

PRODUCT SELECTION GUIDES

TECHNICAL INFORMATION

WHERE TO FIND THEM IN THE 1999 EDITION OF EEM

Batteries, Product Selection Guide	D•1313	Microwave Components, Product Selection Guide	A•1671
Cabinets, Enclosures, Racks & Chassis, Product Selection Guide	C•1003	Motors, Drives, & Rotating Components, Product Selection Guide	B•1169
Capacitors, Product Selection Guide	A•1003	Oscilloscopes, Product Selection Guide	D•1309
Coils, Chokes, Inductors, Product Selection Guide	A•1153	Panel Hardware, Product Selection Guide	C•1446
Connectors & Sockets, Product Selection Guide	C•1127	Panel Meters, Analog & Digital, Product Selection Guide	D•1273
Cores, Magnets & Ferrites	A•1349	Potentiometers, Trimmers, Controls, & Rheostats, Product Selection Guide	A•2010
Crystals, Oscillators, Crystal & Piezoelectric Filters, Product Selection Guide	A•1365	Power Supplies, AC, Product Selection Guide	D•2147
Data Acquisition/Handling Systems & Accessories	D•1139	Power Supplies, DC, Product Selection Guide	D•1379
DC-DC Converters	D•1879	Protective Components (Fuses, Circuit Breakers, etc.) Product Selection Guide	B•1231
Delay Lines, Product Selection Guide	A•1545	Relays, Product Selection Guide	B•1285
Discrete Semiconductors, Product Selection Guide	A•2049	Resistors, Product Selection Guide	A•1857
Displays, Readouts, & CRTs, Product Selection Guide	B•1006	Solenoids, Product Selection Guide	B•1450
Fans, Blowers, Cooling Equipment, & Heat Exchangers, Product Selection Guide	C•1470	Switches, Product Selection Guide	B•1467
Fiber Optics, Product Selection Guide	B•1163	Terminal Blocks	C•1383
Filters, Power, Product Selection Guide	A•1577	Test Accessories	D•1270
Filters, Signal, Product Selection Guide	A•1615	Thermal Components, Product Selection Guide	B•1667
Instruments, Test & Measuring, Product Selection Guide	D•1178	Transducers & Encoders, Product Selection Guide	B•1736
Keyboards, Keypads & Membrane Switches, Product Selection Guide	B•1613	Transformers, Product Selection Guide	A•2079
Lamps, Lights, & Indicators, Product Selection Guide	B•1089	Wire & Cable, Product Selection Guide	C•1581
LAN Products	B•1002		

PACITEC®

Division of LaFrance Corp.

Electronic Enclosures

PacTec plastic enclosures help make your product more successful!

**From Standard...
to Customized...
to Custom...**

- **FAST**
- **INEXPENSIVE**
- **ATTRACTIVE**

- Custom enclosures and prototypes...from initial design concepts and industrial design...to final production in only 6 weeks!
- Over 300 standard enclosures available from stock.
- No limits to the packaging and aesthetic features with PacTec.
- Molded-in mounting bosses, card guides, and board-capturing features reduce assembly time and costs.
- Molded-through color for long life, attractive appearance.
- Low cost options and accessories meet every design need.
- Impact-resistance ABS.
- Flame retardant material meeting UL94V-0 available.
- EMI/RFI shielding available.

Feature Highlights:

- Using our state-of-the-art associative computer system, our DESIGN TEAM can quickly create renderings, SLA prototypes, mechanical layouts and tool designs.
- We can supply prototypes for photo shoots, publicity, trade shows, presentations, PCB/components fitting, and testing.
- Over 100 new models in 1997-98, including ergonomic and high style designs!
- Many models available with standard and custom high quality membrane switches.
- See the Guide to PacTec Enclosures on Page C-1068.

FOR DETAILED INFORMATION, SEE PAGES C-1068 THRU C-1072.PacTec, One LaFrance Way, Concordville, PA 19331 610/361-4200 Fax: 610/361-4201 <http://www.pactecenclosures.com>

CABINETS

Manufacturer	Starting EEM Page No.	Consoles				Cabinets				Turrets		Racks			Special		Characteristics		
		Desk-top	Free-standing	Sys-tems	Bench	Desk-top	Instru-ment	Rack	Port-able	Bench	Desk-top	Equip-ment	Kits	Equip-ment	Desks, Work Stations	Composition	19 in. Standard	Shielded	NEMA/UL Listed
Alumapak	C•1011								✓									✓	
Amco Engineering	C•1012	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓				✓	✓
Ango Electronics Corp.	C•1017					✓	✓	✓				✓	✓					✓	✓
AP Labs	C•1018	✓		✓	✓	✓	✓	✓	✓						Aluminum	✓	✓		
Buckeye Shape Form	C•1020	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓
Bud Industries, Inc.	C•1022	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	Alum., Steel	✓	✓		✓
Cabtron Systems, Inc.	C•1023	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	
Carlo Gavazzi, Inc.	C•1026			✓	✓	✓	✓	✓				✓	✓					✓	✓
CMP Enclosures, Inc.	C•1028	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	Metal	✓			✓
Compac	C•1029			✓															✓
ECS Composites	C•1030						✓	✓	✓					✓	Composites FRP	✓	✓		
Electro-Space Fabricators	C•1032	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓					✓	✓
Electronic Solutions Bircher	C•1031		✓																
Elma Electronic Inc.	C•1034	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓		Alum., Steel	✓	✓		✓
Emcor Products	C•1036		✓				✓	✓		✓	✓		✓	✓	Steel	✓	✓		✓
Enclosures of America Int'l	C•1038	✓			✓	✓	✓	✓											
Equipto Electronics Corp.	C•1039	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	Steel	✓	✓		
ERNI Components	C•1041												✓						
Extrusion Technology, Inc.	C•1042	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓						
General Devices Company, Inc.	C•1046			✓			✓	✓	✓				✓	✓				✓	✓
Hammond Manufacturing Company	C•1048	✓	✓			✓	✓	✓					✓	✓				✓	
Hybricon	C•1053	✓	✓	✓				✓	✓				✓						✓
Hyberlab Corp.	C•1052	✓	✓		✓	✓	✓	✓	✓						Steel				
Instrument Enclosures	C•1055	✓	✓	✓			✓		✓				✓						✓
Lansing Instrument Corp.	C•1058					✓	✓	✓					✓		Alum., Steel, Plastics	✓	✓		
Lien Engineering	C•1061	✓	✓				✓		✓				✓						✓
OKW Enclosures, Inc.	C•1062	✓	✓	✓	✓	✓	✓	✓	✓						Aluminum, Plastic	✓	✓		✓
Optima Electronic Packaging Systems	C•1066	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	Aluminum, Steel	✓	✓		✓
PacTec Corp.	C•1068	✓		✓	✓	✓	✓	✓	✓				✓	✓				✓	✓
Par Metal Products	C•1074		✓	✓	✓	✓	✓	✓	✓				✓	✓					✓
Powerbox USA, Inc.	C•1082					✓	✓	✓							Steel, Aluminum	✓			
Premier Metal Products Company	C•1085	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓
Rose and Bopla Enclosures	C•1087			✓	✓	✓	✓	✓	✓				✓	✓	Aluminum, Plastic	✓	As An Option		✓
Schroff, Inc.	C•1088			✓		✓	✓	✓	✓				✓	✓				✓	✓
SIMCO	C•1093				✓	✓	✓	✓	✓										✓
STRONGBOX	C•1096					✓	✓					✓	✓		Aluminum	✓			
TDJ Company Inc.	C•1098				✓	✓	✓	✓	✓				✓		Aluminum	✓			
Techmar Corp.	C•1100					✓	✓	✓										✓	
Teclab	C•1103			✓															✓
The Barre Co.	C•1024	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓				✓	✓
Tracewell Systems	C•1104			✓	✓	✓	✓	✓	✓				✓					✓	✓
Tri-Mag, Inc.	C•1106	✓			✓	✓	✓	✓					✓	✓	Aluminum	✓	✓		
VERO Electronics Inc.	C•1107	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓				✓	✓

CABINETS (cont'd.)

Manufacturer	Starting EEM Page No.	Consoles			Cabinets				Turrets		Racks		Special		Characteristics		
		Desk-top	Free-standing	Sys-tems	Bench-top	Instru-ment	Rack	Port-able	Bench-top	Equip-ment	Equip-ment	Desks, Work Stations	Composition	19 in. Stan-dard	Shielded	NEMA/UL Listed	
ZERO PFT	C-1108		✓			✓						✓			Steel		✓
ZERO Plastics Cases	C-1110					✓	✓	✓				✓			Plastic	✓	
ZERO Stantron	C-1112		✓	✓	✓	✓	✓			✓	✓		✓		Aluminum	✓	✓
Ziprack	C-1121			✓	✓	✓	✓					✓	✓		Aluminum	✓	

CASES

Manufacturer	Starting EEM Page No.	Type										Characteristics					
		Bench-top	Dis-play	Desk-top	Key-board	Kits	Instru-ment	Port-able	Transit	Equip-ment, General	Composition	19 in. Stan-dard	Shielded	NEMA/UL Listed			
Altech Corp.	C-1006	✓	✓	✓	✓	✓	✓	✓	✓								
Alumapak	C-1011	✓	✓					✓	✓		✓					✓	
Ango Electronics Corp.	C-1017	✓		✓				✓							✓		
AP Labs	C-1018		✓		✓				✓		✓		Aluminum	✓	✓		
Buckeye Shape Form	C-1020	✓	✓	✓	✓	✓	✓	✓	✓				Aluminum	✓	✓		
Bud Industries, Inc.	C-1022	✓	✓	✓	✓			✓	✓			✓	Alum., Steel, Plastic	✓	✓		✓
Compac	C-1029							✓	✓		✓					✓	
ECS Composites	C-1030		✓	✓			✓	✓	✓	✓	✓		Composite FRP, Rotomold	✓	✓		
Electro-Space Fabricators	C-1032	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓		
Elma Electronic, Inc.	C-1034	✓	✓	✓	✓	✓	✓	✓	✓				Alum., Steel	✓	✓		✓
Enclosures of America Int'l	C-1038	✓	✓	✓	✓			✓	✓	✓							
ERNI Components	C-1041										✓						
Extrusion Technology, Inc.	C-1042		✓	✓	✓	✓	✓	✓	✓		✓		Aluminum		✓		
Gemini Inc.	C-1044		✓					✓	✓	✓	✓						
Hammond Manufacturing Company	C-1048	✓	✓	✓			✓	✓			✓				✓		✓
Hybricon Corp.	C-1053	✓		✓						✓		✓				✓	
Instrument Enclosures	C-1055	✓		✓	✓			✓	✓		✓					✓	
Lansing Instrument Corp.	C-1058	✓		✓				✓			✓		Alum, Steel, Plastic, plus other sizes	✓	✓		
Lien Engineering	C-1061	✓		✓				✓	✓		✓					✓	
OKW Enclosures, Inc.	C-1062	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		Alum., Plastic	✓	✓		✓
Optima Electric Packaging Systems	C-1066			✓				✓	✓				Aluminum, Steel	✓	✓		
PacTec Corp.	C-1068	✓		✓	✓	✓	✓	✓	✓		✓			✓			
Patton Electronics	C-1075			✓			✓		✓				Plastic				
Polycase Products	C-1077	✓		✓				✓	✓		✓						✓
Powerbox Inc.	C-1082	✓		✓				✓			✓		Steel, Aluminum	✓			
Premier Metal Products Company	C-1085	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
Rose and Bopla Enclosures	C-1087	✓	✓	✓		✓	✓	✓	✓	✓	✓		Plastic, Aluminum	✓	✓		✓
Schroff, Inc.	C-1088	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓		✓
SERPAC	C-1090							✓	✓		✓						
SIMCO	C-1093	✓		✓				✓	✓				Plastic		✓		✓
STRONGBOX	C-1096							✓			✓		Aluminum	✓			
TDJ Company, Inc.	C-1098	✓		✓			✓	✓	✓		✓		Aluminum	✓			
The Barre Company	C-1024	✓		✓				✓	✓		✓					✓	
Tracewell Systems	C-1104	✓		✓	✓			✓			✓			✓	✓		
Tri-Mag, Inc.	C-1106	✓	✓	✓	✓			✓			✓		Aluminum	✓	✓		
VERO Electronics Inc.	C-1107	✓	✓	✓			✓	✓	✓		✓			✓	✓		✓
ZERO Enclosures	C-1116							✓	✓	✓					✓	✓	
ZERO Plastics Cases	C-1110	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		Plastic, (ABS), Polyethylene	✓	✓		✓

PCB MOUNTING

Manufacturer	Starting EEM Page No.	Card Cages/ Frames	Card Files	Card Guides	Vertical Card Guides	Retainers	Inserters/ Extractors	Ejectors	NEMA/UL Listed
Buckeye Shape Form	C•1020	✓		✓					
Calmark Corp.	C•1025	✓	✓	✓	✓	✓	✓	✓	
Carlo Gavazzi, Inc.	C•1026	✓	✓	✓	✓	✓	✓	✓	
Electro-Space Fabricators	C•1032	✓	✓	✓	✓	✓	✓	✓	
Electronic Solutions Birtcher	C•1031			✓	✓	✓	✓	✓	✓
Elma Electronics Inc.	C•1034	✓	✓	✓	✓	✓	✓	✓	✓
ERNI Components	C•1041	✓	✓	✓	✓				✓
Hybricon Corp.	C•1053	✓	✓	✓	✓				✓
OKW Enclosures, Inc.	C•1062			✓	✓				
Optima Electronic Packaging Systems	C•1066	✓	✓	✓	✓	✓		✓	
PacTec Corp.	C•1068			✓					
Panel Technology	C•1073	✓	✓	✓	✓				
Par Metal Products	C•1074	✓	✓	✓	✓				
Polycase Products	C•1077			✓	✓				
Rose and Bopla Enclosures	C•1087	✓		✓	✓	✓	✓	✓	✓
Schroff, Inc.	C•1088	✓	✓	✓	✓	✓	✓	✓	✓
Techmar Corp.	C•1100	✓		✓					
The Barre Company	C•1024	✓	✓	✓	✓				✓
Tracewell Systems	C•1104	✓							
VERO Electronics Inc.	C•1107	✓	✓	✓	✓	✓	✓	✓	✓

CHASSIS/TRACKS

Manufacturer	Starting EEM Page No.	Chassis	Tracks/ Slides
Ango Electronics Corp.	C•1017	✓	✓
AP Labs	C•1018	✓	
Buckeye Shape Form	C•1020	✓	
Bud Industries, Inc.	C•1022	✓	
Compac	C•1029	✓	
Electro-Space Fabricators	C•1032	✓	✓
Elma Electronics Inc.	C•1034	✓	✓
Emcor Products	C•1036		✓
Extrusion Technology Inc.	C•1042	✓	
General Devices Company, Inc.	C•1046	✓	✓
Jonathan Manufacturing	C•1056	✓	✓
Lansing Instrument Corp.	C•1058	✓	
Optima Electronic Packaging Systems	C•1066	✓	✓
Par Metal	C•1074	✓	✓
Rose and Bopla Enclosures	C•1087	✓	✓
Schroff, Inc.	C•1088	✓	✓
STRONGBOX	C•1096	✓	✓
TDJ Company Inc.	C•1098	✓	✓
Techmar Corp.	C•1100		✓
The Barre Co.	C•1024	✓	✓
Tracewell Systems	C•1104	✓	
Tri-Mag	C•1106	✓	✓
VERO Electronics Inc.	C•1107	✓	✓
Ziprack	C•1121	✓	✓

STORAGE EQUIPMENT

Manufacturer	Starting EEM Page No.	Cartridge/ Cassette	Disk	Magnetic Card	Multifunctional	Reel-to-Reel Tape
AP Labs	C•1018	✓	✓		✓	
Rose and Bopla Enclosures	C•1087	✓				
Tracewell Systems	C•1104	✓	✓		✓	
Tri-Mag, Inc.	C•1106		✓		✓	
Ziprack	C•1121	✓	✓	✓	✓	

Altech Corp.

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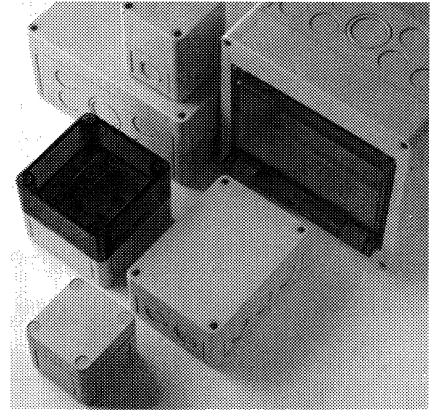
INDUSTRIAL ENCLOSURES

Enclosures That Protect And Look Good Too!

Altech enclosures provide needed protection in a functional and creative way while enhancing the value of your product with their appealing designs. Innovative housing for electrical/electronic/pneumatic components; terminal blocks and assemblies, meters, switches, sensors, DIN rail mount circuit breakers and devices. Choose from our wide selection of sizes and styles.

For tough, industrial environments use our die-cast aluminum enclosures. They are ideal for power distribution, electronics, instrumentation and control and for pneumatic and hydraulic applications. They are available with optional high temperature seals.

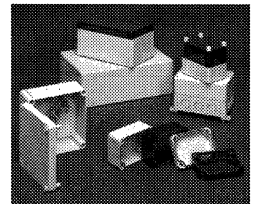
- Dustproof and Watertight
- Non-Corroding, Chemical and Impact Resistant
- International Approvals
- Permanent or Interchangeable Gaskets
- Available with Transparent or Gray Covers
- Up to NEMA 4X
- Smooth or Knockout Sidewalls
- Selection of Styles and Cover Heights
- Easily Customized
- Complete Line of Accessories Available



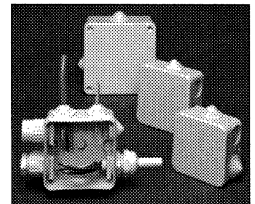
Altech's Family of Enclosures

TK Variety-Polycarbonate, smooth sidewalls without knockouts, NEMA 4X/IP 66

Type	Cover Type	Dimensions (Inches)	Type	Cover Type	Dimensions (Inches)
PC77-6-o	gray	2.56 sq x 2.24	PC1313-7-o	gray	2.12 sq x 2.95
PC77-8-o	gray	2.56 sq x 3.19	PC1313-10-o	gray	5.12 sq x 3.90
PC77-6-to	transparent	2.56 sq x 2.24	PC1313-7-to	transparent	5.12 sq x 2.95
PC77-8-to	transparent	2.56 sq x 3.19	PC1313-10-to	transparent	5.12 sq x 3.90
PC97-6-o	gray	3.70 x 2.56 x 2.24	PC1811-9-o	gray	7.09 x 4.33 x 3.54
PC97-8-o	gray	3.70 x 2.56 x 3.19	PC1811-11-o	gray	7.09 x 4.33 x 4.37
PC97-6-to	transparent	3.70 x 2.56 x 2.24	PC1811-9-to	transparent	7.09 x 4.33 x 3.54
PC97-8-to	transparent	3.70 x 2.56 x 3.19	PC1811-11-to	transparent	7.09 x 4.33 x 4.37
PC99-6-o	gray	3.70 sq x 2.24	PC1818-9-o	gray	7.17 x 7.09 x 3.54
PC99-8-o	gray	3.70 sq x 3.19	PC1818-11-o	gray	7.17 x 7.09 x 4.37
PC99-6-to	transparent	3.70 sq x 2.24	PC1818-9-to	transparent	7.17 x 7.09 x 3.54
PC99-8-to	transparent	3.70 sq x 3.19	PC1818-11-to	transparent	7.17 x 7.09 x 4.37
PC1111-7-o	gray	4.33 sq x 2.60	PC2518-9-o	gray	10.0 x 7.09 x 3.54
PC1111-9-o	gray	4.33 sq x 3.54	PC2518-11-o	gray	10.0 x 7.09 x 4.37
PC1111-7-to	transparent	4.33 sq x 2.60	PC2518-9-to	transparent	10.0 x 7.09 x 3.54
PC1111-9-to	transparent	4.33 sq x 3.54	PC2518-11-to	transparent	10.0 x 7.09 x 4.37
PC1309-6-o	gray	5.12 x 3.70 x 2.24	PC3625-11-o	gray	14.21 x 10.0 x 4.37
PC1309-8-o	gray	5.12 x 3.70 x 3.19	PC3625-16-o	gray	14.21 x 10.0 x 6.50
PC1309-6-to	transparent	5.12 x 3.70 x 2.24	PC3625-11-to	transparent	14.21 x 10.0 x 4.37
PC1309-8-to	transparent	5.12 x 3.70 x 3.19	PC3625-16-to	transparent	14.21 x 10.0 x 6.50



TK Variety Enclosures



HP Economy Junction Boxes

EK Quick Access - Polystyrene

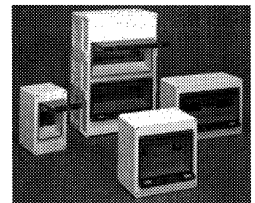
Transparent Hinged Doors
 Sidewalls with knockouts, NEMA 4X/IP 65

Type	Qty/Size Knockouts	Dimensions (In.) W x D x H
EK004	4/PG 16, 1/PG 21/16	4.33 sq x 7.09
EK006	8/PG 16, 1/PG 21/16	7.17 x 7.09 x 4.33
EK012	8/PG 16, 2/PG 21/16	10 x 7.09 x 4.33
EK024	8/PG 16, 1/PG 29/16	14.21 x 10 x 4.33

HP Economy Junction Boxes

Semi-rigid Polypropylene
 with universal entry seals NEMA 4X/IP 54

Type	Dimensions (In.) W x D x H
HP 70	2.95 sq x 1.66 H
HP 80	3.35 sq x 1.66 H
HP 90	3.55 sq x 1.77 H
HP 100	4.45 sq x 2.29 H

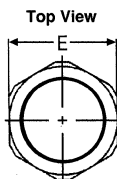
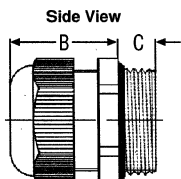
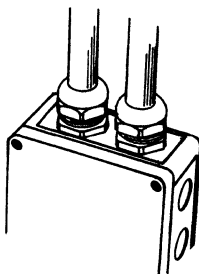


EK Quick Access Enclosures

LIQUID TIGHT STRAIN RELIEFS (CORD GRIPS)

Seal cable entries and keep contaminants such as liquids, gases and solid materials from entering into enclosures. Provide strain relief to reduce stress on components and termination points.

- Polyamide (PA), Light Gray
- Straight Through
- PG7 to PG21 and NPT3/8" to NPT3/4" Sizes with Integral Sealing Ridges
- PG29 to PG48 with preinstalled Perbunan Seal Ring
- Order Locknuts separately



Cord Grips, Polyamide (PA) with Neoprene (NE) Sealing Sleeve

Type	Thread Size	Cable Diameter mm (in.)	Mtg. Hole Dia. Drill Size	Dimensions mm (in.)		
				B	C	E
80.000	PG7	2.0-5.0 (.08-.20)	33/64	22.0 (.87)	8.0 (.32)	15.0 (.59)
80.003	PG9	4.0-8.0 (.16-.32)	39/64	25.5 (1.00)	8.0 (.32)	19.0 (.75)
80.005	PG11	5.0-10.0 (.20-.39)	3/4	28.5 (1.12)	8.0 (.32)	22.0 (.87)
80.007	PG13.5	6.0-12.0 (.24-.47)	53/64	29.7 (1.17)	9.0 (.35)	24.0 (.94)
80.009	PG16	10.0-14.0 (.39-.55)	29/32	32.0 (1.26)	10.0 (.39)	27.0 (1.06)
80.011	PG21	13.0-18.0 (.51-.71)	1-9/64	36.5 (1.44)	11.0 (.43)	33.0 (1.30)
80.013	PG29	18.0-25.0 (.71-.98)	1-31/64	43.5 (1.71)	11.0 (.43)	42.0 (1.65)
80.015	PG36	22.0-32.0 (.87-1.30)	1-7/8	54.0 (2.13)	13.0 (.51)	53.0 (2.09)
80.017	PG42	30.0-38.0 (1.18-1.48)	2-5/32	53.5 (2.11)	13.0 (.51)	60.0 (2.36)
80.019	PG48	34.0-44.0 (1.34-1.73)	2-3/8	55.7 (2.19)	14.0 (.55)	65.0 (2.56)
80.020	NPT3/8"	3.0-7.0 (.12-.28)	11/16	29.0 (1.14)	15.0 (.59)	22.0 (.87)
80.022	NPT1/2"	7.0-12.0 (.28-.47)	27/32	31.3 (1.23)	15.0 (.59)	27.0 (1.06)
80.024	NPT3/4"	9.0-16.0 (.35-.63)	1-1/16	36.7 (1.45)	15.0 (.59)	33.0 (1.30)

Please request our comprehensive Liquid Tight Strain Relief Catalog for additional Cord Grips.

We have only shown a small sampling of our Enclosure line here. Please request our Electronic Enclosure Catalog No. 370.
SEE OUR CIRCUIT BREAKERS IN SECTION B-4300 / SEE OUR TERMINAL BLOCKS IN SECTION C-2150

Altech Corp.

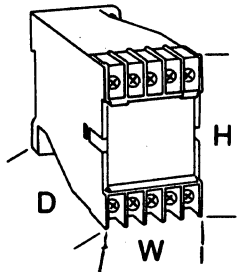
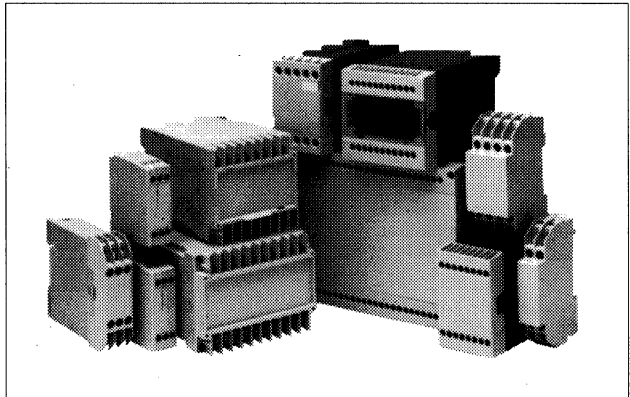
35 Royal Road • Flemington, NJ 08822-6000
 Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

NONMETALLIC ENCLOSURES DIN RAIL MOUNT

Altech's contemporary nonmetallic enclosures are designed to help you package your devices for the world market. Compact in size, they are ideal for housing electrical, electronic and electromechanical devices such as electronic transducers and converters, process controllers, monitoring devices, printed circuit boards and more! Quick and easy front wiring with 4 to 144 ready-to-wire terminals. Snap onto standard DIN rail or panel mount.

- Complete with Terminals
- Several Terminal-to-Board Connection Options
- Integral PC Board Guides
- Beryllium Copper Contacts

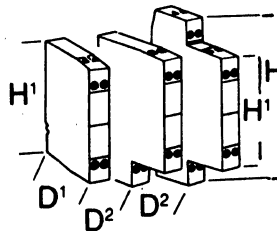
- Up to 25A, 300V; 18-12 AWG
- UL94V0 Materials
- Wide Range of Sizes, Designs
- Easily Customized, Imprinted
- International Acceptance



K70

Cost effective kits have snap-on covers for easy intersection and removal of PC boards. Integral PC board guides. Pressure plate terminals, fixed and pluggable terminal-to-board connections.

- 6 to 32 Terminals
- Housing Material: Polycarbonate
- Cover Material: ABS
- Standard Color: Gray
- Up to 25A (Pluggable to 10A)
- Terminal Covers Optional



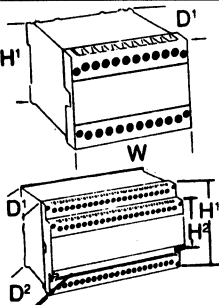
KO4070

Compact, cost effective, snap together kits. Removable cage clamp terminals with dual solder pins are machine solderable. Horizontal and vertical PC board positions. Funnel shaped wire entries.

- 4 to 16 Cage Clamp Terminals
- Material: Polyamide
- Standard Color: Gray
- Up to 16A
- Extended Length Pins Available

Type	Max. # of Terminals	Terminal-to-Bd. Connection*	Housing Dimensions (mm)		
			W	H	D
K7022.5A	8	WJ, FO	22.5	75.0	97.0
K7045C	10	WJ, MS	45.0	75.0	112.0
K7022.5B	12	WJ, FO	22.5	75.0	97.0
K7022.5C	12	WJ, MS	22.5	75.0	97.0
K7055	12	WJ	55.0	73.0	114.0
K7075P	16	WJ, ST, CE	55.0	73.0	114.0
K7045D1	20	WJ, FO	45.0	74.0	124.0
K7045D2	20	WJ, FO	45.0	74.0	124.0
K70100A	20	WJ, FO	100.0	73.0	114.0
K70100P	20	WJ, ST, CE	100.0	73.0	114.0
K70150P	32	WJ, ST, CE	150.0	73.0	113.0

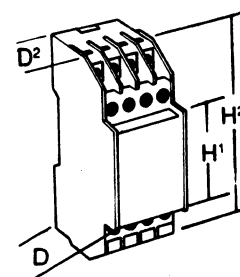
Type	Max. # of Terminals	Terminal-to-Bd. Connection*	Housing Dimensions (mm)				
			W	H1	H2	D1	D2
K04071	4	SP	12.5	60.0	—	60.0	—
K7045C	6	SP	12.5	60.0	75.0	60.0	31.0
K7022.5B	6	SP	20.5	60.0	—	60.0	—
K7022.5C	8	SP	12.5	60.0	90.0	60.0	31.0
K7055	8	SP	28.5	60.0	—	60.0	—
K7075P	9	SP	20.5	60.0	75.0	60.0	31.0
K7045D1	12	SP	28.5	60.0	90.0	60.0	31.0
K7045D2	12	SP	28.5	60.0	75.0	60.0	31.0
K70100A	16	SP	28.5	60.0	90.0	60.0	31.0



KO4700

A wide range of sizes and cover designs. Pressure plate or cage clamp terminals, fixed and pluggable terminal-to-board connections. Pluggable connection helps to eliminate wiring mistakes.

- Housing Material: Polycarbonate
- Cover Material: Glass Filled Polycarbonate
- Standard Color: Black Housing, Tan Cover
- Up to 25A (Pluggable to 10A)
- Enclosures with Removable Cover Panels Available



KO4000

Versatile enclosure provides ample internal space for wiring and electronic components. Kits consist of snap-in double level terminals, cover and base, with integral PC board guides. Machine solderable straight or right angle pins, pressure plate terminals. Fit standard 45mm DIN cutout in larger enclosures like Altech's EK Series.

- 8 to 84 Terminals
- Material: Polycarbonate
- Standard Color: Gray
- Up to 10A

Type	Max. # of Terminals	Terminal-to-Bd. Connection*	Housing Dimensions (mm)				
			W	H1	H2	D1	D2
KO4762	10	WJ, FO	45.0	74.0	—	119.0	—
KO4763A	16	MS	45.0	74.0	—	119.0	—
KO4763P	16	CE	45.0	74.0	—	119.0	—
KO4718P	20	WJ, ST, CE	100.0	74.0	—	119.0	—
KO4713A	22	MS	75.0	74.0	—	119.0	—
KO4713P	22	CE	75.0	74.0	—	119.0	—
KO4717A	30	MS	100.0	74.0	—	119.0	—
KO4717P	30	CE	100.0	74.0	—	119.0	—
KO4719P	32	WJ, ST, CE	152.0	71.0	—	118.0	—
KO4720P	42	WJ, ST, CE	200.0	73.0	—	118.0	—
KO4722SP	42	WJ, ST, CE	200.0	72.0	—	118.0	—
KO4721P	66	WJ, CE	200.0	122.0	—	118.0	—
KO4723SP	66	WJ, ST, CE	200.0	123.0	—	118.0	—
KO4722DP	84	WJ, ST, CE	200.0	82.0	123.0	118.0	136.0
KO4723DP	132	WJ, ST, CE	200.0	82.0	123.0	118.0	136.0

Type	Max. # of Terminals	Terminal-to-Bd. Connection*	Housing Dimensions (mm)				
			W	H1	H2	D1	D2
KU4001B†	8	WJ	17.5	45.0	89.7	47.4	57.7
KU4002C	16	WJ, MS	35.3	45.0	89.7	47.4	58.0
KU4002B†	16	WJ, MS	35.3	45.0	89.7	47.4	58.0
KU4003C	32	WJ, MS	71.7	45.0	89.7	47.8	58.6
KU4003B†	32	WJ, MS	71.7	45.0	89.7	47.8	58.6
KU4011C	32	WJ, MS	140.0	44.6	88.6	47.5	59.5
KU4011B†	32	WJ, MS	140.0	44.6	88.6	47.5	59.5
KU4012C	32	WJ, MS	140.3	44.6	88.6	48.0	59.0
KU4012B†	32	WJ, MS	140.3	44.6	88.6	48.0	59.0
KU4013C	64	WJ, MS	140.3	44.6	88.6	48.0	59.0
KU4013B†	64	WJ, MS	140.3	44.6	88.6	48.0	59.0

† Right Angle Pins

* Terminal-to-Board Connection

WJ = Wire Jumper; CE = Card Edge (Plug.); ST = Solder Tab; SP = Solder Pin; FO = Fast on Tab; MS = Machine Solderable Pins
 NOTE: For printed circuit board dimensions and patterns, contact Altech.

We have only shown a small sampling of our Enclosure line here. Please request our Electronic Enclosure Catalog No. 380.
SEE OUR ENCLOSURES IN SECTION B-4300 / SEE OUR CIRCUIT BREAKERS IN SECTION C-2150

Altech Corp.

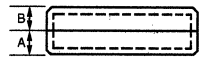
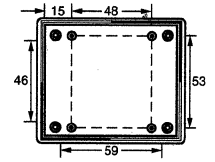
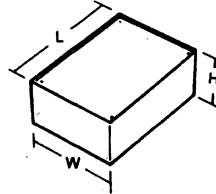
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ELECTRONIC ENCLOSURES

Altech/Teko nonmetallic enclosures can be used for many applications. Screws are used on most designs to join top and bottom shells for stability, and to eliminate the possibility of breaking interlocking pins. Open anytime without damaging the enclosure. Customization is easy.

Hand Held Series

Consist of two half shells which are held together by four self-tapping screws. Four or more mounting provisions for PC boards are molded into bottom shell. Most HH Series enclosures are supplied with a .5mm (.01in.) aluminum panel that fits into a recessed area on top of the top shell. Supplied as kits.

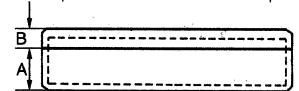
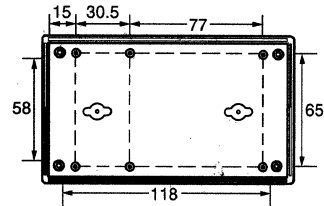


ABS Base and Cover, Black, Aluminum Panel

MFR's Type	Outside Dimensions mm (in.)			Aluminum Panel Dimensions mm (in.)		Length	Width	Thickness
	L	W	H	A	B			
HH-1111	85.0 (3.35)	72.0 (2.83)	25.0 (.98)	12.5 (.49)	12.5 (.49)	72.0 (2.83)	59.5 (2.34)	.5 (.02)
HH-1122	85.0 (3.35)	72.0 (2.83)	30.5 (1.20)	18.0 (.71)	12.5 (.49)	72.0 (2.83)	59.5 (2.34)	.5 (.02)

ABS Base and Cover, Gray, No Aluminum Panel

MFR's Type	Outside Dimensions mm (in.)			Aluminum Panel Dimensions mm (in.)		Length	Width	Thickness
	L	W	H	A	B			
HH-550F	144.5 (5.68)	85.0 (3.35)	21.0 (.83)	8.5 (3.3)	12.5 (.49)	—	—	—
HH-660F	144.5 (5.68)	85.0 (3.35)	27.0 (1.06)	8.5 (3.3)	18.5 (.73)	—	—	—
HH-770F	144.5 (5.68)	85.0 (3.35)	45.0 (1.77)	8.5 (3.3)	36.5 (1.44)	—	—	—



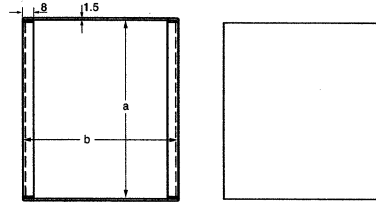
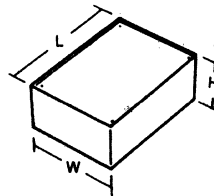
ABS Base and Cover, Gray, Aluminum Panel, External Snap-On Battery Compartment Lid for 9V Battery

MFR's Type	Outside Dimensions mm (in.)			Aluminum Panel Dimensions mm (in.)		Length	Width	Thickness
	L	W	H	A	B			
HH-780	144.5 (5.68)	85.0 (3.35)	31.0 (1.22)	12.5 (.49)	18.5 (.73)	131.5 (5.18)	72.0 (2.83)	.5 (.02)
HH-880	144.5 (5.68)	85.0 (3.35)	37.0 (1.46)	18.5 (.73)	18.5 (.73)	131.5 (5.18)	72.0 (2.83)	.5 (.02)
HH-980	144.5 (5.68)	85.0 (3.35)	55.0 (2.17)	36.5 (1.44)	18.5 (.73)	131.5 (5.18)	72.0 (2.83)	.5 (.02)

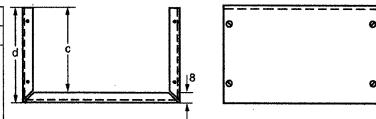
Dimension A = L - 7mm (.28in.); Dimension B = W - 7mm (.28in.)

Aluminum Series

Small to medium size aluminum enclosures, consisting of an anodized aluminum base with integral front and back panels and a black aluminum cover with integral front and side walls. The base and cover are joined together with four self-tapping screws on both front and back. Supplied as a kit, including screws. Surfaces are protected with a peel-off film.

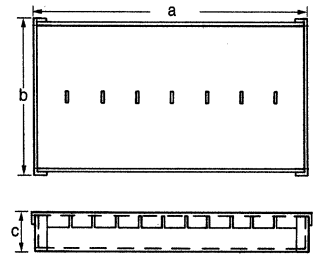
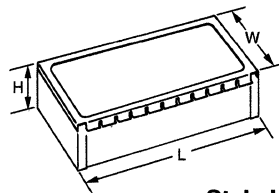


MFR's Type	Outside Dimensions mm (in.)			Inside Dimensions mm (in.)			
	L	W	H	a	b	c	d
A-421	87.0 (3.43)	160.0 (6.30)	100.0 (3.94)	81.0 (3.19)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)
A-423	187.0 (7.36)	160.0 (6.30)	100.0 (3.94)	181.0 (7.13)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)
A-425	287.0 (11.30)	160.0 (6.30)	100.0 (3.94)	281.0 (11.06)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)
A-426	337.0 (13.27)	160.0 (6.30)	100.0 (3.94)	331.0 (13.03)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)



EMI/RFI Series

Use for RF frequency components such as filters, amplifiers, receivers, etc. and to keep radiation close to its source. ER 371 to 374 include dividers and have snap-on covers. ER 433 to 454 have deep drawn bottom shells and are used to hermetically seal RF emitting components. Both series are made of hot tin-plated sheet metal.



Style I

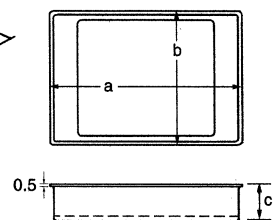
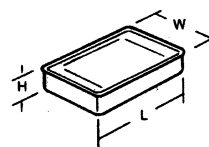
MFR's Type	Outside Dimensions mm (in.)			Inside Dimensions mm (in.)		
	L	W	H	a	b	c

Style

ER-371	54.0 (2.13)	50.0 (1.97)	26.0 (1.02)	50.0 (1.97)	46.0 (1.81)	24.0 (.94)
ER-372	83.0 (3.27)	50.0 (1.97)	26.0 (1.02)	79.0 (3.11)	46.0 (1.81)	24.0 (.94)
ER-373	106.0 (4.17)	50.0 (1.97)	26.0 (1.02)	102.0 (4.02)	46.0 (1.81)	24.0 (.94)
ER-374	161.0 (6.34)	50.0 (1.97)	26.0 (1.02)	157.0 (6.18)	46.0 (1.81)	24.0 (.94)

Style II

ER-433	51.0 (2.01)	31.5 (1.24)	9.5 (.37)	47.0 (1.85)	28.0 (1.10)	6.0 (.24)
ER-434	63.5 (2.50)	31.5 (1.24)	9.5 (.37)	60.0 (2.36)	28.0 (1.10)	6.0 (.24)
ER-443	51.0 (2.01)	31.5 (1.24)	13.0 (.51)	47.0 (1.85)	28.0 (1.10)	9.5 (.37)
ER-444	63.5 (2.50)	31.5 (1.24)	13.0 (.51)	60.0 (2.36)	28.0 (1.10)	9.5 (.37)
ER-453	51.0 (2.01)	31.5 (1.24)	17.5 (.69)	47.0 (1.85)	28.0 (1.10)	14.0 (.55)
ER-454	63.5 (2.50)	31.5 (1.24)	17.5 (.69)	60.0 (2.36)	28.0 (1.10)	14.0 (.55)



Style II

We have only shown a small sampling of our Enclosure line here. Please request our Electronic Enclosure Catalog No. 380.
SEE OUR CIRCUIT BREAKERS IN SECTION B-4300 / SEE OUR TERMINAL BLOCKS IN SECTION C-2150

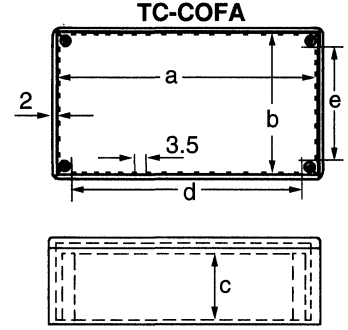
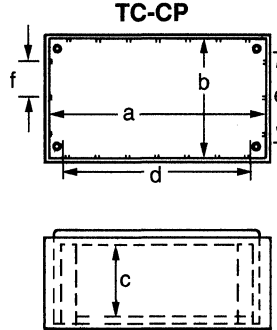
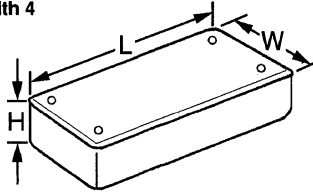
Altech Corp.

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ELECTRONIC ENCLOSURES

Top Cover Series

ABS base, with integral printed circuit board guides. Cover is mounted with 4 screws. ABS or Aluminum covers. Supplied as kits.

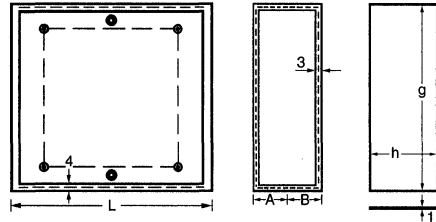
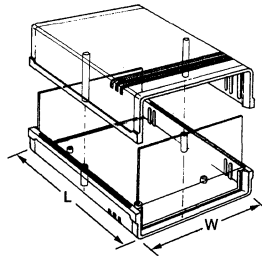


MFR's Type	Outside Dimensions mm (in.)			Inside Dimensions mm (in.)					
	L	W	H	a	b	c	d	e	f
TC-CP Base ABS, Dark Gray with PCB-Guides									
Cover ABS, Light Gray with PCB-Mounting-Studs									
TC-CP/1	85.0 (3.35)	56.0 (2.20)	42.0 (1.65)	81.0 (3.19)	51.0 (2.01)	37.0 (1.47)	67.0 (2.64)	38.0 (1.50)	15.0 (.59)
TC-CP/2	110.0 (4.40)	70.0 (2.76)	54.0 (2.13)	105.0 (4.13)	65.0 (2.56)	50.0 (1.97)	89.0 (3.50)	49.0 (1.93)	20.0 (.79)
TC-CP/3	160.0 (6.30)	96.0 (3.78)	67.0 (2.64)	155.0 (6.10)	91.0 (3.58)	61.0 (2.40)	141.0 (5.55)	77.0 (3.03)	21.5 (.85)
TC-CP/4	215.0 (8.46)	130.0 (5.12)	83.0 (3.27)	210.0 (8.27)	125.0 (4.92)	77.0 (3.03)	195.0 (7.68)	109.0 (4.29)	31.5 (1.24)
TC-COFA ABS Base, Medium Gray, Aluminum Cover Plate, Rounded Corners (Cover Thickness 1mm (.04in.))									
Cover Plate Dimensions mm(in.)									
TC-COFA/5	100.0 (3.35)	55.0 (2.17)	25.0 (.98)	96.0 (3.78)	51.0 (2.01)	20.5 (.81)	80.0 (3.15)	35.0 (1.38)	3.5 (.14)
TC-COFA/6	125.0 (4.92)	70.0 (2.76)	35.0 (1.38)	121.0 (4.76)	66.0 (2.60)	30.5 (1.20)	105.0 (4.13)	50.0 (1.97)	3.5 (.14)
TC-COFA/7	160.0 (6.30)	95.0 (3.74)	45.0 (1.77)	156.0 (6.14)	91.0 (3.58)	40.0 (1.57)	140.0 (5.51)	75.0 (2.95)	3.5 (.14)
TC-COFA/8	215.0 (8.46)	130.0 (5.12)	65.0 (2.56)	201.0 (7.91)	126.0 (4.96)	60.0 (2.36)	195.0 (7.68)	110.0 (4.33)	3.5 (.14)

Dimension a = L - 5mm (.197in.); Dimension b = W - 5mm (.197in.)

Front Panel Series

Consists of two ABS half shells plus front and rear 1mm (.04in.) thick aluminum panels which are inserted vertically. Enclosures are complete with molded in PC board guides and four PC board mounting provisions. Assembled with two self-tapping screws. Supplied as a complete kit. Some FP Series enclosures are equipped with a battery compartment. Easy to customize.
 • Standard color: Gray, Black available
 • Non-skid feet



Catalog No.	MFR's Type	Outside Dimensions mm (in.)				Inside Dimensions mm (in.)			Fr. Panel Dims. mm (in.)		
		L	W	H	A	B	d	e	f	g	h
94.192	FP-011	134.0 (5.28)	129.0 (5.08)	47.0 (1.85)	23.5 (.93)	23.5 (.93)	91.0 (3.58)	76.0 (2.99)	105.5 (4.15)	120.0 (4.72)	41.0 (1.61)
94.194	FP-022	134.0 (5.28)	129.0 (5.08)	61.0 (2.40)	30.5 (1.20)	30.5 (1.20)	91.0 (3.58)	76.0 (2.99)	105.5 (4.15)	120.0 (4.72)	55.0 (2.16)
94.198	FP-222	173.0 (6.81)	154.0 (6.06)	47.0 (1.85)	23.5 (.93)	23.5 (.93)	111.0 (4.37)	115.0 (4.59)	127.0 (5.00)	145.0 (5.71)	41.0 (1.61)
94.199	FP-233	173.0 (6.81)	154.0 (6.06)	61.0 (2.40)	30.5 (1.20)	30.5 (1.20)	111.0 (4.37)	115.0 (4.59)	127.0 (5.00)	145.0 (5.71)	55.0 (2.16)
94.216	FP-10001	145.0 (5.71)	85.0 (3.35)	37.0 (1.46)	18.5 (.73)	18.5 (.73)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)
94.217	FP-10002	145.0 (5.71)	85.0 (3.35)	49.0 (1.93)	18.5 (.73)	30.5 (1.20)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)

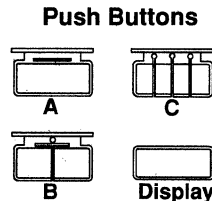
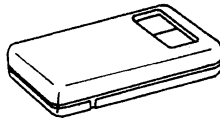
Enclosure with External Snap-On Battery Compartment Lid for 9V Battery

94.226	FP-10002B	145.0 (5.71)	85.0 (3.35)	49.0 (1.93)	30.5 (1.20)	18.5 (.73)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)
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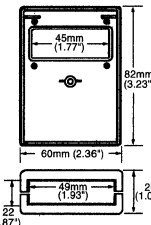
Dimension a = - 7mm (.28in.); Dimension b = W - 7mm (.28in.)

Mini Pocket Series

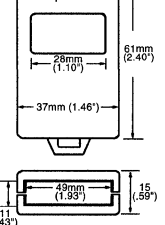
Available in three sizes with up to four push buttons with or without a transparent plexiglass front panel for infrared signals or a top clear plastic readout. Choose from gray or black ABS housing with blue, red or yellow push buttons. Enclosure halfshells held together by self-tapping screw. Stainless Steel clips are available. Styles 1 and 3 have four mounting provisions for PC boards.



Style 1



Style 2



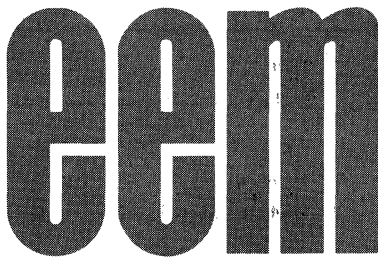
Style No.	Catalog No.	Description	Enclosure Color	Push Button Type(s)	Color of Push Buttons	Battery Type
1	94.316	Push button Set	Gray	A+B+C	Blue	9V
1	94.314	Clear Display Readout, No Push buttons	Gray	—	—	9V
1	94.317	Push button Set	Black	A+B+C	Blue	9V
1	94.315	Clear Display Readout, No Push buttons	Black	—	—	9V

Clip, Stainless Steel

—	94.758	Clip, Stainless Steel	—	—	—	—
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Style No.	Catalog No.	Description	Enclosure Color	Push Button Type(s)	Color of Push Buttons	Battery Type
2	94.304	Push Button	Gray	A	Red	12V
2	94.306	Push Button	Gray	B	Red	12V
2	94.308	Push Button	Gray	A	Blue	12V
2	94.310	Push Button	Gray	B	Blue	12V
2	94.305	Push Button	Black	A	Red	12V
2	94.307	Push Button	Black	B	Red	12V
2	94.309	Push Button	Black	A	Blue	12V
2	94.311	Push Button	Black	B	Blue	12V

We have only shown a small sampling of our Enclosure line here. Please request our Electronic Enclosure Catalog No. 380.
SEE OUR CIRCUIT BREAKERS IN SECTION B-4300 / SEE OUR TERMINAL BLOCKS IN SECTION C-2150



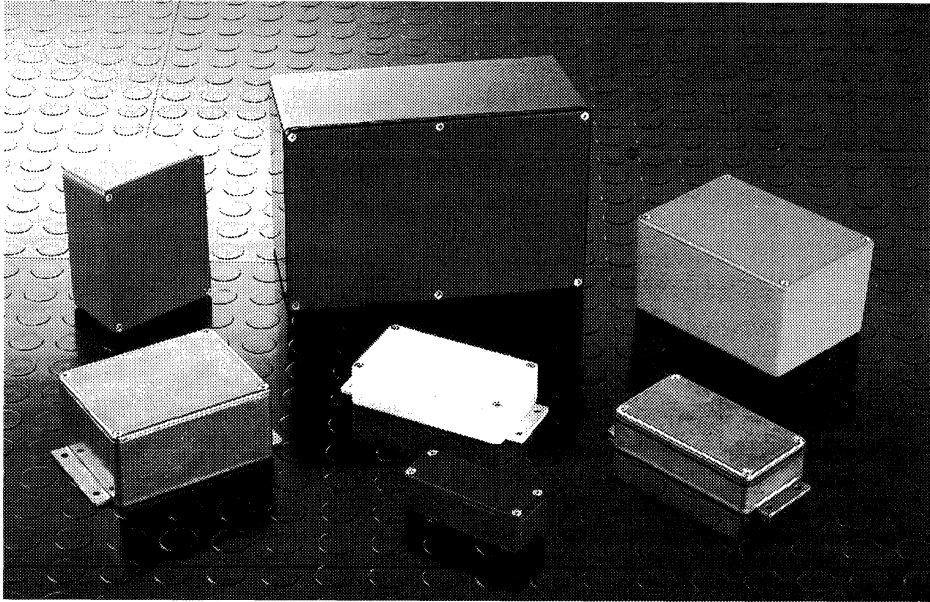
COMMONLY USED ELECTRICAL/ELECTRONIC ABBREVIATIONS AND ACRONYMS

- A**
A/D acrylonitrile butadiene-styrene
A/D analog to digital
ADC analog to digital converter
ADP automatic data processing
AFC audio frequency control
AFT automatic filter test
ALGOL algorithmic language
AM a logical operator
AQL acceptable quality level
ASCH American national standard code for information interchange
ASIC application specific IC
ATE automatic test equipment
ATG automatic test generation
AWG American wire gauge
- B**
BALUN balanced to unbalanced
BASIC beginners' all-purpose symbolic instruction
BCD binary-coded decimal
BNC baby "N" connector
BUS basic utility system
- C**
CAD computer-aided design
CAE computer-aided engineering
CAM computer-aided manufacture
CAMAC computer-automated measurement and control
CAPP computer-aided process planning
CAT computer-aided test
CATV cable television or community antenna television
CCC (leaded) ceramic chip carriers
CCD computer-controlled display
CERMET ceramic metal element
CIE computer-integrated engineering
CIM computer-integrated manufacturing
CLCC ceramic leadless chip carriers
CMOS complementary metal-oxide semiconductor
Comm. communications
CPS characters per second
CPU central processing unit
- D**
D/A digital to analog
DAC digital to analog converter
DBMS data base management system
DC direct current
DFT design for testability
DIAC bidirectional trigger diode
DIL dual in-line
DIN Deutsche Industrie Normenausschuss
DIP dual in-line package
DPM digital panel meter
DRAM dynamic RAM
DTL diode transistor logic
- E**
EDA electronic design automation
EDP electronic data processing
EBCDIC extended binary coded decimal interchange code
EEPROM electrically erasable PROM
- EIA** Electronic Industries Association
EMC electromagnetic compatibility
EMI electromagnetic interference
EMP electromagnetic pulse
EPROM erasable programmable ROM
ESR equivalent series resistance
- F**
FEP fluorinated ethylene propylene Copolymer, 200° Teflon
FET field-effect transistor
FM frequency modulation
FORTRAN formula translator
- G**
GaAsFET gallium arsenide FET
CMIP commn management information protocol
GPIB general purpose interface bus
GPS global positioning system
- H**
HF high frequency (3 to 30 MHz)
HIPOT test, measurement, and diagnostic equipment
HLL high level language
HV high voltage
Hz Hertz
- I**
IAB Internet Activities Board
IC integrated circuit
IDC insulation displacement contact
IF intermediate frequency
IO input/output (devices)
IR insulation resistance (or) infrared
ISDN integrated services digital network
ISO International Standards Organization
- J**
JEDEC Joint Electronic Device Engineering Council
JFET junction FET
JMOS junction MOS
- K**
kHz kilohertz (10^3 hertz)
KSR keyboard send/receive
- L**
LAN local area network
LC (filters) inductance/capacitance
LCC leaded chip carrier
LCD liquid crystal display
LED light-emitting diode
LF low frequency (30 to 300 kHz)
LIF low insertion force
LNA low noise amplifier
LNB low noise band
LSI large scale integration
LVDT linear velocity displacement transformer
- M**
MASER microwave amplification by stimulated emission of radiation
MATV master antenna television
- μ F microfarad
MHz megahertz
MIC microwave IC
MIPS million instructions per second
MIB microcomputer interface board
MOS metal oxide semiconductor
MOSFET metal oxide semiconductor FET
MOSIGT metal oxide semiconductor insulated-gate transistor
MOV metal oxide varistor
MPU microprocessor unit
MSI medium scale integration
- N**
NBS National Bureau of Standards
NEMP nuclear electromagnetic pulse
NIM national instrumentation module
NOR not OR
NTC negative temperature coefficient
- O**
OCR optical character reader
OEM original equipment manufacturer
OR a logical operator
OSI open systems interconnection
- P**
PAL programmable array logic
PC printed circuit
PCB printed circuit board
PCM pulse code modulation
PCS plastic clad silica
pF picofarad
PGA pin grid array
PIN positive-intrinsic-negative (transistor)
PLA programmable logic array
PLCC plastic leaded chip carrier
PLL phased lock loop
PPI plan position indicator
PROM programmable ROM
PTC positive temperature coefficient
PUT programmable unijunction transistor
- Q**
QAM quadrature amplitude modulation
Q (meter) quality-factor meter
- R**
RAM random access memory
RC resistance-capacitance
RFI radio frequency interference
RMS root mean square
ROM read only memory
RF radio frequency
RFC radio-frequency choke
RFI radio-frequency interference
RTD resistance-temperature detector
RTL resistor transistor logic
RTV room temperature vulcanizing
RW read/write
- S**
SAS silicon asymmetrical switch
SBC single board (micro) computer
- SBS silicon bilateral switch
SCR silicon-controlled rectifier
SCS silicon-controlled switch
SDA source & detector assemblies
SGMP simple gateway monitoring protocol
SIDAC bidirectional voltage-triggered switch
SIMM single in-line memory module
SIP single in-line package
SMD surface mount device
SMT surface mount technology
SNMP simple network management protocol
SO small outline
SOIC small outline IC
SOT small outline transistor
SSI small scale integration
SSR solid-state relay
STL Schottky transistor logic
SUS silicon unilateral switch
- T**
TC temperature coefficient
TCE thermal coefficient of expansion
TXCO temperature compensated crystal oscillator
TFE tetrafluoride ethylene propylene Copolymer, 250° Teflon
TRIAC bidirectional AC switch
TTL transistor-transistor logic
TTY teletypewriter
- U**
UHF ultra high frequency (300 MHz to 3 GHz)
UJT silicon unijunction transistor
UL Underwriters Laboratory
UPS uninterruptible power supply
- V**
VAC volts (of) alternating current
VAN value-added network
VAR volt-ampere reactive
VCR video cassette recorder
VDC volts (of) direct current
VHF very high frequency (30 kHz to 300 MHz)
VHSIC very high speed integrated circuit
VLF very low frequency (3 to 30 kHz)
VLSI very large scale integration
VME virtual machine environment
VRM voice recognition module
VTVM vacuum tube volt meter
VU volume unit
VSWR voltage standing wave ratio
- W**
WPS word processing software
- Y**
YIG yttrium iron garnet
- Z**
ZIF zero insertion force

AlumaPak

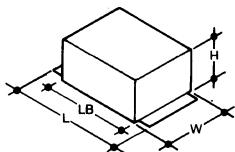
ALUMINUM DIECAST ENCLOSURES

Three attractive styles of high-quality aluminum diecast boxes with close fitting lids are now available in our AlumaPak line. These lightweight enclosures provide excellent screening against EMI/RFI and are therefore ideal housings for electronic components and circuits. Integral PCB guides are incorporated in some of the styles.

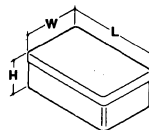


Flanged and general purpose enclosures can be supplied in three finishes: A) Plain, to accept most finishes with a minimum amount of preparation; B) Stove enamel grey texture; C) Nylon coated. The nylon coated boxes can be drilled or machined without affecting the finish. Colors available: grey, blue, yellow, brown, black.

FLANGED MODEL UNPAINTED WITH GASKET	FLANGED MODEL UNPAINTED	EXTERIOR DIMENSIONS W x LB x H x L (inches)
UEGF-141-900*	UEF-141-900*	1.37 x 3.50 x 1.16 x 4.50
UEGF-351-900*	UEF-351-900*	2.50 x 4.50 x 1.16 x 5.50
UEGF-452-900*	UEF-452-900*	3.50 x 4.50 x 2.16 x 5.50
UEGF-352-900*	UEF-352-900*	2.50 x 4.50 x 2.16 x 5.50
UEGF-572-900*	UEF-572-900*	4.75 x 6.75 x 2.16 x 7.95
UEGF-574-900*	UEF-574-900*	4.75 x 6.75 x 4.16 x 7.95
UEGF-692-900*	UEF-692-900*	5.75 x 8.75 x 2.16 x 9.92
UEGF-463-900*	UEF-463-900*	3.94 x 5.51 x 2.95 x 6.69
UEGF-573-900*	UEF-573-900*	5.00 x 6.50 x 2.95 x 7.68
UEGF-451-900*	UEF-451-900*	3.94 x 4.72 x 1.38 x 5.90



*Internal Guide Slots



MODEL UNPAINTED	MODEL UNPAINTED WITH GASKET	EXTERIOR DIMENSIONS W x L x H (inches)
UE-221-900	UEG-221-900	2.16 x 2.36 x 1.18
UE-231-900	UEG-231-900	2.16 x 3.14 x .98
UE-141-900	UEG-141-900	1.37 x 3.50 x 1.16
UE-351-900	UEG-351-900	2.50 x 4.50 x 1.16
UE-452-900	UEG-452-900	3.50 x 4.50 x 2.16
UE-352-900	UEG-352-900	2.50 x 4.50 x 2.16
UE-572-900	UEG-572-900	4.75 x 6.75 x 2.16
UE-574-900	UEG-574-900	4.75 x 6.75 x 4.16
UE-692-900	UEG-692-900	5.75 x 8.75 x 2.16
UE-694-900	UEG-694-900	5.75 x 8.75 x 4.16
UE-7113-900*	UEG-7113-900*	6.89 x 10.83 x 2.56
UE-463-900*	UEG-463-900*	3.94 x 5.51 x 2.95
UE-573-900*	UEG-573-900*	5.00 x 6.50 x 2.95
UE-451-900*	UEG-451-900*	3.94 x 4.72 x 1.38
UE-10104-900*	UEG-10104-900*	9.84 x 9.84 x 3.94

Alumapak engineering will provide design support, if required, for modifications to standard enclosures. Modifications, by CNC machining can be made to top and bottom covers for positioning of PCB's, LCD's, controls and access points for Input/Output devices.

800-775-6077

AlumaPak

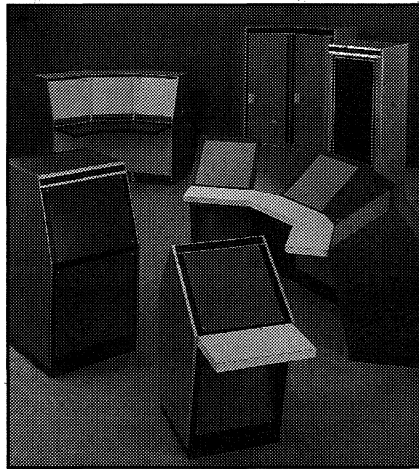
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- A dazzling array of colors. AMCO's standard color palette has 20 distinct selections— from cranberry to bluegrass to pearl gray! Vinyl inlays are available in various woodgrains or black textured leather.
- Configuration flexibility to meet your specific needs. We offer vertical, sloped front, and low silhouette consoles; and provide a line of enclosures for seismic application.

QUALITY CONSTRUCTION

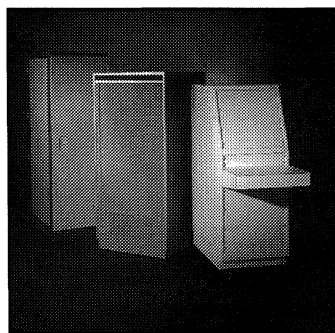
We offer a choice of structural frame designs— the FX or F Series frames. High strength characteristics make the FX Series frame ideal for virtually any commercial or OEM need, in addition to many mil-spec applications. The compact design of the F Series frames makes it ideal for today's challenging limited space applications.

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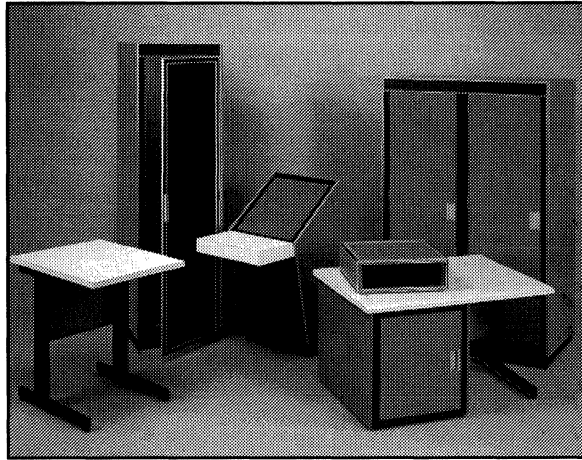
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Whatever your pressing needs— from consoles, computer desks, and desktop cabinets to hardware, accessories or cooling devices, AMCO can ship from stock within five work days. In your choice of 20 contemporary colors, our stock program includes:

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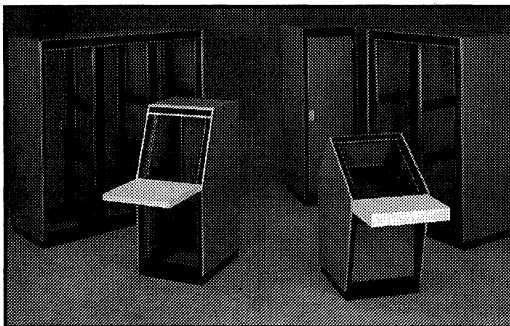
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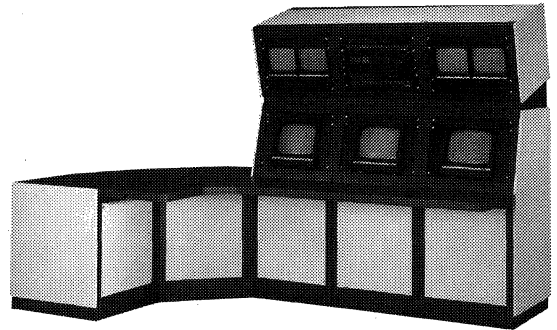
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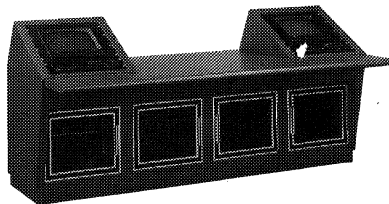
- Vertical, sloped front, or low silhouette base units— standard or custom designs.
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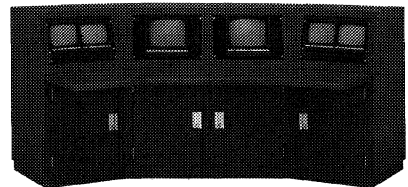
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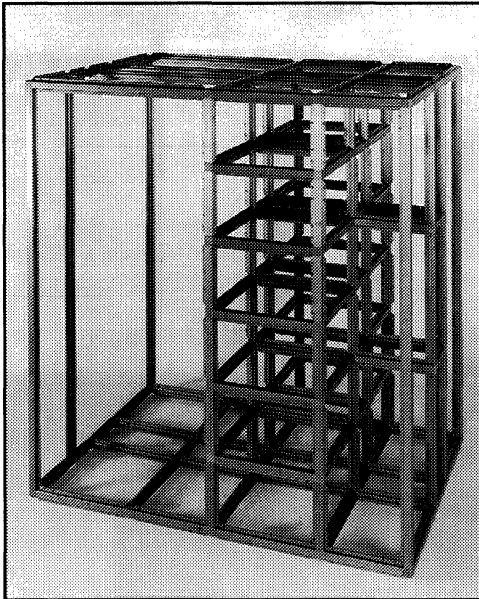


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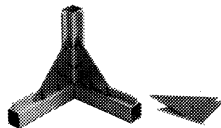
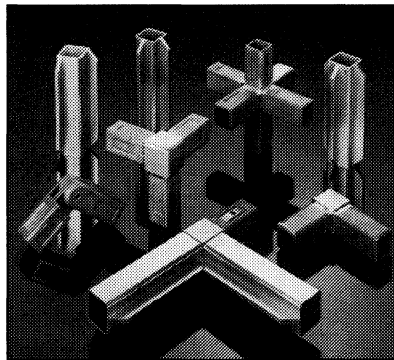
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The AMCO aluminum framing systems allows you to build enclosures from ten inches to twenty feet in any 90° plane. Use non-locking or locking clips for prototyping or permanent assemblies. For extra strength, bolted corner gussets may be added.

ASK FOR CATALOG 203 TODAY

Easy-to-use solutions for complex enclosure problems! This 8 page catalog details construction methods, as well as tubing and casting specifications. Detailed diagrams of extrusions for flush mounting flat or formed panels, recessing flat panels, and mounting accessory channels are provided.



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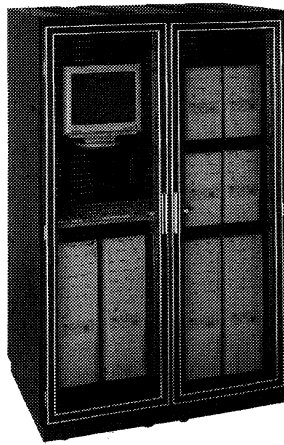
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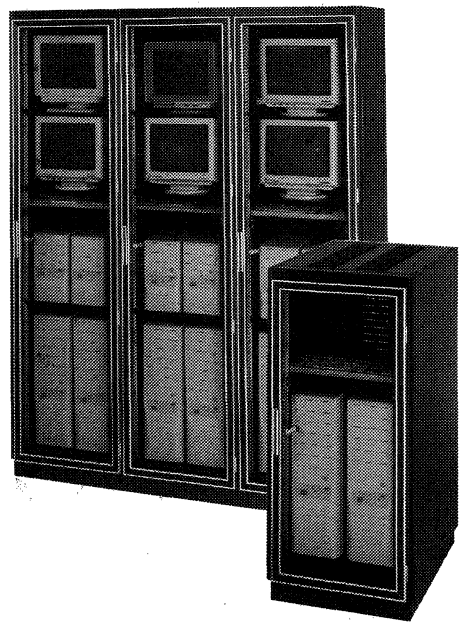
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LAN / DATA
CABINETS TO MEET YOUR NETWORKING NEEDS

RACKS & CHASSIS from STANDARD ENCLOSURES

Series 10 has steel top, bottom and side panels 0.045" thick and grided for excellent heat dissipation, aluminum front (0.125" anodized) and back (0.06" painted) panels that facilitate making of holes.

Note: Add-B for black anodized front and -G for clear anodized front.

Series 12 is all aluminum with 0.06" thick panels with standard gold alodine finish. An additional second front panel for mounting meters or switches is included for improving the flexibility and strength of the chassis.

Note: Add -A for gold alodine, -B for black anodize, -C for clear anodize, -F for painted black, and -G for painted gray.

Series 14 is all aluminum with standard gold alodine finish for EMI/RFI shielding. The support bracket between front and top/bottom are provided for rigidity and shielding. Series 14 is constructed with .09" thick body and .125" thick front panel. Optional custom hole punching, anodize, color painting, and silk screening are available.

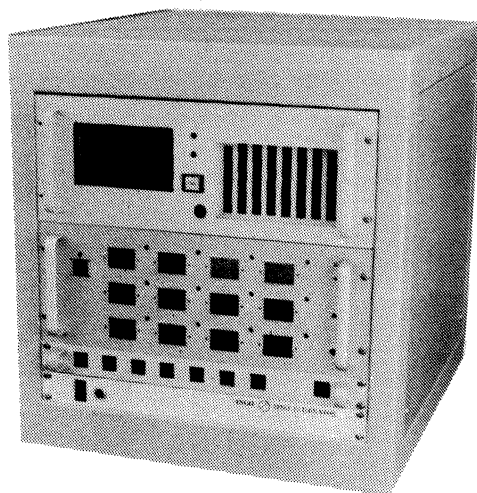
Series 15 is specially made rack-mount cases for PC and AT computers. Stock models include front or rear slotted panels with 4 disk drive spaces. Custom modifications are available for reasonable prices. Reliable power supply and 2nd fan are optional. Other chassis for disk drives, keyboards and monitors can be altered to meet your specifications.

Our Series 16 is custom rack mount chassis that offer our customers the most flexible manufacturing available in the industry. We can manufacture any size enclosure with no minimum quantity. We provide unlimited options including CNC hole punching with pin point accuracy. Please call for more details about our new line of enclosures.

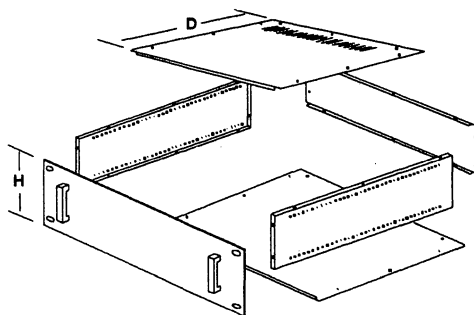
Ango has newly extended its manufacturing capabilities to produce Series 40 standard EIA 19" wide vertical racks and sloped front modules. We stock rack heights from 10 to 40 rack units with depth of 24". Optional EMI/RFI shielded features are also available for sensitive equipment.

Other items include bench-top boxes, instrument cases, and aluminum blank panels with sizes from 1U to 40U high. Vent panels and fan blower are also available from stock.

Call for free catalog, quantity discount or custom sizes. Specifications and prices are subject to change without prior notice.



EIA STANDARD 19" RACK MOUNT CHASSIS



HEIGHT H	SERIES 10			SERIES 12			SERIES 14			SERIES 16			VERTICAL RACK			
	D	Part #	Price	D	Part #	Price	D	Part #	Price	D	Part #	Price	Height	Part #	Depth	Price
1U 1.75	8	10-19082	41.50	7	12-19072	46.80	6	14-19061	79.50				10U 17.5	40-2610	26	395.00
1U	11	10-19112	44.75	11.5	12-19122	56.50	10	14-190101	84.00				14U 24.5	40-2614	26	458.00
1U	14	10-19142	47.25										20U 35.0	40-2620	26	495.00
2U 3.50	8	10-19083	47.50	7	12-19073	56.50	6	14-19062	84.50	18	16-19183	109.00	24U 42.0	40-2624	26	544.00
2U	11	10-19113	49.50	11.5	12-19123	63.80	10	14-19102	92.25	20	16-19203	118.50	30U 52.5	40-2630	26	588.00
2U	14	10-19143	53.25				16	14-19162	98.50	22	16-19223	129.00	34U 59.5	40-2634	26	632.00
2U	17	10-19173	59.50							24	16-19245	142.00	40U 70.0	40-2640	26	678.00
3U 5.25	8	10-19085	53.45	11.5	12-19125	70.25	10	14-19103	116.00	18	16-19185	115.00				
3U	11	10-19115	56.50	15	12-19155	78.50	16	14-19163	125.50	20	16-19205	124.00				
3U	14	10-19145	59.75							22	16-19225	135.00				
3U	17	10-19175	62.75							24	16-19245	142.00				
4U 7.00	14	10-19147	63.50	11.5	12-19127	77.50	10	14-19104	130.00	18	16-19187	122.00				
4U	17	10-19177	67.75	15	12-19157	81.75	16	14-19164	141.60	20	16-19207	131.50				
4U							22	14-19224	149.00	24	16-19247	148.25				
5U 8.75				11.5	12-19129	84.50	16	14-19165	152.50	18	16-19189	127.00				
5U				15	12-19159	90.50	22	14-19225	161.90	24	16-19249	152.50				
6U 10.50							16	14-19166	158.00	18	16-191810	135.00				
6U							22	14-19226	165.00	24	16-192410	155.50				
7U 12.25										18	16-191812	143.00				
7U										24	16-192412	159.50				



ANGO Electronics Corp.

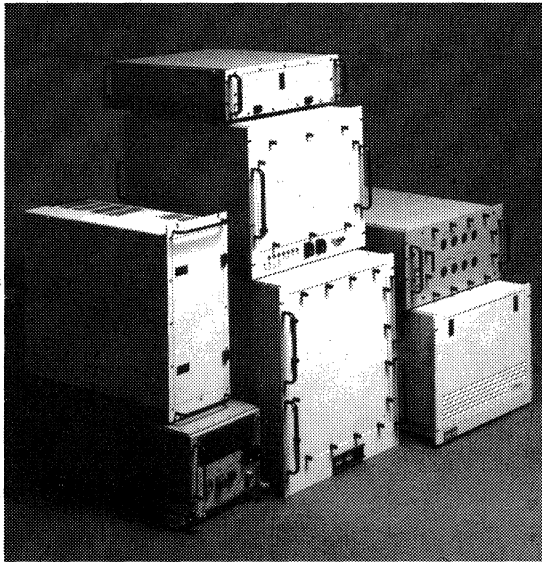


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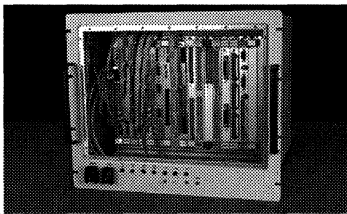
AP Labs FULLspectrum Rugged Enclosures



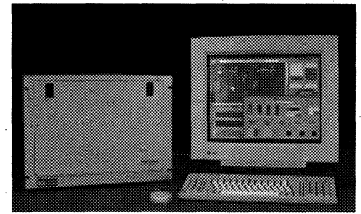
AP Labs is an established leader in the design and manufacture of rugged, industrial and military enclosures. Supported form factors include rackmount, ATR (convection and conduction cooled), and custom hardpoint mountings for industrial, shipboard, airborne, and ground-mobile applications.

- DO-160C
- MIL-STD-810E
- MIL-STD-167/1
- MIL-STD-461C
- MIL-STD-704A-E
- MIL-STD-901D

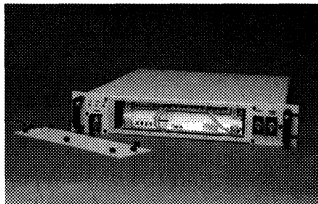
We have cost-effective standard designs and custom solutions - if you need to protect commercial-grade cards and peripherals, **CALL US!** Available in VME & Compact PCI.



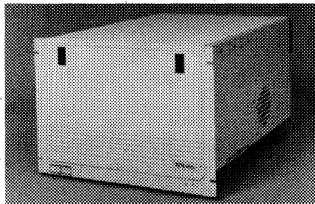
And call us for:
**Systems Integration,
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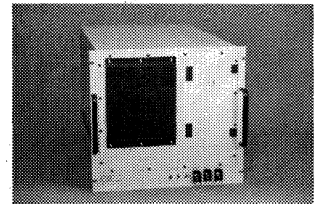
FS-1203



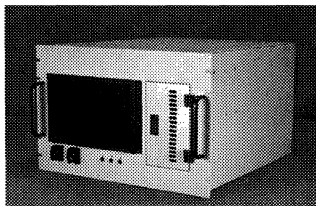
FS-1220



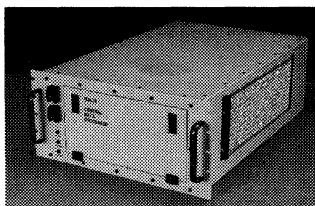
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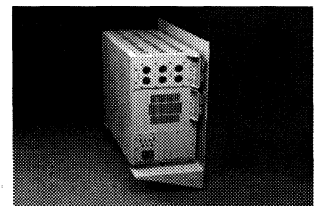
FS-1250



FS-1296



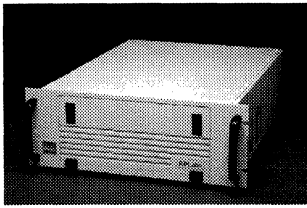
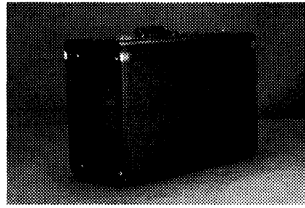
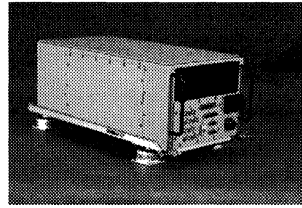
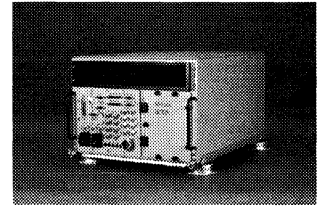
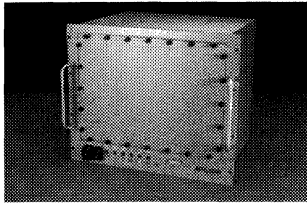
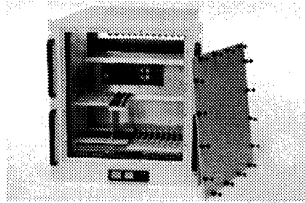
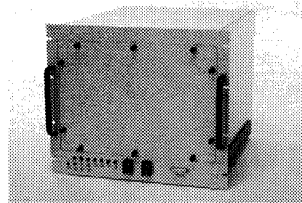
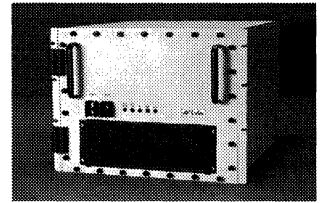
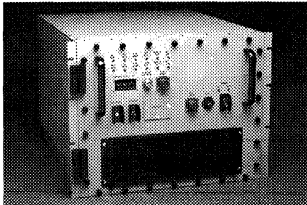
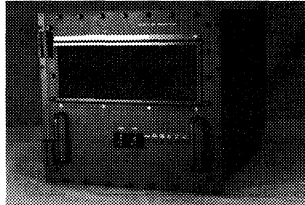
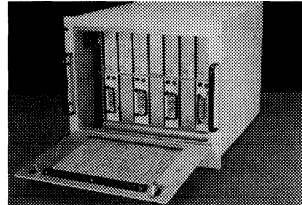
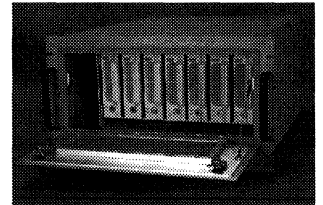
FS-1881



Model	Size	Slots	Drive Bay(s)/Drive(s)	Power	Shock/Vibration	EMI/RFI
FS-1203	3.5" H x 20" D	3 6U VME	one 3.5" Fixed	100W AC	MIL-STD-810E No Isolation	MIL-STD-461C
FS-1220	14" H x 26" D	12 to 20 6U VME	4 HH Front Accessible, 2 Fixed in Rear	600W-1000 AC	MIL-STD-810E No Isolation	NA
FS-1221	17.25" H x 28.25" D	12+21 6U VME	8 HH Front Accessible	100W AC	MIL-STD-810E No Isolation	461C-option
FS-1250	12.25" H x 21" D	12 6U VME, 18 slot option	four 3.5 Drives Front Accessible	600W AC	MIL-STD-810E Isolation Tray	461C-option
FS-1296	8.75" H x 26" D	9 6U VME, Multibus II option	Not Applicable	600W AC	MIL-STD-810E No Isolation	461C-option
FS-1881	22" H x 12" D x 26" W	12 + 20 6U VME	Not Applicable	800W AC	MIL-STD-910E Isolation Coils	MIL-STD-461C

AP Labs 5871 Oberlin Drive, San Diego, CA 92121 USA

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AP Labs**FULLspectrum Rugged Enclosures****FS-2601****FS-4006****FS-7275****FS-7276****FS-8013****FS-8018****FS-8088****FS-8710/12/18****FS-8760****FS-8918****FS-9601****FS-9602**

Model	Size	Slots	Drive Bay(s)/Drive(s)	Power	Shock/Vibration	EMI/RFI
FS-2601	7" H x 22" D	1 Workstation Motherboard	6 HH Front Accessible	375W AC	Not Applicable	NA
FS-4006	12.25" H x 20" W x 9.25" D	4, 6 or 8 6U VME	one HH Top Accessible	100 to 375W AC	MIL-STD-810E Isolation Polymer	NA
FS-7275	7.6" H x 19.6" D x 10.6" W	7 6U VME	one HH (Option with 5 VME slots)	272W AC, 28V DC Option	MIL-STD-810E ARINC Shock Tray	MIL-STD-461C
FS-7276	10.6" H x 19.6" D x 15.4" W	12 to 18 6U VME	up to 2 HH Front Accessible	600W AC, 28V DC Option	MIL-STD-810E ARINC Shock Tray	MIL-STD-461C
FS-8013	15.75" H x 13" D	12 6U VME	1 HH Fixed	600W AC	MIL-STD-810E No Isolation	MIL-STD-461C
FS-8018	21" H x 23" D	Up to 18 6U/9U, (160/220mm cards)	Not Applicable	800W AC	MIL-STD-810E Isolation Tray	MIL-STD-461C
FS-8088	15.75" H x 21" D	18 6U VME	Not Applicable	Dual Redundant 800W	MIL-STD-810E Isolation Tray	MIL-STD-461C
FS-8710/12/18	14" H x 20" D	10 to 18 6U VME	up to 5 HH Front Accessible	600 to 800W AC	MIL-STD-810E Isolation Tray	MIL-STD-461C
FS-8760	14" H x 20" D	6 Red/11 Black 6U	Not Applicable	215W + 375W AC	MIL-STD-810E Isolation Tray	MIL-STD-461C Tempest
FS-8918	17.5" H x 22.5" D	Dual 9 6U VME, single 18 6U Option	4 HH AND 2 Slim 3.5", Front Accessible	800W AC	MIL-STD-810E Isolation Tray	MIL-STD-461C
FS-9601	15.75" H x 22" D	Not Applicable	14 HH drives 1 or 2 SCSI Busses	375W	MIL-STD-810E Isolation Tray	461C-op
FS-9602	10.5" H x 20" D	Not Applicable	7 HH Drives, Front Accessible	TBD	MIL-STD-810E Isolation Tray	461C-option

**Custom or Semi-Custom,
AP Labs can meet your requirements cost-effectively.**

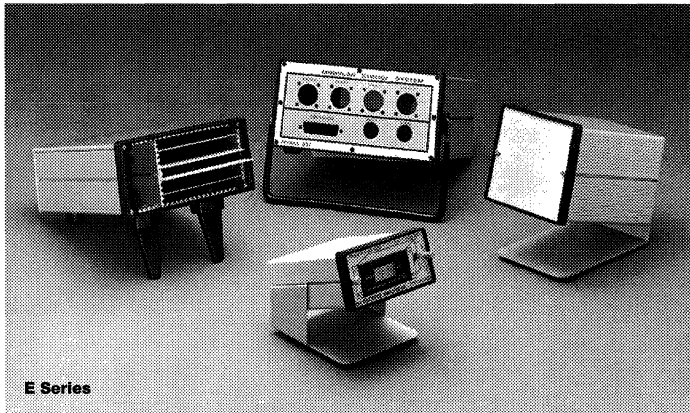
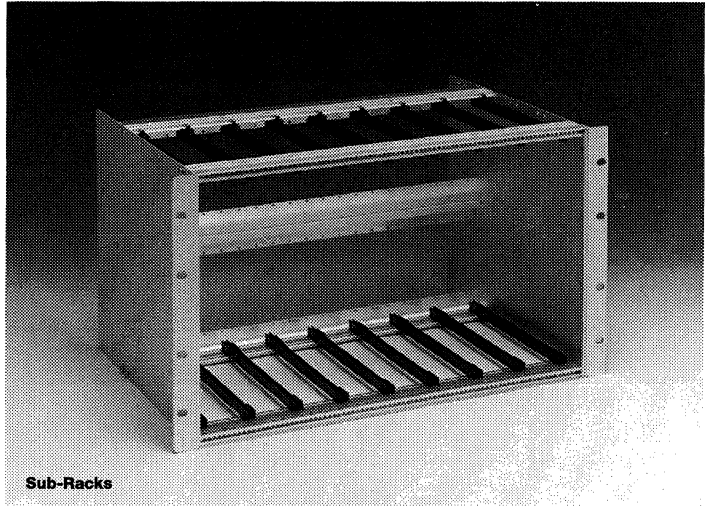
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Buckeye ShapeForm...

SUB-RACK SPECIFICATIONS

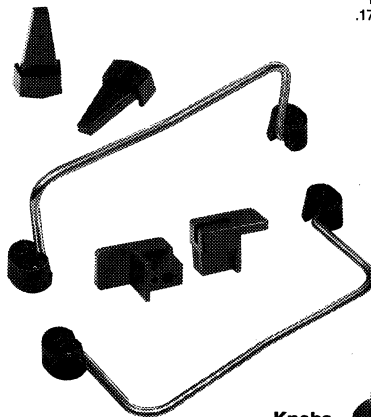
Min.-max. heights	2U-12U 3.50"-21.00"
Standard width	21 position 16.80"
Standard depths	100mm 160mm 220mm 280mm
Special sizes	Yes
Rack mount capable	Yes
Front panel modules	Yes
Punching, painting, screen-printing	Yes
Back planes	Yes
Assembly of electronic components	Yes
EMI/RFI Shielding	Yes



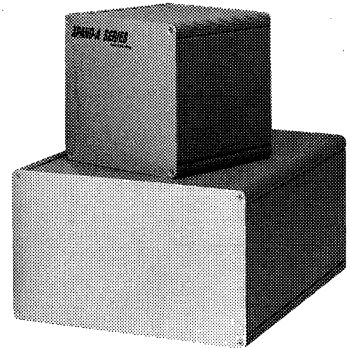
E SERIES SPECIFICATIONS

Min.-max height	1.71"-7.2"
Min.-max. width	1.93" - 7.2"
Standard depths	4.18", 6", 8"
Special sizes	Yes
Standard finishes	Clear anodize, black wrinkle finish powder coat
Punching, painting, screen-printing	Yes
Assembly of electronic components	Yes
Panel mount capable	Yes
EMI/RFI Shielding	Contact factory

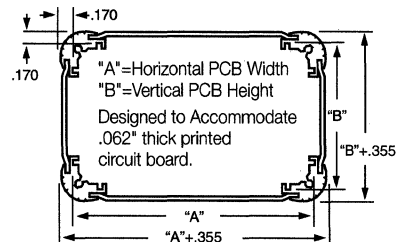
Accessories



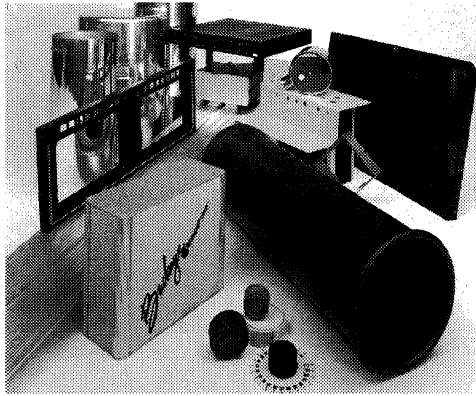
Knobs



XPAND-A SERIES SPECIFICATIONS

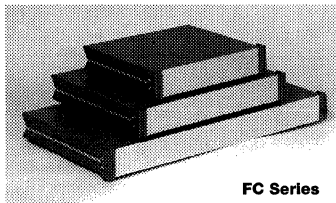


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Buckeye ShapeForm can color match, finish, punch, machine and screen print per your specific requirements. All work is done in-house per drawing. Additionally, assembly of electronic components such as connectors, cables, switches, power supplies, etc...can be performed by Buckeye ShapeForm. Let us ship a completed, fully assembled package to your door.



FC Series

FC SERIES SPECIFICATIONS

Height	1.75" (1U)
Min.-max. widths	8.5"-17.00"
Min.-max. depths	8.00"- 12.00"
Special sizes	Yes
Punching, painting, screen-printing	Yes
Assembly of electronic components	Yes
Rack mount capable	Yes
EMI/RFI Shielding	Contact factory

PRECISION PARTS

Buckeye ShapeForm's exclusive metal forming technology and unique equipment enables us to engineer and produce superior, precision tolerance, deep-drawn parts from most metals at competitive prices. Our engineering, tooling, and manufacturing capabilities produce complex, seamless, one-piece shells, tubes, and other shapes for the commercial, military, and aerospace industries.



CYLINDRICAL PARTS	SIZES IN INCHES	TOLERANCES
Outside Diameters	1 to 12	Low as $\pm .003$
Wall Thickness	.015 to .300	Low as $\pm .002$
Lengths	Up to 72	Low as $\pm .005$
Length: Diameter	20:1	—
* Variable Walls	.050 to .300	Low as $\pm .002$
*Variable Diameters	Delta .600	Low as $\pm .003$

* Within a single part

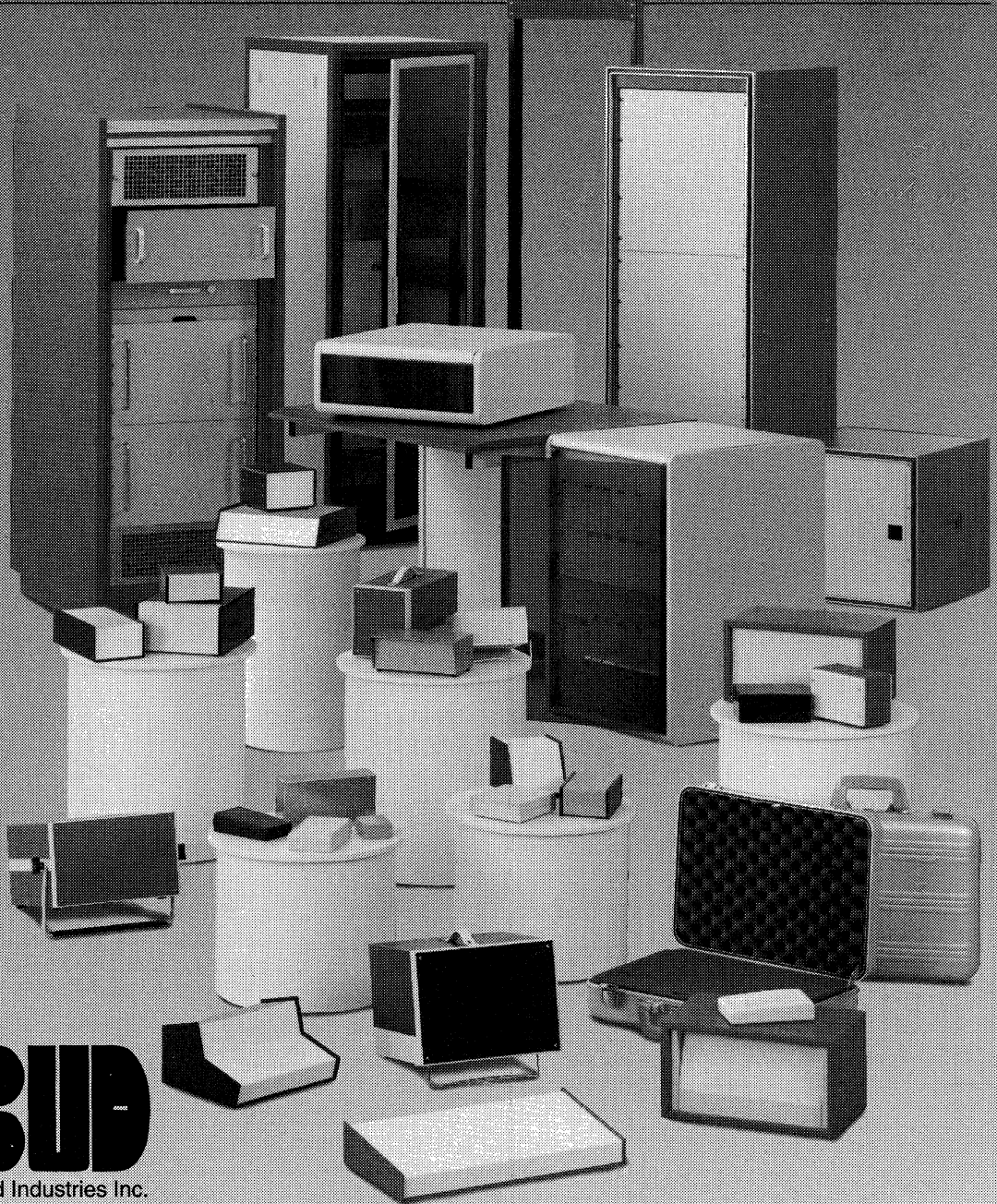
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Electronics enclosures, knobs, seamless cans, precision drawn metal capabilities

Buckeye ShapeForm

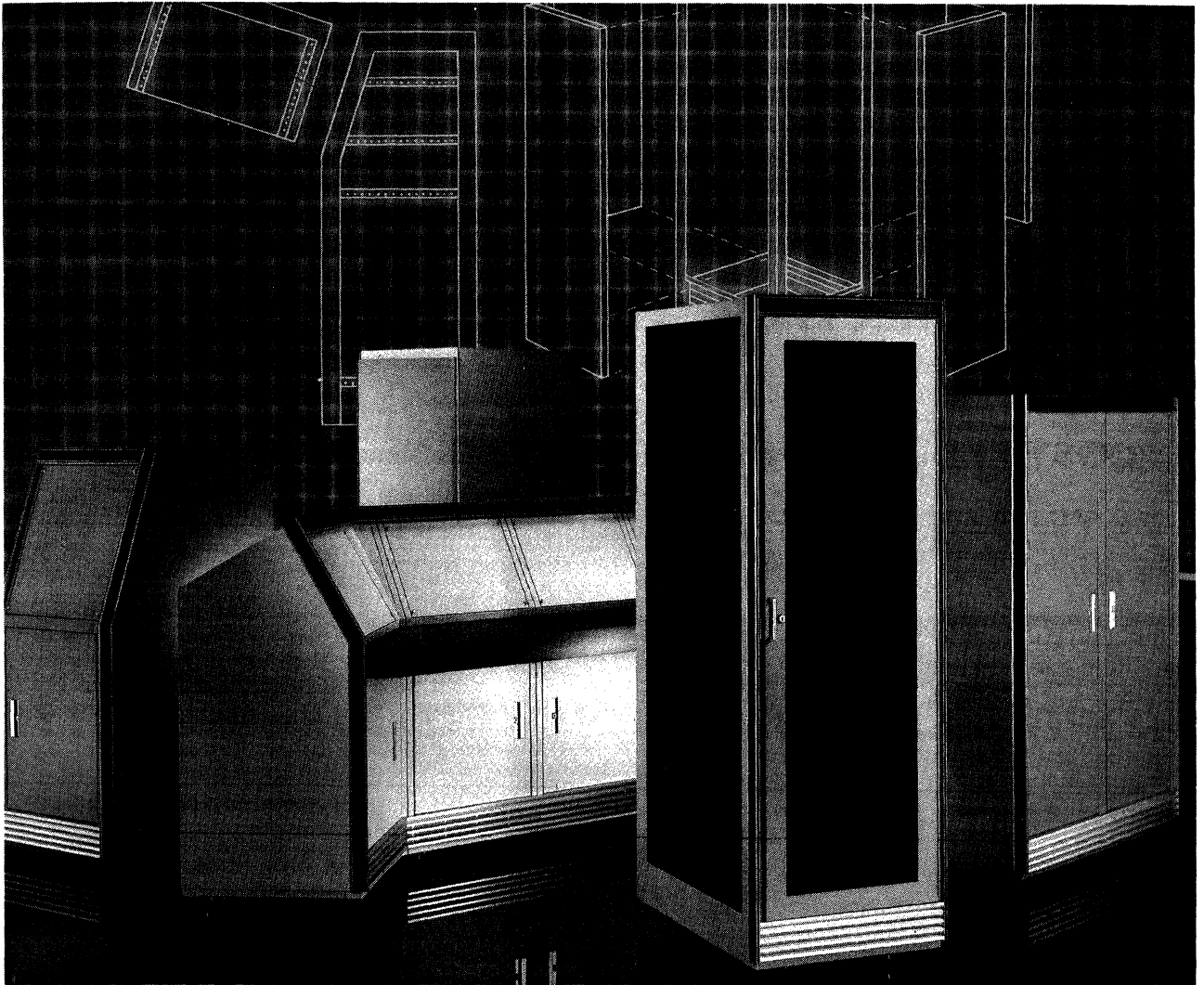
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Standard or Modified — Cabtron has the enclosures to make *your* designs work.

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Cabtron also offers one of the largest selections of accessories in the industry, while attractive trim packages help you finish your enclosures in style. In addition, our skilled technicians will match any color, punch any size hole, or assemble any cabinet configuration to meet your specifications.

perience in electronic enclosures to work for you. For the name of your local representative and your FREE Firstline catalog, contact Cabtron at:



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Standard Features

- 12, 14, or 16 gauge steel frame.
- 11 gauge corner gussets for added strength on vertical rack and console models.
- Horizontal cowlings, vertical frame channel, horizontal top channel, and bottom caster plates all seam welded together for extra strength and rigidity.
- 11 gauge mounting angles have tapped holes on EIA patterns.
- Removable bottom panel for computer floor access.
- Front and rear grills with cleanable air filters engineered to accept exclusive Cabtron blower system.
- Frame provided with knock-outs for easy mounting of casters.
- Casters purchased at time of order installed at no additional charge.
- Free hardware kit includes four 10-32 panel screws for every 8 3/4" of front panel space and joining hardware for multi-bay configurations.
- Choose from 10 standard textured finishes. Combinations of standard colors available at no additional cost.



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EVERY TIME!**

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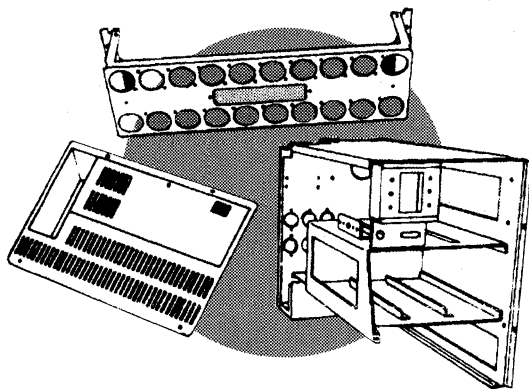
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- Plating and Painting to Commercial and Military Specifications
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- Enclosures

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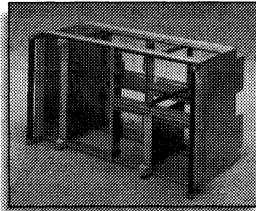
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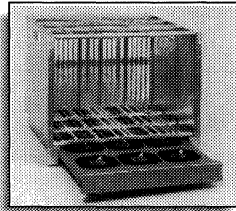
25 YEARS OF DESIGN INNOVATION

SETTING THE STANDARD

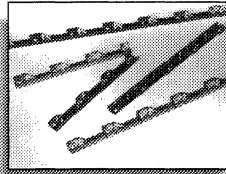


CARD CAGES

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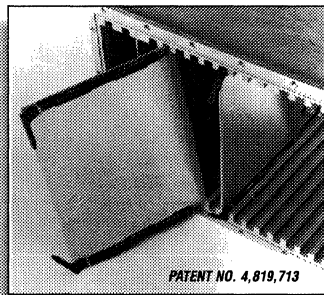


Series LE260
"EXTRACTING" Lever-Lok



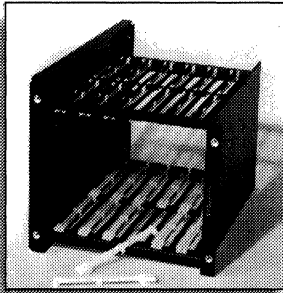
CARD RETAINERS

Excellent thermal and electrical conductivity, plus protection against shock and vibration



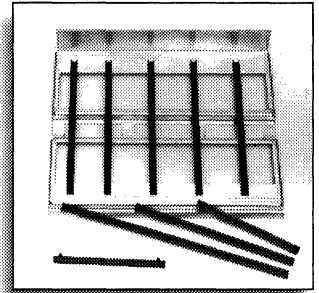
CARD-LOKS Maximum thermal conductivity / shock and vibration protection.

PATENT NO. 4,819,713

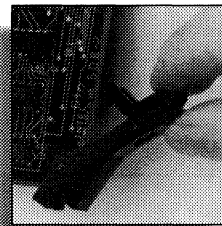


CARD GUIDES

Metal louver and nylon snap-in.

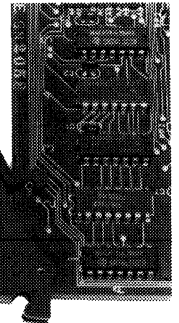


Conductive Series C120 Guide for maximum ESD protection.



Series 107-70
Positive Locking PC Insertor-Extractor

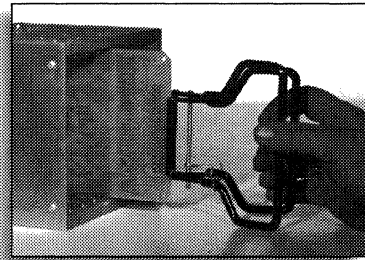
PATENT NO. 4,975,073



CARD INSERTERS & EXTRACTORS

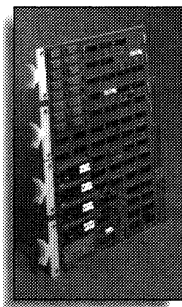
For easy insertion and extraction of cards.

- Available in colors for coding • Generous area for hot stamp marking.
- U.L. Approved • Available with pre-started assembly pins.



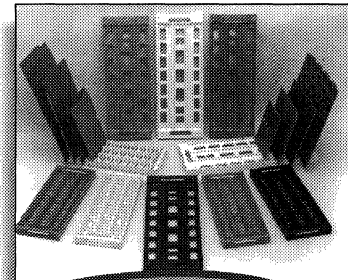
CARD PULLERS

For easy PC card extraction.



PCB HANDLING TRAYS

Trays for safe and efficient handling, transport, and storage of PC boards during all stages of production. Available with static resistant or conductive material.



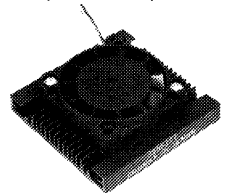
CPU COOLING ASSEMBLIES

Series 350 for Intel 486 & Series 355 for Intel Pentium

Designed to provide critically needed cooling to Microprocessor chips.

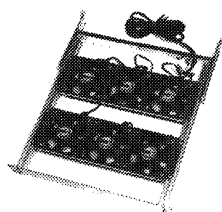
- Maintains greatly reduced case temperatures.
- Low profile.
- Low noise level.
- Low power draw.

Special termination available on request.

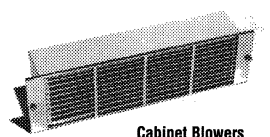


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Fan Tray Assemblies offer standard mounting with multiple and adjustable fan locations. Cabinet Blowers for cooling of electronic rack equipment. For Special Applications Calmark will design an air-mover to meet specific requirements.



Fan Trays



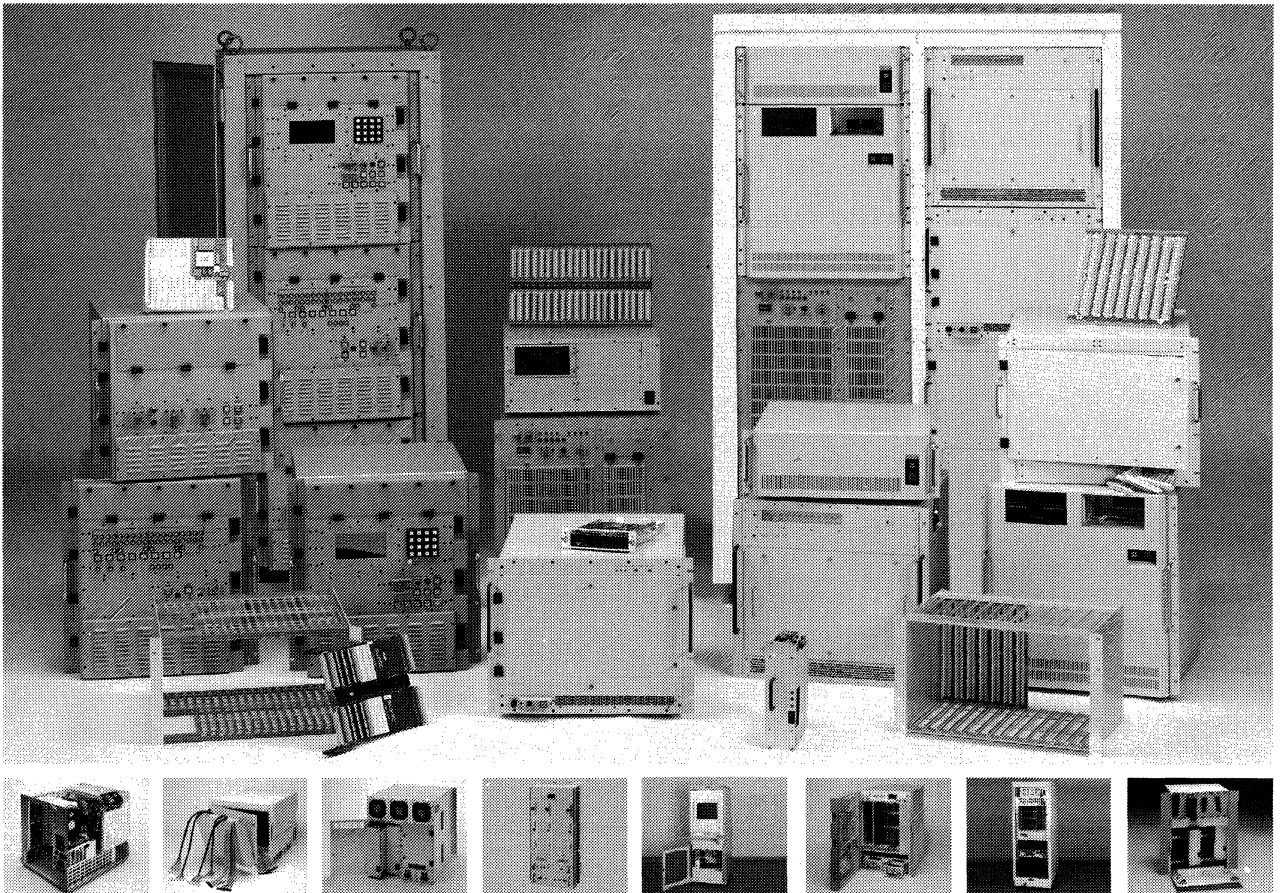
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website: www.calmark-corp.com
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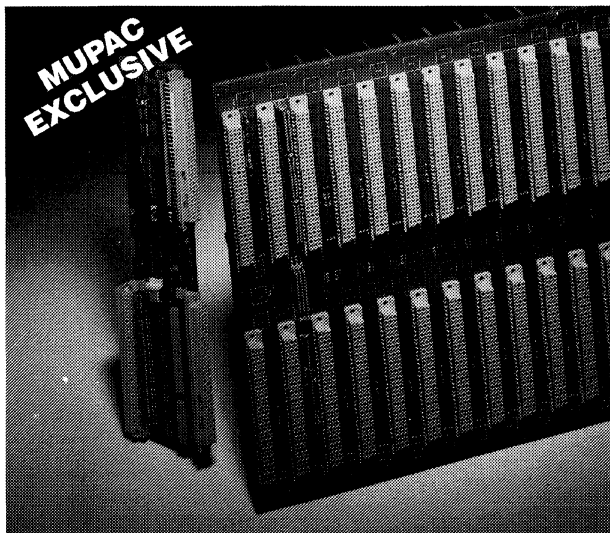


HOT SWAP

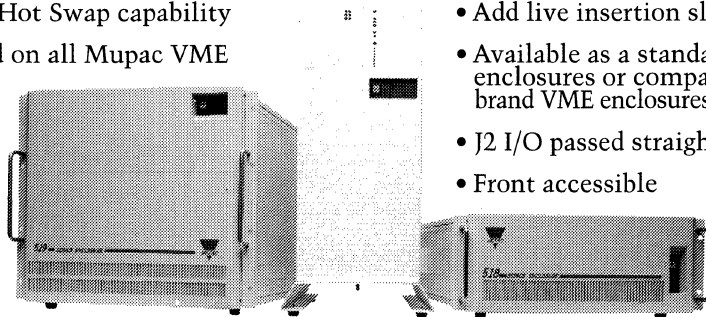
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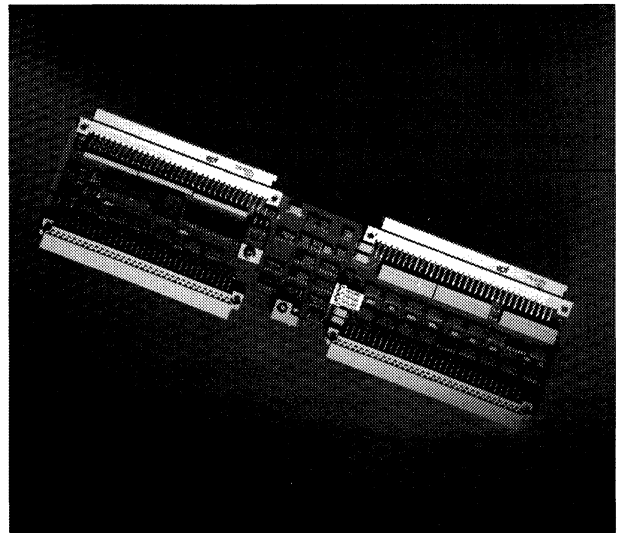
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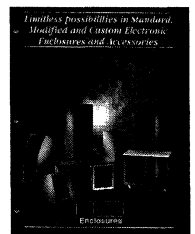
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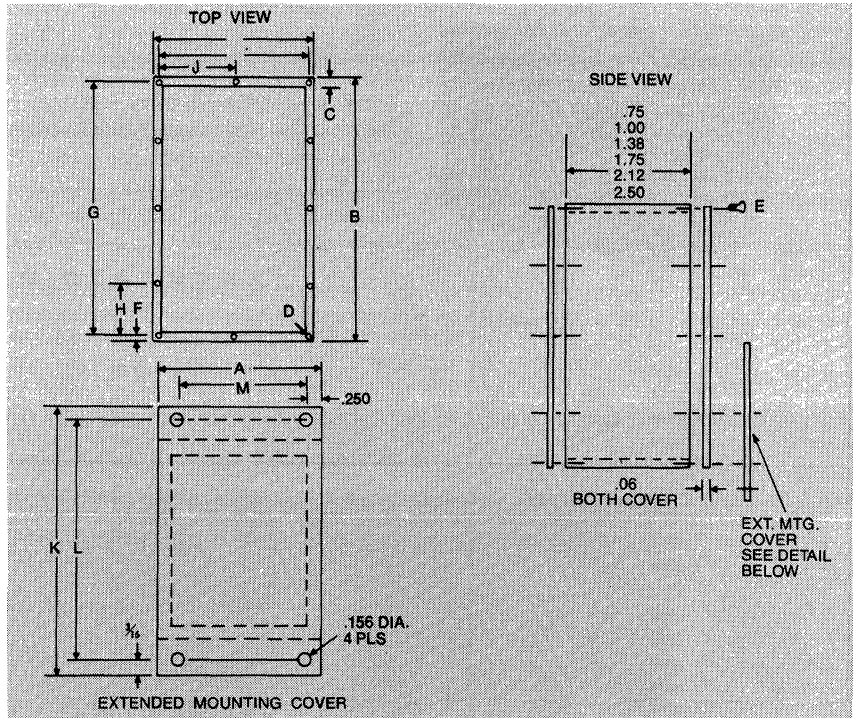
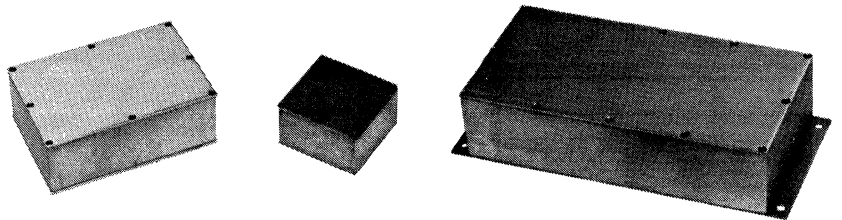


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R51080	1.00	1.00	.125	4	0-80	.070	.860	-	.860	-	1.75	1.375	.50
R51090	1.25	1.25	.125	4	0-80	.070	1.110	-	1.110	-	2.00	1.625	.75
R51095	1.25	2.50	.125	6	0-80	.070	2.360	1.180	1.110	-	3.25	2.875	.75
R51100	1.50	1.50	.125	6	0-80	.070	1.360	.680	1.360	-	2.25	1.875	1.00
R51110	1.50	2.00	.125	6	0-80	.070	1.860	.930	1.360	-	2.75	2.375	1.00
R51120	1.50	2.50	.125	6	0-80	.070	2.360	1.180	1.360	-	3.25	2.875	1.00
R51125	1.50	3.25	.125	6	0-80	.070	3.110	1.555	1.360	-	4.00	3.625	1.00
R51130	1.50	6.00	.125	10	0-80	.070	5.860	1.465	1.360	-	6.75	6.375	1.00
R51140	1.75	1.75	.125	6	0-80	.070	1.610	.805	1.610	-	2.50	2.125	1.25
R51150	1.75	3.00	.125	6	0-80	.070	2.860	1.430	1.610	-	3.75	3.375	1.25
R51160	2.00	2.00	.125	8	0-80	.070	1.860	.930	1.860	.930	2.75	2.375	1.50
R51170	2.00	3.00	.125	8	0-80	.070	2.860	1.430	1.860	.930	3.75	3.375	1.50
R51180	2.00	4.00	.125	10	0-80	.070	3.860	1.286	1.860	.930	4.75	4.375	1.50
R51190	2.00	5.00	.125	12	0-80	.070	4.860	1.215	1.860	.930	5.75	5.375	1.50
R51200	2.00	6.00	.125	12	0-80	.070	5.860	1.465	1.860	.930	6.75	6.375	1.50
R51205	2.50	2.50	.125	8	0-80	.070	2.360	1.180	2.360	1.180	3.25	2.875	2.00
R51210	3.00	3.00	.125	8	0-80	.070	2.860	1.430	2.860	1.430	3.75	3.375	2.50
R54030	3.00	4.00	.125	10	0-80	.070	3.860	1.287	2.860	1.430	4.750	4.375	2.50
R51235	4.00	4.00	.125	12	0-80	.070	3.860	1.287	3.860	1.287	4.750	4.375	3.50
R51220	3.00	5.00	.125	12	0-80	.070	4.860	1.215	2.860	1.430	5.75	5.375	2.50
R51225	3.00	5.00	.188	12	2-56	.094	4.812	1.203	2.812	1.406	5.75	5.375	2.50
R51230	3.00	6.00	.188	12	2-56	.094	5.812	1.453	2.812	1.406	6.75	6.375	2.50
R51250	5.00	6.00	.188	14	2-56	.094	5.812	1.453	4.812	1.604	6.75	6.375	4.50
R57050	5.00	7.00	.188	16	2-56	.095	6.810	1.362	4.812	1.604	7.750	7.375	4.50
R58060	6.00	8.00	.188	18	2-56	.095	7.810	1.562	5.812	1.453	8.750	8.375	5.50
R58010	8.00	10.00	.187	22	2-56	.095	9.810	1.635	7.810	1.562	10.750	10.375	7.50

*D = Number of cover screws

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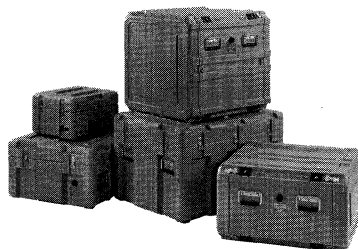
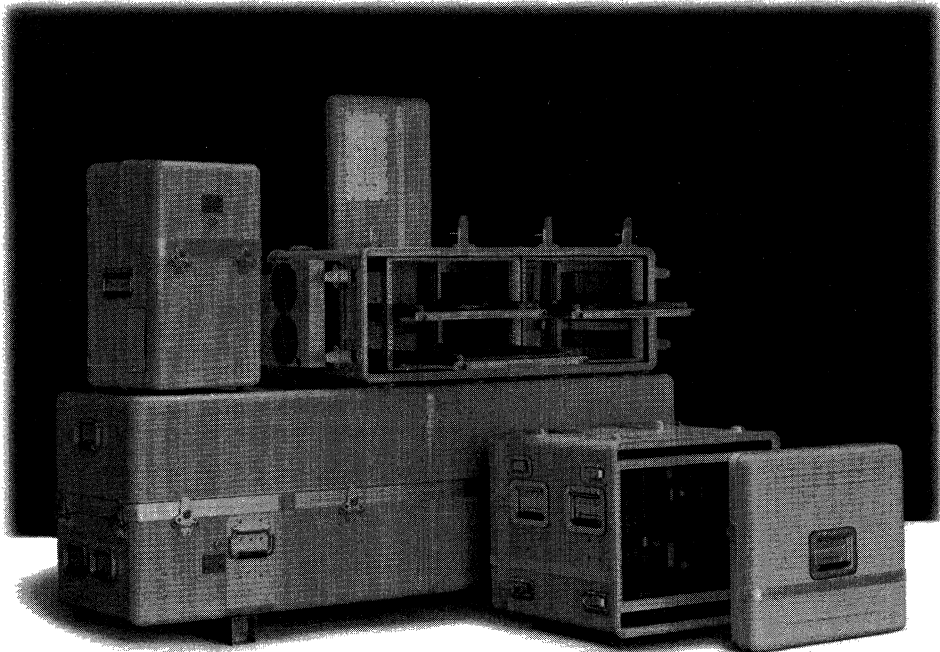


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Series 25: Cold wall mount, lever-actuated.

Series 28: Cold wall mount, screw-actuated.

Series 29: Board mount (for cold wall applications), screw-actuated.

Series 125: Board mount, lever-actuated, low thermal resistance (<2°C/Watt/in), 5" and 6" lengths.

Series 126: Cold wall mount, lever-actuated, low thermal resistance, 5" and 6" lengths.

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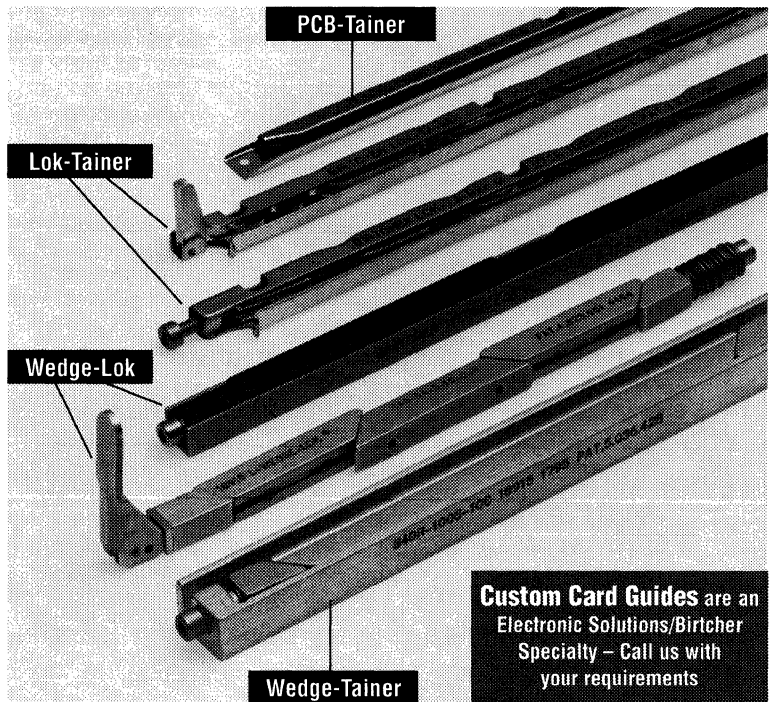
Series 48: "U"-channel version for uniform clamping force and maximum heat transfer. Screw-actuated; 3- and 5-piece configurations. **Series 48SL** has slots and lock nut to provide a stop when deactuating the assembly.

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- Excellent grounding characteristics
- Standard models for VME and CompactPCI applications
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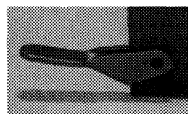


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Wedge-Tainer™ locking retainers provide the high shock, vibration, heat dissipation and zero entry force features of Wedge-Lok retainers in a chassis mount configuration for sheet metal chassis/heat sinking applications. May be screw, bond or braze mounted.

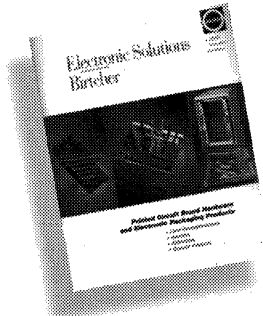
Series 340: Screw-actuated; 3- and 5-piece styles in lengths from 3" to 10.5".

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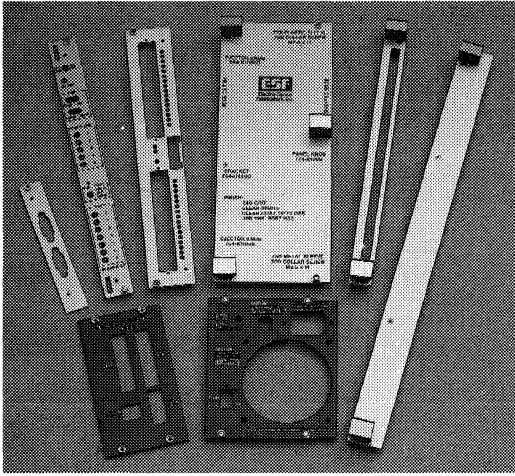
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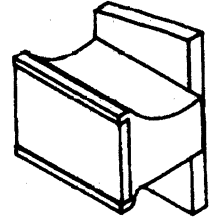
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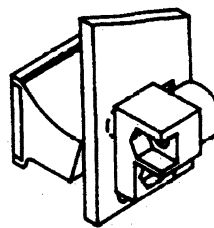
700 Collar Screw

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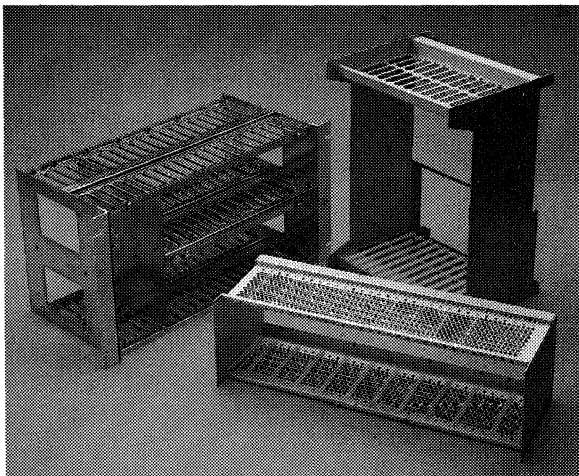
725 Plastic Sleeve

- Used with 700 series 2.5mm panel screw to fasten front panels
- Plastic sleeve snaps into prepunched holes in front panel
- Tan flame-retardant ABS (UL94V-0)



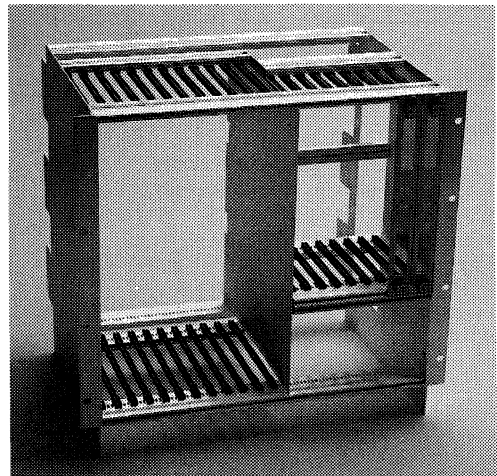
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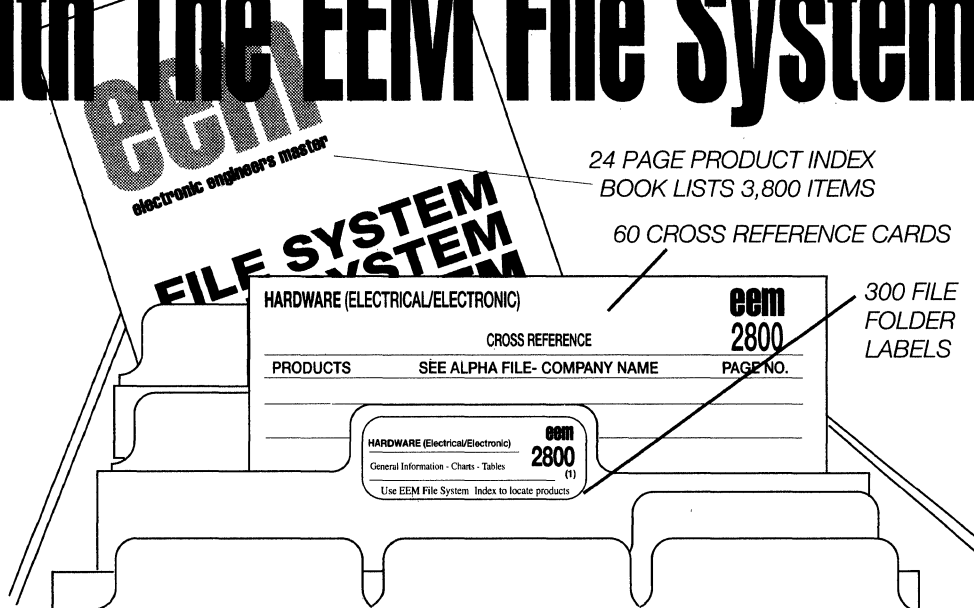
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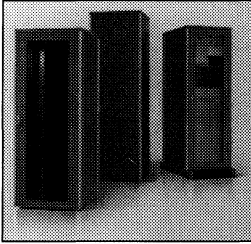
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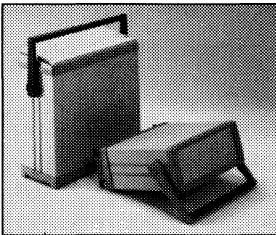
Elegant Cabinets For Office Environments



Min./Max. Height	56" / 71.75" (32U / 41U)
Min./Max. Width	19" only
Min./Max. Depth	24" / 32"
Frame Construction	Bolted Aluminum
Panel Construction	Powder Coated Steel
Delivery	Kitted or Assembled
Sealing	Up to IP54

The Series 47 is an elegant line of European style cabinets. These cabinets are constructed of heavy interlocking aluminum extrusions, clear anodized for beauty and durability. The light gray side and top panels feature a scratch resistant, baked-on powder coated finish. The precision construction of the Series 47 is visually apparent, making it ideally suited for office or computer room environments where aesthetics are important. Standard accessories include height divider kits, solid and Plexiglass hinged doors, door locks, pedestals, castors, leveling feet, lifting eyes, grounding kits, sealing kits (IP54), recessing kits, support rails, telescopic rails, pull out trays, drawers, and more.

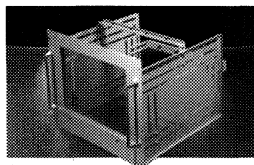
Series 32 Enclosure



Min./Max. Height	3.5"/10.5" (2U/6U)
Min./Max. Width	8.4"/16.8" (42T/84T)
Min./Max. Depth	13.3", 19.6"
Desktop/Portable Use	Both
Rackmount Use	N/A
EMI/RFI Shielded	N/A
NEMA Rated	N/A

The Series 32 provides versatile packaging solutions in a desktop or tower configuration. The 32's internal frame features extruded aluminum depth sections combined with front and rear aluminum bezels, accepting a multitude of mounting options for PCB's, disk drives, power supplies, and other components. The cover set is vinyl-clad aluminum. A complete line of accessories include bail handles, cable wrap sets, front/rear panels, protective hoods, and much more.

19-inch Rackmount Monitor Holder For 14", 15" And 17" Monitors

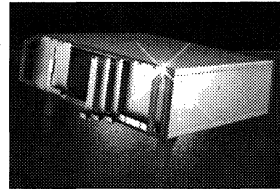


ELMA's line of universal rackmount monitor holders allows customers to rackmount their own monitors. Specially designed brackets insure that your monitor will be firmly held in the correct position and orientation.

Other features include:

- Models available for 14", 15", and 17" monitors
- True universal mounting will accommodate a flat or spherical monitor foot
- Non-reflecting, scratchproof front glass panel
- Brushed aluminum front with handles
- Provision for mounting optional telescopic rails
- Hinged door for access to monitor controls
- Sealed to NEMA 4
- Heavy duty side panels will not rip or tear when heavy monitors are installed
- Optional colors available
- Available without glass front for touchscreen monitors

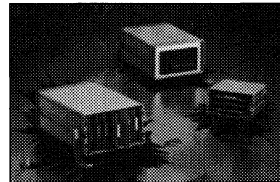
Series 15 Enclosure



Min./Max. Height	3.5"/14" (2U/8U)
Min./Max. Width	8.4"/16.8" (42T/84T)
Min./Max. Depth	10"/20"
Desktop/Portable Use	Both
Rackmount Use	Yes
EMI/RFI Shielded	Up to 68dB@100 Mhz
NEMA Rated	N/A

ELMA's Series 15 enclosure combines EMI/RFI shielding, strength, and modularity in a modern design. The 15's internal frame features solid aluminum side plates joined by horizontal aluminum extrusions, suitable for mounting PCB's and other electronic components. The aluminum top and bottom covers have a baked-on powder-coated finish, carefully masked to ensure electrical contact with the frame for optimum shielding. Accessories include shielding enhancement kits, adjustable bail handles, and provisions for telescopic rails.

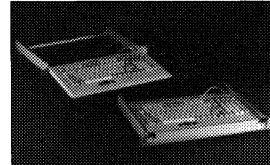
Series 33 Compact Case



Min./Max. Height	1.70", 4.20"
Min./Max. Width	5.94", 9.96"
Min./Max. Depth	4.7", 11.8"
Desktop/Portable Use	Both
Rackmount Use	N/A
EMI/RFI Shielded	Up to 25dB@100 Mhz
NEMA Rated	NEMA 4 with seal kit

The Series 33 case provides a rugged yet stylish solution for smaller packaging requirements. The body consists of a two-piece extruded aluminum section, with the bottom U-shaped section providing maximum strength and mounting provisions for PCB's, PSU's, and other components. The front and rear feature PVC bezels for protection of panel-mount components, while the body is finished in a scratch resistant baked-on finish. Flip-up feet are standard. Accessories include bail handles, wall mounting brackets, and much more.

19-inch Rackmount Keyboard Module with Optional Trackball



ELMA, the leader in PC computer products, now introduces the largest family of 19" rackmount keyboards. These high quality keyboards are suitable for factory or office environments. Two 101 key board styles are available: a full travel and a membrane sealed to NEMA 4.

Some of the main features of the keyboards are:

- PC AT, PS2 Compatible
- Sturdy 1/4" thick extruded aluminum housing with machined end caps
- Self contained module only 1U (1.75") high
- Powder coated light grey or special black for scratch resistant finish
- Only 4x flange mount screws required to mount, no internal rails
- Protected behind hinge panel when not in use
- Keyboard pivots down and locks into position when extended
- Optional integral 17mm trackball, two button, MS mouse compatible
- Optional membrane cover for splash protection

See Section 2400 (Panel Hardware-Bezels, Dials, Knobs, etc.), see section 5100 (Switches), for additional products.

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44350 Grimmer Blvd., Fremont, CA 94538
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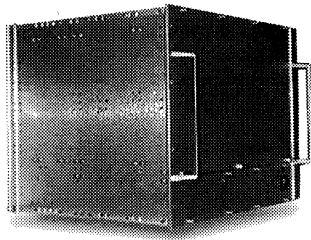
Modular System Enclosures & Backplanes

For VME / VME 64X, VXI, Compact PCI

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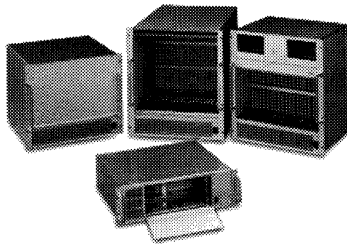
TYPE 11CP

- High quality, low cost cPCI enclosure
- Reduced assembly time
- Designed for EMC compliance
- Available in 4-21 slots
- Fully compliant with IEEE 1101-10 & IEEE 1101-11
- Plug-in power supply & drive options



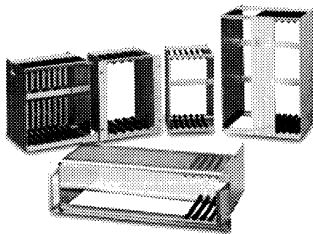
TYPE 12

- 19" Rackmount
- 3-21 slot configurations
- Rugged EMC Shielded construction
- Designed to meet UL, CSA, FCC, & TUV requirements
- 2U-20U



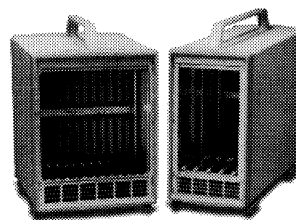
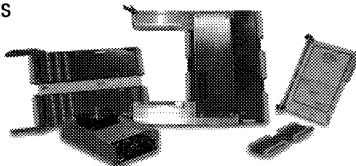
TYPE 11

- Cardcage: 2 to 21 slots
- Over 700 sizes/combinations
- Heights: 3U to 12U
- Depths: 100 to 400mm
- Fully assembled with or without backplane



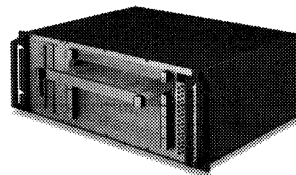
SYSTEM ACCESSORIES

- Extender boards-available in 3U, 6U, and 9U Sizes
 - Total signal line shielding
 - 5 layer construction
 - Front access to test points
- Jumper boards
 - 6U X 160mm
 - Jumpers IAC & BG for unused VME slots
 - Controls airflow
- Form factor adapters
 - Available from 160mm to 240mm 3U and 6U
 - Five types with multi-layer construction
 - Total signal line shielding
- Power Supplies
 - Plug-in or open supplies
 - Wide range of outputs (100W-3000W)
 - Compact Design



TYPE 32

- Desktop, portable or tower
- Lightweight aluminum construction
- Available in heights/width: 2U, 3U, 4U, & 6U
- Depth: 13", 16", & 20"
- Standard or custom design

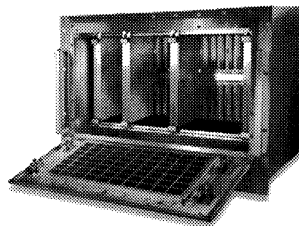


TYPE 15

- Rackmount or desktop
- Advanced EMC shielding
- Simple assembly
- Elegant design
- Horizontal or vertical insertion of eurocards

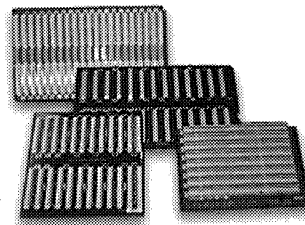
TYPE 12R2

- Rugged COTS enclosure system
- Compliant with MIL-STD-16, MIL-STD-810E, & MIL-STD-46
- 5U, 7U, 9U, & 12U units
- Standard & shielded
- EMI / RFI integrity
- Shock isolated power supplies
- Optional shock isolated cards and drives



BACKPLANES

- VME 64X-World's fastest VME Backplane
- Wide variety of standard commercial products available
- Designed for high-speed and high performance
- All VME backplanes conform to VITA 1.1-1997
- cPCI backplanes conform to IEEE 1101.10 packaging standards



See Section 2400 (Panel Hardware-Bezels, Dials, Knobs, etc.), see section 5100 (Switches), for additional products.

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EMCOR®

EMCOR...Enclosures with Experience!

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- DELIVERY:** Experience, efficient manufacturing processes and unmatched attention to detail result in over 99% of all customer orders shipping on schedule.

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Instant Emcor Program Features

- Shipment in **5 working days** in either a smooth or textured paint finish. Select from 12 contemporary colors.
- Frames and Components from the ESQ, Emcor 1 and 10 Series® product lines

- Vertical, slope front, low silhouette, and turret style frames.
- Computer support furniture
- Plexiglass window doors
- Packaged blowers and fan trays
- Electrical plug strips and bus bars
- A full complement of component accessory items

Instant Color & Instant Shipment in Just 5 Working Days

10 Series® Enclosure System

The **10 Series®** enclosure system is your choice for applications requiring **exceptional strength** and weight load capacities while providing contemporary styling at a **reasonable cost**.

10 Series frame styles have been tested and qualified to the BELLCORE NEBS seismic specification through zone 4.

10 Series® Construction Features

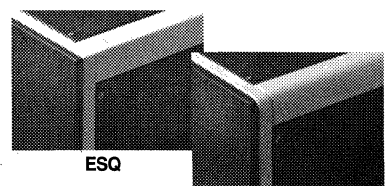
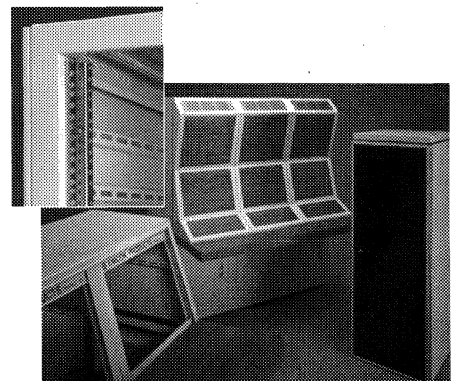
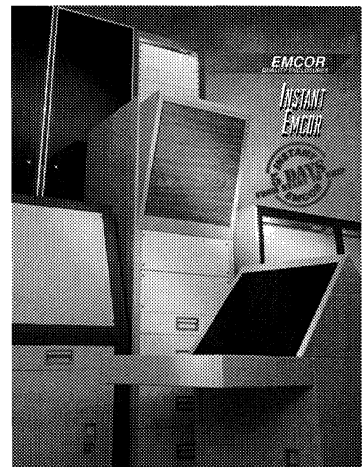
- 10 Series frames are constructed from high quality **14 gauge** cold rolled steel that is **multi-formed** into a 1½" wide frame channel. All Corner joint seams are **fully welded** for strength and metal finished for a **clean appearance**.

- 10 Series fully welded heavy-duty construction offers up to **3,500 pounds** of evenly distributed equipment mounting in static load conditions.
- All 10 Series floor standing frames are equipped with two pairs of plated **multi-formed** 14 gauge **adjustable** panel mounting angles and an applicable hardware kit.

ESQ and EMCOR I Enclosure Systems

The **ESQ enclosure system** should be your choice for applications requiring a clean contemporary appearance and an efficient means for housing your electronic equipment. The **Emcor I enclosure system** should be your choice for applications when a rounded

or **soft, radiused appearance** is preferred. Both enclosures provide the benefits of **economy, style and quality** along with substantial load capacity, fully welded construction and the proven built-in dependability of Emcor Products.



ESQ

EMCOR I

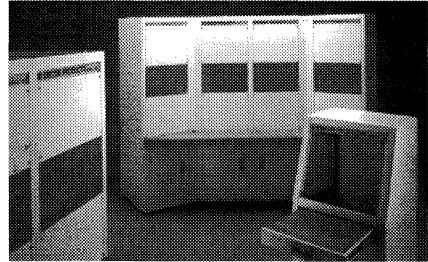
ESQ and Emcor I continued on the following page.

EMCOR PRODUCTS/CRENLO, INC. ROCHESTER, MN 507-289-3371

EMCOR™

ESQ/Emcor I Construction Features

- **Fully modular systems** offering unlimited console configurations and a full complement of accessory options.
- Every frame is **fully welded** using quality **14 and 16 gauge steel** material.
- Quality construction offers up to **800 pounds** of evenly distributed equipment mounting in static load conditions.



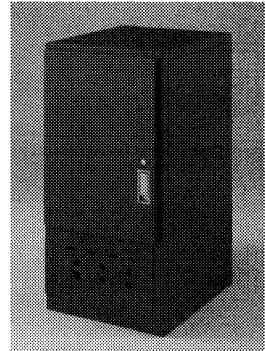
Emission Control Shielded Enclosures

FCC STYLE

Emcor's complete line of **modular** EMI/RFI FCC level **shielded enclosures** and accessories is a perfect combination of quality and styling. **Tested to MIL-STD 285** at a certified test facility, this Emcor shielded enclosure line provides **44dB attenuation at 800 MHz**.

MILITARY/TEMPEST STYLE

Emcor's complete line of EMI/RFI shielded Military/Tempest Style enclosures offers the flexibility of a **modular** enclosure system along with **superior shielding** performance not available from other manufacturers. **Tested to MIL-STD 285** at a certified test facility, this Emcor shielded enclosure line provides 84dB attenuation at 1GHz and has been **tested up through 10 GHz**.

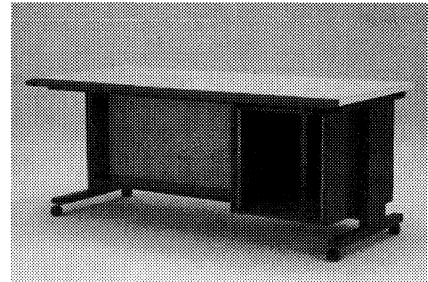


CompuDesk® Workstation System

CompuDesk® is a comprehensive line of high quality heavy-duty terminal work stations and single unit assemblies. The basic desk unit is configured by selecting **modular** pedestal options and accessory items to accommodate your system's function. Also available in the Instant Emcor Program, our most popular CompuDesk units and accessory items are **stocked** to meet your immediate work station needs.

CompuDesk® Construction Features

- All CompuDesk Components are constructed of **14 and 16 gauge** high quality steel.
- Options include **19" rack mountable** electronic pedestals as well as utility storage drawer styles.
- Three distinctive **desk top styles** - Plain, accent edge or inlay to match your particular interior decor.



Modification and Custom Design

No one is better suited to provide enclosures and consoles **exactly to your specifications** than Emcor. From holes, cutouts and knockouts to special configurations, sizes and shapes - Emcor will solve your unique electronic enclosure needs.

Emcor's **full service design** capability starts with a factory sales staff and field representatives who understand your enclosure needs. Then you'll benefit from our experienced design engineering group using the latest **CAD/CAM technology**.

Emcor has a group of **skilled metal fabrication craftsmen** dedicated to custom work. Lower volume requirements are handled in one of two specialty shops; higher volume requirements are run through our modern **600,000 square foot** production facilities.

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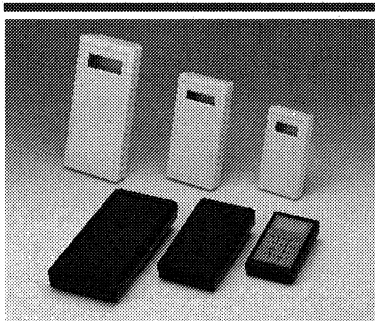
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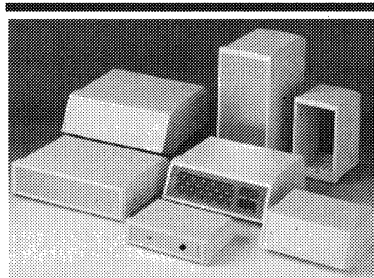


MOBILE ENCLOSURES SEALED - ROBUST - MOBILE - UNIQUE DESIGN

Designed for remote data recording, transfer and equipment control. Particularly suitable for harsh environments. The recessed top is ideal for membrane keypads. Optional NEMA 4X sealing kit is available.

The recessed area of the mold is designed to accept insert tooling. EAI's insert tooling option provides quality customization at a lower cost when compared to traditional CNC machining.

3 popular sizes from 5x3" to 10x5". Battery compartments for 1 or 2 — 9V or 2 AA batt. Optional LCD windows for 2x16, 4x16, 2x20 and 4x20 displays. Call for catalogue, samples, spec sheets and engineering drawings.



WIDE-TECH ENCLOSURES MODERN - EASY ACCESS - DESK TOP DESIGN

Design applications include measurement and control, peripheral devices, interfaces, switch boxes, card reader systems, medical instrument control and laboratory instrument control.

The recessed front panel is ideal for membrane keypads and accommodates insert tooling. EAI's insert tooling option provides quality customization at a lower cost when compared to traditional CNC machining.

Features a snap together design especially suitable for medical control applications where fast internal access may be required. Available in 9 different sizes from 6x4" up to 9x7" Call for catalogue, samples, spec sheets and engineering drawings.

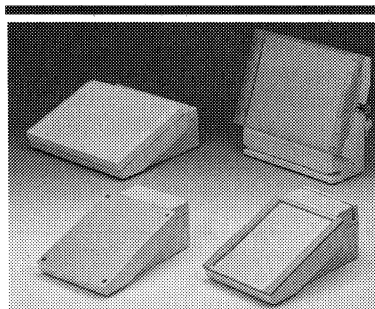


DATA POWER ENCLOSURES THE ULTIMATE SOLUTION FOR REMOTE DATA TRANSFER

Designed for graphic display applications that include remote data recording, transfer and equipment control. Particularly suitable for harsh environments. The recessed top is ideal for membrane keypads. Optional NEMA 4X sealing kit is available.

Large area for graphics displays and membrane key pads. Optional fast change battery pack holds 5AA batteries. Specially designed to take PCMCIA cards. Download docking station with battery recharging module available for wall mount and desktop.

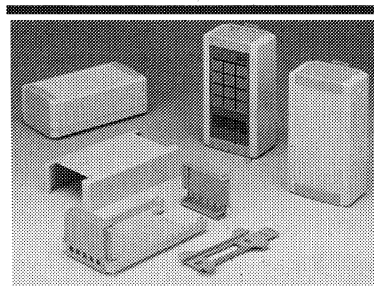
Call for catalogue, samples, spec sheets and engineering drawings.



DATA TERMINAL ENCLOSURES NEW DESIGN - NEW TECHNOLOGY

Designed for desktop or wall mounting applications where a large ergonomic enclosure is required. Available with card reader accessory and sealing kit. Available in 6 different popular sizes.

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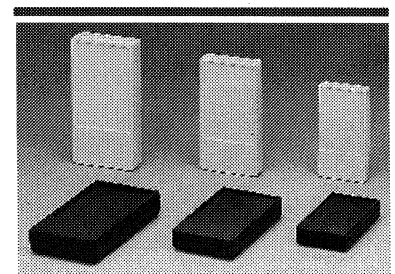
TOP TEC ENCLOSURES NEW DESIGN - NEW TECHNOLOGY

A universal enclosure for electronic devices and electronic control systems. Designed for indoor tabletop or wall-mount applications.

Features:

- Screwless case assembly ideal for fast access
- Removable end panels
- Recessed top for membrane keyboards
- Wall rting w/mouth hidden mount system
- Available in 7 popular sizes

Call for catalogue, samples, spec sheets and engineering drawings.



POCKET ENCLOSURES

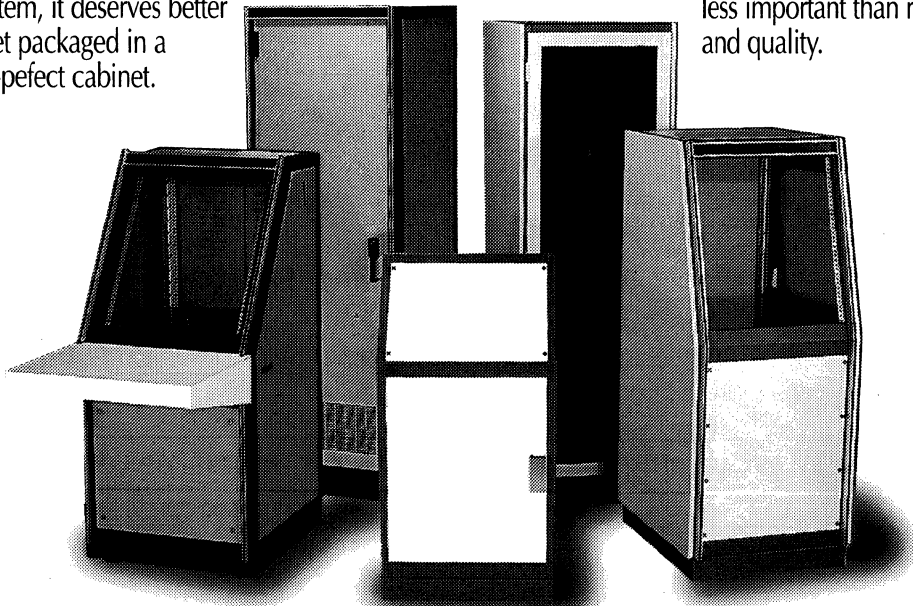
The recessed area of the mold is designed to accept insert tooling. EAI's insert tooling option provides quality customization at a lower cost when compared to traditional CNC machining.

3 popular sizes from 3x2" up to 5x3". Battery compartments for 1x9V, 2AA, 2AAA or 2N size batteries available. Call for catalogue, samples, spec sheets and engineering drawings.

Make Your Work A Lot Easier

The last thing an enclosure should be is confining. So, when you've engineered an innovative electronic system, it deserves better than to get packaged in a not-quite-perfect cabinet.

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How do we provide you with that flexibility?

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- Enclosures designed to meet earthquake, EMI/RFI, FCC, Military, TEMPEST, EMP requirements and the new European EMC Directive
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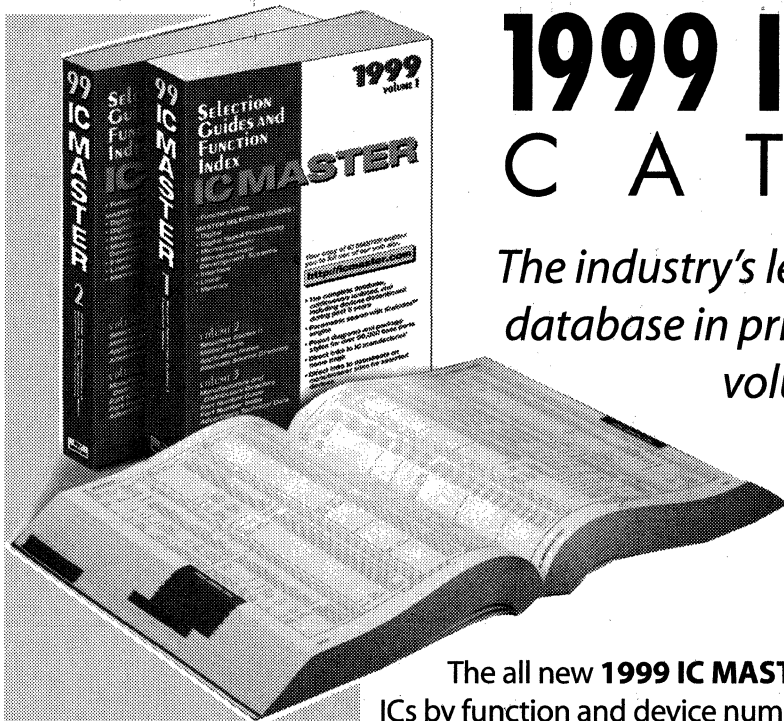
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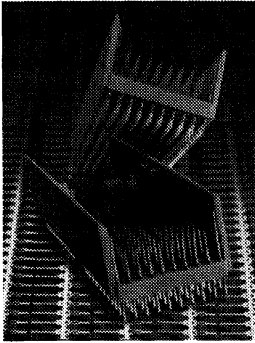
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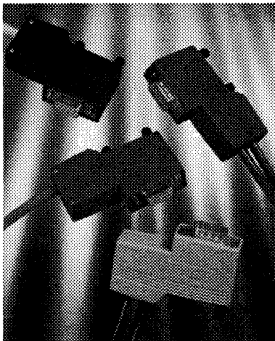
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- More signal paths – 8 signal rows plus 2 shield rows for optimum performance
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- Superior female connector design provides uniform signal path; male connectors provide sequential mating in 1.5 mm increments

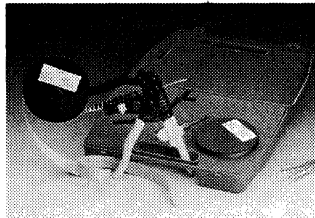
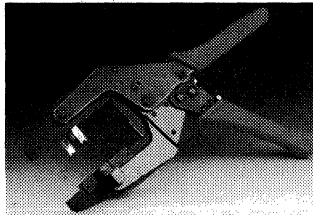


ERBic® BUS INTERFACE CONNECTOR

The ERbic® line of universal bus interface connector systems is versatile, compact and easy to service. It is available for Bitbus, CAN-bus, Interbus-S (Fieldbus) and PROFIBUS. This versatile bus interface system features an integral metal strain relief in a backshell that is built around the 9-pin D-Subminiature connector – making this a compact bus interface connector system. The ERbic features a color-coded plastic backshell housing with the bus configuration name molded in. ERbic termination connectors feature integral termination resistors for the appropriate bus termination. The Bitbus IN/OUT, CAN-Bus and PROFIBUS node connectors enable hot swapping for servicing or changing defective devices, while keeping the bus still running. A horizontal or a vertical cable entry is available depending upon application. To facilitate wiring termination ease, the ERbic offers PCB mounted terminal blocks (screw-clamp).

APPLICATION TOOLING

Along with our broad range of interconnection products, ERNI carries a full complement of first quality application tooling, ranging from simple manual tools to hydro-pneumatic presses to the state-of-the-art fully automated ERNIPRESS Center. While we have highlighted some of our tooling, this by no means covers the vast array available. For details about ERNI application tooling, please consult ERNI Customer Service or the ERNI Representative or Distributor in your area.



ERNI HAND TOOLS

ERNI offers a full range of application hand tooling for various termination processes such as wire crimping and insulation displacement (IDC) termination for discrete wire or flat cable. A specific tool is matched to each contact for termination when functioning as a signal, power or coaxial contact. Contact removal tools are also available for any of the snap-in or plug-in type contacts.

Forged from rugged, long life materials to exacting dimensions, all ERNI Hand Tools are designed to produce consistent, high-quality results. Their designs require less hand force and minimum skill. Many are available with interchangeable dies or replacement inserts for longer service life and greater flexibility.

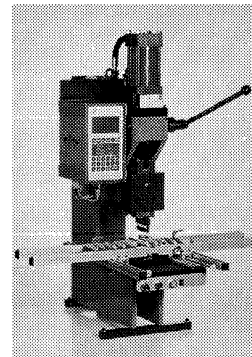
ERNI Hand Tools are ideal for low to moderate production runs, prototype work and any repair as well as field installations and maintenance for cable networking or other industrial or commercial requirements. Consult appropriate ERNI catalogs for product-specific tool information. For additional details and ordering information consult ERNI Customer Service.

ERNI PRESSFIT TOOLING

ERNI offers a broad range of complementary pressfit tooling for its vast array of pressfit connectors. Whether for the patented ERNIPRESS pressfit contact or for other ERNI pressfit contact types, ERNI offers a pressfit tool. A matched pressfit tool-to-connector is available for the full range of ERNI connectors including DIN 41612 connectors, ERmet® 2mm H.M. Connectors, D-Subminiature Connectors or any other ERNI pressfit connector.

ERNI PRESSFIT EQUIPMENT

For pressfitting connectors to printed circuit boards, ERNI offers manual and semi-automatic presses.



ERNI PRESSFIT ARBOR PRESS

This press is a compact, hand-operated, mechanical bench-top unit. It is engineered to press-in connectors up to 96 positions. It offers excellent alignment between upper and lower tools. It has an optional X-Y guide-frame which assures positioning of the PCB to promote maximum productivity. This press is ideal for prototype, repair and moderate volume production runs. Some customized options are available. Weight: 200 lbs.

ERNI HYDRO-PNEUMATIC PRESSFIT PRESS

This ERNI press is engineered to quickly and accurately install virtually any type of pressfit connector into a Printed Circuit Board. The automatic force for pressfit press-in comes via an air pressure line (max. 10 bar) and the press' hydro-pneumatic converter mechanism. This automated press capability, along with a simple, manual pull-down bar for alignment, provides for a highly reliable and productive pressfit assembly operation.

Similar to the ERNI Pressfit Arbor Press, the Hydro-Pneumatic Press includes a X-Y guide-frame with support rails which allows PCBs to be positioned and moved easily from one station to the next. Many options, such as board thickness indicators and pressure feed read-outs, are available. Weight: 330 lbs.

See Our Web Page: • <http://www.erni.com>

EXTRUDED ALUMINUM "TECH-BOX" STANDARD & CUSTOM ENCLOSURES

MODEMS

COMPUTER PERIPHERALS

MEDICAL ELECTRONICS

ELECTRONIC INSTRUMENTS



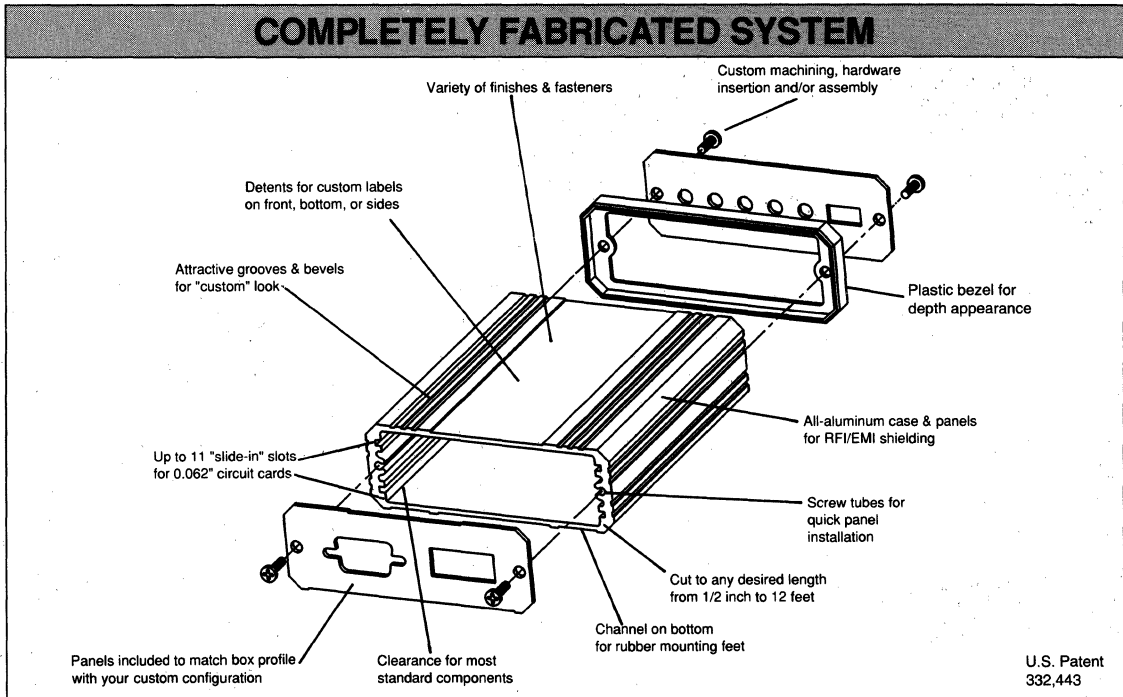
INSTRUMENT CASES

KEYPADS

HAND HELD CONTROLLERS

RUGGED CONNECTORS

COMPLETELY FABRICATED SYSTEM



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"TECH-BOX" is the solution to many of your electronic enclosure concerns. Produced in twelve different profiles that fit most standard applications. "TECH-BOX" Enclosures are available off-the-shelf for quick delivery, even when customized to your requirements.

Since there are no die tooling charges, TECH-BOX ensures that the cost is also designed to suit your budget. TECH-BOX includes the features important to critical electronics applications, and is ideal for prototyping and beta testing, as well as full production.

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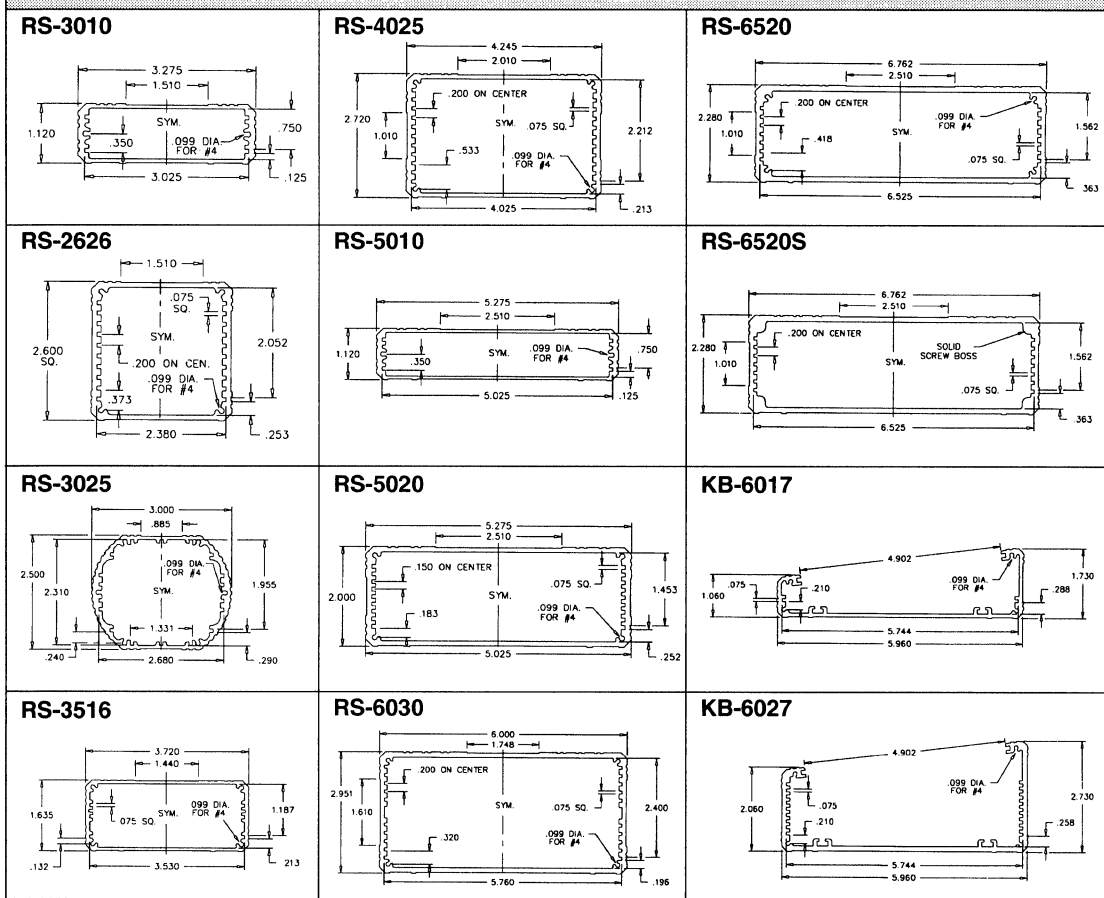
EXTRUSION TECHNOLOGY, INC. 80 TRIM WAY, RANDOLPH, MASSACHUSETTS 02368
TEL: (781)-963-7200
FAX: (781)-963-7203
 EMAIL: info@extrutech.com
 WEBSITE: http://www.extrutech.com

EXTRUDED ALUMINUM "TECH-BOX" ENCLOSURES

"TECH-BOX" – SPECIFICATIONS

MODEL	OVERALL		CARD WIDTH	CLEARANCE		CARD SLOTS	LABEL WIDTH	SCREW HOLES
	WIDTH	HEIGHT		BELOW	TOP			
RS-2626	2.600"	2.600"	2.345"	0.253"	2.052"	10	1.500"	4
RS-3010	3.275"	1.120"	3.000"	0.125"	0.750"	2	1.500"	2
RS-3025	3.720"	2.500"	2.650"	0.290"	1.995"	9	0.875"	6
RS-3516	3.720"	1.635"	3.500"	0.213"	1.187"	3	1.430"	4
RS-4025	4.245"	2.720"	4.000"	0.213"	2.212"	11	2.000"	4
RS-5010	5.275"	1.120"	5.000"	0.125"	0.750"	2	2.500"	2
RS-5020	5.275"	2.000"	5.000"	0.252"	1.453"	9	2.500"	4
RS-6030	6.000"	2.951"	5.735"	0.196"	2.400"	10	1.738"	4
RS-6520	6.762"	2.280"	6.500"	0.363"	1.562"	7	2.500"	4
KB-6017	5.960"	1.727"	5.720"	0.288"	1.370"	1	N/A	4
KB-6027	5.960"	2.727"	5.720"	0.258"	2.370"	9	N/A	4

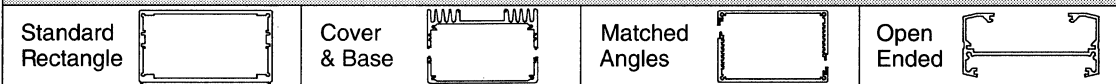
"TECH-BOX" DIMENSIONAL SPECIFICATIONS



ADVANTAGES "TECH-BOX" EXTRUDED ENCLOSURES

- Cut to any desired length
- Circuit card slides into slots
- Panels included – custom configurations
- Variety of finishes & fasteners
- Integral RMI/EFI shielding
- Grooves for rubber feet
- Detents for applying label
- No extrusion tooling/die charges

WE ALSO DESIGN CUSTOM SHAPE PROFILES TO YOUR OWN SPECIFICATIONS



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STANDARD & CUSTOMIZED CASES

HEAVY DUTY TRANSIT CASES*

MODEL	W	L	H1	H2	AVAIL. FOR W & H
GH0710RP-2	7-3/16	10-1/2	2-1/4 to 4 • 6 to 8	2-1/4 to 4 • 6 to 8	
GH0718RP-1	7	18-1/16	2-1/2 to 4 • 4-1/2 to 6	2-1/2 to 4 • 4-1/2 to 6	
GH1012RP-1	10-3/8	12-7/8	2 to 4, 5-1/2 to 7	2 to 4, 5-1/2 to 7	
GH1016RP-2	10-5/8	16-9/16	2-3/4 to 4, 4 to 8	2-3/4 to 4, 4 to 8	
GH1218RP-2	12-15/16	18-1/8	2-1/4 to 3-11/16 • 4 to 6	2-1/4 to 3-11/16 • 4 to 6	
GH1314RP-2	14-7/16	13-7/8	3-1/8 to 4 • 6-1/4 to 6-3/4	3-1/8 to 4 • 6-1/4 to 6-3/4	
GH1419RP-2	14	19-7/16	3-1/4 to 3-3/4 4-1/4 to 6 7-5/8 to 9-1/2	3-1/4 to 3-3/4 4-1/4 to 6 7-5/8 to 9-1/2	

MODEL	W	L	H1	H2	AVAIL. FOR W & H
GH1423RP-2	14-7/16	23-3/4	3-1/8 to 5-1/2 4-3/8 to 6-5/16	3-1/8 to 5-1/2 4-3/8 to 6-5/16	X
GH1617RP-2	16-1/2	17-3/4	3-1/8 to 4-3/8 5-3/4 to 8	3-1/8 to 4-3/8 5-3/4 to 8	
GH1622RP-2	16-1/2	22-3/8	3-1/2 to 4 4-1/2 to 5-3/4 6-9/16 to 8 1/4	3-1/2 to 4 4-1/2 to 5-3/4 6-9/16 to 8 1/4	
GH1727RP-2	17-13/16	27-3/4	3-3/4 to 4-3/8 5-1/2 to 7	3-3/4 to 4-3/8 5-1/2 to 7	X
GH1752RP-2	17-9/16	52-3/4	3 to 5	3 to 5	X
GH1823RP-2	18-1/8	23-7/8	3-3/4 to 5-3/8 5-1/2 to 7-1/2 10 to 13-1/4	3-3/4 to 5-3/8 5-1/2 to 7-1/2 10 to 13-1/4	X
GH2031RP-2	20	31	5-1/2 to 7-1/2	5-1/2 to 7-1/2	X
GH2238RP-2	22	38-13/16	3-1/4 to 7	3-1/4 to 7	X
GH2325RP-2	23	25	5-1/4 to 7-3/16	5-1/4 to 7-3/16	X
GH2530RP-2	25-1/8	30-1/8	5-1/4 to 7	5-1/4 to 7	X

HEAVY DUTY CARRYING CASE*

MODEL	W	L	H1	H2
GH0710R-1	7-1/2	10	3-1/8 to 3-3/8 • 4-3/16 to 5-3/8	3-1/8 to 3-3/8 • 4-3/16 to 5-3/8
GH0914R-1	9-1/4	14	2-1/2 to 2-3/4, 3-1/2 to 6, 6-7/16 to 7-3/8	2-1/2 to 2-3/4, 3-1/2 to 6, 6-7/16 to 7-3/8
GH0918R-1	9	18-15/16	2-1/2 to 3-1/2	2-1/2 to 3-1/2
GH1013R-1	10	13-1/8	2-3/4 to 3-1/2	2-3/4 to 3-1/2
GH1113R-1	11	13	2-1/4 to 2-3/4	2-1/4 to 2-3/4
GH1116R-2	11	16-1/2	2-5/8 to 3-15/16, 4 to 6	2-5/8 to 3-15/16, 4 to 6

MODEL	W	L	H1	H2
GH1121R-2	11-7/16	20-15/16	3-1/16 to 4-1/16 • 6-5/8 to 8-13/16	3-1/16 to 4-1/16 • 6-5/8 to 8-13/16
GH1123R-2	11-11/16	23-3/4	1-1/4 to 2-1/4	1-1/4 to 2-1/4
GH1316R-1	13-13/16	16-13/16	2-5/16 to 3-1/8 • 3-5/8 to 6-1/4	2-5/16 to 3-1/8 • 3-5/8 to 6-1/4
GH1523R-2	15-1/8	23-7/16	2-5/8 to 4-5/8 • 3-9/16 to 5-13/16	2-5/8 to 4-5/8 • 3-9/16 to 5-13/16
GH1528R-2	15-1/4	28-1/16	2-5/8 to 4-3/4 • 6-7/8 to 9-1/16	2-5/8 to 4-3/4 • 6-7/8 to 9-1/16
GH1825R-2	18	25-3/4	1-13/16 to 2-13/16 • 5-1/4 to 6-9/16	1-13/16 to 2-13/16 • 5-1/4 to 6-9/16
GH2131R-2	21	31	3 to 5	3 to 5

REUSABLE SHIPPING CONTAINERS*

MODEL	W	L	H1	H2
GT1418RP-RM	14.50	18.00	4.00	5.00
GT1320RP-RM	13.25	20.25	3.00	9.50
GT1436RP-RM	14.00	36.88	3.00	5.50
GT2122RP-RM	21.50	22.50	5.00	12.00

Gemini specializes in custom designed cases for industry. We have the capability to design a case specifically for your product and follow through from prototypes to production. If you are currently purchasing a standard case from another manufacturer, we may be able to duplicate that case at a lower cost. We welcome the opportunity to quote your case requirements and to work with you on design.

ROTATIONALLY MOLDED CASES*

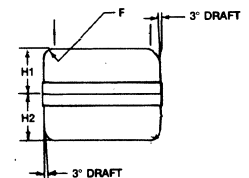
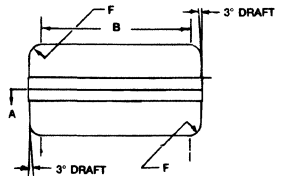
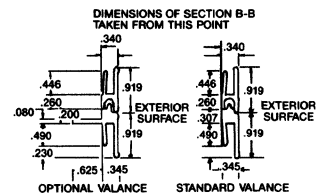
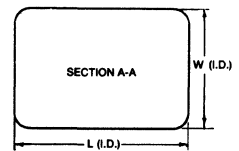
MODEL	W	L	DEPTH RANGE TOP HALF H1	DEPTH RANGE BOTTOM HALF H2
GH0719RM	7	19-7/16	1-3/4 to 3-3/4	10-1/8 to 11-1/2
GH0817RM	7-1/2	16-1/2	1-7/8 to 2-1/2	12-1/4 to 14-1/4
GH1426RM	14	26	4 to 6-3/4	13 to 15-3/4
GH1620RM	16-1/2	20-1/2	2 to 4-1/8	2 to 6-1/2

RUGGED RACK*

MODEL	WIDTH	LENGTH	END CAPS	SECTION CENTER
GH0719RRM	7-1/16	19-1/16	3-3/8 to 3-5/8	12-1/4 to 13-1/4
GH0919RRM	8-31/32	19-1/16	3-1/8 to 4-1/4	16-1/2 to 19

* The above sizes are only a partial list, contact GEMINI for a complete catalog. CALL TOLL FREE: 1-800-533-3631

Gemini's standard line of **HEAVY DUTY TRANSIT CASES** are constructed from high density polyethylene, an extremely tough and resilient material ideally suited to the abuses transit cases are subjected to. The heavy duty (.100" nominal) shells and heavy duty 1.838" wide #6063 T52 aluminum valance combine to form a container capable of transporting delicate portable instruments under the most adverse conditions. Many are available with recessed wheels and folding handle.



Gemini's standard line of **HEAVY DUTY CARRYING CASES** are constructed from rugged A.B.S. and feature a heavy wall aluminum valance to provide an extremely rugged case with contemporary lines for transporting delicate portable instruments under the most demanding conditions.

Standard Features include:

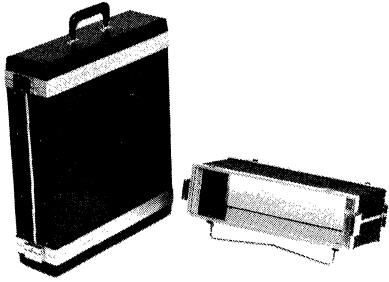
- .100" to .150" nominal wall black A.B.S. shells
- variable case depth
- heavy wall 1.838" wide #6063 T52 aluminum valance with dust seal
- choice of handle, latch, hinge and bumpers

GEMINI

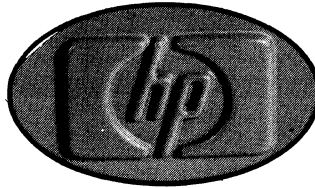
INCORPORATED

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Cannon Falls, MN 55009
Phone: 1-800-533-3631
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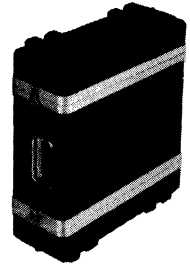
STANDARD & CUSTOMIZED CASES



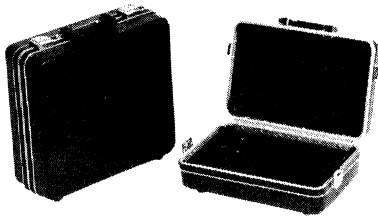
EIA RACK MOUNT CASE



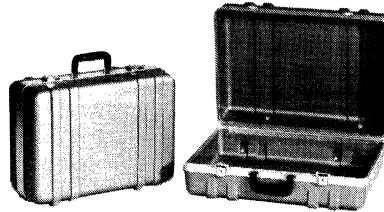
MOLDED LOGOS



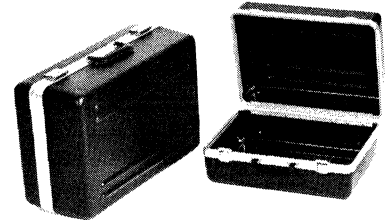
RUGGED RACK



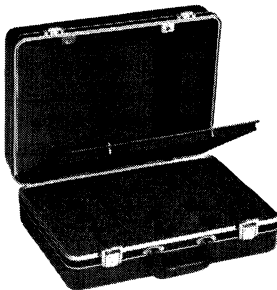
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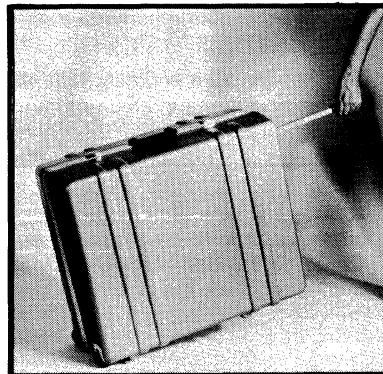
TRANSIT CASE



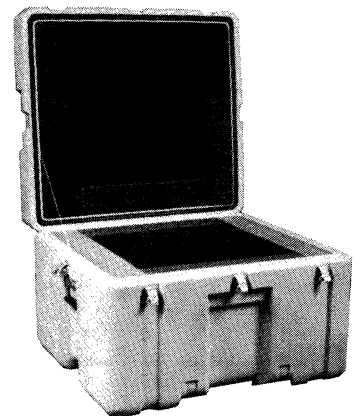
HEAVY DUTY CARRYING CASE



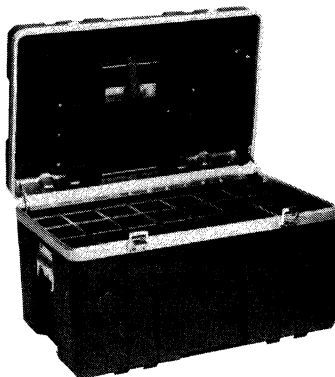
DOORS/HINGED DIVIDERS
DIE-CUT FOAM INSERTS



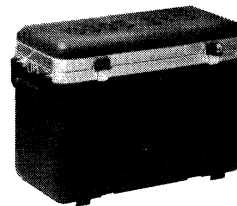
WHEEL CASE



REUSABLE SHIPPING CONTAINER



ROTATIONALLY MOLDED CASE



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Special hardware selections available • Special colors • Flame retardant material • Special brackets • Door/dividers/ formed inserts • ATA Style - Rotational molded • EMI/RFI shielding • Foam filled • Foam die cut • Printed circuit board racks • MIL Spec

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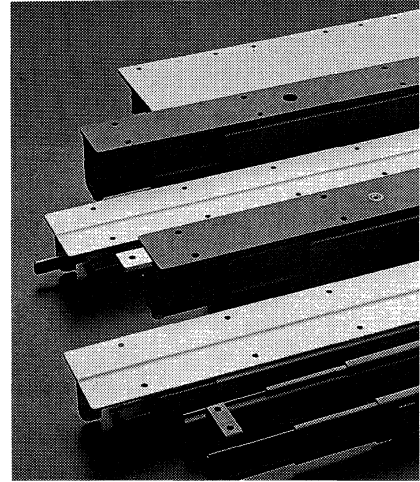
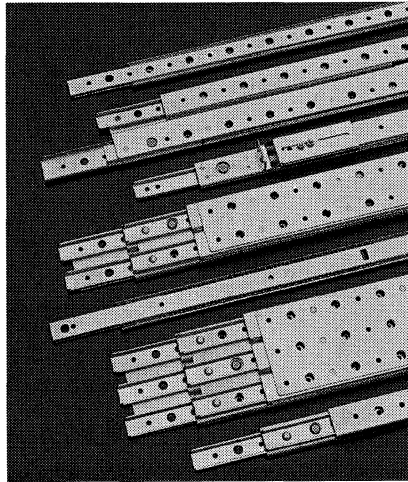
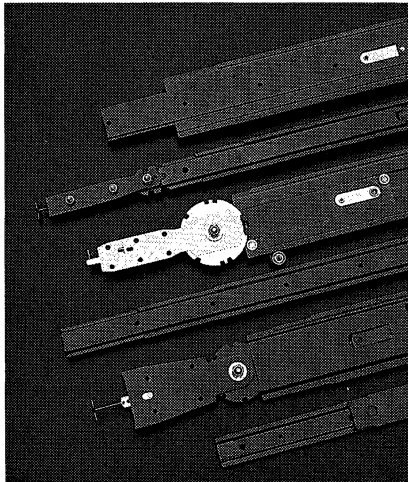
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Solid Bearing Slides

Chassis Trak® solid bearing slides are exceptionally compact, durable and economical for commercial and military applications. Permanently lubricated with molybdenum disulfide dry film lubricant to provide smooth sliding action, Chassis Trak solid bearing slides offer a high degree of immunity to shock and vibration and all slides offer lock-out and quick disconnect as standard features.

Series	Load Capacity lbs./pr.	Lengths
C-3700	60-85	12" to 30"
C-200	80-95	10" to 30"
C-230	125-140	12" to 24"
D-600	125	12" to 24"
CT	175	12" to 24"
CTR	175	12" to 24"
CTH	275	12" to 24"
CTHR	275	14" to 24"

All solid bearing slides available in 2 inch increments affording complete installation versatility.

Pencil-thin design permits installation of standard 17" chassis in standard 19 panel racks. All solid bearing slides are cold-rolled steel except Model D-600 which is lightweight, hard-coated aluminum.

Ball Bearing Slides

Designed for quick and easy installation, ball bearing slides offer a smooth sliding motion for frequent cycling and are available in a wide range of lengths and weight capacities. Plus, only General Devices offers the Green Button® slide with patented release - a unique design that eliminates pinched fingers on all its ball bearing slides that lock-out or disconnect.

Series	Load Capacity lbs./pr.	Lengths
CLB-203	50-145	10" to 30"
CLB-305	75-140	12" to 30"
CLB-307	75-175	12" to 30"
CLB-315	75-170	12" to 30"

Standard Lengths Available: 10 to 30 inches in one inch increments.

- Symmetrical slide assemblies used as right or left hand
- Quick disconnect to ease cabinet mounting and service
- Rubber bumper to quiet closing of slides
- Lock-out feature when fully extended
- Industry standard mounting holes
- Zinc plated with clear chromate finish

Two Section Slides

These slides are thinner than normal slides. Sturdy construction allows these two section slides to be only .340 of an inch thick to provide additional chassis space. They are supplied as *direct mount* solid bearing slides but can be obtained with a return flange for standard mounting. Also designed to be easily disconnected. Mounting hardware is included.

Bottom Mount Slides

Five different models offer load carrying capacities from 90 lbs./ea. to 1,270 lbs./ea. These slides are made from cold-rolled steel, are iridite dipped, and are available with solid bearing surfaces or roller bearing, depending on the model. Slides feature smooth operation, dependability and long life for heavy-duty applications. Close tolerance rollers minimize the pull force required for extension and provide vertical alignment, while ball bearings carry any horizontal thrust.

Series	Slide Type	Load Capacity lbs.	Lengths
B-200/300	(solid)	90-150	10" to 30"
C-930	(roller)	85-400	12" to 48"
C-7000	(bearing)	75-180	10" to 30"
D-1050	(roller)	475-1270	18" to 48"
D-1054 †	(roller)	475-1270	18" to 48"

† Same as D-1050 except includes lock-in and lock-out.
 Other lengths available upon request.

Suspension Bottom Mount Slides

Telescoping, formed sections, with a film of molybdenum disulfide dry film lubricant, make this low-cost slide desirable for many applications.



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Techtower™

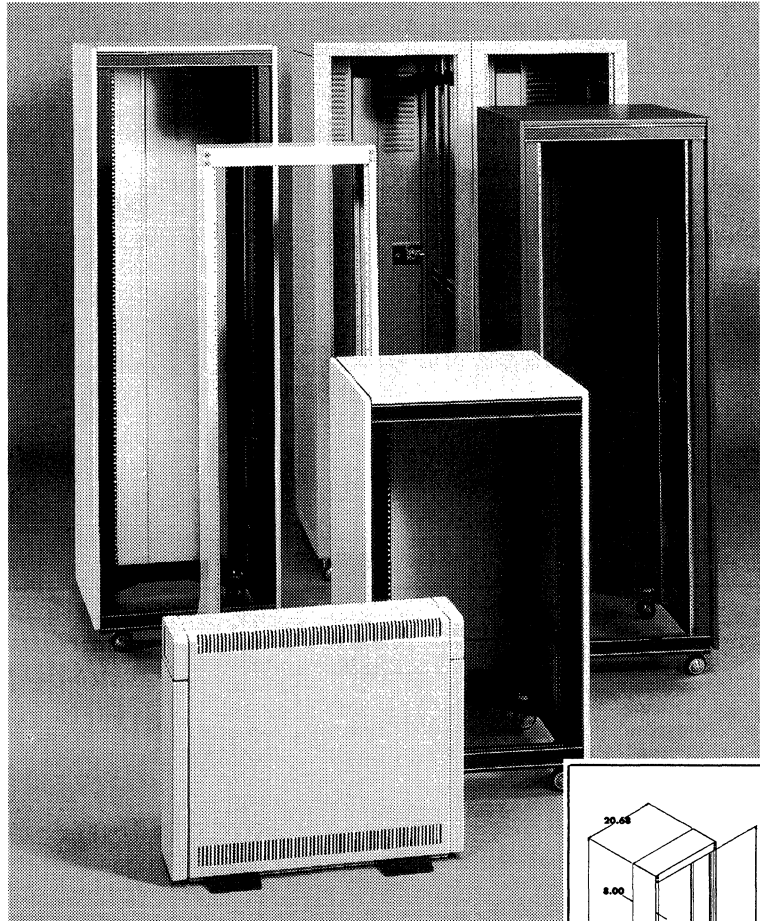
- Low profile, desksize cabinet offers secure storage and compact design.
- Ideal for data storage or as a network server.
- Aesthetically pleasing design, available in several popular colors.
- Accessible from all sides, makes installation and maintenance easier.
- "Invisible" fasteners avoid clothing snags, create a clean appearance.

Commercial Cabinets

- Wide variety of applications, including:
 - communications
 - electronic controls
 - computers, instrumentation storage
 - test measurement
 - medical uses
 - for LAN/WAN cable management
 - massive data storage
- Suited for loads up to 600 lbs.
- 12 gauge welded construction
- Available with solid or removable sides
- Heavy duty mounting angles create structural integrity, UNISTRUTS® provide infinite adjustment.

Seismic Cabinets

- Suitable for severe shock and vibration environment
- For use in nuclear power plants, military shelters
- Provide earthquake protection
- EMI/RFI shielding capability



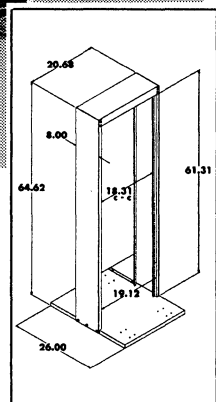
EMI/RFI Shielded Cabinets

- Ideal for protection from unwanted electronic "crosstalk," protects expensive electronic components
- Used for commercial and military applications
- Available for medium and heavy duty applications
- Meet FCC and military shielding specifications

Relay Racks

- For telephone and satellite communication
- Audio/video applications
- LAN/WAN cable management
- Optional casters and shelves available

The 2600 Series Relay Rack — perfect for monitors, editors, power supplies, tape machines and more. Also available with optional casters.



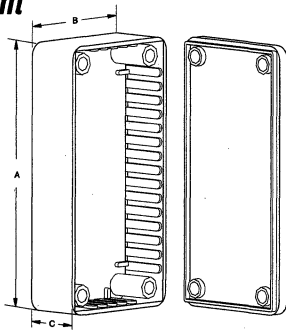
Hardware and Accessories

- Cooling Modules
- Handles and Pulls
- Retractable and Stationary Shelves
- Storage Drawers
- Cabinet Panels
- Cable Carriers and Guides

ENCLOSURES



1591 Plastic and Instrument Cases



1591 Styrene Plastic Cases

- A rugged small case molded in high impact styrene plastic
- Comes with four self-tapping #4 x 1/2 flat head screws countersunk into the lid
- Standard stock items available in black only.

Mfr.'s Type	Dimensions (inches)		
	A	B	C
1591LSBK	3.34	2.20	1.38
1591ASBK	3.93	1.97	.82
1591BSBK	4.41	2.44	1.06
1591CSBK	4.72	2.55	1.41
1591DSBK	5.90	3.14	1.80
1591ESBK	7.47	4.33	2.24
1591GSBK	4.75	3.69	1.18
1591HSBK	6.52	2.78	.98
1591SSBK	4.33	3.23	1.58
1591TSBK	4.72	3.15	2.17
1591USBK	4.72	4.72	2.17
1591VSBK	4.72	4.72	3.54

KJB Plastic Boxes

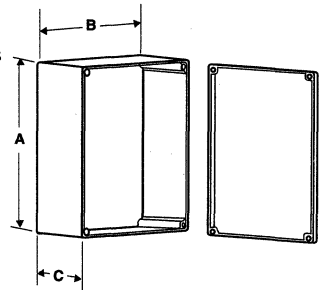
- Molded in an improved medium impact ABS thermoplastic with flame retardant properties.
- Carries a UL flammability rating of 94 V0 at 1.47 mm thickness and a continuous use temperature rating of 60°C.
- Comes in colors: blue, black, gray and beige.
- Interlocking flange on the lid.
- Comes with M3 x .5 x 10 mm, Phillips head screws, countersunk lid, and tapped integral brass bushings.
- Integral card guides accept .062" p.c. cards.
- Cat. No. 1591E has removable center brace.
- Comes with ABS lid in matching color. Optional clear plastic or metal lids are available.

Mfr.'s Type	Mfr.'s Type	Mfr.'s Type	Mfr.'s Type	Dimensions (inches)		
				A	B	C
1591LBK	1591LBU	1591LGY	1591LBG	3.34	2.20	1.38
1591ABK	1591ABU	1591AGY	1591ABG	3.93	1.97	.82
1591BBK	1591BBU	1591BGY	1591BBG	4.41	2.44	1.06
1591CBK	1591CBU	1591CGY	1591CBG	4.72	2.55	1.41
1591DBK	1591DBU	1591DGY	1591DBG	5.90	3.14	1.80
1591EBK	1591EBU	1591EGY	1591EBG	7.47	4.33	2.24
1591GBK	1591GBU	1591GGY	1591GBG	4.75	3.69	1.18
1591HBK	1591HBU	1591HGY	1591HBG	6.52	2.78	0.98
1591SBK	1591SBU	1591SGY	1591SBG	4.33	3.23	1.58
1591TBK	1591TBU	1591TGY	1591TBG	4.72	3.15	2.17
1591UBK	1591UBU	1591UGY	1591UBG	4.72	4.72	2.17
1591VBK	1591VBU	1591VGY	1591VBG	4.72	4.72	3.54

*BU = Blue, BK = Black, GY = Gray, and BG = Beige

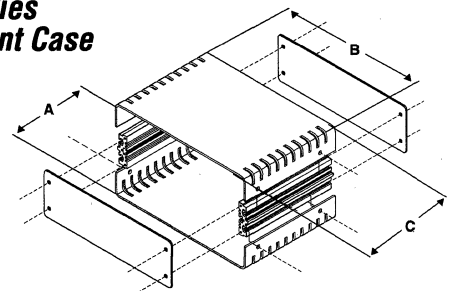
1590 Diecast Aluminum Boxes

These diecast aluminum alloy boxes with tumbled surface come drilled and tapped with countersunk lid and four 6-32 x 1/2 Phillips screws (models "D" and "E" have two additional center posts and six screws). These boxes are excellent for RF/audio connectors because of their RF shielding capabilities due to an interlocking flange in the lid. The aluminum alloy allows for easy drilling and punching with the durability of metal.



Mfr.'s Type	Dimensions (inches)		
	A	B	C
1590A	3.62	1.50	1.07
1590B	4.37	2.37	1.07
1590BB	4.68	3.68	1.18
1590C	4.68	3.68	2.06
1590D	7.39	4.70	2.06
1590E	7.39	4.70	3.06
1590F	7.39	7.37	2.50
1590LB	1.98	1.98	1.07
1590S	4.33	3.23	1.58
1590T	4.72	3.15	2.17
1590U	4.72	4.72	2.17
1590V	4.72	4.72	3.54

1402 Series Instrument Case



Features:

- Top and bottom made from 12 gauge aluminum finished in off-white.
- Top and bottom are attached to an internal aluminum extrusion which contains a mounting slot for printed account cards or panels.
- Front and rear panels are natural aluminum (paper coated one side) which are attached with screws to the aluminum mounting extrusion.
- Panels on top can be easily removed for easy access to components.
- Tops and bottoms are available in solid or with vent slots.
- All hardware and self-adhesive rubber feet are included.

Solid Top and Base Mfr.'s Type	Vented Top and Base Mfr.'s Type	Units	Dimensions (inches)			Fits Eurcard Sizes
			A	B	C	
1402 B	1402 BV	mm in.	60.45 2.38	28.07 7.13	12.39 4.88	160 x 100
1402 D	1402 DV	mm in.	60.45 2.38	28.07 7.13	18.42 7.25	160 x 160
1402 F	1402 FV	mm in.	79.50 3.13	28.07 7.13	26.03 10.25	160 x 234
1402 H	1402 HV	mm in.	98.55 3.88	25.48 10.03	18.42 7.25	234 x 160
1402 K	1402 KV	mm in.	98.55 3.88	25.48 10.03	24.46 9.63	234 x 220

NOTE: Inches are for reference only and are not exact. Use metric for precise measurements.

HAMMOND MANUFACTURING CO., 4700 Genesee St., Cheektowaga, N.Y. 14225, Tel: 716/631-5700, Fax: 716/631-1156



ENCLOSURES

1592 T-Case Hand Held Display Cases

Application

- Hand held instrument or mobile data enclosures ideally suited for keypad and display applications.

Construction

DISPLAY AREA

- Available with either a solid display area or a versatile opening with a clear lens.
- The display area has been insert tooled in order to provide the capability of custom molding a low-cost display area to specific requirements.

KEYPAD AREA

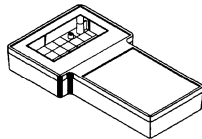
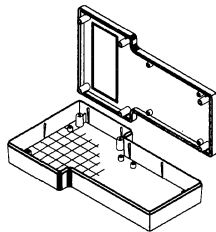
- Has been designed to accept membrane keypads up to 87 mm x 119 mm (3.4" x 4.68").
- Insert tooled in order to provide the capability of custom molding a low-cost display area to specific requirements.

INTERIOR

- A total of eight mounting bosses have been provided in order to facilitate the use of PC cards and other components. These bosses have been strategically placed to provide maximum usable space.
- A light cross-hatch has been provided in order to facilitate layout design.
- The interior of the lid of the 1592 ET has been designed with mounting bosses to facilitate use of displays and other components.

Other Features

- Ergonomically designed for a comfortable fit into the user's hand.
- Molded in flame retardant ABS with a UL rating of VO.
- The top of the case is compatible with standard card swipe units.



Mfr.'s Type	Shielded Part No.	Color	Description
1592 ETSDGY	-	Gray	Case with solid display area
1592 ETSDBK	1592 RETSDBK	Black	Case with solid display area
1592 ETCDGY	-	Gray	Case with open display insert and clear polycarbonate lens kit
1592 ETCDBK	-	Black	Case with open display insert and clear polycarbonate lens kit

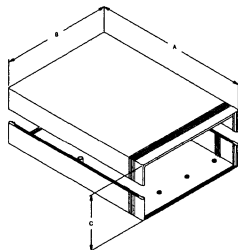
Accessories

Gasket Part No.	Rubber Feet Part No.	Magnetic Strip Part No.	Velcro Mounting Tab Part No.
1592 ETG	1592 RF	1592 ETM	1592 ETV

1598 Plastic Instrument Cases

Features:

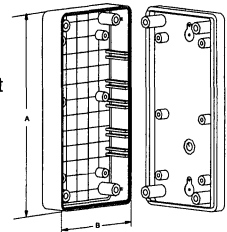
- Two-piece, tongue-and-groove construction
- Molded in flame retardant ABS
- Four self-adhesive PC clips supplied
- Carry flammability rating of UL 94V-0



Mfr.'s Type	Mfr.'s Type	Dimensions (inches)		
		A	B	C
1598ABK	1598ABU	6.10	3.62	1.38
1598BBK	1598BBU	5.24	5.24	2.01
1598CBK	1598CBU	7.01	6.02	2.01
1598DBK	1598DBU	7.01	7.99	2.48
1598EBK	1598EBU	6.30	6.30	3.35
1598FBK	1598FBU	9.84	6.30	1.58
1598GBK	1598GBU	9.84	6.30	2.95
1598HBK	1598HBU	11.02	7.87	1.58
1598JBK	1598JBU	11.02	7.87	2.95

1599 Hand Held Plastic Cases

- Molded in a flame retardant ABS high impact plastic - meets UL 94 VO. Finish is a light texture to resist scratching. Available in black or gray
- Includes integral brass inserts and machine screws (M3 slot head). This provides extra strength for repeated assembly and disassembly.



- Recessed top panel ideal for membrane display.
- Extra deep top and ultra shallow base designed to both enhance aesthetics and improve flexibility.
- Twelve PCB bosses (six in both top and bottom) and vertical mounting slots are molded in.

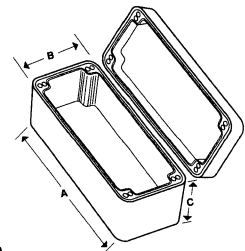
Mfr.'s Type	Mfr.'s Type	Dimensions (inches)		
		A	B	C (assembled height)
1599BBK	1599BGY	5.12	2.56	0.98
1599EBK	1599EGY	6.70	3.35	1.38
1599HBK	1599HGY	8.66	4.33	1.77

- Molded in high impact polystyrene with self-tapping screws. Finish is a light texture to resist scratching. Available in gray only.
- Perfect for applications where economy is important and where repetitive assembly and disassembly is not important.
- Recessed top panel ideal for membrane display.
- Extra deep top and ultra shallow base designed to both enhance aesthetics and improve flexibility.
- Twelve PCB bosses (six in both top and bottom) and vertical mounting slots are molded in.

Mfr.'s Type	Dimensions (inches)		
	A	B	C
1599BSGY	5.12	2.56	0.98
1599ESGY	6.70	3.35	1.38
1599HSGY	8.66	4.33	1.77

Rolec® RFI Series Watertight Diecast Enclosure

- Patented lid design provides excellent RFI shielding
- Gasketed to IP65 watertight
- Stainless steel screws
- Finished in RAL: 7032 pebble grey
- Mounting feet and accessories available

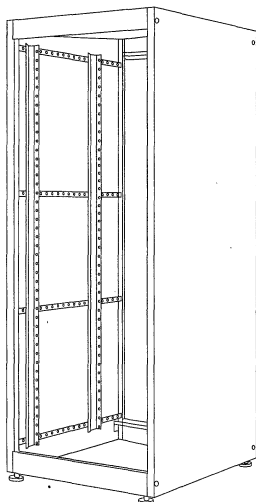


Mfr.'s Type	Type	Weight (g) Weight (lbs.)	Size (mm) Size (inches)		
			A	B	C
R111-082-000	EKF 082	410	125	80	44
		.90	4.87	3.12	1.72
R110-082-000	EK 082	520	125	80	67
		1.15	4.87	3.12	2.61
R111-083-000	EKF 083	540	175	80	44
		1.19	6.82	3.12	1.72
R110-083-000	EK 083	680	175	80	67
		1.50	6.82	3.12	2.61
R111-123-000	EKF 123	1200	220	120	60
		2.64	8.58	4.68	2.34
R110-123-000	EK 123	1400	220	120	90
		3.09	8.58	4.68	3.51
R110-162-000	EK 162	2150	260	160	100
		4.74	10.14	6.24	3.90

RACKS & ACCESSORIES



Economy Knockdown Rack REFK Series



- 19" rack mount panel width with two pair of fully adjustable rails (to allow front & rear mounting).
- 16 guage steel - baked enamel finish.
- 8 bolt assembly - top and bottom affix to sides.
- Includes 4 adjustable levelling feet, clip nuts and hardware.
- Standard EIA spaced punched rails.
- Choice of two depths (17.5" and 24.5").

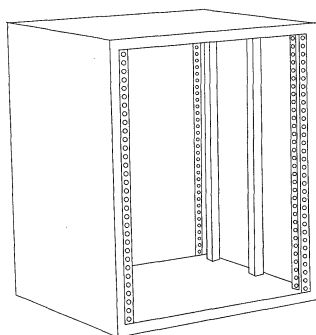
17.5" Deep

Black Part No.	Grey Part No.	Textured Biege Part No.	Panel Height (in)	Overall Height (in)
REFK1903517BK2	REFK1903517GY2	REFK1903517CG1	35	40.19
REFK1904217BK2	REFK1904217GY2	REFK1904217CG1	42	47.19
REFK1904917BK2	REFK1904917GY2	REFK1904917CG1	49	54.19
REFK1905617BK2	REFK1905617GY2	REFK1905617CG1	56	61.19
REFK1906317BK2	REFK1906317GY2	REFK1906317CG1	63	68.19
REFK1907017BK2	REFK1907017GY2	REFK1907017CG1	70	75.19
REFK1907717BK2	REFK1907717GY2	REFK1907717CG1	77	82.19
REFK1908417BK2	REFK1908417GY2	REFK1908417CG1	84	89.19

24.5" Deep

Black Part No.	Grey Part No.	Textured Biege Part No.	Panel Height (in)	Overall Height (in)
REFK1903524BK2	REFK1903524GY2	REFK1903524CG1	35	40.19
REFK1904224BK2	REFK1904224GY2	REFK1904224CG1	42	47.19
REFK1904924BK2	REFK1904924GY2	REFK1904924CG1	49	54.19
REFK1905624BK2	REFK1905624GY2	REFK1905624CG1	56	61.19
REFK1906324BK2	REFK1906324GY2	REFK1906324CG1	63	68.19
REFK1907024BK2	REFK1907024GY2	REFK1907024CG1	70	75.19
REFK1907724BK2	REFK1907724GY2	REFK1907724CG1	77	82.19
REFK1908424BK2	REFK1908424GY2	REFK1908424CG1	84	89.19

Heavy Duty Desktop Rack RCHS Series



- 19" rack mount panel width - both front and rear.
- Includes welded in support rails for heavy equipment or shelves requiring extra support.
- 18 guage steel - baked enamel finish.
- Rubber feet and clip nuts included.
- Standard EIA spaced punching of fixed rails.
- Choice of two depths (17.5" and 24.5").

17.5" Deep

Textured Blue Part No.	Textured Biege Part No.	Panel Height (in)	Dimensions (inches)	
			Height	Width
RCHS1900817GF1	RCHS1900817CG1	8.75	10.75	21.00
RCHS1901017GF1	RCHS1901017CG1	10.5	12.50	21.00
RCHS1901417GF1	RCHS1901417CG1	14.00	16.00	21.00
RCHS1901717GF1	RCHS1901717CG1	17.50	19.50	21.00
RCHS1902217GF1	RCHS1902217CG1	22.75	24.75	21.00
RCHS1902817GF1	RCHS1902817CG1	28.00	30.00	21.00

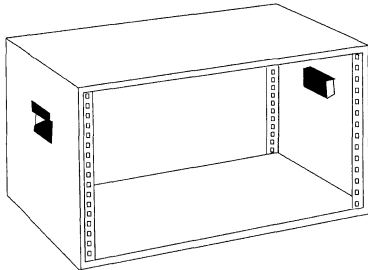
24.5" Deep

Textured Blue Part No.	Textured Biege Part No.	Panel Height (in)	Dimensions (inches)	
			Height	Width
RCHS1901024GF1	RCHS1901024CG1	10.50	12.50	21.00
RCHS19014024GF1	RCHS1901424CG1	14.00	16.00	21.00
RCHS1901724GF1	RCHS1901724CG1	17.50	19.50	21.00
RCHS1902224GF1	RCHS1902224CG1	22.75	24.75	21.00
RCHS1902824GF1	RCHS1902824CG1	28.00	30.00	21.00

RACKS & ACCESSORIES



Desktop Rack RCBS Series



13" Deep

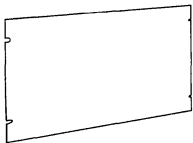
Grey Part No.	Textured Biege Part No.	Panel Height (in)	Dimensions (in)	
			Height	Width
RCBS1900313GY2	RCBS1900313CG1	3.5	4.53	20.06
RCBS1900513GY2	RCBS1900513CG1	5.25	6.28	20.06
RCBS1900713GY2	RCBS1900713CG1	7.00	8.03	20.06
RCBS1900813GY2	RCBS1900813CG1	8.75	9.78	20.06
RCBS1901013GY2	RCBS1901013CG1	10.50	11.53	20.06
RCBS1901213GY2	RCBS1901213CG1	12.25	13.28	20.06
RCBS1901413GY2	RCBS1901413CG1	14.00	20.06	20.06

17.5" Deep

Grey Part No.	Textured Biege Part No.	Panel Height (in)	Dimensions (in)	
			Height	Width
RCBS1900317GY2	RCBS1900317CG1	3.5	4.53	20.06
RCBS1900517GY2	RCBS1900517CG1	5.25	6.28	20.06
RCBS1900717GY2	RCBS1900717CG1	7.00	8.03	20.06
RCBS1900817GY2	RCBS1900817CG1	8.75	9.78	20.06
RCBS1901017GY2	RCBS1901017CG1	10.50	11.53	20.06
RCBS1901217GY2	RCBS1901217CG1	12.25	13.28	20.06
RCBS1901417GY2	RCBS1901417CG1	14.00	20.06	20.06

- 19" rack mount panel width - both front and rear.
- 18 gauge steel - baked enamel finish.
- Black ABS plastic handles.
- Rubber feet and clip nuts included.
- Standard EIA spaced punching of fixed rails.
- Choice of two depths (13" and 17.5").

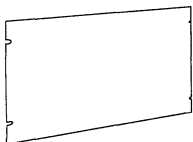
Steel Rack Panels PBPS Series



- Economical steel panels.
- Available in black, grey or biege.
- 14 gauge steel.
- Standard 19" width and slot spacing.
- Hardware not included.

Black Part No.	Grey Part No.	Biege Part No.	Panel Height (in)
PBPS19001BK2	PBPS19001GY2	PBPS19001CG2	1.75
PBPS19003BK2	PBPS19003GY2	PBPS19003CG2	3.50
PBPS19005BK2	PBPS19005GY2	PBPS19005CG2	5.25
PBPS19007BK2	PBPS19007GY2	PBPS19007CG2	7.00
PBPS19008BK2	PBPS19008GY2	PBPS19008CG2	8.75
PBPS19010BK2	PBPS19010GY2	PBPS19010CG2	10.50
PBPS19012BK2	PBPS19012GY2	PBPS19012CG2	12.25
PBPS19014BK2	PBPS19014GY2	PBPS19014CG2	14.00
PBPS19015BK2	PBPS19015GY2	PBPS19015CG2	15.75
PBPS19017BK2	PBPS19017GY2	PBPS19017CG2	17.50
PBPS19019BK2	PBPS19019GY2	PBPS19019CG2	19.25
PBPS19021BK2	PBPS19021GY2	PBPS19021CG2	21.00
PBPS19022BK2	PBPS19022GY2	PBPS19022CG2	22.75
PBPS19024BK2	PBPS19024GY2	PBPS19024CG2	24.50
PBPS19026BK2	PBPS19026GY2	PBPS19026CG2	26.25
PBPS19028BK2	PBPS19028GY2	PBPS19028CG2	28.00
PBPS19029BK2	PBPS19029GY2	PBPS19029CG2	29.75
PBPS19031BK2	PBPS19031GY2	PBPS19031CG2	31.50

Aluminum Rack Panels PBPA Series



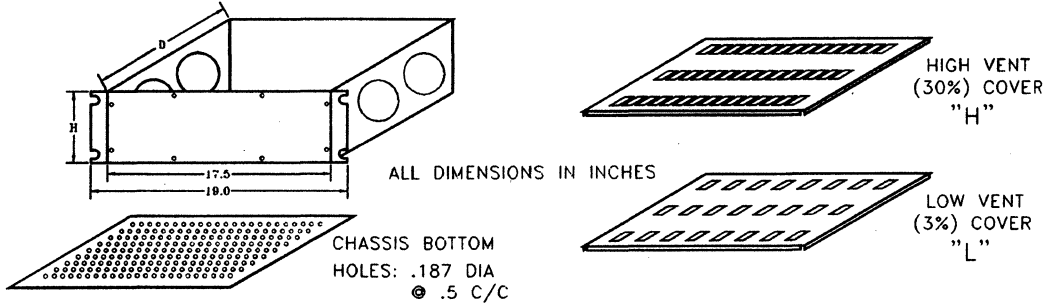
- Economical aluminum panels.
- Available in black, grey, biege or unfinished (covered with paper on one side).
- 0.125" thick aluminum.
- Standard 19" width and slot spacing.
- Hardware not included.

Black Part No.	Grey Part No.	Biege Part No.	Unfinished Part No.	Panel Height (in)
PBPA19001BK2	PBPA19001GY2	PBPA19001CG2	PBPA19001UNF	1.75
PBPA19003BK2	PBPA19003GY2	PBPA19003CG2	PBPA19003UNF	3.50
PBPA19005BK2	PBPA19005GY2	PBPA19005CG2	PBPA19005UNF	5.25
PBPA19007BK2	PBPA19007GY2	PBPA19007CG2	PBPA19007UNF	7.00
PBPA19008BK2	PBPA19008GY2	PBPA19008CG2	PBPA19008UNF	8.75
PBPA19010BK2	PBPA19010GY2	PBPA19010CG2	PBPA19010UNF	10.50
PBPA19012BK2	PBPA19012GY2	PBPA19012CG2	PBPA19012UNF	12.25
PBPA19014BK2	PBPA19014GY2	PBPA19014CG2	PBPA19014UNF	14.00
PBPA19015BK2	PBPA19015GY2	PBPA19015CG2	PBPA19015UNF	15.75
PBPA19017BK2	PBPA19017GY2	PBPA19017CG2	PBPA19017UNF	17.50
PBPA19019BK2	PBPA19019GY2	PBPA19019CG2	PBPA19019UNF	19.25
PBPA19021BK2	PBPA19021GY2	PBPA19021CG2	PBPA19021UNF	21.00
PBPA19022BK2	PBPA19022GY2	PBPA19022CG2	PBPA19022UNF	22.75
PBPA19024BK2	PBPA19024GY2	PBPA19024CG2	PBPA19024UNF	24.50
PBPA19026BK2	PBPA19026GY2	PBPA19026CG2	PBPA19026UNF	26.25
PBPA19028BK2	PBPA19028GY2	PBPA19028CG2	PBPA19028UNF	28.00
PBPA19029BK2	PBPA19029GY2	PBPA19029CG2	PBPA19029UNF	29.75
PBPA19031BK2	PBPA19031GY2	PBPA19031CG2	PBPA19031UNF	31.50

HYBERLAB

BoxFlex

ULTRA RUGGED BENCH-TOP/RACK-MOUNT CHASSIS



CUSTOM OR USER-SPECIFIED CHASSIS AVAILABLE

Modifications, face plate punching, silkscreening and card cages, etc.

Contact HYBERLAB for user-specified programs with no NRE charges and rapid delivery

STANDARD BENCH-TOP / RACK-MOUNT CHASSIS DESCRIPTION

MODEL	DIMENSION "D"	DIMENSION "H"	FAN HOLES	CHASSIS TYPE (blue)	FRONT/BACK PANEL (aluminum)
BF50	6"	BOX 1.75"	NO	8" w box 0.09" Aluminum	N/A
^t BF100	12"	1U 1.75"	NO	19" rack-mount /18Ga CRS	0.063" blank, grey
^{tt} BF200	12"	2U 3.5"	4 @ 2.4"	19" rack-mount /18Ga CRS	0.063" blank, grey
[*] BF300	15"	3U 5.25"	6 @ 2.4"	19" rack-mount /14Ga CRS	0.125" blank, grey
BF400	17"	4U 7"	4 @ 4.7"	19" rack-mount /16Ga CRS	0.090" blank, grey
[*] BF500	15"	5U 8.75"	4 @ 4.7"	19" rack-mount /14Ga CRS	0.125" blank, grey
BF600	17"	6U 10.5"	4 @ 4.7"	19" rack-mount /16Ga CRS	0.125" blank, grey
BF800	19"	8U 14"	8 @ 4.7"	19" rack-mount /14Ga CRS	0.125" blank, grey
BF1200	21"	12U 21"	12 @ 4.7"	19" rack-mount /14Ga CRS	0.125" blank, grey

ALL CHASSIS COME WITH FAN COVERS, RUBBER FEET, AND HANDLES.

* EXTREMELY RUGGED HIGH STRENGTH CHASSIS. ^t ONLY 12% OPEN COVER AVAILABLE. ^{tt} ONLY 3% OPEN COVER AVAILABLE.

FAN KIT "K" OPTION

MODEL	KIT COMPONENTS
BF200	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 4 - 2.4" fans & grills.
BF300	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 6 - 2.4" fans & grills.
BF400	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 4 - 4.7" fans & grills.
BF500	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 4 - 4.7" fans & grills.
BF600	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 4 - 4.7" fans & grills.
BF800	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 8 - 4.7" fans & grills.
BF1200	Front panel with fan switch/lamp, Back panel with IEC connector & fuse, AC cord, 12 - 4.7" fans & grills.

HOW TO ORDER

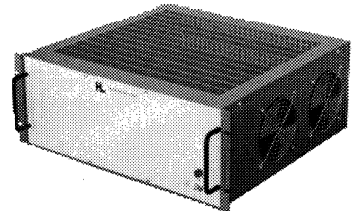
BF 100

H - K

50 - 1.75"H x 6"D x 8"W	box type
100 - 1.75"H x 12"D x 17.5"W	9" rack-mount
200 - 3.5"H x 12"D x 17.5"W	19" rack-mount
300 - 5.25"H x 15"D x 17.5"W	19" rack-mount
400 - 7"H x 17"D x 17.5"W	19" rack-mount
500 - 8.75"H x 15"D x 17.5"W	19" rack-mount
600 - 10.5"H x 17"D x 17.5"W	19" rack-mount
800 - 14"H x 19"D x 17.5"W	19" rack-mount
1200 - 21"H x 21"D x 17.5"W	19" rack-mount

see table

H - High vent cover	Optional fan kits include AC fans and accessories.
L - Low vent cover	
Models BF400, 600, 800, 1200 only.	see table
See diagram & table	



See our other products in section 2900 (page D-1217) and section 4000 (pages D-1640-1641)

HYBERLAB CORP.

330 MILLWAY AV., CONCORD, ONTARIO, CANADA, L4K 3W2

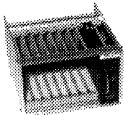
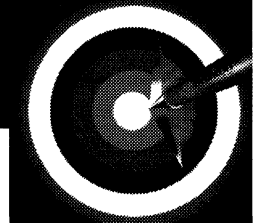
PHONE (905)761-0055

FAX (905)761-6203

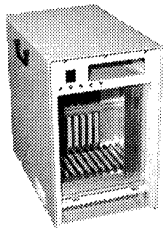


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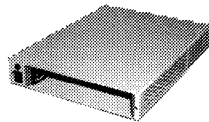
Subracks



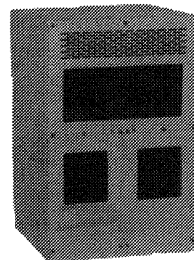
Portable
Towers

Superior Technology

- CompactPCI, VME, VME64x
- Excellent cooling
 - Patented card guides
 - High signal integrity
 - IEEE 1101.10 compliant
 - Modeling & simulation



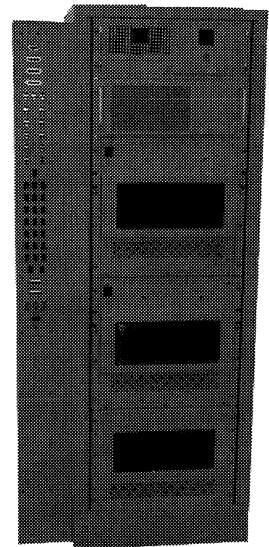
Desktop
Enclosures



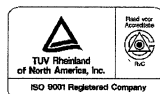
Telecom
Enclosures

Superior Service

- Many designs in stock
- On-line data sheets
 - Rapid response quotes
 - Will customize to meet your application needs



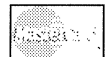
Integrated
Cabinets



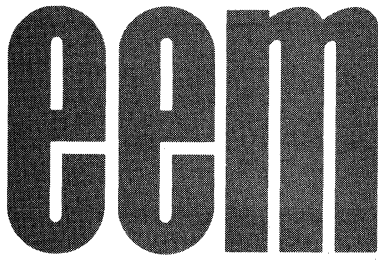
Hybricon Corporation, 12 Willow Road, Ayer, Massachusetts 01432

Tel: (800) 352-3468 Fax: (978) 772-2963

Web: <http://www.hybricon.com> E-Mail: info@hybricon.com



Backplanes • Card Cages • Enclosures • Modeling and Simulation



MINIGLOSSARY ENCAPSULATION

MATERIALS/HANDLING

Catalyst: A substance which changes the *rate* of chemical reaction. Very small quantities can cause fast change.

Conformal coating Sprayed or dipped. A thin conformal jacket which protects an assembly from moisture or other degrading environments.

Curing agent: See catalyst.

Hardener: See catalyst.

Hermetic: A permanent gas-tight seal.

RTV: Room Temperature Vulcanizing. Associated with silicone rubber sealants which vulcanize at room temperature.

Thermoplastic: Plastic materials which can be made to flow *repeatedly* with the application of heat.

Thermosetting: Plastics which once cured cannot be made to flow again.

Thixotropy: The property of a coating compound which has low viscosity when agitated, but which thickens when the agitation ceases.

Viscosity: Measured in units of *poise* or *centipoise*. The property of a liquid which resists internal flow. Low viscosity equates with thin and vice-versa.

PROCESSING

Casting: Parts or assemblies are placed in a mold. Encapsulating material is added and cured. Part is then removed from the mold.

Dip coating: Part or assembly is dipped into the encapsulating material. Final thickness is determined by number of dips, viscosity, rate of withdrawal, and temperature.

Embedding: Wherein an encapsulant substantially fills all voids in and about an assembly.

Impregnation: A process of encapsulation involving evacuating all air and then allowing the encapsulating material to flow in and fill all voids.

Molding: Similar to casting except this process usually implies multicavity molds and costly machines.

Potting: Wherein the part or assembly is immersed in an encapsulating material contained in a shell which becomes a permanent outer surface after curing.

DIELECTRIC

Arc resistance: An encapsulant's resistance to the formation of a conductive path or track. Measured in time.

Breakdown voltage: The voltage at which an encapsulant fails electrically.

Capacitance: The property of conductors and dielectrics which allows the storage of an electrical charge when the voltage is applied.

Corona: A luminous discharge of electricity due to air ionization when a cer-

tain voltage is reached. Can be internal or external. The formation of ozone can cause rapid deterioration of certain materials.

Dielectric: Insulator (Nonconductor.)

Dielectric constant: The property of a material that determines its ability to store electrostatic energy.

Dielectric strength: The ratio of dielectric breakdown to the thickness of insulating material.

Dissipation factor: The ratio of a dielectric material's energy losses.

Flashover: Point at which an electric discharge occurs around an edge or across a surface. Can result in a carbon track and permanent degradation.

Insulation resistance: (IR) An insulating material's total DC leakage.

Surface resistivity: The resistance of the surface of an insulating material to the flow of direct current.

Voltage endurance: Sometimes called corona resistance. The ability of a material to withstand the application of sustained high voltage.

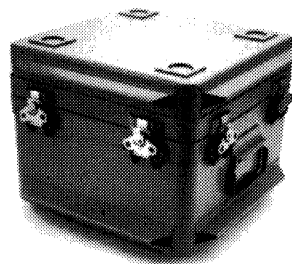
Volume resistivity: The resistance of a material to direct current flow as a measure of volume. Expressed as ohm-centimeters.



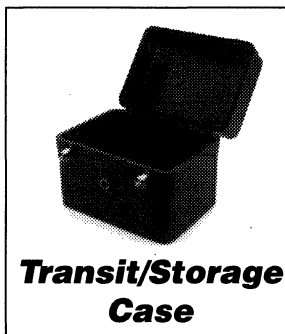
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Custom Case Specialists

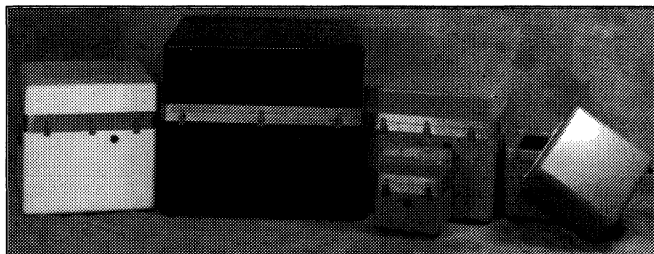
To protect instruments in transit or operation in hostile environments, choose an Instrument Enclosures product container. We can meet specifications for any application.



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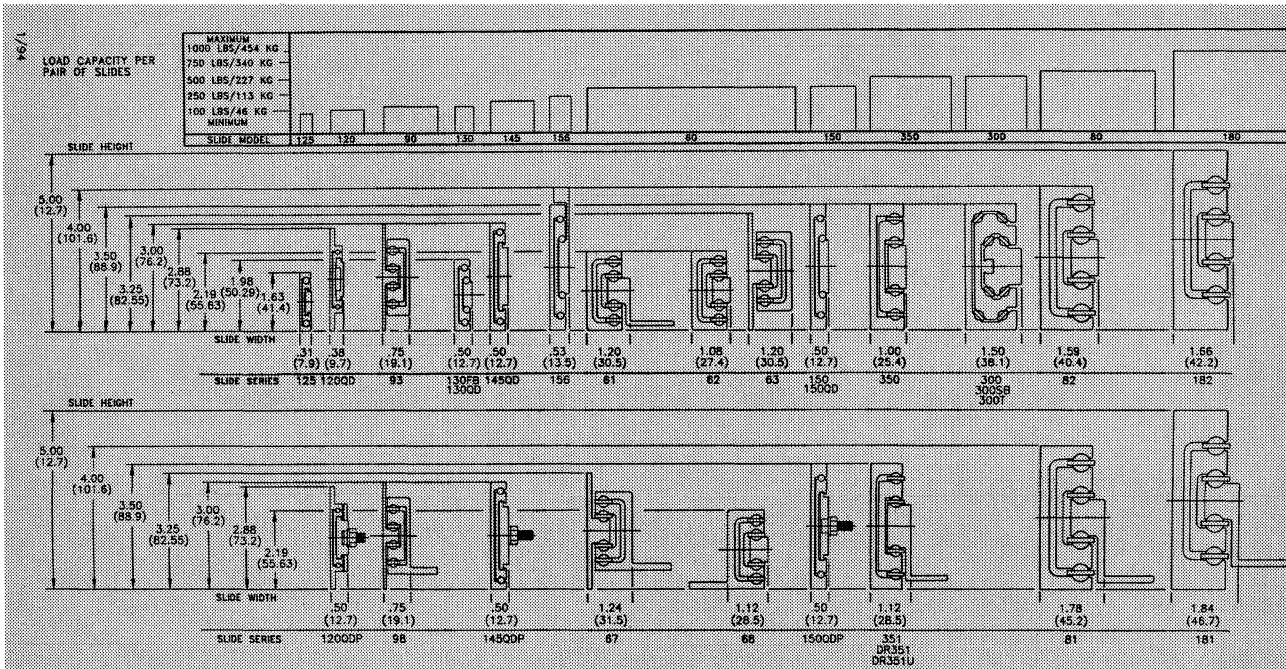
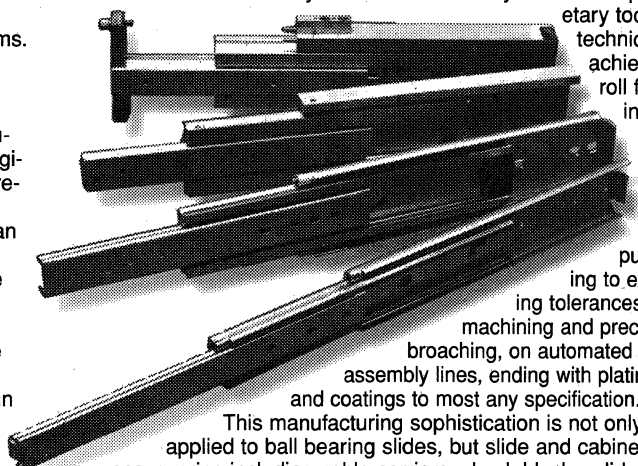
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Jonathan's 160,000 square foot complex, centrally located in southern California, combines fully integrated business, engineering, manufacturing and test facilities. With 40 years experience, Jonathan provides industry leadership in the design and production of aluminum and steel, ball bearing slide mechanisms. Although Jonathan is known for innovative solutions to unique slide applications, it also has a broad selection of standard designs for commercial, industrial and military requirements. Jonathan is a progressive business partner, using creative solutions to achieve long term customer relationships. Jonathan engineers, working with the customer, modify existing designs or create custom products to meet the customer needs. Blending skilled labor with automated manufacturing operations, Jonathan offers both precision and economy for short and long run programs. Stringent quality inspection coupled with inhouse or site testing assure the proper product for the job. Jonathan provides design solutions beyond expectations. Jonathan's Application Engineering Group is recognized as the industry leader. With over 40 years experience and more than 20,000 designs in use, Jonathan's engineers have the insight to resolve customer product requirements quickly and efficiently. The Human side of engineering, when coupled with the latest multi-platform, Computer Aided Design, produce ball bearing slides with unlimited features, meeting all special requirements.

Advanced manufacturing enables Jonathan to create your product cost effectively, to precision tolerances. Steel and aluminum alloys are transformed by Jonathan's proprietary tooling techniques, achieving roll forming and punching to exacting tolerances, CNC machining and precision broaching, on automated assembly lines, ending with platings and coatings to most any specification. This manufacturing sophistication is not only applied to ball bearing slides, but slide and cabinet accessories including cable carriers, shock blocks, slide locks, brackets, door stops and all items necessary for a total application solution.



LOAD CAPACITY IN CHART IS RANGE ACCEPTABLE LOAD BASED ON SLIDE LENGTH AND TRAVEL
 CONSULT INDIVIDUAL SLIDE DATA SHEET FOR EXACT LOADS/LENGTHS
 CONTACT JONATHAN IF REQUIREMENTS EXCEED THE MAXIMUM LOAD RATING SHOWN

ILLUSTRATIONS NOT TO SCALE

HAVE YOU CONSIDERED?

- What load are the slides to carry?
- How tall can the slides be?
- How much side space or width for each slide is available?
- Are any special features required?

Aluminum Slide Quick Selection Guide • Lit-By-Fax™ www.thomasregister.com/jonathanmfg

DESIGN FEATURES	SERIES NUMBER																							
	125	125	120	120	130	130	145	145	156	61	63	65	150	150	150	350	DR351	DR353	300	300	300	81	81	
	L	QD	QDP	98	QD	QD	QDP		62	67	68		QD	QDP	DR350	DR351U				SB	T	82	182	
ADJUSTABLE SHOCK BLOCK																								
CAPTIVE SCREW																								
CHASSIS PIVOT																								
EIA MOUNTING BRACKETS																								
FRONT DISCONNECT																								
LOCK CLOSED																								
LOCK OPEN																								
PTC CABLE CARRIER																								
REPLACEMENT SECTIONS																								
SHOCK BLOCKS																								
UNDERMOUNT																								

PART NUMBER MODIFIER

- DR DYNA-RACE
- L LOCK OPEN
- PTC POWER TRACK CABLE CARRIER
- SB SHOCK BLOCK
- T T-SECTION DISCONNECT
- QD QUICK DISCONNECT
- QDP QUICK DISCONNECT & PIVOT
- U UTILITY TRUCK BODY



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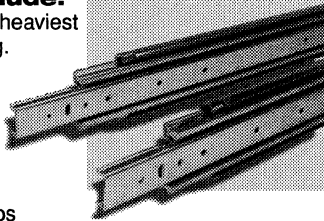
Model 432 Drawer Slide Universally Applicable

When Longevity Counts

Jonathan's model 432 is a three-section steel slide that carries up to 300 lbs. per pair. It's stout, versatile, smooth and can be used wherever strength and durability matter.

Standard Features Include:

- Polished ball-bearings float the heaviest loads in and out without sticking.
- Heavy-duty stops survive slam-bang field use
- Slide lengths and travels from 12" to 36"
- Custom lengths up to 60"
- Requires just 3/4" sidespace
- Non-metallic open & closed stops assure smooth, silent operation
- Lock-open feature (model 433)
- Specification drawings available over the Internet.



Technical Support Makes The Difference

Jonathan application engineers will customize the 432 to meet your specific drawer and cabinet mounting requirements. We also have more than 100 field sales reps nationwide to assist you. We can add mounting holes, change the slide length and travel, add brackets, install PEM® nuts or studs, whatever you need. When we're through, you'll have a slide that exactly meets your specific application requirements.

Our Reputation Rides On Every Slide.

Behind every Jonathan product stands 40 years of design and manufacturing expertise. We developed the modern industrial slide and have stayed at the forefront of its engineering and applications.

Call and ask one of our experienced application engineers about your next design project. We'll help it run more smoothly.

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8 Use #10 (82°) Flat Head Machine Screws on the Outer Member.

7 Use #10 Pan Head Machine Screws on the Inner Member.

6 Slide is available in standard lengths beyond 36.00 inches (914 mm), contact Jonathan for hole pattern and load rating.

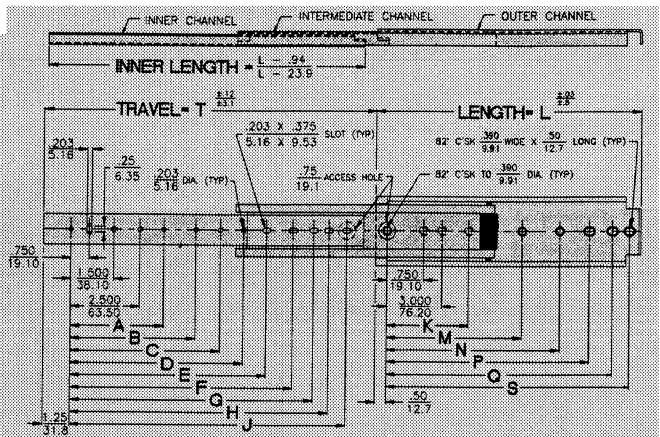
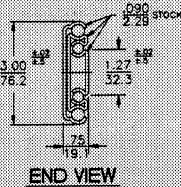
5 Non metallic stops open and closed.

4 Tolerance: (.XX) ±.03 IN or (.XXX) ±.010 IN
(X) ±.8 MM (XX) ±.25 MM

3 For "EIA/RETMA" Brackets, see separate section.

2 Holes other than shown may be in the slide member at Jonathan option.

1 Slide is symmetrical. May be used as left or right hand slide.



PART NO.	Slide Length	Slide Travel	MOUNTING HOLE PATTERN													Load Rating			
			INNER CHANNEL					OUTER CHANNEL					PER PAIR						
Series Length	L	T	A	B	C	D	E	F	G	H	J	K		M	N	P	Q	S	
432-12	12 304	12 304						6.06 153.9	7.06 179.3	7.81 198.4	8.56 217.4				8.00 203.2	10.25 260.4	11.00 279.4	300 LBS 136 KG	
432-14	14 356	14 356						8.06 204.7	9.06 230.1	9.81 249.2	10.56 268.2				10.00 254.0	12.25 311.1	13.00 330.2	300 LBS 136 KG	
432-16	16 406	16 406	5.00 127.00					10.06 255.5	11.06 280.9	11.81 300.0	12.56 319.0				12.00 304.8	14.25 362.0	15.00 381.0	300 LBS 136 KG	
432-18	18 457	18 457	5.00 127.00					9.56 242.8	12.06 306.3	13.06 331.7	13.81 350.8	14.56 369.8			14.00 355.6	16.25 412.8	17.00 431.8	300 LBS 136 KG	
432-20	20 508	20 508	5.00 127.00	7.50 190.50				11.56 293.6	14.06 357.1	15.06 382.5	15.81 401.6	16.56 420.6			16.00 406.4	18.25 463.6	19.00 482.6	281 LBS 129 KG	
432-22	22 559	22 559	5.00 127.00	7.50 190.50				13.56 344.4	16.06 407.9	17.06 433.3	17.81 452.4	18.56 471.4			18.00 457.2	20.25 514.4	21.00 533.4	265 LBS 121 KG	
432-24	24 610	24 610	5.00 127.00	7.50 190.50				15.56 395.2	18.06 458.7	19.06 484.1	19.81 503.2	20.56 522.2			20.00 508.0	22.25 565.2	23.00 584.2	256 LBS 116 KG	
432-26	26 660	26 660	5.00 127.00	7.50 190.50				17.56 446	20.06 509.5	21.06 534.9	21.81 554.0	22.56 573.0			22.00 558.8	24.25 616.0	25.00 635.0	251 LBS 114 KG	
432-28	28 711	28 711	5.00 127.00	7.50 190.50				19.56 496.8	22.06 560.3	23.06 585.7	23.81 604.8	24.56 623.8			24.00 609.6	26.25 666.8	27.00 685.8	246 LBS 112 KG	
432-30	30 762	30 762	5.00 127.00	7.50 190.50	14.50 368.30			21.56 547.6	24.06 611.1	25.06 636.5	25.81 655.6	26.56 674.6	9.250 235.00	19.750 501.70	26.00 660.4	28.25 717.6	29.00 736.6	240 LBS 109 KG	
432-32	32 813	32 813	5.00 127.00	7.50 190.50	14.50 368.30			23.56 598.4	26.06 661.9	27.06 687.3	27.81 706.4	28.56 725.4	9.250 235.00	15.500 393.70	21.750 552.50	28.00 711.2	30.25 768.4	31.00 787.4	235 LBS 107 KG
432-34	34 864	34 864	5.00 127.00	7.50 190.50	14.50 368.30	18.50 469.90		25.56 649.2	28.06 712.7	29.06 738.1	29.81 757.2	30.56 776.2	9.250 235.00	16.500 419.10	23.750 603.30	30.00 762.0	32.25 819.2	33.00 838.2	230 LBS 105 KG
432-36	36 914	36 914	5.00 127.00	7.50 190.50	14.50 368.30	20.50 520.70		27.56 700	30.06 763.5	31.06 788.9	31.81 808.0	32.56 827.0	9.250 235.00	17.500 444.50	25.750 654.10	32.00 812.8	34.25 870.0	35.00 889.0	224 LBS 102 KG

Steel Slide Quick Selection Guide • Lit-By-Fax™ www.thomasregister.com/jonathanmfg

DESIGN FEATURES	SERIES NUMBER													PART NUMBER MODIFIER		
	375QD	320	371	311	110QD	110QDP	340	310	330	370	475	432	433			
BAYONET POCKET															D	DISCONNECT POCKETS
LIFT-OFF DISCONNECT															DO	DETENT OPEN
CHASSIS PIVOT															L	LOCK OPEN
EIA MOUNTING BRACKETS															LC	LOCK OPEN & LOCK CLOSED
FRONT DISCONNECT															LD	LOCK OPEN & DISCONNECT POCKETS
LOCK CLOSED															LM	LINEAR MOTION
LOCK OPEN															S	SIDE SPACE ADJUSTING
REPLACEMENT SECTIONS															TW	TWO WAY TRAVEL
UNDERMOUNT															QD	QUICK DISCONNECT
															QDP	QUICK DISCONNECT & PIVOT
															QRS	QUICK DISCONNECT & STOP OPEN
															U	UTILITY

Above Specs are based on 18" Slides

LANSING

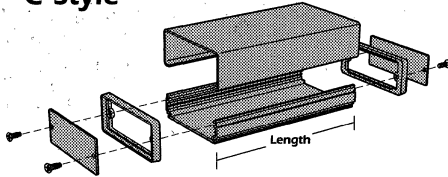
Small and Rack-mounted

1. Determine the Family

MicroPak™ enclosures for small, free-standing electronic instruments. Simplicity and reasonable price are key features of the MicroPak family which utilizes a one or two piece tube with sealed ends chosen from a selection of end configurations. Each style provides a convenient way to mount printed circuit boards and interface other electronics. A choice of quality finishes makes it suitable for the finest of products.

2. Choose the Style

C Style

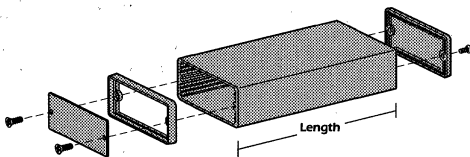


Extruded base with formed, slide-on cover. Shown with panel/bezel end configuration (both ends).

Standard (stocked) lengths - inch (metric)

N-Width	Q-Width	T-Width	W-Width
2.75 in (69.9 mm)	4.17 in (105.9 mm)	5.57 in (141.5 mm)	7.29 in (185.2 mm)
5.00 (127.0) 6.00 (152.4)	5.00 (127.0) 6.00 (152.4) *6.30 (160.0)	5.00 (127.0) 6.00 (152.4) 7.00 (177.8) 8.50 (215.9)	9.00 (228.6)
			*Accepts 100 mm x 160 mm Eurocards.

D Style

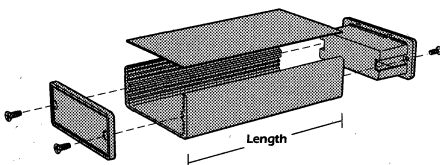


One-piece, seamless extruded tube. Shown with panel/bezel and solid end cap end configurations.

Standard (stocked) lengths - inch (metric)

N-Width	Q-Width	T-Width	W-Width
2.75 in (69.9 mm)	4.19 in (106.4 mm)	5.55 in (141.0 mm)	7.29 in (185.2 mm)
3.00 (76.2) 4.00 (101.6) 5.00 (127.0) 6.00 (152.4)	5.00 (127.0) 6.00 (152.4) *6.30 (160.0)	6.00 (152.4) 7.00 (177.8)	
			*Accepts 100 mm x 160 mm Eurocards.

E Style



Extruded base with slide-in flat panel. Shown with solid end cap and battery compartment end configurations.

Standard (stocked) lengths - inch (metric)

N-Width	Q-Width	T-Width	W-Width
2.75 in (69.9 mm)	4.19 in (106.4 mm)	5.55 in (141.0 mm)	7.29 in (185.2 mm)
5.00 (127.0) 6.00 (152.4)	5.00 (127.0) 6.00 (152.4) *6.30 (160.0)	6.00 (152.4) 7.00 (177.8)	
			*Accepts 100 mm x 160 mm Eurocards.

3. Finish the Job with Level 1 Customization...

Special Sizes

If our standard sizes don't work for you, special sizes are available.

The length (front to back) dimension of any **MicroPak** enclosure is easily varied.

The width (left to right) and depth (front to back) of any **GrayBox** enclosure are also easy to vary.

Machining/Inserts

Interfacing your electronics with your choice of enclosure requires the addition of mechanical features. Whether those features require **machining** (drilling, milling, punching, etc.) or the installation of **self-clinching inserts**, Lansing is well equipped and organized to respond to your needs in an effective and timely fashion and at a reasonable price.

Graphics/Special Finishes

Whether your final details call for **silkscreening** or **overlays**, Lansing is prepared to assist you with your graphic requirements - from the creation of artwork through execution. And in applications where it may be beneficial, **special finishes, colors and materials** (both conductive and non-conductive) can be considered.

Get Literature

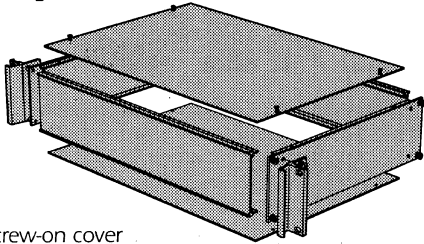
For in depth product information, consult Lansing's literature. This literature package contains overall product descriptions, the range of choices and options, technical drawings with English and metric measurements, pricing, and a no-risk offer.

Electronic Instrument Enclosures

GrayBox™ enclosures for rack-mounted or free-standing electronic instruments.

The GrayBox family offers strength and functionality at a reasonable price. Its rigid structural frame utilizes extruded aluminum modified I-beams, enclosed with sheet metal covers top and bottom. Part count is kept to a minimum, ensuring simplicity. Styling and finish are consistent with the concept of industrial neat design.

B Style

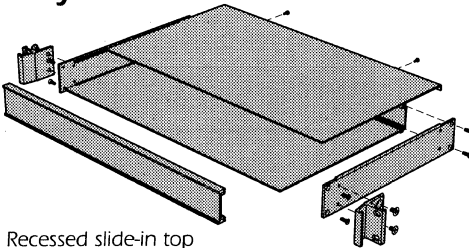


Screw-on cover design for rack-mounted or free-standing applications. Optional rack mounting ears.

B Style Available Sizes — Inch and mm Dimensions

HEIGHT	1U = 1.72" (43.7 mm)			2U = 3.47" (88.1 mm)			3U = 5.72" (145.3 mm)		
	FR	HR	QR	FR	HR	QR	FR	HR	QR
BODY WIDTH inches (mm)	16.73 (424.9)	8.37 (212.6)	4.18 (106.2)	16.73 (424.9)	8.37 (212.6)	4.18 (106.2)	16.73 (424.9)	8.37 (212.6)	4.18 (106.2)
DEPTH	6 (152.4)	*	*	*	*	*	*	*	*
	8 (203.2)	*	*	*	*	*	*	*	*
	10 (254.0)	*	*	*	*	*	*	*	*
	12 (304.8)	*	*	*	*	*	*	*	*
	14 (355.6)	*	*	*	*	*	*	*	*
	16 (406.4)	*	*	*	*	*	*	*	*
	18 (457.2)	*	*	*	*	*	*	*	*
	20 (508.0)	*	*	*	*	*	*	*	*
	22 (558.8)	*	*	*	*	*	*	*	*

P Style

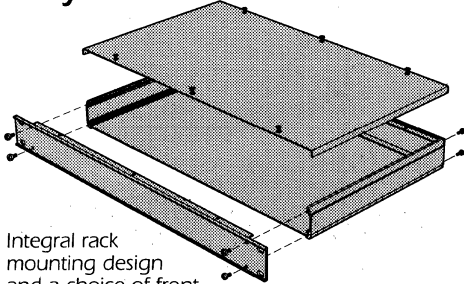


Recessed slide-in top cover design for rack-mounted and free-standing applications. Optional rack mounting ears.

P Style Available Sizes — Inch and mm Dimensions

HEIGHT	1U = 1.72" (43.7 mm)			2U = 3.47" (88.1 mm)			3U = 5.72" (145.3 mm)		
	FR	HR	QR	FR	HR	QR	FR	HR	QR
BODY WIDTH inches (mm)	16.73 (424.9)	8.37 (212.6)	4.18 (106.2)	16.73 (424.9)	8.37 (212.6)	4.18 (106.2)	16.73 (424.9)	8.37 (212.6)	4.18 (106.2)
DEPTH	6 (152.4)	*	*	*	*	*	*	*	*
	8 (203.2)	*	*	*	*	*	*	*	*
	10 (254.0)	*	*	*	*	*	*	*	*
	12 (304.8)	*	*	*	*	*	*	*	*
	14 (355.6)	*	*	*	*	*	*	*	*
	16 (406.4)	*	*	*	*	*	*	*	*
	18 (457.2)	*	*	*	*	*	*	*	*
	20 (508.0)	*	*	*	*	*	*	*	*
	22 (558.8)	*	*	*	*	*	*	*	*

A Style



Integral rack mounting design and a choice of front panel details. Full rack width only.

A Style Available Sizes — Inch and mm Dimensions

HEIGHT	1U = 1.72" (43.7 mm)			2U = 3.47" (88.1 mm)			3U = 5.72" (145.3 mm)		
	FR	HR	QR	FR	HR	QR	FR	HR	QR
BODY WIDTH inches (mm)	17.67 (448.8)			17.67 (448.8)			17.67 (448.8)		
DEPTH	6 (152.4)	*	*	*	*	*	*	*	*
	8 (203.2)	*	*	*	*	*	*	*	*
	10 (254.0)	*	*	*	*	*	*	*	*
	12 (304.8)	*	*	*	*	*	*	*	*
	14 (355.6)	*	*	*	*	*	*	*	*
	16 (406.4)	*	*	*	*	*	*	*	*
	18 (457.2)	*	*	*	*	*	*	*	*
	20 (508.0)	*	*	*	*	*	*	*	*
	22 (558.8)	*	*	*	*	*	*	*	*

or Consider Level 2 Customization

Special Extrusions/Ends

Lansing enclosure designs are flexible - providing the opportunity to optimize individual components for your specific application. Imagine the advantages that **special extrusions** (MicroPak or GrayBox) or **special end caps and bezels** (MicroPak) can provide - simplified assembly, interface components, unique styling, integral graphics, etc. Contact Lansing to discuss your needs.

Even more ...

Lansing enclosure designs have originated from real customer needs. We have an extensive experience base that we will share with you to find designs which address your requirements. We look forward to a candid discussion of your needs and the appropriateness of working with Lansing to meet them.

To receive your copy of Lansing's literature by priority mail, call us at **800-847-3535**, or visit our website at www.lansing-enclosures.com



About Lansing Instrument Corporation

Lansing designs, manufactures, and sells specialized enclosures for electronic instruments, working with both large and small firms in an international market. We consult with our customers directly, without an external sales force. This direct contact, and our background in both electronic and mechanical engineering, gives us a hands-on understanding of your requirements. It allows us to provide strong technical support in selecting and customizing the enclosures that are right for your specific needs. You will always deal with the people who actually make your enclosures. That means you receive high-quality products and support in a timely, cost-efficient manner.

We treat our customers with courtesy and respect, and we protect their confidentiality. We keep our promises.

We take exceptional pride in our designs and craftsmanship, even though our name is never visible on our enclosures. Once your product is secure within ours, the result will reflect a unity of design and function that is uniquely yours.

How to Contact Lansing



Call us at:
800-847-3535
Anywhere in the U.S. or Canada
607-272-3265



Fax us at:
607-277-1953



Visit our website at:
www.lansing-enclosures.com

E-mail us at:
info@lansing-enclosures.com



Write us at:
Lansing Instrument Corp.
PO Box 730
Ithaca, NY 14851-0730

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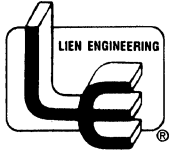


<http://eemonline.com>



Hearst Business Communications, Inc./UTP Division

645 Stewart Avenue, Garden City, NY 11530 • Tel: 516.227.1300 • FAX: 516.227.1901



LIEN ENGINEERING, INC.

SCSI Disk Tape & Optical Enclosures

SCSI Drive Enclosures

Tower Series

Lien Engineering has designed these quality subsystems to accommodate most current 3.5" and 5.25" half-height drive mechanisms available. Whether your market is PC, Sun, or Macintosh, an enclosure from Lien Engineering is sure to fit your needs.

Specifications

Power Supply: 80W to 250W Power supply depending upon model and configuration. Dual hot-swappable 300W power supplies optional on some models

Input Voltage: 90-260 VAC 47-63HZ Universal Input, automatic switching

Reliability: MTBF 50,000 hours at full load @ 25°C

Temperature: Operational 0°C to 55°C

Data Connectors: SCSI II, Fast Wide SCSI, Ultra SCSI, Ultra Wide SCSI 3, Fibre Channel

Dimensions: 6.75"H x 7.5"W x 12"D to 19"H x 7.5"W x 12"D

Color: Platinum, other colors available by special order.

EMI: Meets FCC B and VDE requirements.

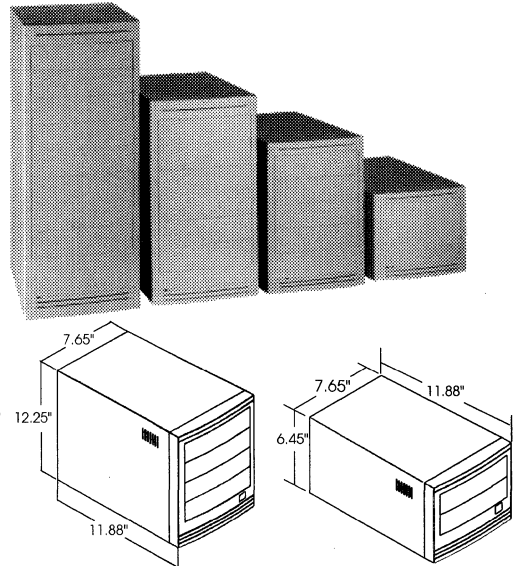
Air Flow: 5CFM. Low Noise (27.5 DB) ball bearing fan.

(Optional 6.5 ball bearing fan available) Swappable fan optional on some models.

Weight: 9.5 lb. to 18.25 lb. depending upon model and configuration.

Capacity: 2, 4, 6 or 8 half height drive bays

CFM All enclosures include: Power supply, ball bearing fan, AC switch, IEC AC dual LEDs for power and drive activity, multiple SCSI switches, multiple SCSI connectors, high impact ABS bezel with a metal case and chassis.



SCSI Disk, Tape & Optical Enclosures

SL Series- DK3.5SL-1A (Hard Disk)/
DK3.5SL-2A (Removable Media)
Slim Line Portable DK3.5SL-2P (Paralle Interface)

Features:

- SCSI, QIC and Parallel Interfaces Available
- Attractive Slimline Design For Portable Use
- Highest Quality Universal Input Power Supply
- Accommodates All Low Profile 3.5" Disk, Tape & Optical and Removable Media Drives
- Meets All Safety and FCC & VDE EMI Requirements
- Sturdy Injected Molded Case of High Impact Plastic
- Two SCSI Ports or Parallel Interface
- SCSI IS Select Switch
- Custom Designs Available in OEM Quantities

Specifications

Power Supply: Model #SP20W1p-193 5V @3A, 4A(PK). Max. 20W

Input Voltage: 90-260 VAC 47-63HZ Universal Input (automatic)

Reliability: MTBF 50,000 hours at full load @ 25°C

Temperature: Operational 0°C to 55°C

Output Connectors: SCSI, SCSI II, QIC, or Parallel

Weight: 1.75 lbs.

Color: Apple Platinum or IBM Gray (special order)

EMI: Meets FCC B and VDE

Air Flow: Convection cooled (Optional fan)

All enclosures include: Power supply, AC switch, SCSI ID switch, Dual SCSI connectors, IEC AC receptacle, Dual LEDs for power and activity, Rugged high impact ABS case with metal chassis

SCSI Disk and Tape Enclosures

LP Series DK5HLP-3A (Disk)/
DK5HLP-4A (Removable Media)

Features:

- SCSI and QIC Interfaces Available
- Attractive Zero "Footprint"
- Highest Quality Universal Input Power Supply
- Accommodates All 1/2 Height 5 1/4" Drives
- Meets All Safety and FCC & VDE EMI Requirements
- Sturdy Injected Molded Case of High Impact Plastic
- Two SCSI Ports
- SCSI IS Select Switch
- Custom Designs Available in OEM Quantities

Specifications

Power Supply: Model #SP35W2P-141 5V @2A, 12V @2A 4A(PK). Maximum 35W

Input Voltage: 90-260 VAC 47-63HZ Universal Input (automatic)

Reliability: MTBF 50,000 hours at full load @ 25°C

Temperature: Operational 0°C to 55°C

Output Connectors: SCSI, SCSI II, QIC, or Parallel

Weight: 4 lbs.

Color: Apple Platinum or IBM Gray (special order)

EMI: Meets FCC B and VDE

Air Flow: 13CFM. Low Noise (27.5 DB)

All enclosures include: Power supply, Fan, AC switch, SCSI ID switch, Dual SCSI connectors, IEC AC receptacle, Dual LEDs for power and activity, Rugged high impact ABS case with metal chassis

SCSI Disk, Tape & Optical Enclosures

LPB Series DK3.5LPB-3A (Disk)
DK3.5LPB-4A (DAT & Optical)

Features:

- SCSI and QIC Interfaces Available
- Attractive "Low Profile Footprint"
- Highest Quality Universal Input Power Supply
- Accommodates All Low Profile 3.5" Disk, DAT & Optical Drives
- Meets All Safety and FCC & VDE EMI Requirements
- Sturdy Injected Molded Case of High Impact Plastic
- Two SCSI Ports
- SCSI IS Select Switch
- Custom Designs Available in OEM Quantities

Specifications

Power Supply: Model #SP35W2P-141

5V 0-2.0, 12V @ 0-2.0/4 PK

Input Voltage: 90-260 VAC 47-63HZ Universal Input (automatic)

Reliability: MTBF 50,000 hours at full load @ 25°C

Temperature: Operational 0°C to 55°C

Output Connectors: SCSI, SCSI II, QIC, or Parallel

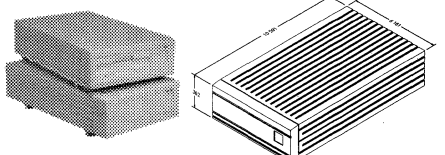
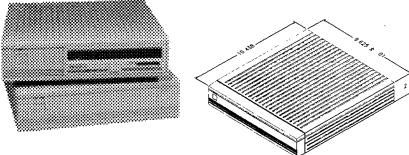
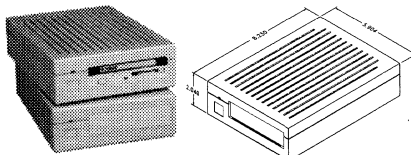
Weight: 3.25 lbs.

Color: Apple Platinum or IBM Gray (special order)

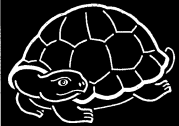
EMI: Meets FCC B and VDE

Air Flow: 5CFM. Low Noise (27.5 DB) 6.5 CFM (Optional)

All enclosures include: Power supply, Fan, AC switch, SCSI ID switch, Dual SCSI connectors, IEC AC receptacle, Dual LEDs for power and activity, Rugged high impact ABS case with metal chassis



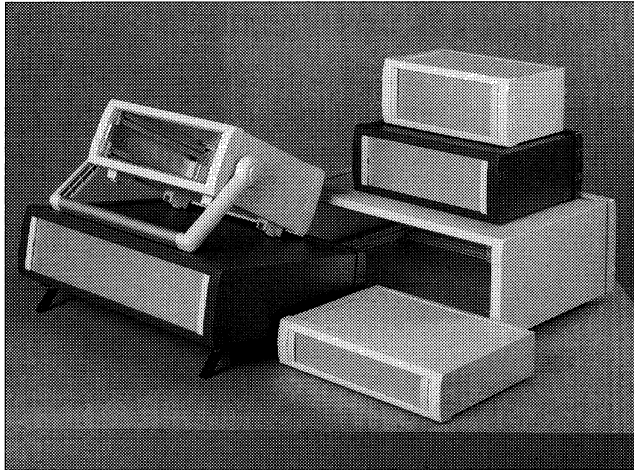
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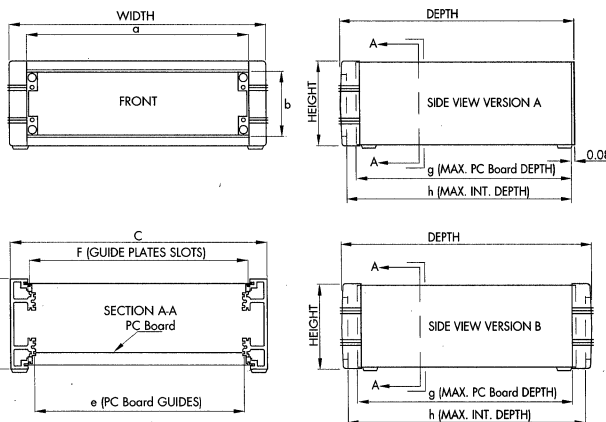
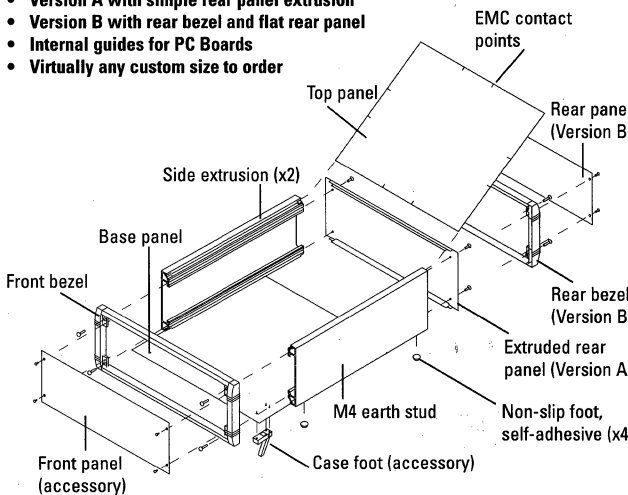
For Aluminum Enclosures
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METTEC ALUMINUM CASES

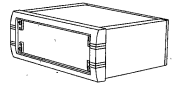


- Stylish and robust aluminum instrument cases
- Excellent shielding (i.e. 65dB @60Mhz)
- Large range painted in anthracite gray and off-white
- Version A with simple rear panel extrusion
- Version B with rear bezel and flat rear panel
- Internal guides for PC Boards
- Virtually any custom size to order



Version A Mettec Cases

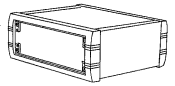
Supplied assembled including: front bezel, 2 side extrusions, rear extrusion, top, base
4 rubber feet and fixings



Part #	Outside Dims.			Inside Dims.							
	H.	W.	D.	a	b	c	d	e	f	g	h
anthracite off-white											
M5716004 M5716007	1.97	6.30	5.12	5.12	1.34	6.22	1.89	4.57	-	4.45	4.76
M5716104 M5716107	3.35	6.30	5.12	5.12	2.60	6.22	3.27	4.57	4.76	4.45	4.80
M5720004 M5720007	1.97	7.87	5.12	6.69	1.34	7.80	1.89	6.14	-	4.45	4.76
M5720104 M5720107	3.35	7.87	5.12	6.69	2.60	7.80	3.27	6.14	6.34	4.45	4.76
M5723004 M5723007	1.97	9.06	7.09	7.87	1.34	8.98	1.89	7.32	-	6.42	6.80
M5725004 M5725007	1.97	9.84	9.84	8.66	1.34	9.76	1.89	8.11	-	9.17	9.49
M5735004 M5735007	1.97	13.78	9.84	12.60	1.34	13.70	1.89	12.05	-	9.17	9.49

Version B Mettec Cases

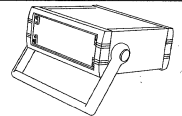
Supplied assembled including: front bezel, 2 side extrusions, rear bezel, rear panel, top, base
4 rubber feet and fixings



Part #	Outside Dims.			Inside Dims.							
	H.	W.	D.	a	b	c	d	e	f	g	h
anthracite off-white											
M5723114 M5723117	3.35	9.06	7.60	7.87	2.60	8.98	3.27	7.32	7.52	6.42	7.13
M5723214 M5723217	4.72	9.06	7.60	7.87	3.98	8.98	4.65	7.32	7.52	6.42	7.13
M5725114 M5725117	3.35	9.84	10.35	8.66	2.60	9.76	3.27	8.11	8.31	9.17	9.88
M5725214 M5725217	4.72	9.84	10.35	8.66	3.98	9.76	4.65	8.11	8.31	9.17	9.88
M5735114 M5735117	3.35	13.78	10.35	12.60	2.60	13.70	3.27	12.05	12.24	9.17	9.88
M5735214 M5735217	4.72	13.78	10.35	12.60	3.98	13.70	4.65	12.05	12.24	9.17	9.88

Mettec Cases with bail handle

Supplied assembled including: front bezel, 2 side extrusions, rear bezel, rear panel, top, base
bail handle, 4 rubber feet and fixings



Part #	Outside Dims.			Inside Dims.							
	H.	W.	D.	a	b	c	d	e	f	g	h
anthracite off-white											
M5723134 M5723137	3.35	9.06	7.60	7.87	2.60	8.98	3.27	7.32	7.52	6.42	7.13
M5725234 M5725237	4.72	9.84	10.35	8.66	3.98	9.76	4.65	8.11	8.31	9.17	9.88

Mettec Aluminum Front Panels

Kit including 2mm anodized panel and 2 ABS trims (fixings supplied with the cases)

Part #	For case..		Panel size		Usable panel area with trims fitted	
	H.	W.	height.	width.	height	width
M5700601	1.97	6.30	1.32	5.10	1.32	4.31
M5700604	1.97	7.87	1.32	6.67	1.32	5.89
M5700607	1.97	9.06	1.32	7.85	1.32	7.07
M5700612	1.97	9.84	1.32	8.64	1.32	7.85
M5700617	1.97	13.78	1.32	12.58	1.32	11.79
M5700602	3.35	6.30	2.56	5.10	2.56	4.31
M5700605	3.35	7.87	2.56	6.67	2.56	5.89
M5700608	3.35	9.06	2.56	7.85	2.56	7.07
M5700613	3.35	9.84	2.56	8.64	2.56	7.85
M5700618	3.35	13.78	2.56	12.58	2.56	11.79
M5700610	4.72	9.06	3.94	7.85	3.94	7.07
M5700615	4.72	9.84	3.94	8.64	3.94	7.85
M5700620	4.72	13.78	3.94	12.58	3.94	11.79

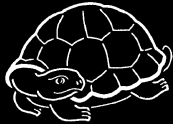
Mettec Case Feet Kits

These ABS Feet fit directly to ready punched holes in the base panels

Part #	For case color..	Description
A9257209	anthracite	Four feet with two tilt legs for canting the unit
A9257207	off-white	Four feet with two tilt legs for canting the unit

OKW Enclosures, Inc. Abele Business Park #203. 300 Old Pond Road, Bridgeville, PA 15017
Tel: (412) 220 9244 Fax: (412) 220 9247 Email: okwusa@aol.com Web: www.okwusa.by.net

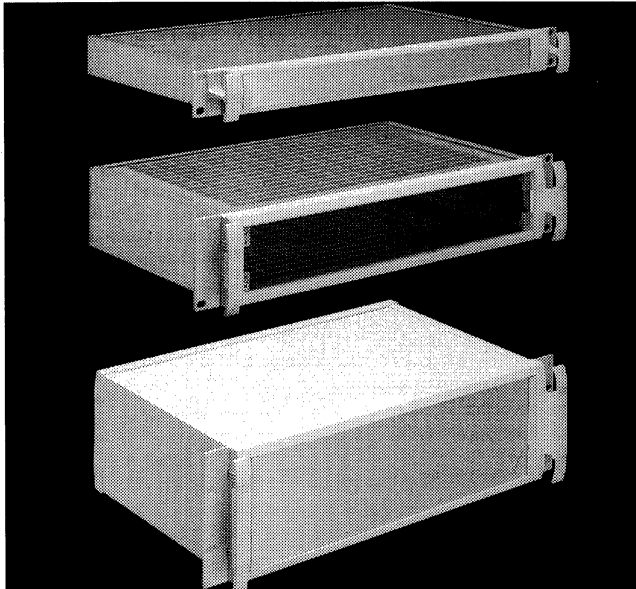




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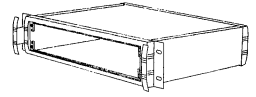


METTEC 19" RACK CASES



Version B Mettec 19" Rack cases

Supplied assembled including: front bezel, 2 side extrusions, top, base, rear bezel and flat rear panel. Complete case painted off-white or anthracite gray.

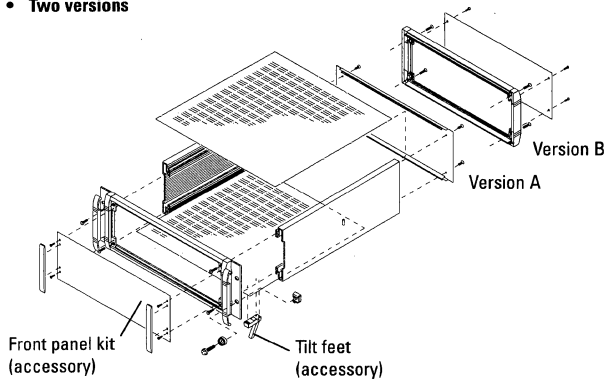


Case Part #		Type	Outside Dimensions		
anthracite	off-white		H.	W.	D.
M5910024	M5910027	1U	1.73	19	11.02
M5910034	M5910037	1U	1.73	19	14.96
M5920024	M5920027	2U	3.46	19	11.02
M5920034	M5920037	2U	3.46	19	14.96
M5930024	M5930027	3U	5.22	19	11.02
M5930034	M5930037	3U	5.22	19	14.96

Accessories for Mettec 19" Rack cases

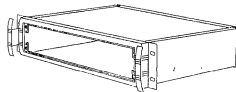
Part#	Accessory description
M5900010	1U Front panel kit
M5900020	2U Front panel kit
M5900030	3U Front panel kit
M5900201	Chassis Tray for 6.59 deep cases
M5900202	Chassis Tray for 10.53 & 11.02 deep cases
M5900203	Chassis Tray for 14.47 & 14.96 deep cases
M5900204	Chassis Tray for 18.40 deep cases
A9257209	Tilt feet kit for anthracite cases (set for one case)
A9257207	Tilt feet kit for off-white cases (set for one case)

- Stylish ergonomic and robust
- 1U, 2U and 3U heights
- With or without ventilation
- Unique "Comfort-Handles"
- Two versions
- Guide grooves for PC Boards
- Front panels can be removed in-situ
- Custom versions to order

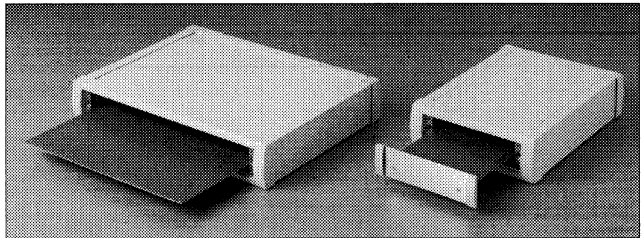


Version A Mettec 19" Rack cases

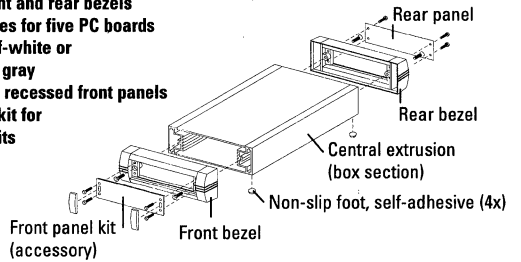
Supplied assembled including: front bezel, 2 side extrusions, top, base and rear panel extrusion. Front bezel painted gray and case section finished Allocrom 1200.



METTEC EUROCARD CASES



- For DIN 41612 Eurocards
- Robust design in aluminum
- Four sizes for single and double Eurocards
- Stylish front and rear bezels
- Guide ridges for five PC boards
- Painted off-white or anthracite gray
- Accessory recessed front panels
- Mounting kit for plug-in units



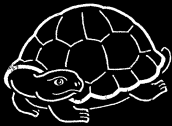
Ordering: 100mm Version - supplied assembled including: front bezel, central case extrusion, rear bezel and flat rear panel. 233mm version - central extrusion replaced by top, base and 2 side extrusions. For mounting a Eurocard to the front panel (plug-in unit) order Part# M5700017

Case Part #		Type	Outside Dimensions		
Un-ventilated	Ventilated		H.	W.	D.
M5910015	-	1U	1.73	19	6.59
M5910025	M5910205	1U	1.73	19	10.53
M5910035	M5910305	1U	1.73	19	14.47
M5920015	-	2U	3.46	19	6.59
M5920025	M5920205	2U	3.46	19	10.53
M5920035	M5920305	2U	3.46	19	14.47
M5920045	M5920405	2U	3.46	19	18.41
M5930015	-	3U	5.22	19	6.59
M5930025	M5930205	3U	5.22	19	10.53
M5930035	M5930305	3U	5.22	19	14.47
M5930045	M5930405	3U	5.22	19	18.41

anthracite	Part # off-white	front panel	Eurocard size(mm)	Outside Dimensions		
				H.	W.	D.
M5714054	M5714057	M5700622	100x160	1.97	6.00	8.66
M5715054	M5715057	M5700622	100x220	1.97	6.00	11.02
M5727054	M5727057	M5700623	233x160	1.97	11.26	8.66
M5728054	M5728057	M5700623	233x220	1.97	11.26	11.02

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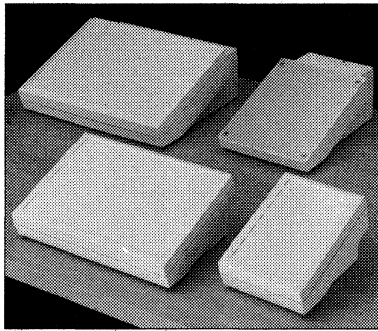




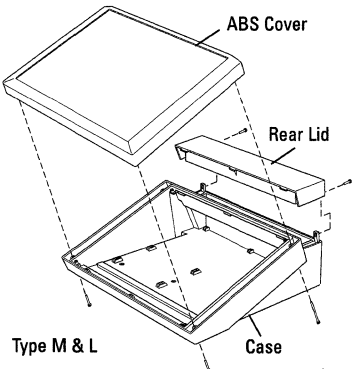
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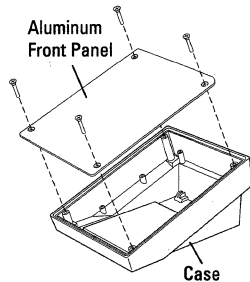
DATEC TERMINAL CASES



- Stylish sloping table-top cases
- Aluminum front panels
- ABS covers for extra height
- Four sizes
- Sealing kit supplied
- M & L with removable rear lid
- Off-white ABS plastic
- Eurocard mounting



Type M & L

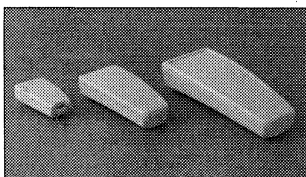


Type S & SL

Ordering: Case supplied as a base molding, 4 PC Board screws, 4 rubber feet and a sealing gasket. Rear Lid for types M & L and a front panel or an ABS cover must be ordered separately. (Dimensions H=Rear, H1=Front)

Case	Rear Lid	Part #		Type	Outside Dimensions (Case)			
		Alu Front Pnl	ABS Cover		H.	H1.	W.	D.
B4013117	-	B4113106	B4013617	S	3.37	0.94	5.12	7.09
B4026117	-	B4126106	B4026617	SL	3.37	0.94	10.39	7.09
B4016117	B4016417	B4116106	B4016617	M	3.98	0.98	6.61	10.70
B4030117	B4030417	B4130106	B4030617	L	3.98	0.98	11.89	10.70

SMART CASES



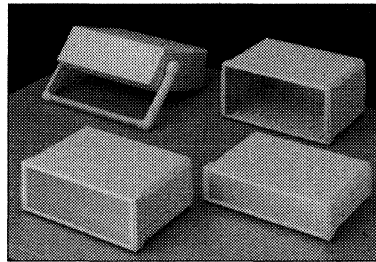
- Advanced ergonomic shape
- Three sizes
- Off-white, black or infra-red plastic
- Key ring holder on XS
- Top recess for keypads
- PC Board mounting posts
- Battery compartments: L - 2 x AA or 9V, M - 2 x AAA

Ordering: Cases supplied with top, base and fixings. Type L also has a clip-on battery compartment lid. Order battery clips and key ring separately.

Off-white	Case Part #		Type	Keypad recess	Outside Dimensions		
	Black	Infra-red			H.	W.	L.
A9067107	A9067109	A9067209	L	Yes	1.26	2.44	5.51
A9066117	A9066119	A9066219	M	Yes	0.94	1.89	3.78
A9066107	A9066109	A9066209	M	No	0.94	1.89	3.78
A9064107	A9064109	A9064209	S	No	0.79	1.38	2.28

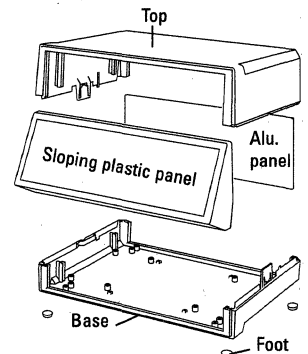
Part #	For type	Accessory description
A9190002	L	Battery clips for 2 x AA cells
A9167001	L	Sealing kit
A9166001	M	Battery clips for 2 x AAA cells
A9164001	XS	Key ring

MOTEC INSTRUMENT CASES



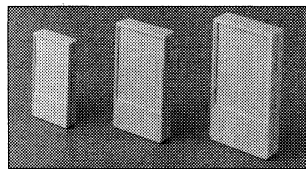
- Modern table-top design
- Strong snap-together assembly
- Three types - nine sizes
- Off-white high-impact polystyrene
- Type M takes a single Eurocard
- Aluminum front/rear panels
- Plastic sloping front panels
- Two sizes with bail handle

Ordering: Each case is supplied with a top, base and 4 rubber feet. aluminum panels and sloping panels must be ordered separately. The aluminum panels can be fitted at both the front and rear. The sloping panels fit only at the front of the middle size versions of each Motec case type.



Case	Part #		Type	Bail handle	Outside Dimensions		
	Alu. panel	Sloping Pnl.			W.	D.	H.
B3023117	B3123100	-	L	No	9.25	6.50	2.36
B3023127	B3123110	B3123167	L	No	9.25	6.50	3.35
B3023147	B3123110	B3123167	L	Yes	9.25	6.50	3.35
B3023137	B3123120	-	L	No	9.25	6.50	4.33
B3020117	B3120100	-	M	No	8.07	5.51	1.97
B3020127	B3120110	B3120167	M	No	8.07	5.51	2.95
B3020147	B3120110	B3120167	M	Yes	8.07	5.51	2.95
B3020137	B3120120	-	M	No	8.07	5.51	3.94
B3015117	B3115100	-	S	No	6.10	4.13	1.57
B3015127	B3115110	B3115167	S	No	6.10	4.13	2.56
B3015137	B3115120	-	S	No	6.10	4.13	3.54

DATEC POCKET BOXES



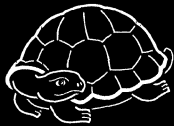
- Robust and stylish design
- Three sizes
- Off-white, black or infra-red plastic
- Strong pocket/belt clip
- Top recess for keypads
- PC Board mounting posts
- Battery compartments: L - 2 x AA or 9V, M - 2 x AAA, S - 2 x N

Ordering: Cases supplied with top, base and fixings. Type L and M also have a screw-on battery compartment lid. Order battery clips and pocket/belt clips separately.

Off-white	Case Part #		Type	Outside Dimensions			Keypad recess
	Black	Infra-red		H.	W.	L.	
A9072107	A9072109	A9072209	L	0.87	2.56	4.72	2.17x3.15x0.08
A9071107	A9071109	A9071209	M	0.73	2.28	4.13	1.97x2.83x0.06
A9070107	A9070109	A9070209	S	0.63	1.81	3.35	1.57x2.28x0.05

Part #	For type	Accessory description
A9172107	L	Pocket/belt clip off-white
A9172109	L	Pocket/belt clip black
A9190002	All	Battery clips for 2 x AA, AAA & N cells
A9160003	L	9V battery lead

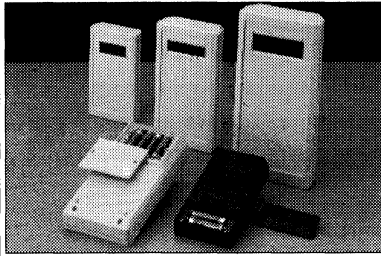
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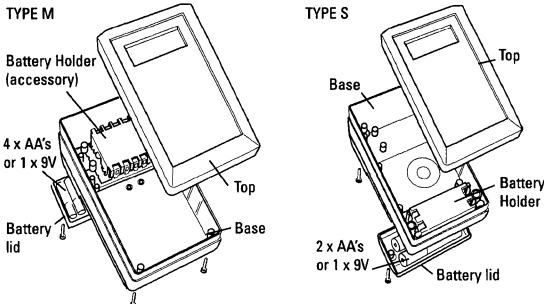
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DATEC MOBIL HAND-HELD CASES



- Stylish hand held cases
- Robust assembly
- Two sizes S & M
- LCD window areas
- Off-white & black ABS
- Battery compartments
- Top recess for keypads
- PC Board mounting posts

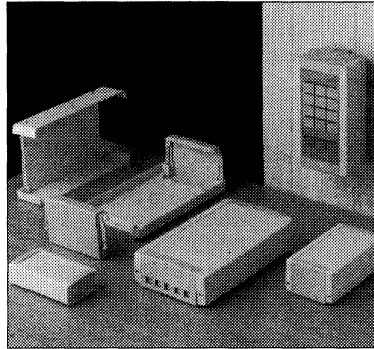


Ordering: Each case is supplied with a top, base, battery lid, and fixings. Type S has a molded-in battery holder. For type M the holder must be ordered separately. The contacts for the different battery sizes must also be ordered separately.

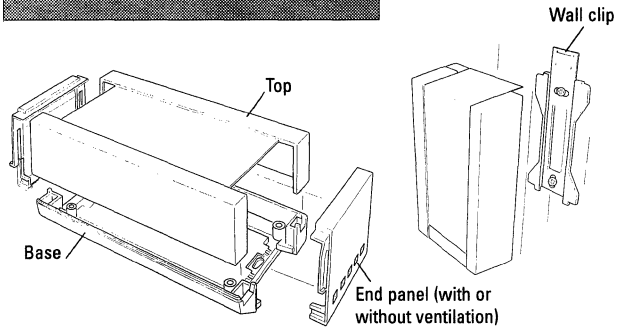
Case Part #	Type	Outside Dimensions			LCD window	Top recess size
		L	W	D		
A9073107 A9073109	S	5.98	3.27	1.32	None	5.10x2.68x0.07
A9073207 A9073209	S	5.98	3.27	1.32	1.80x0.70	5.10x2.68x0.07
A9074107 A9074109	M	7.68	3.98	1.73	None	6.61x3.19x0.07
A9074207 A9074209	M	7.68	3.98	1.73	2.36x0.59	6.61x3.19x0.07

Part #	Type	Accessory description
A9194001	S	Set of contacts for 2 1.5V AA's
A9160003	S	Contact lead for 1 9V battery
A9174004 A9161001	M	Screw in battery holder and contacts for 4 1.5V AA's
A9174003 A9160003	M	Screw in battery holder and lead for 1 9V battery

TOPTec CASES



- Universal table-top or wall cases
- Modern clip-together design
- Removable end panels
- Seven sizes in two tone ABS
- PC board mounting posts
- Recessed top for keypads
- Wall mounting clip
- Version I with plain end panels
- Version II with ventilated end panels



Ordering: Each case is supplied with a top, base and 2 end panels. Order Wall clips, rubber feet (Part # A9207158) and PC Board screws (Part # A9199008) separately.

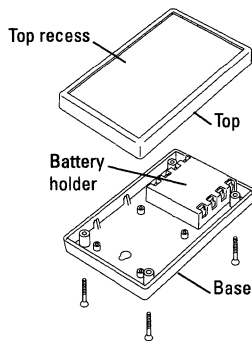
Version I	Part #	Version II	Wall Clip	Type	Outside Dimensions		
					H.	W.	L.
	B1040365	B1040465	B1340028	102	1.18	2.13	4.02
	B1055365	B1055465	B1350028	123F	1.18	2.68	4.84
	B1050365	B1050465	B1350028	123H	1.77	2.68	4.84
	B1065365	B1065465	B1360028	154F	1.50	3.31	6.06
	B1060365	B1060465	B1360028	154H	2.20	3.31	6.06
	B1075365	B1075465	B1370028	194F	1.81	4.53	7.64
	B1070365	B1070465	B1370028	194H	2.68	4.53	7.64

SHELL TYPE CASES

- Attractive and robust
- Recessed top for keypads
- Seven versions
- Battery compartments
- Off-white polystyrene
- PC board mounting posts

Ordering: Each case is supplied with a top, base and 4 fixings. For 9V batteries order lead part # A9160003 separately.

Cases which accept 1.5V AA's have the contacts ready fitted to the battery holder.

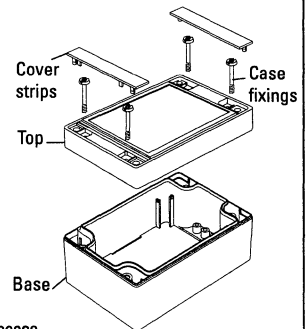


SEALED ROBUST BOXES

- Strong universal cases
- Sealed from water and dust
- Two materials molded in gray
- Large range of sizes
- PC Board mounting posts
- Recessed top for membranes and labels
- Easy wall mounting
- Unique cover strips hide case fixings

Ordering: Each case is supplied with a top, base, four cover strips (2 for top, 2 for base) and four case fixings.

For wall mounting brackets order Part # C2299028



Part #	Outside Dimensions			Top recess size	Battery compartment type
	L	W	H.		
A9406351	4.49	2.83	1.32	4.02x2.36x0.04	None
A9406352	4.49	2.83	1.32	4.02x2.36x0.04	1 9V battery
A9408351	6.22	3.74	1.32	5.69x3.21x0.04	None
A9408357	6.22	3.74	1.32	5.69x3.21x0.04	4 1.5V AA's (contacts supplied)
A9408355	6.22	3.74	1.32	5.69x3.21x0.04	1 9V battery
A9413351	7.48	5.43	1.79	6.77x4.72x0.04	None
A9413357	7.48	5.43	1.79	6.77x4.72x0.04	4 1.5V AA's (contacts supplied)

Case Part #		Outside dimensions			Top recess size
ABS	Polycarbonate	L	W.	H.	
C2008121	C2008122	4.72	3.15	2.36	3.27x2.60x0.04
C2108121	C2108122	4.72	3.15	3.15	3.27x2.60x0.04
C2012201	C2012202	7.87	4.72	2.36	6.42x4.17x0.04
C2112201	C2112202	7.87	4.72	3.54	6.42x4.17x0.04
C2012241	C2012242	9.45	4.72	2.36	7.99x4.17x0.04
C2016241	C2016242	9.45	6.30	2.36	7.99x5.75x0.04
C2116241	C2116242	9.45	6.30	3.54	7.99x5.75x0.04

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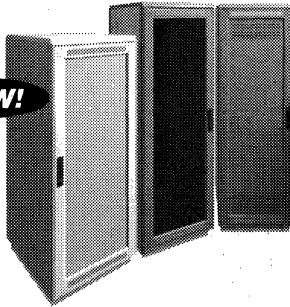
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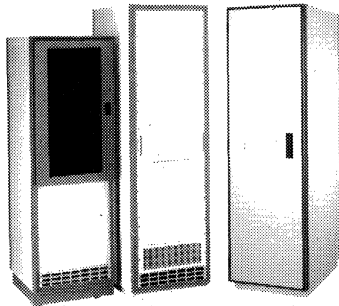
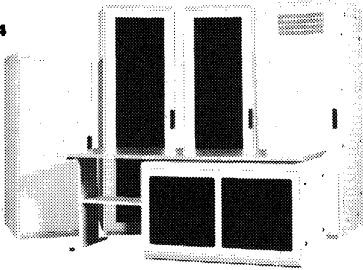


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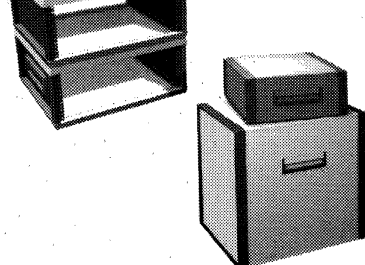
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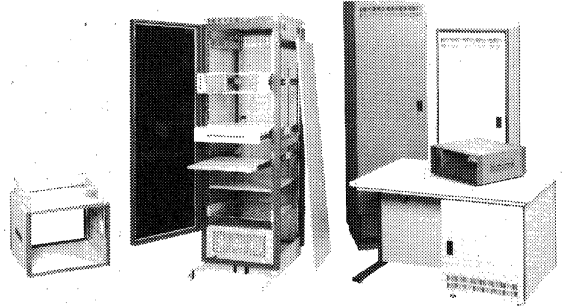
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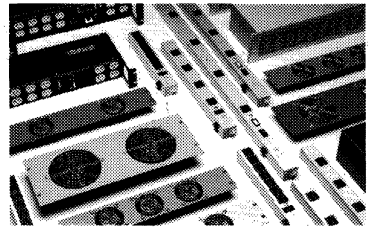
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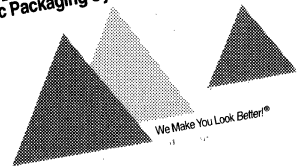


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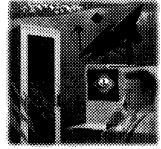


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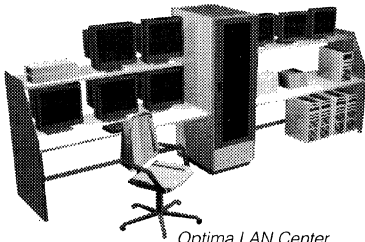


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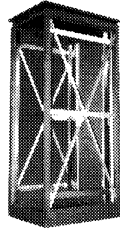
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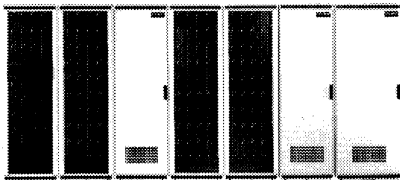
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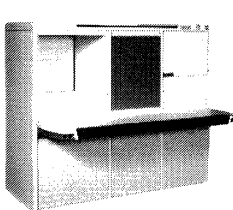
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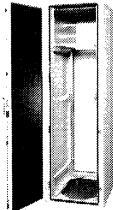
Mass storage systems



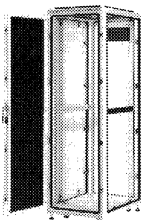
NASA Control Room



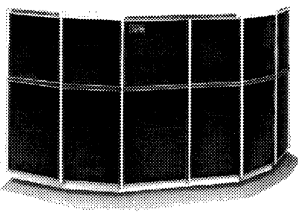
Mil-Aero



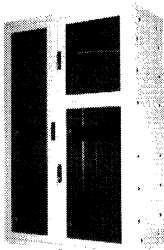
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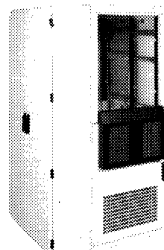
NEMA 12



Super Computers

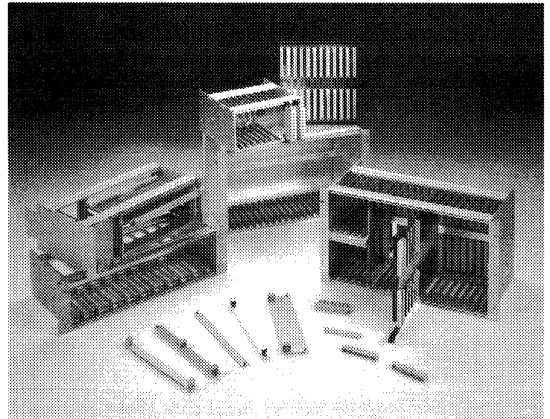


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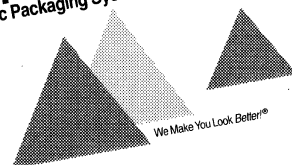
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Guide to PacTec Enclosure Sizes

Size Range of Models Within Series (Exterior Dimensions)

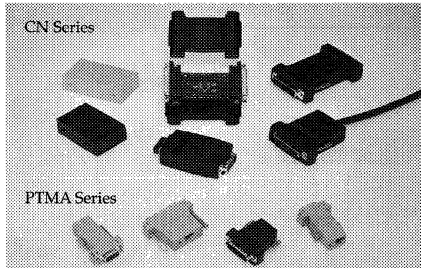
MODEL	MINIMUM DIMENSIONS			MAXIMUM DIMENSIONS			STANDARD COLORS			
	WIDTH	LENGTH	HEIGHT	WIDTH	LENGTH	HEIGHT	BLACK	PC BONE	GRAY	TAN
KR	1.40	2.30	.45	1.40	2.30	.45	X	X		
JM	1.60	2.27	.40	3.80	4.60	1.00	X	X		
CN	1.68	2.27	.80	1.68	4.00	1.00	X	X		
RF	1.50	5.00	.70	2.95	6.77	.93	X	X		
RC/RCS	1.94	2.94	.70	2.80	6.50	.90	X	X		
WM	3.00	4.00	.80	8.00	10.00	1.40	X	X		
HM	2.40	3.80	.90	2.40	3.80	1.30	X	X	X	X
HR/HRP	3.25	5.48	.95	3.25	5.98	.95	X	X		
PS	2.13	4.20	1.18	3.45	5.85	1.89	X	X		
HP	3.60	5.75	.81	3.60	5.75	1.29	X	X	X	X
HPL/HPLS	4.00	7.50	1.12	4.17	8.50	2.56	X	X	X	X
TI/TS	3.29	7.29	1.25	5.45	10.29	2.88	X	X		
FLX	2.50	3.50	1.00	8.00	6.00	3.00	X	X		
CM3	3.33	5.25	1.25	3.33	5.25	1.75	X	X	X	X
CM5	5.08	5.25	1.50	5.08	5.25	2.25	X	X	X	X
CM6	6.08	6.25	1.75	6.08	6.25	4.75	X	X	X	X
LH	4.50	3.00	1.25	11.80	9.33	2.25	X	X		
CM59	5.57	8.78	1.56	5.57	8.78	1.56	X	X		
CM69	6.33	9.50	1.38	6.33	9.50	3.47	X	X		
CM86	8.08	6.25	2.00	8.08	6.25	4.00	X	X	X	X
CF	8.36	9.11	1.65	8.36	9.11	3.65	X	X	X	X
CML	9.33	11.80	2.25	9.33	11.80	2.25	X	X		
BM/DM	10.40	8.46	2.38	10.40	11.46	4.48	X	X		
RM	14.00	6.00	1.70	17.00	8.00	1.70	X	X		
C	8.50	9.25	2.44	8.50	9.25	6.44	X	X	X	X
CL	12.52	11.64	3.51	12.52	11.64	8.75	X	X	X	X
KEU	5.42	5.00	1.12	10.00	8.03	4.20	X	X		
KE	12.40	6.50	1.50	20.08	8.68	2.79	X	X		
DE	19.63	15.50	6.65	19.63	20.01	7.22	X	X		
NE	2.36	2.57	1.57	5.75	7.32	2.95	X	X		

NOTE: All models are available as Prototype Kits or Production Units. Prototype Kits are individually packaged and include all parts and hardware necessary for assembly. Production Units include all parts and hardware necessary for assembly, packaged in bulk with the exception of removable panels which are ordered separately.

CN SERIES CONNECTOR INTERFACE ENCLOSURES PTMA MODULAR ADAPTERS

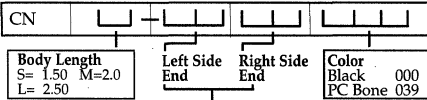


- Create your own design
- Select from 3 standard lengths, 9 standard connectors plus blank ends and strain reliefs, and 2 standard colors
- Top, bottom, side, and end insert tooling areas for customization
- Snap fit assembly

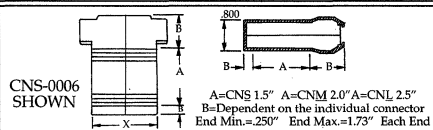


STANDARD AVAILABLE FROM STOCK	
Part Numbers	Standard Ends
Small 1.5" Center	
CNS-0000	2 Blank ends
CNS-0101	DB-9(CA) - DB-9(CA)
CNS-0103	DB-9(CA) - DB-25(CA)
CNS-0407	DB-9(CA) - RJ-11/45
CNS-0303	DB-25(CA) - DB-25(CA)
CNS-0607	DB-25(CC) - RJ-11/45
CNS-0307	DB-25(CA) - RJ-11/45
CNS-0310	DB-25(CA) - Strain Relief
CNS-0709	RJ-11/45 - Centronics (CC)
Medium 2.0" Center	
CNM-0000	2 Blank ends
CNM-0101	DB-9(CA) - DB-9(CA)
CNM-0103	DB-9(CA) - DB-25(CA)
CNM-0407	DB-9(CA) - RJ-11/45
CNM-0303	DB-25(CA) - DB-25(CA)
CNM-0607	DB-25(CC) - RJ-11/45
CNM-0307	DB-25(CA) - RJ-11/45
CNM-0310	DB-25(CA) - Strain Relief
CNM-0709	RJ-11/45 - Centronics (CC)
Long 2.5" Center	
CNL-0000	2 Blank ends
CNL-0101	DB-9(CA) - DB-9(CA)
CNL-0103	DB-9(CA) - DB-25(CA)
CNL-0407	DB-9(CA) - RJ-11/45
CNL-0303	DB-25(CA) - DB-25(CA)
CNL-0607	DB-25(CC) - RJ-11/45
CNL-0307	DB-25(CA) - RJ-11/45
CNL-0310	DB-25(CA) - Strain Relief
CNL-0709	RJ-11/45 - Centronics (CC)

CREATE YOUR OWN ENCLOSURE DESIGN



End #	Optional Ends	Mating to:
OO	Blank	—
O1	DB-9 Centerline Conn.	Cable Attachment (CA)
O2	DB-15 Centerline Conn.	Cable Attachment (CA)
O3	DB-25 Centerline Conn.	Captive Conn. (CC)
O4	DB-9 Rt Angle, PCB Mount	Cable Attachment (CA)
O5	DB-15 Rt Angle, PCB Mount	Cable Attachment (CA)
O6	DB-25 Rt Angle, PCB Mount	Captive Conn. (CC)
O7	RJ-11/45 PCB Conn.	—
O8	CENT. Centerline Conn.	Cable Attachment (CA)
O9	CENT. Rt Angle, PCB Mount	Captive Conn. (CC)
O10	Strain Relief (Cable)	—
O11	DB-9 Rt Angle, PCB Mount	Captive Conn. (CC)
O12	DB-15 Rt Angle, PCB Mount	Captive Conn. (CC)
O13	RJ End for use with O1, O2, O3 Ends	Captive Conn. (CC)



Any combination of ends can be used in any of the three lengths. Custom ends, sides, tops and bottoms are also available, call the factory for assistance. All dimensions are outside dimensions - in inches. The actual connector determines the overall length. Contact the factory for User Diagrams or further information.

MODULAR ADAPTERS

- PTMA Series: 1 2 3 4 5
- 1 D-Sub: 9, 15, or 25
 - 2 Gender: M = Male F = Female
 - 3 RJ: 6 pin 6D = DEC 8 pin 8K Keyed
 - 4 Hardware: TS = 24 mm Long Thumbscrew SL = Screw Lock, 4 X 40 Filister Head
 - 5 Color: BN = Bone B = Black

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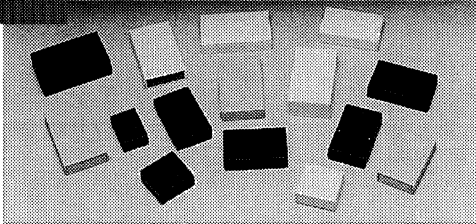
**JM, HM, AND KR SERIES
 SMALL ENCLOSURES**



Model KR



- Many versatile sizes for a host of small-sized devices
- Membrane switches, panels, and many other options and accessories available
- Insert areas for customization at low cost
- NEW KR enclosure is compact, highly styled—ideal for keyless remotes, etc.



HM/JM/KR SERIES	WIDTH	LENGTH	HEIGHT	BELT CLIP
KR-1	1.40	2.30	.45	
JM12-IE	1.60	2.40	.80	
JM12-LP	1.60	2.40	.40	
JM22	2.40	2.27	1.00	
JM22-IE	2.40	2.27	1.00	
JM24	2.40	3.80	1.00	
JMS24	2.40	3.80	.88/1.13	
JM25	2.70	2.60	1.00	
JM33	3.00	2.70	1.00	
JM35	2.70	4.00	1.00	
JM42	3.80	2.40	1.00	
HM	2.40	3.80	.90	HM-BC
HM-ET	2.40	3.80	1.30	
HMW	2.75	3.25	.90	
HMW-ET	2.75	3.25	1.40	
HMC-2AAA	2.40	3.80	1.00	HM-2AAA-BC
HM-9VB	2.40	3.80	1.00	HM-9VB-BC
HM-9VB-ET	2.40	3.80	1.30	
HML	2.75	4.60	.90	HML-BC
HML-EB	2.75	4.60	1.00	
HML-9VB	2.75	4.60	1.00	HML-9VB-BC
HML-ET	2.75	4.60	1.40	HML-ET-BC
HML-ET-9VB	2.75	4.60	1.50	HML-ET-9VB-BC

All dimensions are outside dimensions—in inches

HR, HP, SH, CR AND HPL ENCLOSURES

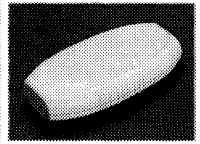
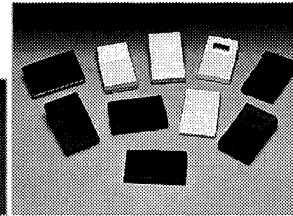
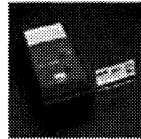
- Ideal for handheld controls, data entry keypads, and testers
- Available with angled display areas, tilted bottoms, & battery compartments plus sloped top, low-profile, & elongated designs
- Membrane switches, bezels, panels, and many other options and accessories available
- Insert areas for customization at low cost



HP/SH SERIES	WIDTH	LENGTH	HEIGHT	BELT CLIP	EXTRA HEIGHT
SH	3.60	5.75	1.12	SH-BC	SH-XH•
**SH-TB	3.60	5.75	1.10/1.50		
SH-LP	3.60	5.75	.81		SHLP-XH•
SH-9VB	3.60	5.75	1.29	SH-9VB-BC	SH-9VB-XH•
SH-4AA	3.60	5.75	1.29		
HP-LP	3.60	5.75	.81		
HP	3.60	5.75	1.12	HP-BC	HP-XH•
HP-IE	3.60	5.75	1.12		
**HP-TB	3.60	5.75	1.20/1.50		
HP-9VB	3.60	5.75	1.29	HP-9VB-BC	HP-9VB-XH•
HP-4AA	3.60	5.75	1.29	HP-4AA-BC	HP-4AA-XH•
HPS-LP	3.60	5.75	.81/1.61		
HPS	3.60	5.75	1.12/1.92		HPS-XH•
HPS-TB	3.60	5.75	1.20/2.80		
HPS-9VB	3.60	5.75	1.29/2.09		HPS-9VB-XH•
HPS-4AA	3.60	5.75	1.29/2.09		HPS-4AA-XH•
HR-9VB/2AA	3.25	5.98	.95		
HRP-9VB/2AA	3.25	5.48	.95		

All dimensions are outside dimensions—in inches • Extra height adds 40" ** Tilted/Sloping Bottom Cover

Model CR-48

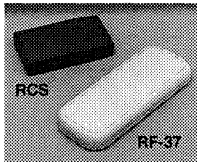


Model HR-9VB/2AA

HPL/HPLS SERIES	WIDTH	LENGTH	HEIGHT	BELT CLIP	EXTRA HEIGHT
HPL	4.00	7.50	1.12	HPL-BC	HPL-XH+
HPL-IE	4.00	7.50	1.12		
HP-W	4.50	6.75	1.00		
HPL-TB	4.00	7.50	1.50/1.73		
HPL-9VB	4.00	7.50	1.29	HPL-9VB-BC	HPL-9VB-XH+
HPL-4AA	4.00	7.50	1.29	HPL-4AA-BC	HPL-4AA-XH+
HPLS	4.00	7.50	1.12/2.09		HPLS-XH+
HPLS-TB	4.00	7.50	1.30/2.85		
HPLS-9VB	4.00	7.50	1.29/2.26		HPLS-9VB-XH+
HPLS-4AA	4.00	7.50	1.29/2.26		HPLS-4AA-XH+
HPLS-48	4.17	8.50	1.73/2.56	HPLS-48BC	
CR-48	4.70	8.50	1.73		
CR-64	6.08	4.26	1.50		

All dimensions are outside dimensions—in inches + Extra height adds .60".

**RC & WM SERIES
 SMALL HANDHELD & WALL MOUNT ENCLOSURES**



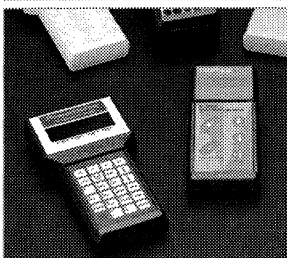
RC3

RF37

- Ergonomically designed handheld enclosures with low-profile, attractive styling
- Wall mountable units with large display/controls area
- Easily and inexpensively customized
- Membrane switches, panels, and many other options and accessories available

RC SERIES	WIDTH	LENGTH	HEIGHT	BELT CLIP	RF/WM SERIES	WIDTH	LENGTH	HEIGHT
RC24-9VB	2.50	3.00	0.92		RF15/2AA	1.50	5.70	0.70
RCS-24	2.50	4.60	0.70		RF35	2.95	5.00	0.83
RC24	2.50	4.60	0.80		RF37	2.95	6.77	0.83
RC24-9VB/2AA	2.50	4.60	0.90	RC-24-9VB/2AA-BC	RF37/9VB	2.95	6.77	0.93
RCS-24-9VB/2AA	2.50	4.60	0.90	RCS-24-9VB/2AA-BC	WM-34	3.00	4.00	0.80
RC-35-9VB/2AA	2.50	4.95	0.90		WM-46	3.75	5.25	1.00
RC-37-9VB	2.75	6.50	0.80		WM-56	5.00	6.00	1.50
					WM-810	8.00	10.00	1.40

**T SERIES
 METER & TEST EQUIPMENT ENCLOSURES**



- Ideal for handheld test instruments and equipment
- Extremely practical, ergonomic design
- Membrane switches, panels, and other accessories available
- Provisions for batteries, "O" ring gasket, increased height, and many other options

T SERIES	WIDTH	LENGTH	HEIGHT
TR-9VB/2AA	4.40/3.30	7.70	1.25
TS	3.29	7.27	1.25
TS-9VB/2AA	3.29	7.27	1.25
TT	4.44/3.29	8.52	1.15/1.50
TT-9VB/2AA	4.44/3.29	8.52	1.15/1.50
TT1-(2)9VB/4AA	5.45/3.30	8.40	2.42/2.88
TT2-5AA	4.60	10.29	2.25/2.38

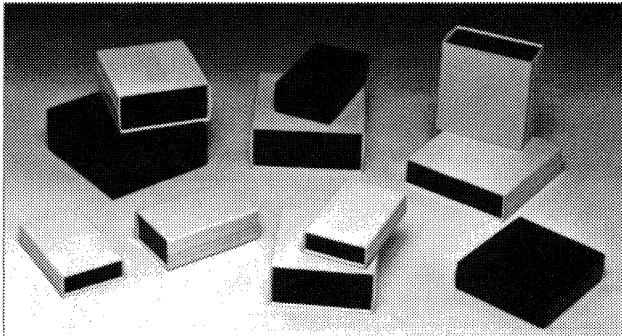
All dimensions are outside dimensions—in inches T-Series units are available with a gasket for water-proofing the unit. Add G to the end of the part number when requesting a gasket.



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CM SERIES
SMALL-TO-MID-SIZED ENCLOSURES

- Compact, versatile designs with surprisingly ample interior space
- Top & bottom covers, as well as end panels, can be inexpensively modified
- Special designs for external disk and CD-ROM drives
- Wide array of options & accessories available



CM SERIES	WIDTH	LENGTH	HEIGHT	TILT STAND	VENTS	BAILS & VENTS
CM59-135	5.57	8.78	1.56	CMB59-135	CMV59-135	
EE59-135	5.57	8.78	1.56	EEB59-135	EEV59-135	
CM69-120	6.33	9.50	1.38	CMB69-120	CMV69-120	CMBV69-120
CM69-S120	6.33	9.50	1.38			
CM69-R120	6.33	9.50	1.38			
CM69-X150	6.33	9.50	1.68			
CM69-180	6.33	9.50	1.99	CMB69-180	CMV69-180	CMBV69-180
CM69-X210	6.33	9.50	2.29			
CM69-240	6.33	9.50	2.50	CMB69-240	CMV69-240	CMBV69-240
CM69-X270	6.33	9.50	2.80			
CM69-300	6.33	9.50	3.17	CMB69-300	CMV69-300	CMBV69-300
CM69-X330	6.33	9.50	3.47			
CM79-125	7.45	9.36	1.25	CMB79-125		
CM79-180	7.45	9.36	1.80	CMB79-180		
CM86-175	8.08	6.25	2.00	CMB86-175	CMV86-175	CMBV86-175
CM86-X325	8.08	6.25	3.50			
CM86-225	8.08	6.25	2.50	CMB86-225	CMV86-225	CMBV86-225
CM86-X300	8.08	6.25	3.25			
CM86-X375	8.08	6.25	4.00			

"X" denotes an expander strip used between top and bottom covers.
 All dimensions are outside dimensions-in inches

CM SERIES	WIDTH	LENGTH	HEIGHT	BAIL/TILT STAND	VENTS	BAILS & VENTS
CM3-100	3.33	5.25	1.25	CMB3-100		
CM3-150	3.33	5.25	1.75	CMB3-150		
CM5-125	5.08	5.25	1.50	CMB5-125	CMV5-125	CMBV5-125
CM5-200	5.08	5.25	2.25	CMB5-200	CMV5-200	CMBV5-200

"X" denotes expander strip used between top and bottom covers.
 All dimensions are outside dimensions-in inches

CM SERIES	WIDTH	LENGTH	HEIGHT	BAIL/TILT STAND	VENTS	BAILS & VENTS
CM6-150	6.08	6.25	1.75	CMB6-150		
CM6-225	6.08	6.25	2.50	CMB6-225		
CM6-300	6.08	6.25	3.25	CMB6-300		
CM6-X375	6.08	6.25	4.00	CMB6-X375		
CM6-X450	6.08	6.25	4.75	CMB6-X450		

LH SERIES
LOW PROFILE, HIGH STYLE ENCLOSURES



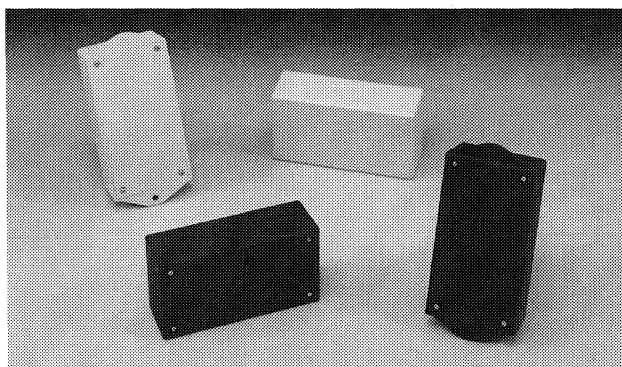
- Attractive styling with flush panels, rounded corners, radiused sides
- Ideal for computer peripherals, LAN & data communications devices
- Insert tooling areas make customization inexpensive yet effective
- Wide variety of options and accessories available



LH SERIES	WIDTH	LENGTH	HEIGHT	LH SERIES	WIDTH	LENGTH	HEIGHT
LH43-100	4.50	3.00	1.25	LH75-200	7.07	5.31	2.25
LH43-200	4.50	3.00	1.75	LH77-130	7.00	7.37	1.50
LH55-130	5.07	5.07	1.50	LH77-200	7.00	7.37	2.25
LH55-200	5.07	5.07	2.25	LH84-130	8.08	4.26	1.50
LH57-130	5.50	7.25	1.50	LH84-200	8.08	4.26	2.25
LH57-200	5.50	7.25	2.25	LH89-130	8.08	9.50	1.50
LH64-130	6.08	4.26	1.50	LH89-200	8.08	9.50	2.25
LH64-200	6.08	4.26	2.25	LH96-130	9.08	6.26	1.50
LH68-130	6.30	7.83	1.50	LH96-200	9.08	6.26	2.25
LH68-200	6.30	7.83	2.25	LH129-175	11.80	9.33	1.70
LH75-130	7.07	5.31	1.50	LH129-200	11.80	9.33	2.25

All dimensions are outside dimensions-in inches

FLX & FLXT SERIES
FLEXIBLE UTILITY ENCLOSURES



- Attractive, sturdy utility enclosures
- Custom features easily attainable through insert molding
- Wide range of aesthetic and functional options included bosses, LCD, connector, & keypad openings, battery doors, and more
- Virtually limitless applications
- FLXT offers mounting tabs and separate panel
- FLX offers top and bottom covers



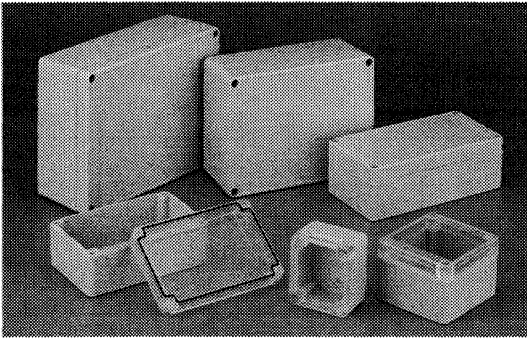
FLX SERIES	WIDTH	LENGTH	HEIGHT	MOUNTING TABS
FLX 2535	2.50	3.50	1.12	FLX 2535
FLX 4020	4.00	2.00	1.00	FLX 4020
FLX 4624	4.60	2.40	1.32	FLX 4624
FLX 6020	6.00	2.00	1.00	FLX 6020
FLX 6030	6.00	3.00	2.00	FLX 6030
FLX 6040	6.00	4.00	2.00	FLX 6040
FLX 7050	7.00	5.00	3.00	FLX 7050
FLX 8060	8.00	6.00	3.00	FLX 8060

All dimensions are outside dimensions-in inches

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NEMA 4X/IP65 SEALED ENCLOSURES

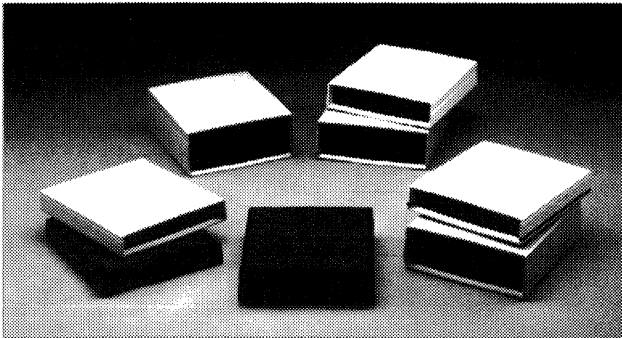


- Meets NEMA 4X and IP65 dust and hose proof requirements
- Brass threaded inserts in base
- Top cover includes neoprene gasket
- Polycarbonate (UL94V-2) and impact resistant polystyrene (UL94V-0)
- Clear polycarbonate top cover available

STOCK NO.	MATERIAL	STOCK NO.	MATERIAL	DIMENSIONS (INCHES)
NE1020	Polycarbonate	NE1022	Polystyrene	2.36 X 2.36 X 1.57
NE1060	Polycarbonate	NE1062	Polystyrene	3.35 X 3.36 X 2.57
NE1130	Polycarbonate	NE1132	Polystyrene	4.92 X 4.39 X 1.57
NE1170	Polycarbonate	NE1172	Polystyrene	6.50 X 5.36 X 4.57
NE1240	Polycarbonate	NE1242	Polystyrene	6.50 X 6.36 X 5.57
NE1280	Polycarbonate	NE1282	Polystyrene	7.32 X 7.36 X 6.57

Standard: Each enclosure is supplied with brass inserts (I) and stainless steel screws x4, Neoprene gasket x1, opaque top cover x1 and housing x1.
 Option: (C)-Polycarbonate transparent top cover. Standard Color: Polycarbonate - Ivory Polystyrene (UL-94V0) - Dark Gray

CF SERIES MID-SIZED ENCLOSURES

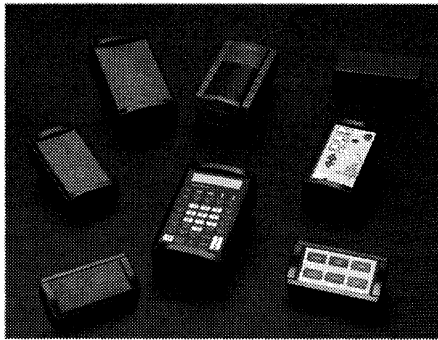


- Popular units for all type of instrumentation, medical electronics, and more
- Low profile units, yet with plenty of front panel space
- Insert tooling areas make customization inexpensive yet effective
- Wide variety of options and accessories available including custom overlays and membrane switches

CF SERIES	WIDTH	LENGTH	HEIGHT	BAIL	VENTS	BAIL & VENTS	EXTRA HT.
CF-125	8.36	9.11	1.65	CFB-125	CFV-125	CFBV-125	CF-X150 *
CF-175	8.36	9.11	2.15	CFB-175	CFV-175	CFBV-175	CF-X200 *
CF-225	8.36	9.11	2.65	CFB-225	CFV-225	CFBV-225	CF-X250 *
CF-275	8.36	9.11	3.15	CFB-275	CFV-275	CFBV-275	CF-X300 *
CF-325	8.36	9.11	3.65	CFB-325	CFV-325	CFBV-325	CF-X350 *

All dimensions are outside dimensions-in inches. * Extra height adds 0.25"

PS SERIES VERSATILE, STYLISH ENCLOSURES

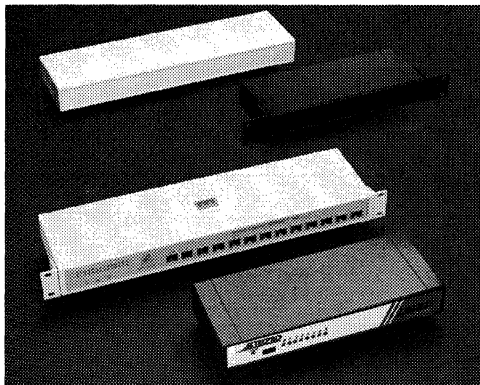


- Stylish design
- Snap-together assembly
- Extremely versatile -- ideal for handheld instruments, computer peripherals, power supplies, and much more
- Wide range of possible internal and external modifications
- UL/CSA venting available

PS SERIES	WIDTH	LENGTH	HEIGHT	VENTED
PS24-110	2.13	4.20	1.18	PSV24-110
PS24-150	2.13	4.20	1.77	PSV24-150
PS35-150	2.70	4.80	1.57	PSV35-150
PS35-200	2.70	4.80	1.89	PSV35-200
PS36-150	3.23	5.85	1.57	PSV36-150
PS36-200	3.23	5.85	1.89	PSV36-200

All dimensions are outside dimensions-in inches

RM SERIES ALL-PLASTIC RACK MOUNTED OR STAND ALONE ENCLOSURES



- Contemporary, stylish plastic design
- Much better aesthetics and versatility compared to sheet metal
- Wide variety of PCB and component mounting features
- Card guide option available
- UL/CSA venting available
- EMI/RFI shielding available

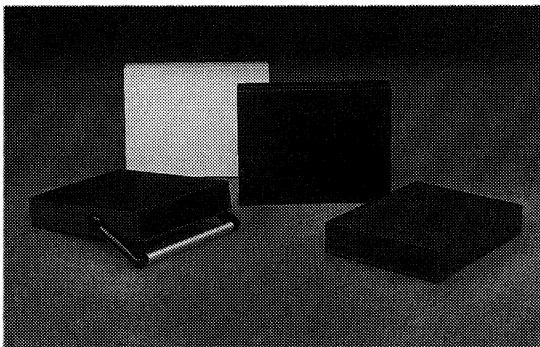
RM SERIES	WIDTH	LENGTH	HEIGHT	VENTED
RM-146	14.00	6.00	1.70	RM -146 V
RM-178	17.00	8.00	1.70	RM -178V

All dimensions are outside dimensions-in inches



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**DM, BM, & CML SERIES
 LARGER-SIZED ENCLOSURES**

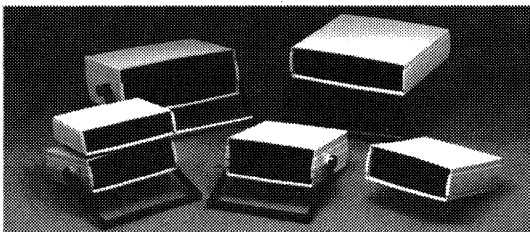


- Stylish, extremely flexible enclosures ideal for desktop or benchtop instrumentation
- Wide variety of options and accessories available including custom overlays and membrane switches
- Internal features speed assembly and mounting of printers and other devices
- New Hi-Style handle available

BM/DM/CML SERIES	WIDTH	LENGTH	HEIGHT	HANDLE	BAIL
BM-2	10.40	8.46	2.38		BMB-2
* BMH-2	10.40	8.46	2.38	X	
BM-3	10.40	8.46	3.38		BMB-3
* BMH-3	10.40	8.46	3.38	X	
BM-4	10.40	8.46	4.48		BMB-4
* BMH-4	10.40	8.46	4.48	X	
DM-2	10.40	11.46	2.38		DMB-2
* DMH-2	10.40	11.46	2.38	X	
DM-3	10.40	11.46	3.38		DMB-3
* DMH-3	10.40	11.46	3.38	X	
DM-4	10.40	11.46	4.48		DMB-4
* DMH-4	10.40	11.46	4.48	X	
CML912-200	9.33	11.80	2.25		

All dimensions are outside dimensions-in inches. * Handle version can be used for carrying or as a Tilt Stand.

**C & CL SERIES
 LARGE SIZE ENCLOSURES**



- Exceptionally flexible size and design for larger instruments, systems, and test equipment
- Large panel areas
- Wide assortment of component, subsystems, and board mounting features
- Kits help speed the development of prototypes and small production runs
- Insert tooling areas make customization inexpensive yet effective
- Wide variety of options and accessories available including custom overlays and membrane switches

C SERIES	WIDTH	LENGTH	HEIGHT	BAIL	HANDLE	VENTS	BAIL & VENTS	HANDLE & VENTS
C-200	8.50	9.25	2.44	CB-200	CH-200	CV-200	CBV-200	CHV-200
C-225	8.50	9.25	2.69	CB-225	CH-225	CV-225	CBV-225	CHV-225
C-250	8.50	9.25	2.94	CB-250	CH-250	CV-250	CBV-250	CHV-250
C-275	8.50	9.25	3.19	CB-275	CH-275	CV-275	CBV-275	CHV-275
C-300	8.50	9.25	3.44	CB-300	CH-300	CV-300	CBV-300	CHV-300
C-325	8.50	9.25	3.69	CB-325	CH-325	CV-325	CBV-325	CHV-325
CS-400	8.50	9.25	4.43	CBS-400	CHS-400	CSV-400	CBSV-400	CHSV-400
CS-500	8.50	9.25	5.43	CBS-500	CHS-500	CSV-500	CBSV-500	CHSV-500
CS-600	8.50	9.25	6.43	CBS-600	CHS-600	CSV-600	CBSV-600	CHSV-600

CL SERIES	WIDTH	LENGTH	HEIGHT	BAIL	HANDLE	EXTRA HEIGHT
CLLP-300	12.52	11.64	3.51	CLLPB-300	CLLPH-300	
CLLP-325	12.52	11.64	3.76	CLLPB-325	CLLPH-325	
CLLP-350	12.52	11.64	4.01	CLLPB-350	CLLPH-350	
CLLP-375	12.52	11.64	4.26	CLLPB-375	CLLPH-375	
CL-400	12.52	11.64	4.51	CLB-400	CLH-400	
CL-425	12.52	11.64	4.76	CLB-425	CLH-425	
CL-450	12.52	11.64	5.01	CLB-450	CLH-450	
CL-475	12.52	11.64	5.26	CLB-475	CLH-475	
CL-500	12.52	11.64	5.51	CLB-500	CLH-500	
CL-525	12.52	11.64	5.76	CLB-525	CLH-525	
CLS-625	12.52	11.64	6.75	CLBS-625	CLHS-625	•
CLS-725	12.52	11.64	7.75	CLBS-725	CLHS-725	•
CLS-825	12.52	11.64	8.75	CLBS-825	CLHS-825	•

All dimensions are outside dimensions-in inches. "S" denotes height expander (filler panel)

**KE, KEU AND DE SERIES
 KEYBOARD, UTILITY, AND DESKTOP ENCLOSURES**



- Ideal for devices with keyboards and display/control panels
- New high-style low-profile units available
- KE and KEU units can be used desk- or bench-top or vertically mounted
- Insert tooling areas make customization inexpensive yet effective
- Wide variety of options and accessories available including custom overlays, aluminum panels, and membrane switches

KEU/KE & DE SERIES	WIDTH	LENGTH	HEIGHT
KEU-5LP	5.40	5.42	1.59
KEU-7LP	7.00	5.00	1.30
KEU-7	7.00	5.00	3.00
PTS-58	5.29	6.79	1.76
PTS-68	5.94	6.79	1.88
KEU-10LP	10.00	8.03	2.04
KEU-10	10.00	8.03	4.00
KE-12LP	12.40	6.50	1.50
KE-17	17.08	8.68	2.79
KE-20	20.08	8.68	2.79
DE-620	19.63	15.50	6.65
DE-720	19.63	20.01	7.22

All dimensions are outside dimensions-in inches. *Feet height included.

EXTRUDED ALUMINUM "PANEL TECH" CIRCUIT BOARD FRONT PANELS

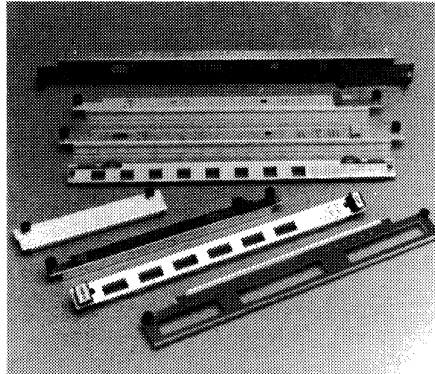
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ROUTERS
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REPLACE STAMPINGS WITH CUSTOM OR STANDARD EXTRUDED DESIGN

FEATURES

Extruded Channel Design

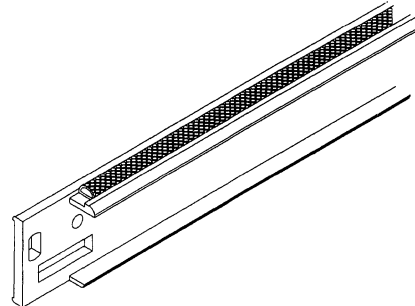
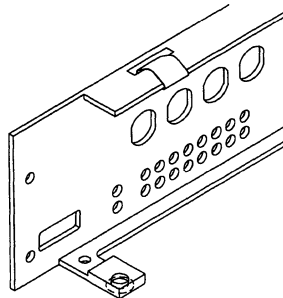
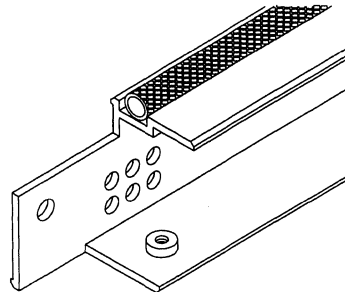
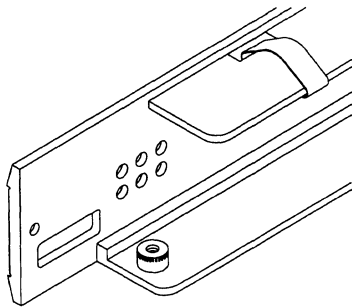
Formed Label "Detents"

Integral Board Support

BENEFITS

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- Strength & rigidity over length
- Replace Silk Screen w/Mylar labels
- Use Labels to cover open holes
- Added Strength & Support for boards
- Integrate with available or custom ejectors

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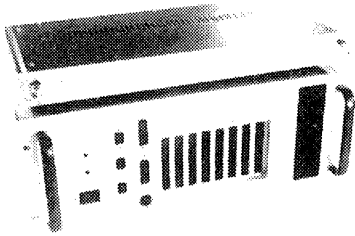


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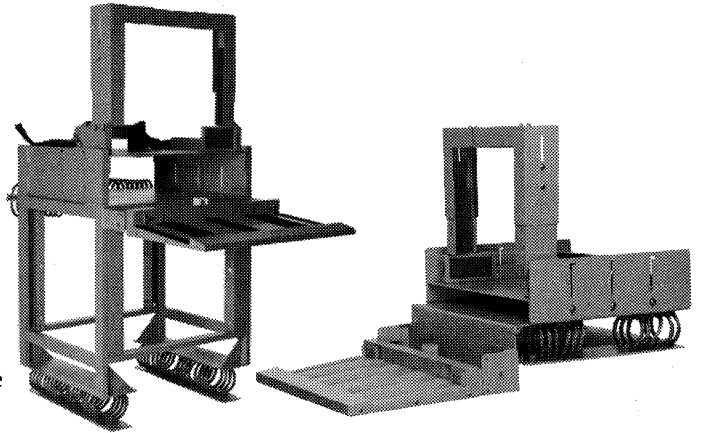
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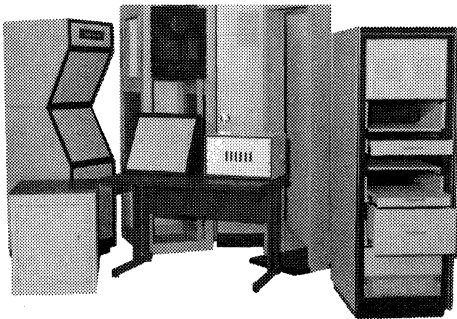
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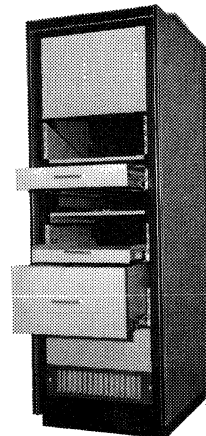
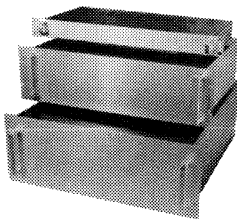
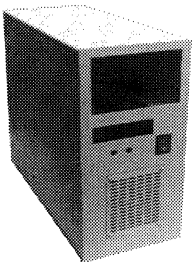


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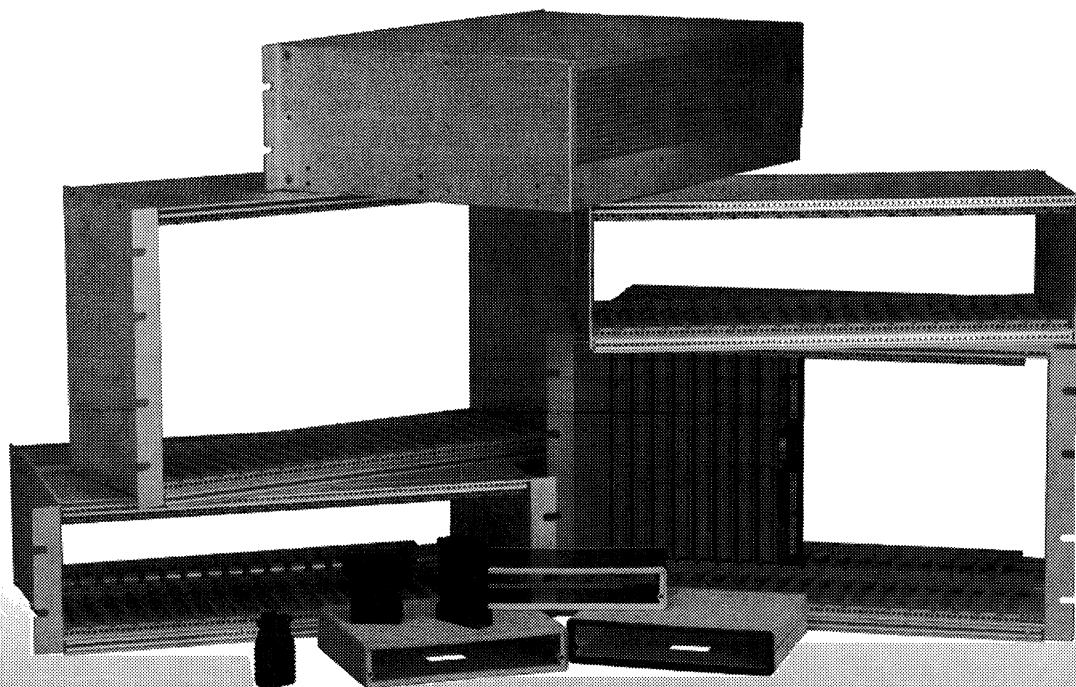
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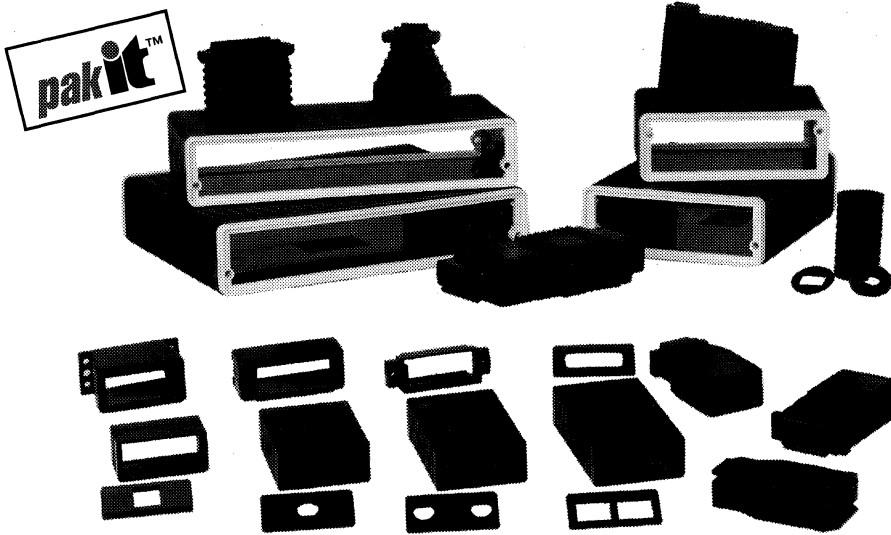


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Here is a Sampling of SOME of the Cases Available

Standard Connector Cases:-

Description	Part No.	Price	overall length	max. width	outside height	body width	inside width	inside height
Centronics to DB-25 with ears (2.95")	0436S8	2.50	2.95	2.08	0.75	1.70	1.49	0.57
Centronics to RJ-11 (2.60")	0436M4S	2.50	2.60	2.08	0.75	1.70	1.49	0.57
Centronics to RJ-45 (2.60")	0436M4S	2.50	2.60	2.08	0.75	1.70	1.49	0.57
DB-15 to RJ-11	041006S	1.50	2.50	1.55	0.75	1.25	0.90	0.57
DB-15 to RJ-45	041056S	1.50	2.50	1.55	0.75	1.25	0.90	0.57
DB-25 to DB-25	0430S	1.50	1.94	2.08	0.69	1.75	1.49	0.50
DB-25 to DB-25 (thick)	0434S	1.50	1.94	2.08	0.89	1.75	1.49	0.70
DB-25 to DB-25, (2.9"long)	0408S	1.80	2.86	2.08	0.73	1.75	1.49	0.57
DB-25 to Dual RJ-11 (2.50")	0405S	2.00	2.50	2.08	0.73	1.75	1.49	0.57
DB-25 to Dual RJ-45 (2.50")	0407S	2.00	2.50	2.08	0.73	1.75	1.49	0.57
DB-25 to RJ-11 (2.50")	0404S	2.00	2.50	2.08	0.73	1.75	1.49	0.55
DB-25 to RJ-11 (4.25")	042S	3.00	4.25	2.08	1.00	1.90	1.53	0.75
DB-25 to RJ-45 (2.50")	0406S	2.00	2.50	2.08	0.73	1.75	1.49	0.55
DB-25 to Strain Relief (4.25")	041S	3.00	4.15	2.08	1.00	1.90	1.53	0.75
DB-37 to RJ-11	437S4	3.00	2.54	2.78	0.73	1.76	1.49	0.55
DB-9 to DB-15	041096S	1.50	2.47	1.55	0.68	1.21	1.00	0.55
DB-9 to DB-25 (ears on both ends)	0471S	1.50	1.93	2.08	0.69	angles	angles	0.50
DB-9 to DB-9	041099S	1.50	2.43	1.21	0.69	1.21	1.00	0.55
DB-9 to RJ-11	041009S	1.50	2.49	1.25	0.76	1.25	1.00	0.55
DB-9 to RJ-45	041059S	1.50	2.49	1.25	0.76	1.25	1.00	0.55

Typical Universal Plastic Enclosures: Use sheet metal front & rear panels for universal application.

Electronic Enclosure	0443	7.50	3.00	4.17	1.52
Electronic Enclosure	0445	8.95	5.00	4.17	1.52
Electronic Enclosure	0473	9.05	3.00	7.29	1.52

Universal Plastic Cases: Holds the following end plates - Blank, BNC, Centronics, DB-15, DB-25, M/34, RJ-11, Dual RJ-11, RJ-45, Dual RJ-45, Strain Relief

Universal Rectangular Case-(0.8")	0421CS	1.50	0.80	1.70	0.80
Universal Rectangular Case-(2.00")	0421S	1.75	2.00	1.70	0.80
Universal Rectangular Case-(2.60")	0421M	2.00	2.60	1.70	0.80
Universal Rectangular Case-(3.00")	0421L	2.25	3.00	1.70	0.80

Note: These dimensions vary with end plate used.



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KT Series Hand Held Plastic Enclosures



Introduction

Our **KT Series** of hand held enclosures is ideal for all types of remote controls. It is available in two styles: key fob and hand held transmitter. Both styles are uniquely designed so that when assembled, the PC board is captured and locked into place.

Material

- Lightweight, impact-resistant ABS plastic

Enclosure Styles and Features

Key Fob Style

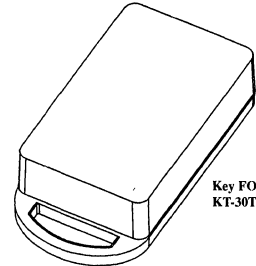
- Two-piece screw together design-- permits future access for battery change
- Recessed area accommodates graphic overlays and composite touch pads
- Integrally molded ring for easy attachment

Transmitter Style

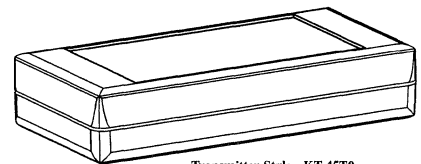
- Two equal halves with screw-together design
- Two standard styles for top half of enclosures
 - 1) Recessed area for graphic overlays or membrane keypad
 - 2) Recessed area with a molded slot for membrane keypad ribbon cable
- Bottom half has a small recessed area for FCC identification label

Styling

- Textured surfaces resist scuffs and smudges
- Standard colors are black, light gray and PC bone



Key Fob Style
KT-30T0



Transmitter Style - KT-45T0

CATALOG NO.	LENGTH		WIDTH		HEIGHT		INSIDE DEPTH		OVERALL LENGTH	PCB BOSSES		GRAPHIC OVERLAY TOP		GRAPHIC OVERLAY BOTTOM	
	-A-	-B-	-C-	-D1-	-D2-	-E-	-F-	-G1-	-G2-	-H1-	-H2-				
KT-30T0	2.100	1.300	0.580	0.440 X 0.281		2.488	1.675	1.438 X 1.125							
KT-45T0*	3.520	1.770	0.725	0.539 X 0.230			2.971	2.500 X 1.438		1.250 X 1.250					

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

CAD Design • CNC Machining
Pad Printing

Value-Added Services

Mold Inserts • Special Materials
Custom Colors

ID Series Integrated Design Plastic Enclosures

Introduction - The **ID Series** two piece screw-together design provides the perfect housing for small instruments and controls. Its textured surface, rounded corners and perfect case-to-base fit define this series as both contemporary and high quality.

Details

Material

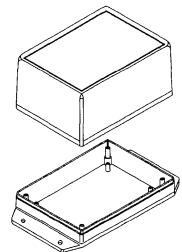
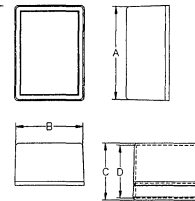
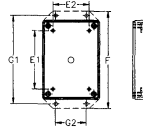
- Tough, lightweight, flame retardant ABS plastic with UL flame rating of 94-VO. (ID 3420 is 945-VA)

Enclosure Styles and Features

- Available in two styles: plain bottom or integrally molded mounting feet
- Enclosures include case, base and screws
- Base includes 4 PC board mounting bosses

Styling

- Textured exterior with rounded corners
- Contemporary design



CATALOG NO.	LENGTH		WIDTH		HEIGHT		INSIDE DEPTH		PCB BOSSES		MTG. FEET OVERALL	MTG. FOOT HOLES		MTG. HOLE DIA.
	-A-	-B-	-C-	-D-	-E1-	-E2-	-F-	-G1-	-G2-					
ID-1741	4.000	1.750	1.270	1.105	3.090	0.830	4.875	4.500	—	0.187				
ID-2309	3.030	2.030	1.490	1.325	2.080	1.080	3.875	3.500	—	0.187				
ID-2315	3.000	2.000	2.090	1.930	2.080	1.080	3.875	3.500	—	0.187				
ID-2409	4.060	2.190	1.490	1.325	2.900	1.025	4.875	4.500	—	0.187				
ID-2420*	4.000	2.125	2.590	2.395	2.900	1.025	4.875	4.500	—	0.187				
ID-3315	3.000	3.000	2.090	1.925	2.125	2.125	3.875	3.500	—	0.187				
ID-3420*	4.375	3.125	2.700	2.450	3.295	2.045	5.500	5.000	1.750	0.187				

*Case has an optional recessed smooth surface to accommodate graphic overlays

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

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Introduction - The LP Series houses small to medium-sized electronic devices in a sleek, low profile enclosure.

Details

Material

- Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO
- LPs 31, 41, 51 & 61 have UL's best flame rating of 94-5VA (black only)

Enclosure Styles and Features

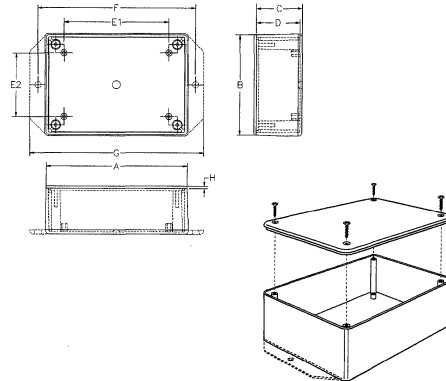
- Available in two styles: plain bottom or with integrally molded mounting feet
- Enclosures include case, cover and screws
- PCB mounting bosses are optional on some sizes

Cover

- Screw-on covers permit future access to electronics

Styling

- Contemporary styling includes rounded corners and a low profile design
- Attractive textured finish resists scuffs and smudges



CATALOG NO.	LENGTH	WIDTH	HEIGHT	INSIDE DEPTH	PCB BOSSSES		MTG. HOLES	MTG. HOLE DIAMETER	MTNG. FEET O/A	COVER THICKNESS
	-A-	-B-	-C-	-D-	-E1-	-E2-	-F-		-G-	-H-
LP-20	3.250	2.375	1.000	0.920	1.875 X —		3.800	0.187	4.330	0.080
LP-31	4.165	2.790	1.000	0.900	3.000 X 1.625		4.625	0.187	5.125	0.100
LP-35	4.250	3.000	1.375	1.305	3.160 X 1.910		4.750	0.187	5.250	0.070
LP-41	3.290	3.290	1.250	1.150	2.125 x 2.125		3.750	0.187	4.250	0.100
LP-51	4.540	3.290	1.250	1.150	3.375 X 2.125		5.000	0.187	5.500	0.100
LP-55	5.000	3.500	1.500	1.430	3.190 X 2.410		5.500	0.187	6.000	0.070
LP-61	5.540	3.790	1.250	1.150	4.375 X 2.625		6.000	0.187	6.500	0.100
LP-70	5.500	4.250	1.750	1.660	4.125 X 2.875		6.100	0.187	6.615	0.070

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

LP Series Low Profile Plastic Enclosures

CAD Design • CNC Machining
Pad Printing

Value-Added Services

Mold Inserts • Special Materials
Custom Colors

Introduction - The DC Series is attractive yet durable and has a raised radius cover with perfect case-to-cover alignment.

Details

Material

- Tough, lightweight, flame retardant ABS plastic with UL's best flame rating of 94-5VA (black and light gray)
- UL approved 94-VO flame retardant ABS (PC Bone)

Enclosure Styles and Features

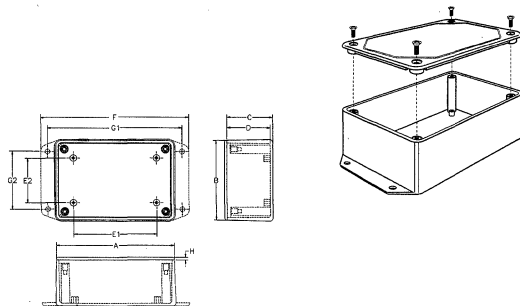
- Available in two styles: plain bottom or integrally molded mounting feet
- Threaded brass inserts for continuous cover on/cover off applications
- Four PC board mounting bosses per enclosure
- Enclosures include case, cover and screws

Cover Options

- Flush textured or recessed smooth center area (eases installation of graphic overlays and membrane switches)
- Insert molding capabilities within center area (allows for custom molding without expensive tooling)

Styling

- Textured surfaces provide an attractive finish that resists scuffs, scratches and fingerprints.



CATALOG NO.	LENGTH	WIDTH	HEIGHT	INSIDE DEPTH	PCB BOSSSES		MTG. FEET	MOUNTING FOOT HOLES		MTG. HOLE DIA.	COVER THICKNESS
	-A-	-B-	-C-	-D-	-E1-	-E2-	-F-	-G1-	-G2-		-H-
DC-34	4.610	3.100	1.770	1.670	3.250	1.750	5.775	5.250	2.250	0.187	0.100
DC-44	4.610	4.610	2.255	2.155	3.250	3.250	5.775	5.250	3.500	0.187	0.100
DC-46	6.110	4.610	2.255	2.155	4.750	3.250	7.275	6.750	3.500	0.187	0.100
DC-47	7.610	4.610	2.255	2.155	6.250	3.250	8.775	8.250	3.500	0.187	0.100

OPTIONAL RECESSED FACE FOR GRAPHIC OVERLAY PLUS INSERT MOLDING CAPABILITIES

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DC Series Designer's Choice Plastic Enclosures



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TX Series Textured Plastic Enclosures

Introduction - TX Series low-cost enclosures are an outstanding choice for either prominent enclosures of small electronic assemblies or economical potting boxes. Its textured surfaces hide all fingerprints and smudges, giving your product a clean, contemporary appearance. - **NOTE:** For screw-on covers and PC board mounting bosses, see the TX Select Series.

Details

- Enclosures include case only. Covers sold separately
- For mounting feet see TX-F Series

Material

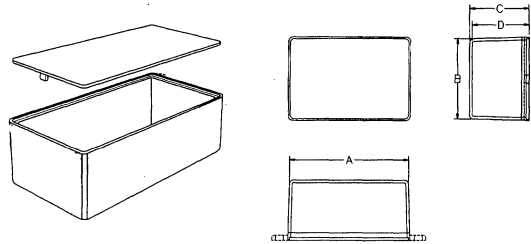
- Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO
- Optional nylon material for high heat applications

Cover

- Covers have smooth surfaces that are flush mounted
- Covers are bonded to an internal ledge

Styling

- Textured surfaces hide all fingerprints and smudges
- Contemporary look has clean, consistent surfaces and rounded corners



CATALOG NO.	LENGTH -A-	WIDTH -B-	HEIGHT -C-	INSIDE DEPTH WITH COVER -D-	CATALOG COVER NO.
P-1175TX	1.000	1.000	0.750	0.663	C-0101-N
P-1218TX	1.500	1.250	0.800	0.645	C-1201-N
P-1304TX	2.080	1.280	0.450	0.300	C-1302-N
P-1521TX	2.000	1.500	1.000	0.845	C-1502-N
P-1741TX	4.000	1.750	1.000	0.845	C-1704-N
P-2215TX	2.000	2.000	1.500	1.345	C-0202-N
P-2309TX	3.000	2.000	0.900	0.745	C-0203-N
P-2315TX	3.000	2.000	1.500	1.345	C-0203-N
P-2409TX	4.000	2.125	0.900	0.745	C-0204-N
P-2420TX	4.000	2.125	2.000	1.815	C-0204-N
P-3315TX	3.000	3.000	1.500	1.345	C-0303-N
P-3420TX	4.375	3.125	2.000	1.780	C-0304-N

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

CAD Design • CNC Machining
Pad Printing

Value-Added Services

Mold Inserts • Special Materials
Custom Colors

TX-F Series Textured with mounting feet

Introduction - TX-F Series low-cost enclosures are an outstanding choice for either prominent enclosures of small electronic assemblies or economical potting boxes. Its textured surfaces hide all fingerprints and smudges, giving your product a clean, contemporary appearance. - **NOTE:** For screw-on covers and PC board mounting bosses, see the TX Select Series.

Details

- Enclosures include case only. Covers sold separately
- No mounting feet see TX Series

Material

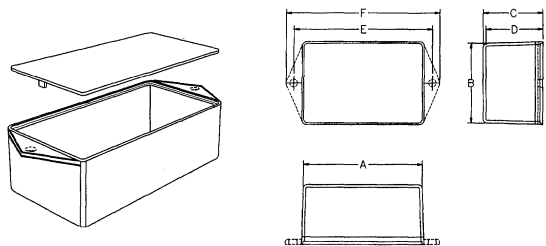
- Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO
- Optional nylon material for high heat applications

Cover

- Covers have smooth surfaces that are flush mounted
- Covers are bonded to an internal ledge

Styling

- Textured surfaces hide all fingerprints and smudges
- Contemporary look has clean, consistent surfaces and rounded corners



CATALOG NO.	LENGTH -A-	WIDTH -B-	HEIGHT -C-	INSIDE DEPTH WITH COVER -D-	MOUNTING HOLES -E-	MOUNTING HOLE DIA.	OVERALL -F-	COVER CATALOG NO.
TF-1175TX	1.000	1.000	0.750	0.663	1.375	0.166	1.750	C-0101-N
TF-1218TX	1.500	1.250	0.800	0.645	2.000	0.187	2.375	C-1201-N
TF-1304TX	2.080	1.280	0.450	0.300	2.438	0.156	2.873	C-1302-N
TF-1521TX	2.000	1.500	1.000	0.845	2.500	0.187	2.875	C-1502-N
TF-1741TX	4.000	1.750	1.000	0.845	4.500	0.187	4.875	C-1704-N
TF-2215TX	2.000	2.000	1.500	1.345	2.500	0.187	2.375	C-0202-N
TF-2309TX	3.000	2.000	0.900	0.745	3.500	0.187	3.875	C-0203-N
TF-2315TX	3.000	2.000	1.500	1.345	3.500	0.187	3.875	C-0203-N
TF-2409TX	4.000	2.125	0.900	0.745	4.500	0.187	4.875	C-0204-N
TF-2420TX	4.000	2.125	2.000	1.815	4.500	0.187	4.875	C-0204-N
TF-3315TX	3.000	3.000	1.500	1.345	3.500	0.187	3.875	C-0303-N
TF-3420TX	4.375	3.125	2.000	1.780	5.000	0.187	5.500	C-0304-N

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Introduction - TX Select Series offers screw-on covers and optional mounting bosses to create the best small enclosure value on the market. TX Select provides high quality, high-tech styling and access to electronics -- all for a low price.

Details

Material

- Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO

Enclosure Styles and Features

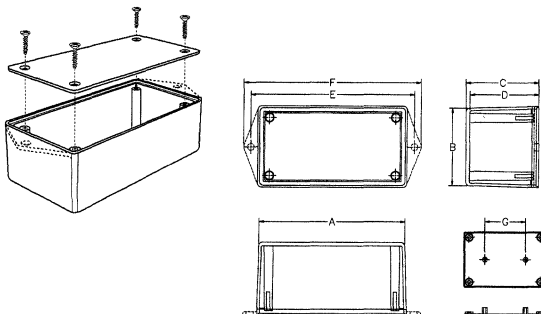
- Available in two styles: plain or with integrally molded mounting feet
- Enclosures include case, cover and screws

Cover

- Screw-on covers have PCB mounting bosses and mount flush with the top of the case.

Styling

- Contemporary design
- Textured exterior with rounded corners



CATALOG NO.	LENGTH -A-	WIDTH -B-	HEIGHT -C-	INSIDE DEPTH -D-	MTG. HOLES -E-	MTG. HOLE DIA.	MTG. FEET OVERALL -F-	PCB BOSSES -G-	COVER THICKNESS
TS-1741P	4.000	1.750	1.000	.845	—	—	—	3.000	0.075
TS-1741F	4.000	1.750	1.000	.845	4.500	0.187	4.875	3.000	0.075
TS-2309P	3.000	2.000	0.900	.745	—	—	—	1.750	0.075
TS-2309F	3.000	2.000	0.900	.745	2.500	0.187	2.375	1.750	0.075
TS-2315P	3.000	2.000	1.500	1.345	—	—	—	1.750	0.075
TS-2315F	3.000	2.000	1.500	1.345	3.500	0.187	3.875	1.750	0.075
TS-2409P	4.000	2.125	0.900	0.745	—	—	—	3.470	0.085
TS-2409F	4.000	2.125	0.900	0.745	4.500	0.187	4.875	3.470	0.085
TS-2420P**	4.000	2.125	2.000	1.815	—	—	—	3.470	0.085
TS-2420F**	4.000	2.125	2.000	1.815	4.500	0.187	4.875	3.470	0.085
TS-3315P	3.000	3.000	1.500	1.345	—	—	—	1.750	0.075
TS-3315F	3.000	3.000	1.500	1.345	3.500	0.187	3.875	1.750	0.075
TS-3420P**	4.375	3.125	2.000	1.805	—	—	—	3.295 X 2.045	0.100
TS-3420F	4.375	3.125	2.000	1.805	5.000 X 1.750	0.187	5.500	3.295 X 2.045	0.100

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

CAD Design • CNC Machining
Pad Printing

Value-Added Services

Mold Inserts • Special Materials
Custom Colors

Introduction - BF Series enclosures provide a cost-effective way to package and mount small electronic devices or circuitries. It is also ideal for potting or encapsulating. **NOTE:** For plain and top foot styles refer to the POLYCASE TX, TX-F & TX Select Series.

Details

Material

- Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO

Enclosure Styles and Features

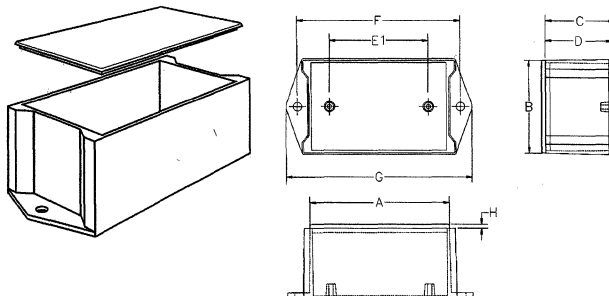
- Some sizes available with optional internal mounting bosses
- Enclosures include case only. Covers ordered separately.

Cover

- Glue-on covers

Styling

- Enclosures molded with a satin finish



CATALOG NO.	LENGTH -A-	WIDTH -B-	HEIGHT -C-	INSIDE DEPTH -D-	PCB BOSSES -E1-	MTG. HOLES -F-	MTG. HOLE DIA.	MTG. FEET OVERALL -G-	COVER THICKNESS -H-	COVER CATALOG NO.
BF-010175	1.000	1.000	0.750	0.687	—	1.375	0.187	1.850	0.060	C-0101
BF-150201	2.000	1.500	1.000	0.937	—	2.500	0.187	3.000	0.060	C-1502
BF-020215	2.000	2.000	1.500	1.437	—	2.500	0.187	3.000	0.060	C-0202
BF-020305	3.000	2.000	0.500	0.440	—	3.500	0.187	4.000	0.060	C-0203
BF-020305MB	3.000	2.000	0.500	0.440	2.125	3.500	0.187	4.000	0.060	C-0203
BF-020308	3.000	2.000	0.875	0.815	—	3.500	0.187	4.000	0.060	C-0203
BF-020308MB	3.000	2.000	0.875	0.815	2.125	3.500	0.187	4.000	0.060	C-0203
BF-020310	3.000	2.000	1.000	0.940	—	3.500	0.187	4.000	0.060	C-0203
BF020310MB	3.000	2.000	1.000	0.940	2.125	3.500	0.187	4.000	0.060	C-0203
BF-020315	3.000	2.000	1.500	1.437	—	3.500	0.187	4.000	0.060	C-0203
BF-020315MB	3.000	2.000	1.500	1.437	2.125	3.500	0.187	4.000	0.060	C-0203
BF-030308	3.000	3.000	0.875	0.815	2.125	3.500	0.187	4.000	0.060	C-0303
BF-030315	3.000	3.000	1.500	1.406	—	3.500	0.187	4.000	0.060	C-0303
BF-030315MB	3.000	3.000	1.500	1.406	2.125	3.500	0.187	4.000	0.060	C-0303

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

TX Select Textured Select Plastic Enclosures

BF Series Bottom Foot Plastic Enclosures



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EP Series Multi-Purpose Plastic Enclosures

Introduction - Multi-Purpose electronic enclosures house a variety of electronic devices or circuitries.
Details

Material

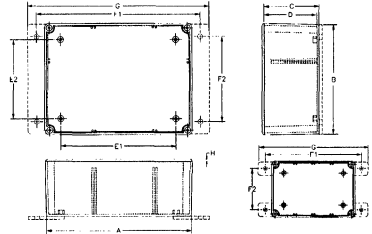
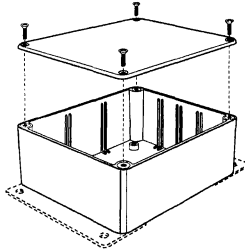
- Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO

Enclosure Styles and Features

- Internal bosses for mounting printed circuit boards
- Internal slots for vertical mounting of PC boards or dividers for potting portions of the enclosure
- Optional mounting feet available with each size
- Enclosures include case, cover and screws

Cover

- Covers screw into threaded brass inserts for cover on/cover off applications



CAT. NO.	LENGTH -A-	WIDTH -B-	HEIGHT -C-	INSIDE DEPTH -D-	PCB BOSSSES -E1- -E2-		MTG. FEET STYLE "FS" -F1- -F2-		MTG. FEET STYLE "FE" -F1- -F2-		MTG. HOLE	MTG. FEET DIA. -G-	COVER THICKNESS OVERALL -H-
EP-6	4.500	3.000	1.750	1.675	3.250	1.750	5.250	2.250	—	—	0.200	6.000	0.080
EP-7	4.500	4.500	2.250	2.175	3.250	3.250	—	—	5.250	3.500	0.200	6.000	0.080
EP-8	6.000	4.500	2.250	2.175	4.750	3.250	—	—	6.750	3.500	0.200	7.500	0.080
EP-9	7.500	4.500	2.250	2.175	6.250	3.250	—	—	8.250	3.500	0.200	9.000	0.080

EP-6 ENCLOSURE ONLY "FS" STYLE MOUNTING FEET
 EP7,8 and 9 ENCLOSURES "FE" STYLE MOUNTING FEET

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

CAD Design • CNC Machining
 Pad Printing

Value-Added Services

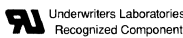
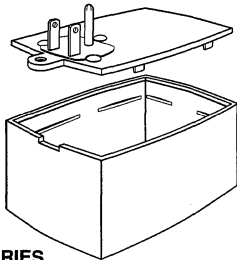
Mold Inserts • Special Materials
 Custom Colors

PS & PLUG-IN Series

Introduction - PS & PLUG-IN Series enclosures provide the ultimate flexibility for plug-in style applications. A wide range of case and base options allow numerous configurations.

Details

- Material** - Tough, lightweight, flame retardant ABS plastic with a UL flame rating of 94-VO
Styling - Attractive, textured surfaces resist scuffs & smudges



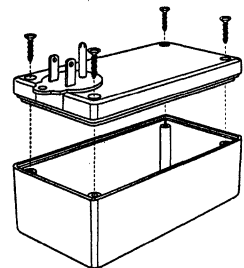
PS SERIES

Case

- Available with textured flush surface or recessed, smooth surface designed to accept graphic overlays
- Cases may be specified without holes, or with one or two holes molded into the face for snap-in receptacles

Base

- Recessed smooth area is standard to accommodate labels, coding or printing
- Internal mounting bosses for PC board screw-down mounting
- Case and base assembled with four recessed screws in base
- Three base styles available: desktop, 2-pole and 3-pole (grounded) 15 AMP 120 VAC plug configurations
- Bases can be ordered with an integral hold-down tab to semi-permanently secure unit to wall receptacle



PLUG-IN SERIES

Case

- Recessed smooth face for labels or graphic overlays
- Several options are available for locating receptacle holes. Consult Customer Service for details

Base

- Integral hold-down tab
- Base and case are bonded together for permanent closure
- Three base styles available: desktop, 2-pole and 3-pole (grounded) 15 AMP 120 VAC plug configurations

Case	LENGTH	WIDTH	HEIGHT	INSIDE DEPTH	RECEPTACLE HOLES	RECEPTACLE HOLES	OPTIONAL .010" RECESSED FACE	
	-A-	-B-	-C-	-D-	-E-	-F1-	-F2-	-G1-	-G2-
4.000	2.125	0.900	0.830	0.760	0.950	0.950	3.750	1.875
4.000	2.125	2.000	1.930	0.760	0.950	0.950	3.750	1.875

Base	LENGTH	WIDTH	HEIGHT	INSIDE DEPTH	PCB BOSSSES	PCB BOSSSES	RECESSED FACE
	-A-	-B-	-C-	-D-	-E1-	-E2-	-F-
4.105	2.230	0.510	0.380	2.860	1.580	0.187	0.120
							2.000 X 1.500

ALL DIMENSIONS ARE NOMINAL AND IN INCHES

Case	CATALOG NO.	LENGTH	WIDTH	HEIGHT	INSIDE DEPTH	RECESSED FACE
	M2203-6R	3.000	2.000	1.250	1.955	1.888 X 2.800
	M2203-10	3.000	2.000	2.000	1.825	1.888 X 2.804
	M2203-13	3.000	2.000	2.500	2.300	1.802 X 2.732

Base	CATALOG NO.	LENGTH	WIDTH	HEIGHT	PCB BOSSSES	PCB BOSSSES
	DT (DESKTOP)	3.000	2.000	0.150	1.000	1.500
	2 (2 POLE)				0.250 X 0.150	

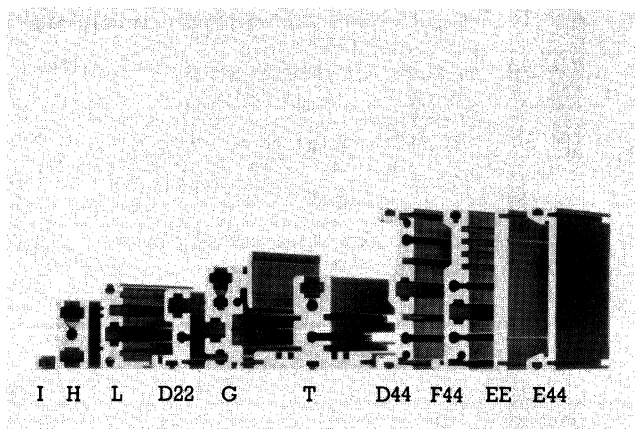
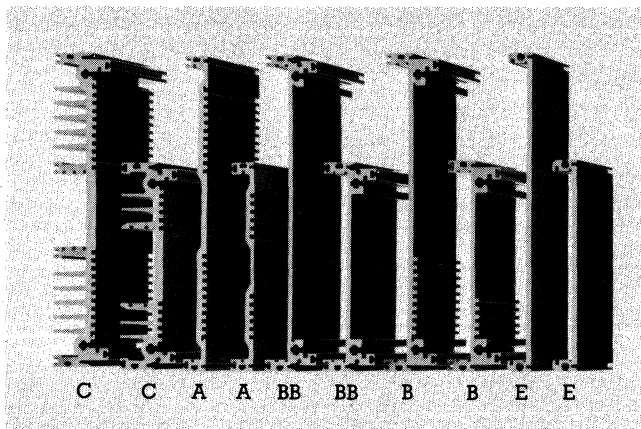
ALL DIMENSIONS ARE NOMINAL AND IN INCHES

Save Design And Assembly Time With

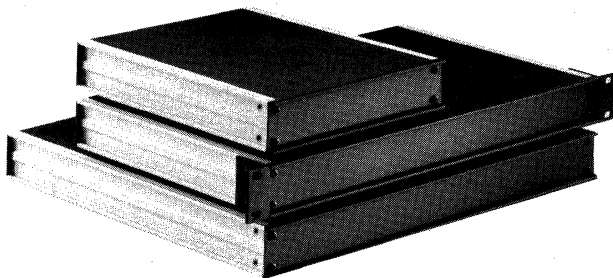
Flexibox

From Powerbox Enclosure Systems.

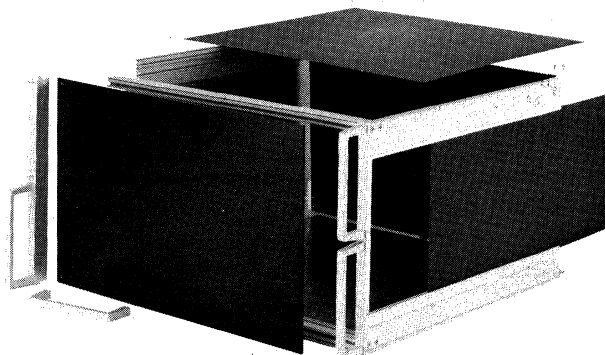
INSTRUMENT CASES BASED ON UNIQUE EXTRUSIONS



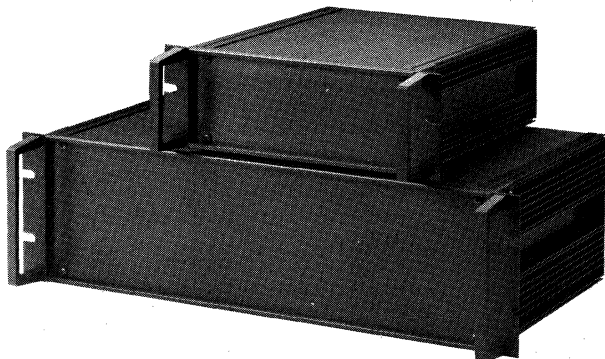
FEATURING:



THE MICROBOX
The 1-3/4" (1U) Tall Case Series



THE MACROBOX
In Sizes 3 1/2" (2U) To 14" (8U) Tall.
Can Hold Up To 70 lbs.



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FLEXIBOX

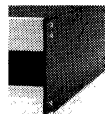
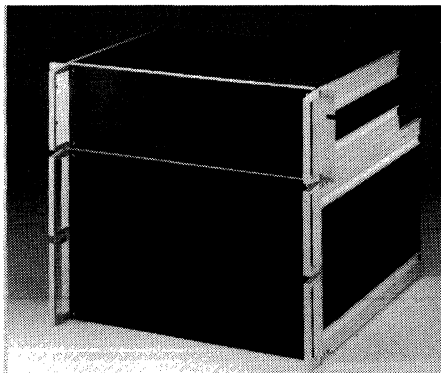
Flexibox is an attractive modular enclosure system engineered for low thermal resistance, strength and convenience.

The Flexibox family of modular instrument cases utilizes a versatile selection of aluminum extrusions, together with PVC-coated steel coverplates to provide a wide range of electronic equipment enclosures. All are easily assembled with just a screwdriver.

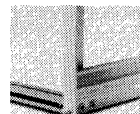
Custom kits can be supplied to meet

specific requirements. Many electronic design engineers spend a considerable amount of time and effort to produce a superior, operable design only to install it in an unsuitable, or perhaps even a crude enclosure. With Flexibox your prototype will look professional from the start. In kits or as separate parts (extra panels, tapped strips, angle brackets, handles, etc.) Flexibox combinations are virtually endless.

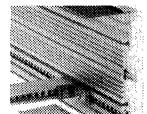
MACRO



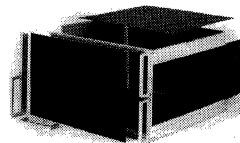
The back panel of aluminum sheet .098" (2.5 mm) is screwed into drawn holes in the side extrusions with self-tapping screws.



Cover angle/rack angle assembly. By changing height on cover angles, front and back panel, you can easily build to various heights.



C-channel with tapped strip for mounting brackets.



A Macrobox with all extrusions and coverplates in proper position. Extrusions are clear anodized, front and back panels are black anodized. Coverplates are black PVC-coated steel.

FEATURES

- The largest Flexibox Model: from 2U to 8U in height. Up to 19" in depth.
- Removable front panel - allows easy entry.
- Guide channels for mounting PC-boards in side extrusions.
- Available in all-black.
- C-channels for tapped strips in front and side extrusions allow easy mounting of plug-in card cages/card drawers in front, and of bracketing hardware on sides.
- Sturdy construction - 2 screw fastening at every joint - can hold up to 70 lbs.

MACRO PART #	OUTSIDE DIMENSIONS			INSIDE DIMENSIONS			PC BOARD		THERMAL RESISTANCE	
	WIDTH	HEIGHT	DEPTH	WIDTH	HEIGHT	DEPTH	WIDTH	DEPTH	W	°C/W
	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
2-440-325	17.283 439	3.445 87.5	12.776 324.5	16.457 418	3.228 82.0	12.520 318	16.594 421.5	12.520 318	95	0.50
2-440-425	17.283 439	3.445 87.5	16.713 424.5	16.457 418	3.228 82.0	16.457 418	16.594 421.5	16.457 418	120	0.42
2-440-500	17.283 439	3.445 87.5	19.665 499.5	16.457 418	3.228 82.0	19.409 493	16.594 421.5	19.409 493	130	0.37
3-440-325	17.283 439	5.217 132.5	12.776 324.5	16.457 418	5.000 127.0	12.520 318	16.594 421.5	12.520 318	140	0.36
3-440-425	17.283 439	5.217 132.5	16.713 424.5	16.457 418	5.000 127.0	16.457 418	16.594 421.5	16.457 418	170	0.30
3-440-500	17.283 439	5.217 132.5	19.665 499.5	16.457 418	5.000 127.0	19.409 493	16.594 421.5	19.409 493	195	0.28
4-440-325	17.283 439	6.969 177.0	12.776 324.5	16.457 418	6.752 171.5	12.520 318	16.594 421.5	12.520 318	155	0.32
4-440-425	17.283 439	6.969 177.0	16.713 424.5	16.457 418	6.752 171.5	16.457 418	16.594 421.5	16.457 418	185	0.27
4-440-500	17.283 439	6.969 177.0	19.665 499.5	16.457 418	6.752 171.5	19.409 493	16.594 421.5	19.409 493	205	0.26
5-440-325	17.283 439	8.720 221.5	12.776 324.5	16.457 418	8.504 216.0	12.520 318	16.594 421.5	12.520 318	170	0.30
5-440-425	17.283 439	8.720 221.5	16.713 424.5	16.457 418	8.504 216.0	16.457 418	16.594 421.5	16.457 418	205	0.26
5-440-500	17.283 439	8.720 221.5	19.665 499.5	16.457 418	8.504 216.0	19.409 493	16.594 421.5	19.409 493	220	0.24
6-440-325	17.283 439	10.472 266.0	12.776 324.5	16.457 418	10.256 260.5	12.520 318	16.594 421.5	12.520 318	185	0.27
6-440-425	17.283 439	10.472 266.0	16.713 424.5	16.457 418	10.256 260.5	16.457 418	16.594 421.5	16.457 418	220	0.24
6-440-500	17.283 439	10.472 266.0	19.665 499.5	16.457 418	10.256 260.5	19.409 493	16.594 421.5	19.409 493	235	0.23
8-440-325	17.283 439	13.976 355.0	12.776 324.5	16.457 418	13.760 349.5	12.520 318	16.594 421.5	12.520 318	215	0.24
8-440-425	17.283 439	13.976 355.0	16.716 424.5	16.457 418	13.760 349.5	16.457 418	16.594 421.5	16.457 418	260	0.21
8-440-500	17.283 439	13.976 355.0	19.665 499.5	16.457 418	13.760 349.5	19.409 493	16.594 421.5	19.409 493	275	0.20

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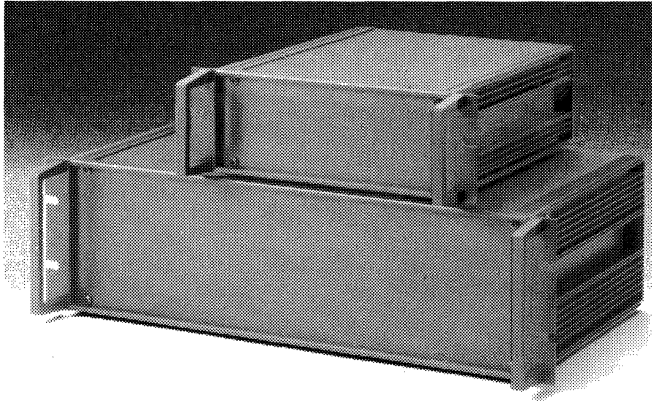
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FLEXIBOX

MULTI



A Multibox with all different extrusions and cover-plates in position. Front and back panels, and side extrusions are black anodized. Coverplates are black PVC-coated steel.



The back panel is a flat .098" (2.5 mm) thick aluminum plate, which mounts with four self-tapping screws.



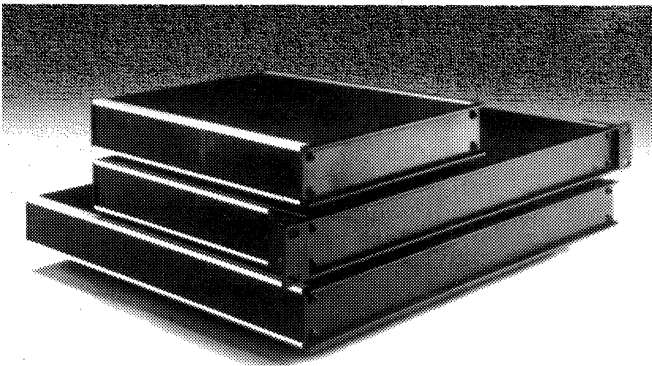
All extrusions and panels are used to hold different components and PC cards.

FEATURES

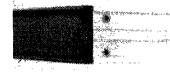
- Built-in heat sinks on sides.
- Maximum power loss of 300W.
- Easy-to-machine front panel.
- Grooves for PC boards.

MULTI PART #	OUTSIDE DIMENSIONS			INSIDE DIMENSIONS			PC BOARD		THERMAL RESISTANCE	
	WIDTH	HEIGHT	DEPTH	WIDTH	HEIGHT	DEPTH	WIDTH	DEPTH	W	°C/W
	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
2-220-250	8.504 216	3.445 87.5	10.354 263	7.008 178	3.228 82	9.843 250	7.154 181.7	9.843 250	100	0.50
3-220-250	8.504 216	5.217 132.5	10.354 263	7.008 178	5.000 127	9.843 250	7.154 181.7	9.843 250	145	0.35
2-220-350	8.504 216	3.445 87.5	14.291 363	7.008 178	3.228 82	13.780 350	7.154 181.7	13.780 350	125	0.40
3-220-350	8.504 216	5.217 132.5	14.291 363	7.008 178	5.000 127	13.780 350	7.154 181.7	13.780 350	165	0.32
2-440-250	17.008 432	3.445 87.5	10.354 263	15.512 394	3.228 82	9.843 250	15.657 397.7	9.843 250	170	0.30
3-440-250	17.008 432	5.217 132.5	10.354 263	15.512 394	5.000 127	9.843 250	15.657 397.7	9.843 250	220	0.24
2-440-350	17.008 432	3.445 87.5	14.291 363	15.512 394	3.228 82	13.780 350	15.657 397.7	13.780 350	210	0.25
3-440-350	17.008 432	5.217 132.5	14.291 363	15.512 394	5.000 127	13.780 350	15.657 397.7	13.780 350	300	0.17

MICRO



The Microbox with all different extrusions and cover-plates in proper position. Front and back panels are black anodized, side extrusions clear anodized and coverplates are black PVC-coated steel.



The side extrusions are prepared with anchor nuts for easy mounting of rack angles.



Black side coverplates to match top/bottom panels are included in all Microbox kits. Fit right in grooves in the side extrusions.

FEATURES

- The 1U (1 3/4") tall Flexibox.
- Maximum power loss of 72W.
- Inside grooves for PC-boards and tapped strips.
- Available in all-black.

MICRO PART #	OUTSIDE DIMENSIONS			INSIDE DIMENSIONS			PC BOARD		THERMAL RESISTANCE	
	WIDTH	HEIGHT	DEPTH	WIDTH	HEIGHT	DEPTH	WIDTH	DEPTH	W	°C/W
	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
1-115-160	4.516 114.7	1.732 44.0	6.713 170.5	3.689 93.7	1.496 38	6.299 160	3.937 100.0	6.299 160	12	2.44
1-115-190	4.516 114.7	1.732 44.0	7.894 200.5	3.689 93.7	1.496 38	7.480 190	3.937 100.0	7.480 190	15	2.26
1-220-250	8.504 216.0	1.732 44.0	10.256 260.5	7.677 195.0	1.496 38	9.483 250	7.933 201.5	9.016 229	30	1.66
1-220-350	8.504 216.0	1.732 44.0	14.193 360.5	7.677 195.0	1.496 38	13.780 350	7.933 201.5	12.953 329	36	1.38
1-250-250	9.783 248.5	1.732 44.0	10.256 260.5	8.957 227.5	1.496 38	9.843 250	9.193 233.5	9.016 229	32	1.55
1-440-130	17.008 432.0	1.732 44.0	5.571 141.5	16.181 411.0	1.496 38	5.157 131	16.437 417.5	3.937 100	30	1.73
1-440-250	17.008 432.0	1.732 44.0	10.256 260.5	16.181 411.0	1.496 38	9.483 250	16.437 417.5	8.622 219	60	0.83
1-440-350	17.008 432.0	1.732 44.0	14.193 360.5	16.181 411.0	1.496 38	13.780 350	16.437 417.5	12.559 319	72	0.70

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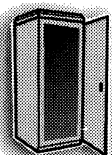
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Avalanche Photodiode: A photodiode that takes advantage of avalanche multiplication of photocurrent. It is particularly suited to low noise and/or high speed applications.

Contrast: A noticeable difference in color, brightness, or other characteristics in a side-by-side comparison.

Chrominance Contrast: The color contrast between two adjacent surfaces of identical area, shape, texture, and luminance. The human eye is more sensitive to differences in color than it is to differences in brightness.

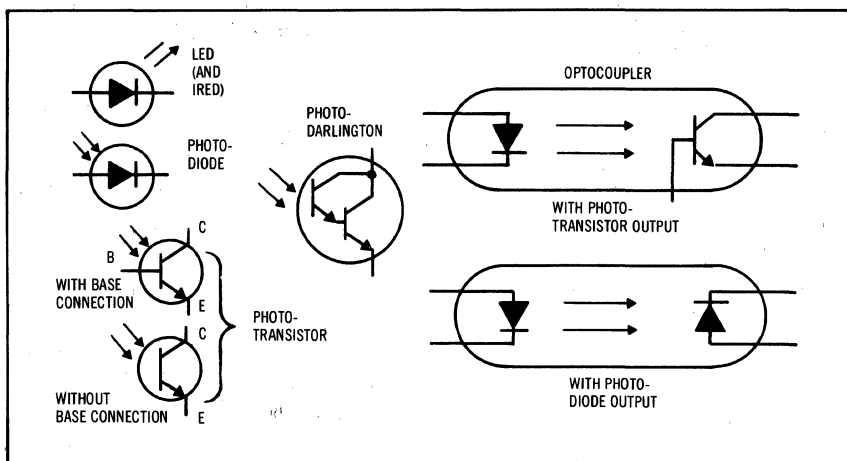
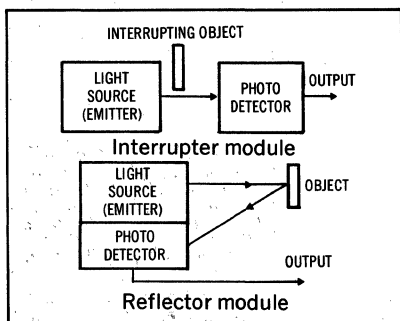
Current Transfer Ratio: The ratio of an optocoupler's output current to input current at a specified bias.

Dark Current: The leakage current of a photodetector with no incident light.

Dominant Wavelength: The wavelength that is a quantitative measure of apparent color of light as perceived by the human eye.

Infrared Radiation: The electromagnetic wavelength region between approximately 0.75 and 100 micrometers longer than the wavelength of visible light.

Interrupter (module): A device that produces an electrical output signal when an object breaks the light (visible or invisible) between a light source and a photodetector.



IRED: An infrared-emitting diode. See light-emitting diode.

Light Current: The current that flows through a photodetector when it is exposed to radiant energy.

Light-Emitting Diode (LED): A semiconductor diode that emits incoherent light at its PN junction when forward biased. The light can be in the visible or invisible (infrared) wavelength region.

Luminance Contrast: The observed brightness of a light-emitting element compared to the brightness of the "surround," an integral part of the device and inseparable from it.

Optocoupler: A device that transmits electrical signals, without electrical connection, between a light source (input) and the receiver (output). The input is generally an LED; the output might be a photodiode, phototransistor, a photo-Darlington, etc. Sometimes referred to as optoisolator.

Peak Wavelength: The wavelength at the peak of the radiated spectrum of an emitter.

Photo-Darlington: A light-sensitive Darlington-connected transistor pair. The photo-Darlington has a very high sensitivity to illumination or radiation.

Photodetector: A device that provides an electrical output signal when subjected to radiation in the visible, infrared, or ultraviolet regions of the electromagnetic spectrum. Photodiodes, phototransistors, and photo-Darlington are the most common type of photodetectors.

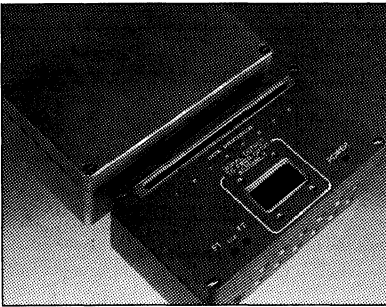
Photodiode: A junction diode that is responsive to radiant energy. Photodiodes have a high degree of linearity between the input radiation and the output current, and faster switching speeds than phototransistors.

Photothyristor: A thyristor whose switching action is controlled by light applied to the thyristor gate.

Phototransistor: A light-sensitive transistor that delivers an electrical output proportional to the light intensity at its input. The low-level photocurrent that is generated is amplified by the current gain of the transistor. The base region (or gate in a FET) may or may not be brought out as an external terminal.

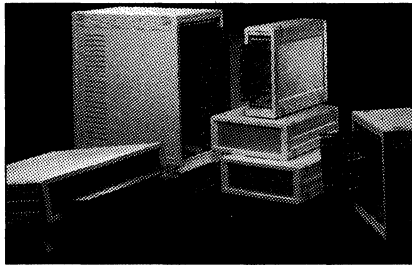
Point Source: A source with a maximum dimension less than one-tenth the distance between sources and detector.

Reflector (module): A device containing a light source and a photodetector that detects any object that reflects light produced by the source back to the detector.



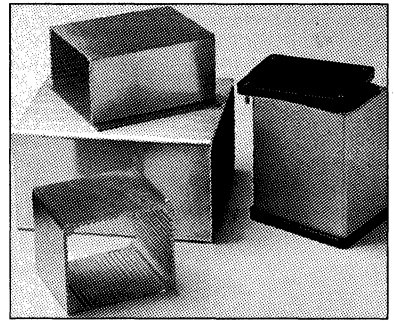
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Sophisticated Styling

Bopla's sophisticated Ultramas enclosures are ideal for small test equipment or computer peripherals, including information superhighway applications. Molded in white-gray ABS plastic, with smooth lines and satin finish.



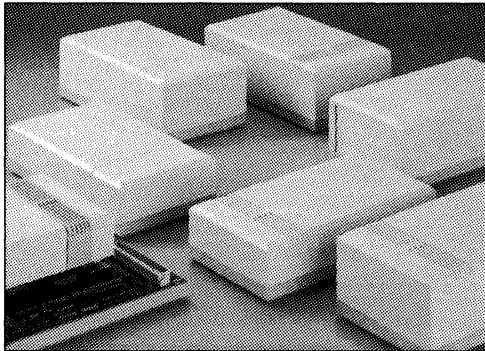
The Ultimate in Design Flexibility

Unique Build-A-Box® line consists of extruded aluminum profiles that can be cut to any length required. A variety of lids and end plates complete the enclosure. Eight new profiles are designed for dust tight electronic enclosures.



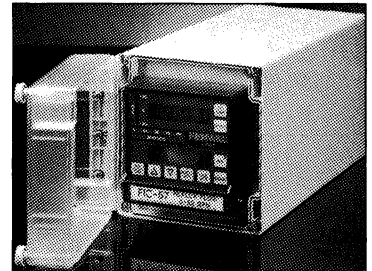
Solutions In Hand

Designed for portable data acquisition and transmission equipment, the BOS 900 hand-held enclosure accepts a 16-character-by-four-line display and a 1-mm-thick membrane keypad.



Elegant Protection

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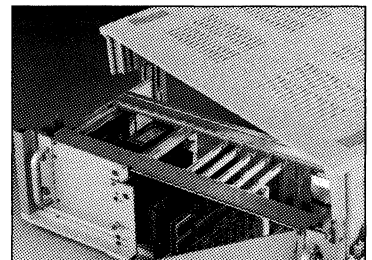
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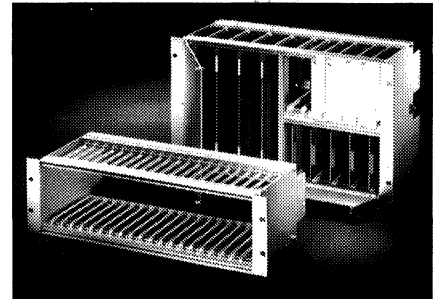
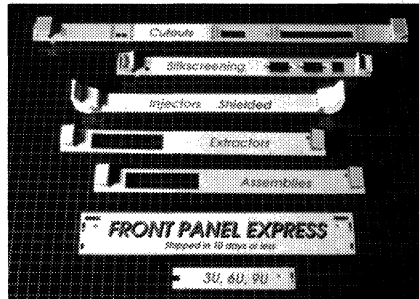
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**Front Panel
EXPRESS**



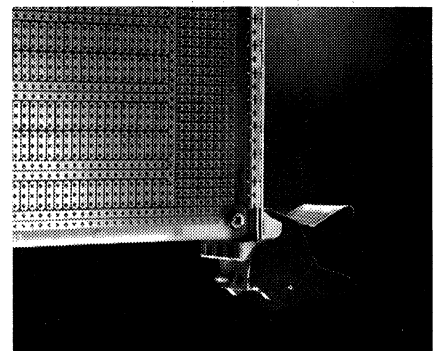
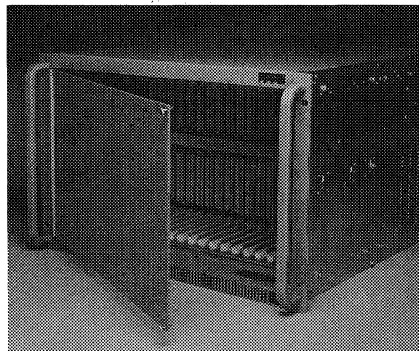
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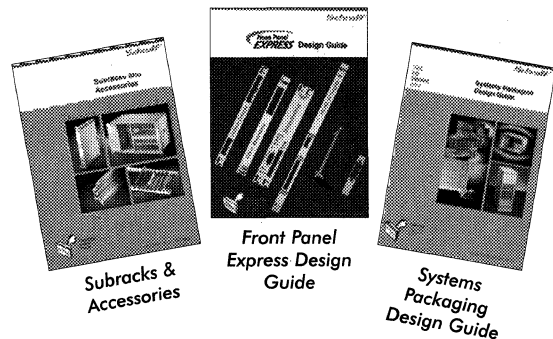


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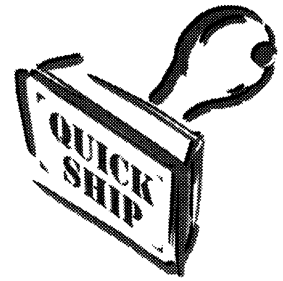
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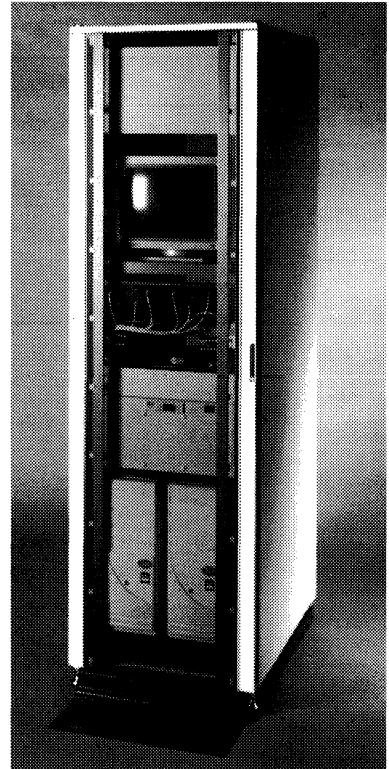
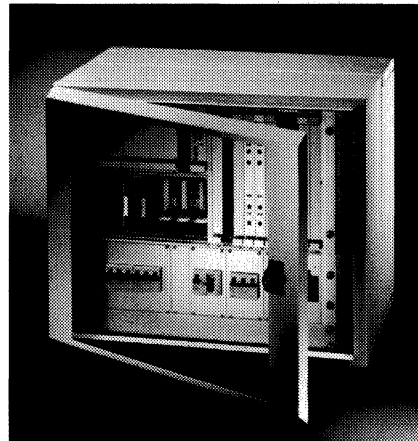
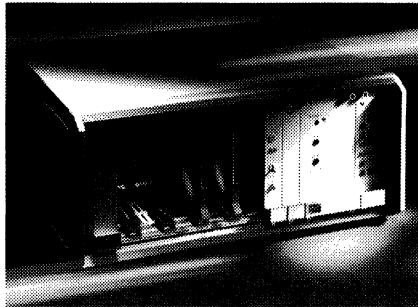
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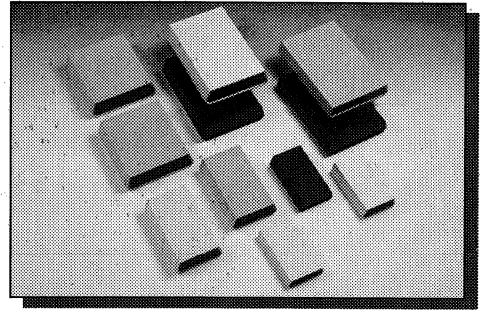
A-SERIES

Clam shell design
Interchangeable end
panels

- Standard black
- Infrared
- clear
- 9-Volt
- DB-9, DB-25

Colors:
black, gray, almond

	WIDTH	LENGTH	HEIGHT
A-20	2.600	4.250	0.875
A-21	2.600	4.250	1.125
A-21,9V	2.600	4.250	1.125
A27	3.350	5.310	1.500
A-27,9V	3.350	5.310	1.500
A-31	5.100	5.300	1.710
A-31,9V	5.100	5.300	1.710
A-41	5.000	7.100	1.300
A-41,9V	5.000	7.100	1.300
A-42	5.000	7.100	1.620
A-42,9V	5.000	7.100	1.620



C-SERIES

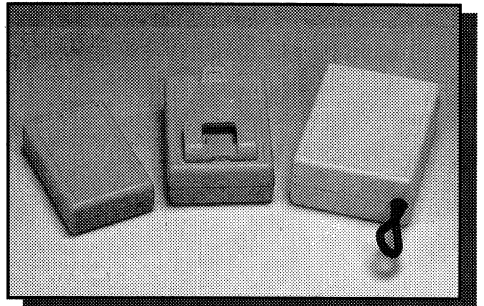
Single screw assembly

Key holder (KH) option

Pocket clip (PC) option

Colors:
black, gray, almond,
blue, white

	WIDTH	LENGTH	HEIGHT
C-4	1.375	2.125	0.580
C-4,PC	1.375	2.125	0.580
C-4,KH	1.375	2.125	0.580
C-6	1.613	2.263	0.753
C-6,PC	1.613	2.263	0.753
C-6,KH	1.613	2.263	0.753
C-8	1.850	2.400	0.925
C-8,PC	1.850	2.400	0.925
C-8,KH	1.850	2.400	0.925



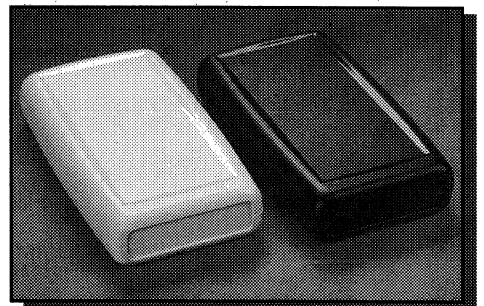
H-SERIES

- 9V
- AA
- Access
- Standard

Face Plates:
IR, Red, Clear

Colors:
black, gray, almond

	WIDTH	LENGTH	HEIGHT
H-65	2.750	4.940	0.944
H-65,AC	2.750	4.940	0.944
H-65,9V	2.750	4.940	0.944
H-65,AA	2.750	4.940	0.944
H-67	2.750	4.940	1.275
H-67,AC	2.750	4.940	1.275
H-67-9V	2.750	4.940	1.275
H-67-AA	2.750	4.940	1.275



M-SERIES

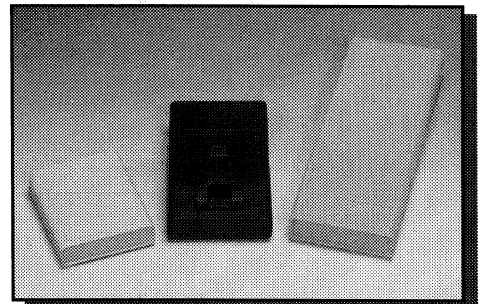
Interlocking assembly

Face Plates:
IR, Red, Clear

Pocket Clip (PC) option

Colors:
black, gray, almond,
blue, white

	WIDTH	LENGTH	HEIGHT
M-4	2.200	2.800	0.710
M-4,PC	2.200	2.800	0.710
M-6	2.400	4.150	0.850
M-6,PC	2.400	4.150	0.850
M-8	2.400	6.970	0.850
M-8,PC	2.400	6.970	0.850



IMAGINE-IT! ENCLOSE-IT!

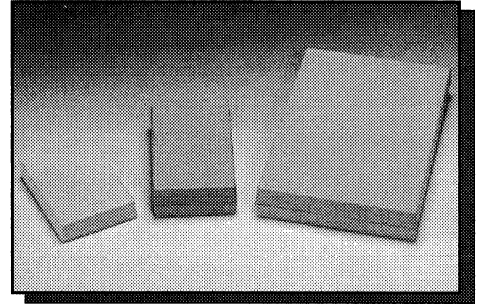
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SERPAC *Electronic Enclosures*

S-SERIES

- Custom insert areas (I-Plate)
- Wall mounting option
- Waterproof gasket available
- 9 Volt battery option (2xx)

Colors: black, gray, almond, white, blue



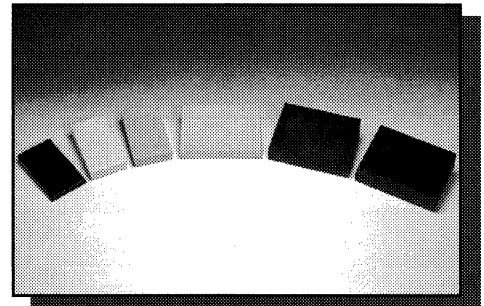
	WIDTH	LENGTH	HEIGHT
110-I	2.275	3.625	1.010
111	2.275	3.625	1.510
211,9V	2.610	4.115	1.510
112	2.275	3.625	2.015
113	2.275	3.625	2.510
031, 031-I	3.255	4.380	0.910
131, 131-I	3.255	4.380	1.510
231,231-I(9V)	3.255	4.380	1.510
32	3.255	4.380	1.410
132	3.255	4.380	1.410
232 (9V)	3.255	4.380	2.010
033, 03-I	3.255	4.380	1.910
133, 133-I	3.255	4.380	2.510
233,233-I(9V)	3.255	4.380	2.510
051, 051-I	3.275	5.650	0.910
151, 151-I	3.275	5.650	1.505
251,251-I(9V)	3.275	5.650	1.505
52	3.275	5.650	1.410
152	3.275	5.650	2.005

	WIDTH	LENGTH	HEIGHT
252 (9V)	3.275	5.650	2.005
053, 053-I	3.275	5.650	1.910
153, 153-I	3.275	5.650	2.500
253,253-I(9V)	3.275	5.650	2.500
071, 071-I	4.890	6.890	0.920
171, 171-I	4.890	6.890	1.510
271,271-I(9V)	4.890	6.890	1.510
072, 072-I	4.890	6.890	1.453
172, 172-I	4.890	6.879	2.025
272,272-I(9V)	4.890	6.890	2.025
073, 073-I	4.890	6.890	1.925
173, 173-I	4.890	6.890	2.520
273,273-I(9V)	4.890	6.890	2.520
182-I	5.960	13.960	2.010
091, 091-I	6.340	9.500	0.910
191, 191-I	6.340	9.500	1.510
093, 093-I	6.340	9.500	1.895
193, 193-I	6.340	9.500	2.495

SL-SERIES

- Custom insert areas (I-Plate)
- Slanted desktop design
- Wall mounting option
- 9 Volt battery option (2xx)
- Waterproof gasket available

Colors:
black, gray, almond, white, blue



	WIDTH	LENGTH	BACK HEIGHT	FRONT HEIGHT
05-S	3.275	5.650	0.900	0.390
15-S	3.275	5.650	1.500	0.900
25-S	3.275	5.650	1.500	0.900
07-S	4.890	6.890	1.865	0.990
17-S	4.890	6.890	2.450	1.520
27-S	4.890	6.890	2.450	1.520

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SERPAC *Electronic Enclosures*

R-SERIES



- **Unbreakable**
- **Waterproof**
- **Ergonomic handle**
- **Light-weight**
- **Airtight**
- **Corrosion proof**
- **Pressure purge valve**
- **Colors: black, gray**

EXTERIOR DIMENSIONS			
	WIDTH	LENGTH	HEIGHT
R-100	6.500	8.500	3.250
R-200	7.750	9.250	4.500
R-300	9.750	10.750	5.000
R-400	9.750	10.750	7.000
R-500	12.000	13.000	6.000
R-600	13.000	16.000	7.000
R-700	15.500	19.250	7.500

INTERIOR DIMENSIONS			
	WIDTH	LENGTH	HEIGHT
R-100	4.750	7.500	3.125
R-200	6.000	8.500	3.750
R-300	7.500	9.500	4.500
R-400	7.500	9.500	6.500
R-500	9.250	12.250	5.250
R-600	10.500	15.000	6.000
R-700	12.875	18.000	6.750

IMAGINE-IT! ENCLOSE-IT!

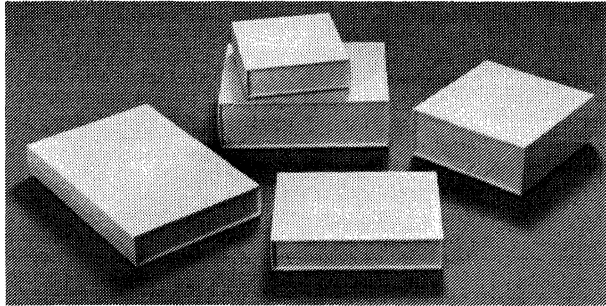
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DRESS IT WITH A SIMCO HOUSING

THE CHALLENGER SERIES



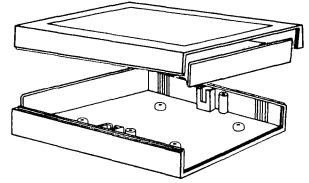
Features

- High Impact Material
- Attractive Soft Suede Finish
- Molded-in card guides and mounting bosses
- Complete w/Plastite® screws and self adhesive rubber feet
- In-stock availability
- Colors: Black, Sand, Dark Grey and PC Bone Grey

The Challenger Series is ideal for most any portable instrument housing. Available in five popular sizes.

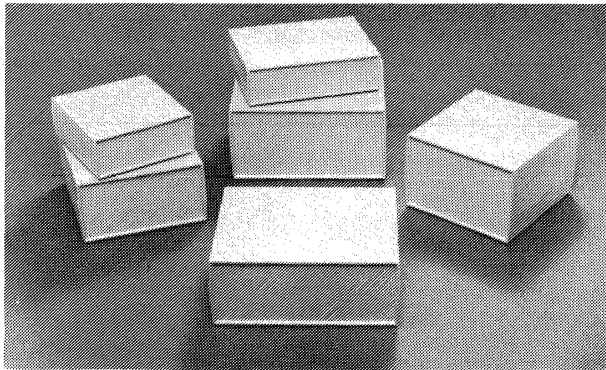
Available Options

- Custom colors
- UL 94V-O Material
- EMI/RFI shielding
- Tilt stand / carrying handle
- Universal mounting brackets
- Front and rear panels



Model Number	Outside Dimensions (Inches)
150X5	1.53H x 5.08W x 5.30D
150X75	1.53H x 7.06W x 5.30D
150X69	1.55H x 6.33W x 9.62D
250X6	2.52H x 6.12W x 6.32D
250X86	2.52H x 8.10W x 6.32D

THE XPANDER SERIES



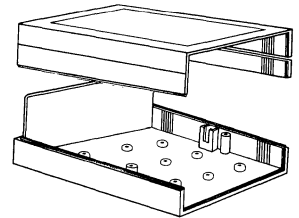
Features

- High Impact Material
- Attractive Soft Suede Finish
- Molded-in card guides and mounting bosses
- Complete with Plastite® screws and rubber feet
- In-stock availability
- Colors: Black, Sand, Dark Grey and PC Bone Grey

The Xpander Series is created using xpander panels to increase the height of a standard enclosure.

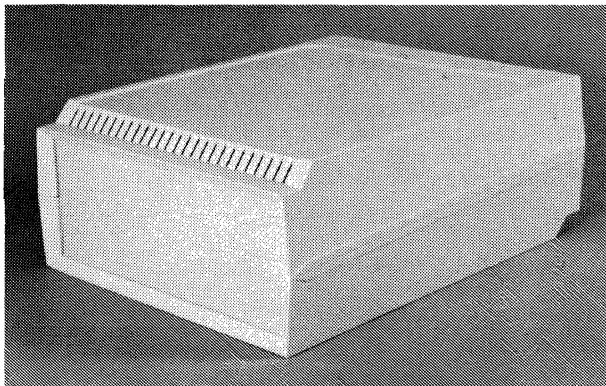
Available Options

- Custom colors
- UL 94V-O Material
- EMI/RFI shielding
- Tilt stand / carrying handle
- Universal mounting brackets
- Front and rear panels



Model Number	Outside Dimensions (Inches)
200XP5	2.04H x 5.08W x 5.30D
200XP75	2.04H x 7.06W x 5.30D
325XP6	3.30H x 6.12W x 6.32D
325XP86	3.30H x 8.10W x 6.32D
400XP6	4.04H x 6.12W x 6.32D
400XP86	4.04H x 8.10W x 6.32D

THE NEW ENTERPRISE SERIES



* To order without ventilation slots add /NV to part #.

With its rugged design, the Enterprise is suitable for many applications from industrial to commercial to medical fields.

Features

- High Impact Material
- Attractive leatherette finish
- Molded-in ventilation slots
- Molded-in card guides & mounting bosses
- Hardware included
- Colors: Black, Sand, Dark Grey, PC Bone Grey

Options:

- UL 94V-O Material
- EMI/RFI shielding
- Front & Rear Panels
- Secondary Machining
- Available without ventilation slots

Model Number	Outside Dimensions (Inches)
425 X 911	4.25 H x 9.30 W x 10.93 D

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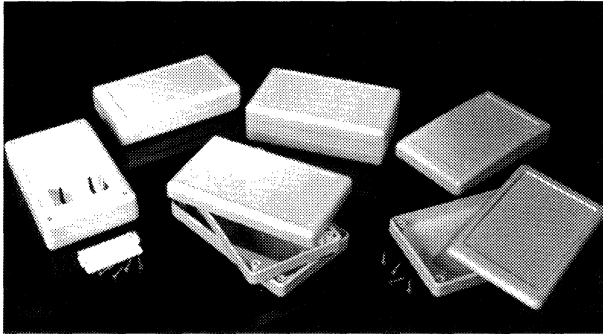
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THE DISCOVERY SERIES



Size 1.5 to .40H x 3.75W x 6.30L (inches)

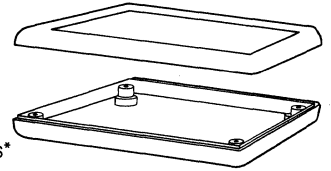
Features

- High Impact Material
- Complete with Plastite® screws and self-adhesive transparent non-skid feet
- In-stock availability
- Easily machined
- Smooth recessed area for graphics, over-lays
- Colors: Black, Sand, Dark Grey, PC Bone Grey

Small hand-held enclosures in six distinctive styles. Choose from a plain utility top or graceful sloped top with plain bottom or deep bottom with or without 9-volt battery compartment.

Available Options

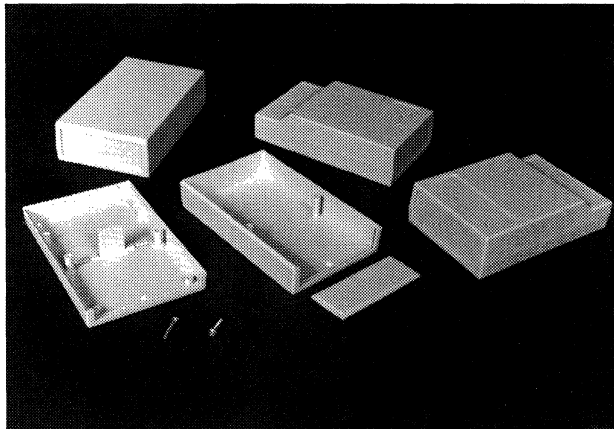
- UL 94V-O Material
- EMI/RFI shielding
- Low-cost tooling insert to customize tops or bottoms
- Molded-in mounting bosses*
- .5625 Expander Ring



Model Number	Description
36SB	Sloped Top, Plain Bottom
36SDB	Sloped Top, Deep Bottom
36S9VB	Sloped Top, Battery Bottom
36TB	Plain Top, Plain Bottom
36TDB	Plain Top, Deep Bottom
36T9VB	Plain Top, Battery Bottom
36XR	.5625 Expander Ring

* To order with PC Board mounting bosses molded-in add /B to the model number.

THE ENDEAVOR SERIES



Size 1.30 x 2.97 x 4.82 (inches)

Pocket size enclosures are ideal for a variety of small electronic devices



Features

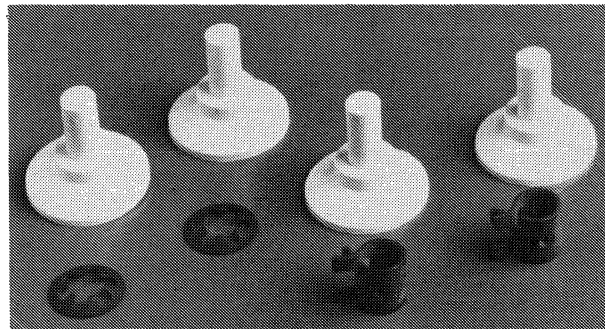
- High impact material
- Plastite® screws
- In-stock availability
- Molded-in mounting bosses
- Drop-in end panel

Options

- UL 94V-O material
- EMI/RFI shielding
- Low cost inserts for custom tooling

Model Number	Description
35CB	Contour Top, Plain Bottom
35TB	Plain Top, Plain Bottom
35CBA	Contour Top, Battery Access
35TBA	Plain Top, Battery Access

UNIVERSAL MOUNTING BOSSES



PC board mounting boss location need not be a concern with SIMCO's new Universal Mounting Bosses. Designed to bond securely to an ABS enclosure with MEK or other bonding agent, the bosses can be located wherever needed within an enclosure. The PC board is then held in place with easy to use push-on fasteners, or removable spring clips.

Model Number	Description
PMB-125	PC Board Mounting Bosses and Clips
PMB-125R	PC Board Mounting Bosses and Removable Spring Clips

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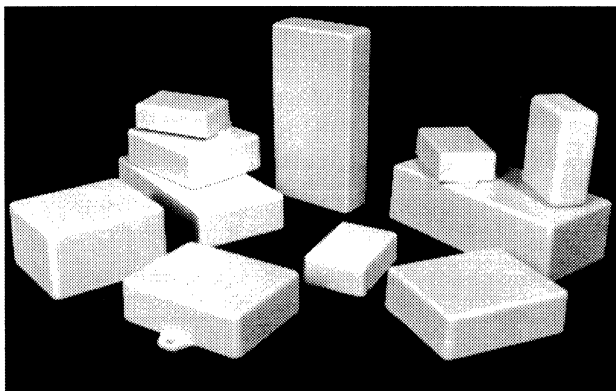
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THE SATURN SERIES



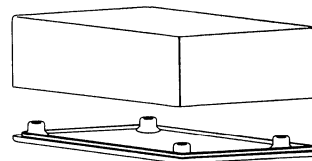
Model Number	Outside Dimensions (inches)
100 X 22	.940H x 1.80W x 2.30D

The 100 x 22 snaps together. No screws needed.
Mounting tabs not available

The smallest enclosures in the SIMCO line, these mini-boxes offer a practical, economical packaging solution for small electronic devices or circuitry.

Features

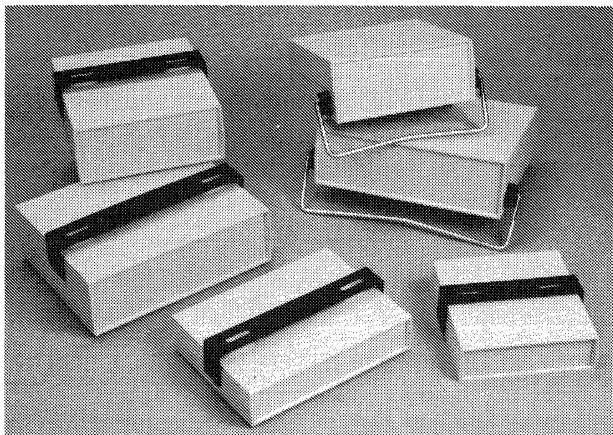
- High Impact Material
- Plastite® screws
- With or without mount tabs*
- PC board provisions
- Easily machined
- Colors: Black, Sand, Dark Grey, PC Bone Grey



Model Number	Outside Dimensions (inches)
075 X 12	.785H x 1.51W x 2.26D
100 X 23	1.00H x 2.49W x 2.99D
100 X 25	1.00H x 2.50W x 5.00D
160 X 23	1.60H x 2.49W x 2.99D
160 X 25	1.60H x 2.50W x 5.00D

* To order with mount tabs add /M to the model number.

TILT STAND/HANDLE KIT & MOUNTING BRACKETS



Tilt Stand/Handle Kits are chrome plated steel with molded side attachment buttons.

Mounting Brackets are durable 16 gauge crs 1010 with Polane 2 part epoxy.

All hardware for easy assembly is included.

Tilt/Stand Handle Kits

- HK-6 – to fit 6" enclosure
- HK-86 – to fit 8" enclosure

Mounting Brackets

- MBK-5 – to fit 5" enclosure
- MBK-6 – to fit 6" enclosure
- MBK-7 – to fit 7" enclosure
- MBK-8 – to fit 8" enclosure

CUSTOM MACHINING & MOLDING



SIMCO enclosures and panels are easily machined or drilled to create openings for switches, connectors, displays, etc. Do it yourself or let SIMCO quote your custom modifications. Send a drawing or rough sketch of your requirements for a prompt quote.

Some SIMCO enclosures can be custom molded using our patented "insert" technique to mold openings and assembly requirements where needed. A special low cost mold can be constructed to your specifications for inexpensive custom end panels.

Pad printing on enclosures and end panels is available from SIMCO. Send camera ready artwork or copy for a prompt quote.

STANDARD INJECTION MOLDING CO., INC./DBA SIMCO

P.O. Box 997, Avon Park, Florida 33826

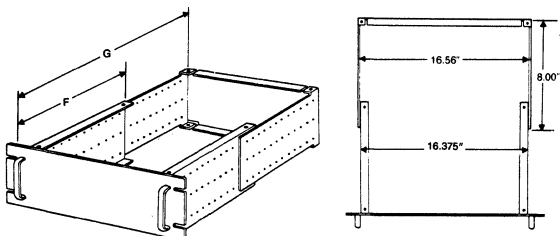
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THE STRONGBOX®

E-SERIES EXTENSION KITS

E-Series depth Extension kits are user adjustable in 1/2" increments for intermediate and extended chassis depth. Thus any chassis depth from 9 1/2" to 26" is available off-the-shelf.

E-Series kits contain 2 Extension Side Panels and 2 Extension Perforated Covers.



EXTENSION RANGE

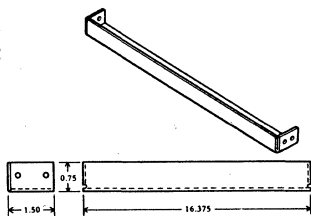
Kit Number	F	+ E-Series = G
SB9-	9.50"	9.50" - 16.50"
SB12-	12.00"	12.00" - 19.00"
SB19-	19.00"	19.00" - 26.00"

E-SERIES DEPTH EXTENSION KITS

Extension Kit Number	Mates With			Price
E-3	SB9-3	SB12-3	SB19-3	137.00
E-5	SB9-5	SB12-5	SB19-5	140.00
E-7	SB9-7	SB12-7	SB19-7	143.50
E-8	SB9-8	SB12-8	SB19-8	144.70
E-10	(NONE)	SB12-10	SB19-10	181.50

Add dash "--SAC" to kit number to get Solid instead of Perforated covers (deduct \$20.00 from kit price). Add dash "--SAC 1" to kit number to get one, each, Solid and Perforated cover (deduct \$10.00 from kit price).

MA-1.5 MOUNTING ANGLE



The Mounting Angle is used to attach card guides and other interior parts when a full-length, -height, or -width platform is not required or would impede the flow of cooling air. It also adds torsional stiffness to chassis used in extremely demanding environments.

Each heavy-duty MA-1.5 is made of 0.090"-thick, clear-iridized aluminum, and is supplied with captive attachment hardware. It is an "L"-shaped solid which mounts to pre-drilled chassis holes in any of four useful orientations.

Order SB9-, SB12-, and SB19-Series parts from this table. Parts in each column mate with others of the same depth.

PARTS	KIT DEPTH	KIT DASH NUMBER						
		-1	-3	-5	-7	-8	-10	-12
Handle	ALL	(none)	SBH-3	SBH-5	SBH-7	SBH-8	SBH-10	SBH-12
Front Panel	ALL	FP-1	FP-3	FP-5	FP-7	FP-8	FP-10	FP-12
Interior Mounting Panel	ALL	IMP-1	IMP-3	IMP-5	IMP-7	IMP-8	IMP-10	IMP-12
Side Panel	SP9-	CHA9-1	SP9-3	SP9-5	SP9-7	SP9-8	(none)	(none)
	SP12-	CHA12-1	SP12-3	SP12-5	SP12-7	SP12-8	SP12-10	(none)
	SB19-	(none)	SP19-3	SP19-5	SP19-7	SP19-8	SP19-10	SP19-12
Perforated Cover	SB9-	PAC-9	PAC-9	PAC-9	PAC-9	PAC-9	(none)	(none)
	SB12-	PAC-12	PAC-12	PAC-12	PAC-12	PAC-12	PAC-12	(none)
	SB19-	(none)	PAC-19	PAC-19	PAC-19	PAC-19	PAC-19	PAC-19
Solid Cover	SB9-	SAC-9	SAC-9	SAC-9	SAC-9	SAC-9	(none)	(none)
	SB12-	SAC-12	SAC-12	SAC-12	SAC-12	SAC-12	SAC-12	(none)
	SB19-	(none)	SAC-19	SAC-19	SAC-19	SAC-19	SAC-19	SAC-19
Bottom Mounting Plate	SB9-	(none)	IMP-8	IMP-8	IMP-8	IMP-8	(none)	(none)
	SB12-	(none)	BMP-12	BMP-12	BMP-12	BMP-12	BMP-12	(none)
	SB19-	(none)	BMP-19	BMP-19	BMP-19	BMP-19	BMP-19	BMP-19
Heavy Cover Plate	SB9-	HCP-9	HCP-9	HCP-9	HCP-9	HCP-9	(none)	(none)
	SB12-	HCP-12	HCP-12	HCP-12	HCP-12	HCP-12	HCP-12	(none)
	SB19-	(none)	HCP-19	HCP-19	HCP-19	HCP-19	HCP-19	HCP-19
Mounting Angle	ALL	MA-1.5	MA-1.5	MA-1.5	MA-1.5	MA-1.5	MA-1.5	MA-1.5
Depth Extension Kit	ALL	(none)	E-3	E-5	E-7	E-8	E-10	(none)
Slide Kit	SB9	SLD-9	SLD-9	SLD-9	SLD-9	SLD-9	(none)	(none)
	SB12	SLD-12	SLD-12	SLD-12	SLD-12	SLD-12	SLD-12	(none)
	SB19	(none)	SLD-19	SLD-19	SLD-19	SLD-19	SLD-19	SLD-19

RACK-MOUNT CHASSIS KITS AND PRICE LIST

Kit Dash Number	Number of Rack Units	Front Panel Height	Price		
			SB9-	SB12-	SB19-
-1	1	1.72	121.75	125.80	(none)
-3	2	3.47	245.50	252.50	263.50
-5	3	5.22	253.00	260.00	271.00
-7	4	6.97	265.50	268.50	278.50
-8	5	8.72	272.50	278.00	287.00
-10	6	10.47	(none)	333.00	342.00
-12	7	12.22	(none)	(none)	355.00

Add dash "--SAC" to kit number to get Solid instead of Perforated covers (deduct \$20.00 from kit price). Add dash "--SAC 1" to kit number to get one, each Solid and Perforated cover (deduct \$10.00 from kit price).

Detailed drawings available on request. Other sizes available; call for quote.

Prices subject to change. Order Bottom Mounting Plates, Slides and additional Interior Mounting Panels as separate items.

STRONGBOX®

P.O. Box 2726, Culver City, CA 90231
(310) 305-8288 FAX: (310) 305-1905



THE STRONGBOX®

HEAVY-DUTY RACK-MOUNT CHASSIS

SB9-, SB12-, SB19-SERIES

Seven EIA Front Panel heights: 1³/₄" , 3¹/₂" , 5¹/₄" , 7" , 8³/₄" , 10¹/₄" , and 12¹/₂" (1, 3, 5, 7, 8, 10, 12 nominal).

Three-standard depths: 9¹/₂" (SB9-Series), 12" (SB12-Series), and 19" (SB19-Series).

Components can be ordered as complete kits or by the part. See kit and parts table. Kits and parts come with all required captive machine hardware. Front, Side, and Mounting Panels are clear iridited. Covers and handles are clear anodized. All surfaces are satin grained.

Each kit (except SB9-1 and SB12-1) contains 1 Front Panel, 2 Handles, 2 Side Panels, 2 Perforated Covers, and 1 Interior Mounting Panel.

SPECIFICATIONS

PARTS

FRONT PANEL — 0.125" thick, 19.00" wide. 6061-T6 aluminum. EIA notched.

SIDE PANEL — 0.090" thick, 5052-H32 aluminum. Three rows of holes on 1/2" centers for mounting panels, card cages, etc.

INTERIOR MOUNTING PANEL — 0.090" thick, 16.37" wide. 5052-H32 aluminum. For use as a rear panel or vertical or horizontal mounting panel.

PERFORATED ALUMINUM COVER — 0.063" thick, 16.85" wide. 3003 aluminum. Assembles with four screws and captive stainless steel nuts.

STRONGBOX® HANDLE — Standard aluminum handle.

ACCESSORIES

BOTTOM MOUNTING PLATE — 0.090" thick, 16.37" wide. 5052-H32 aluminum. For mounting heavy components. Clear iridite finish.

SOLID BEARING SLIDE — .38" thick. Cad plated steel. Adjustable brackets for assembling to EIA tapped-rail.

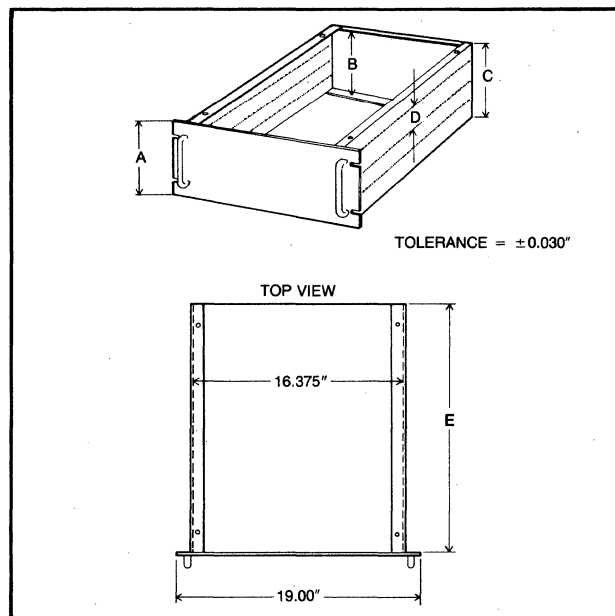
SOLID ALUMINUM COVER — 0.063" thick, 16.85" wide. 5052-H32 aluminum. Clear anodize finish.

HEAVY COVER PLATE — 0.090" thick, 16.88" wide. 5052-H32 aluminum. For mounting heavy components flush with chassis bottom. Clear iridite finish.

Detailed drawings available on request. Other sizes available; call for quote.

DIMENSIONS

Kit Number	A	B	C	D	E
SB9-1	1.72	1.22	1.40	0.50	9.50
SB9-3	3.47	2.91	3.15	0.75	9.50
SB9-5	5.22	4.66	4.90	1.50	9.50
SB9-7	6.97	6.41	6.65	2.00	9.50
SB9-8	8.72	8.16	8.40	3.00	9.50
SB12-1	1.72	1.22	1.40	0.50	12.00
SB12-3	3.47	2.91	3.15	0.75	12.00
SB12-5	5.22	4.66	4.90	1.50	12.00
SB12-7	6.97	6.41	6.65	2.00	12.00
SB12-8	8.72	8.16	8.40	3.00	12.00
SB12-10	10.47	9.91	10.15	3.50	12.00
SB19-3	3.47	2.91	3.15	0.75	19.00
SB19-5	5.22	4.66	4.90	1.50	19.00
SB19-7	6.97	6.41	6.65	2.00	19.00
SB19-8	8.72	8.16	8.40	3.00	19.00
SB19-10	10.47	9.91	10.15	3.50	19.00
SB19-12	12.22	11.66	11.90	4.00	19.00



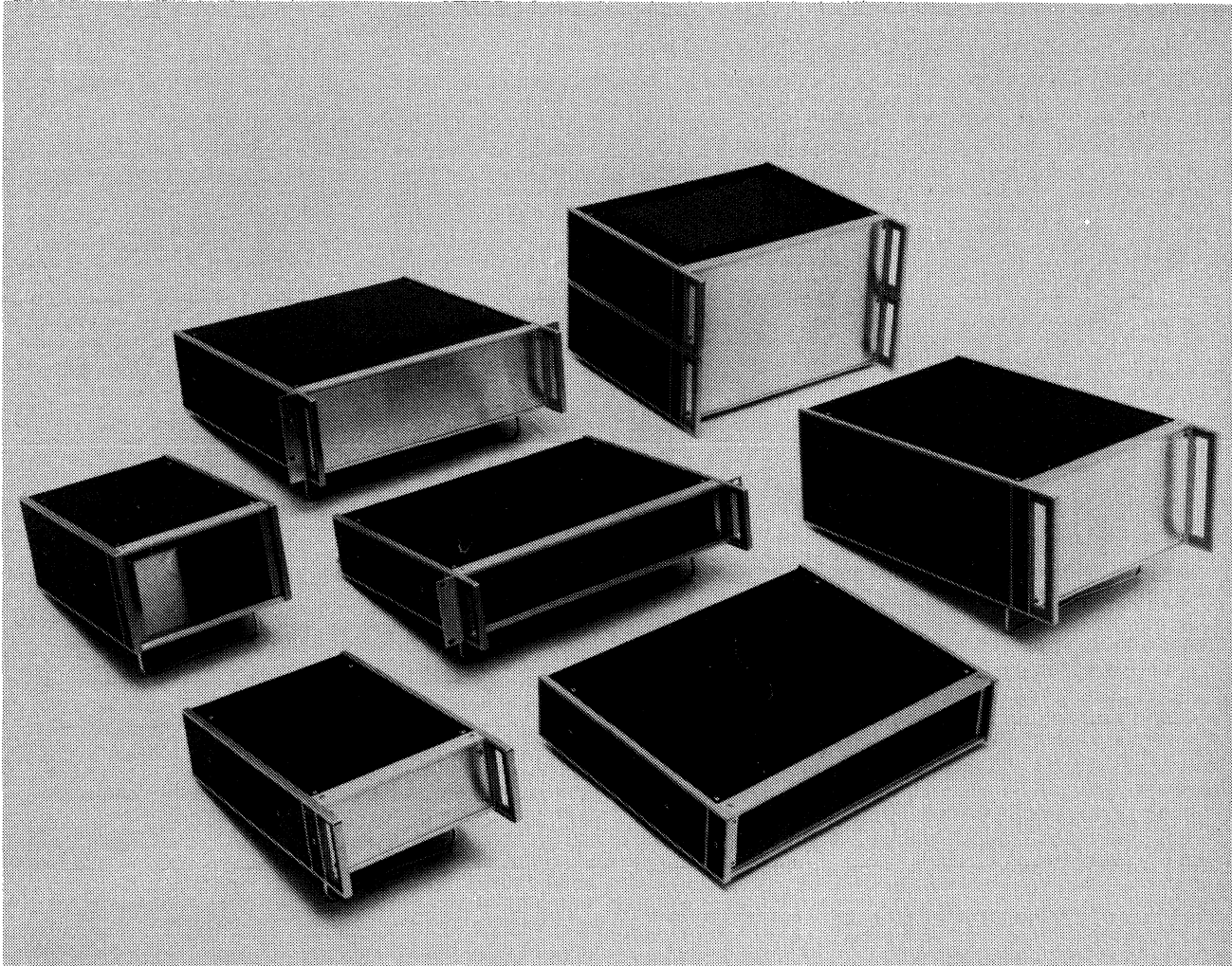
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TDJ Company, Inc.

Instrument Enclosures



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Easily Assembled

Sliding Top and Bottom Covers for Maximum Accessibility

Convenient Side Frame Mounting Hole Pattern

Will Accept Your Custom Removable Front and Rear Panels

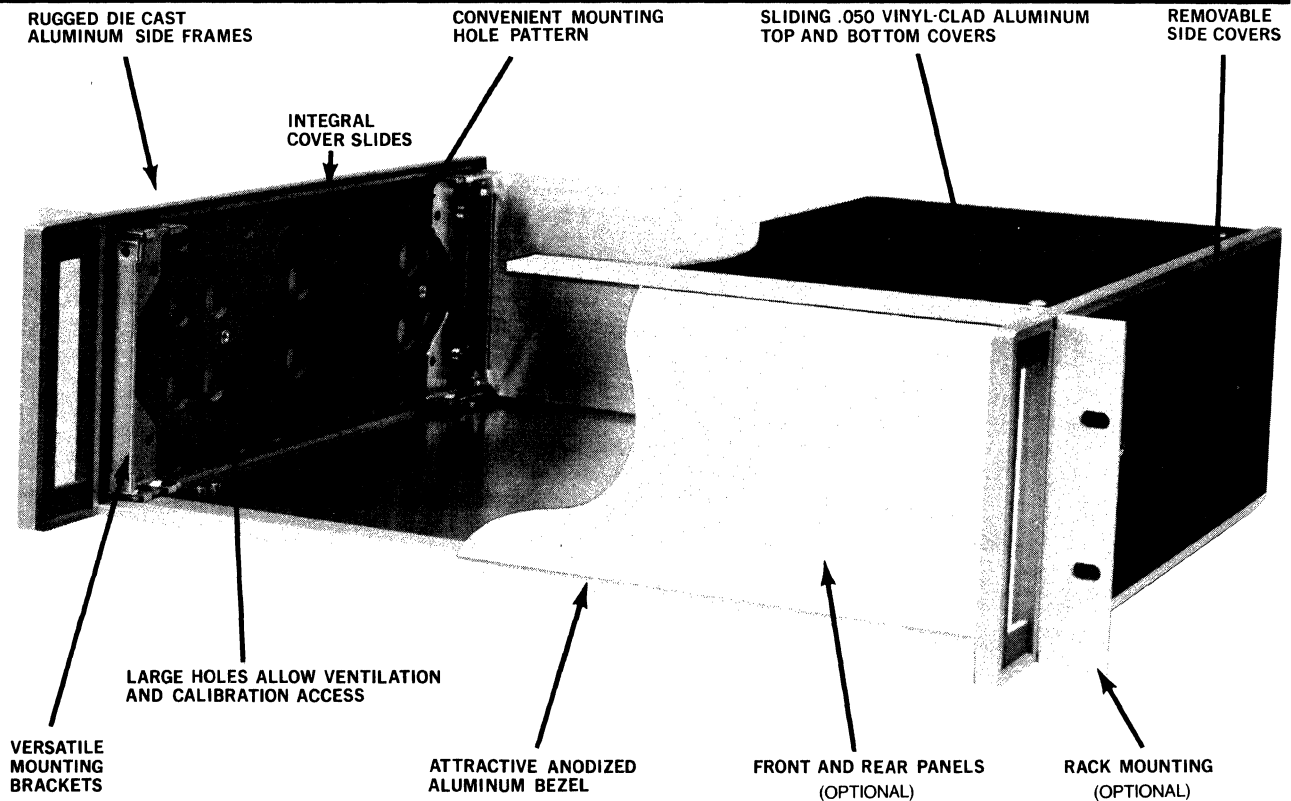
Standard Colors - Black, Brown, Gray-Blue, Grey and Off-White

Modular Instrument Enclosures

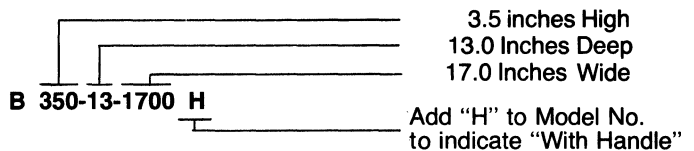
The BETA-LINE Series of Modular Instrument Enclosures offer the ultimate in quality and versatility and provide an extensive range of standard packaging dimensions. This flexible component approach offers a custom-designed appearance that permits expansion of a product line while maintaining the continuity of a design standard. The rugged die cast aluminum side frames are uniquely engineered to provide strength and durability and the top and bottom as well as the side covers are easily removed for quick internal access. The finished side frames and vinyl clad aluminum covers combine to produce a superbly crafted enclosure. Standard vinyl colors include black, brown, gray-blue, grey and off white. A full complement of optional accessories include rack mounting kits, rack mounting slides and aluminum front or rear panels. A retractable instrument bail is available for bench mounting applications.

Web: tdjco.ml.org E-mail: order@tdj.com

TDJ Company, Inc. Instrument Enclosures



Model number is determined by outside dimensions of enclosure. Example for Model **B-350-13-1700** is:



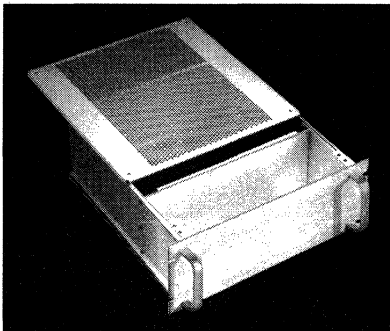
3.5 Inch Height	5.25 Inch Height	7 Inch Height	8.75 Inch Height
B-350-13-1700H B-350-13-1275 B-350-13-0850 B-350-13-0425 B-350-15-1700H B-350-15-1275 B-350-15-0850 B-350-15-0425 B-350-17-1700H B-350-17-1275 B-350-17-0850	B-525-13-1700H B-525-13-1275 B-525-13-0850 B-525-13-0425 B-525-15-1700H B-525-15-1275 B-525-15-0850 B-525-15-0425 B-525-17-1700H B-525-17-1275 B-525-17-0850 B-525-21-1700H B-525-21-1275 B-525-21-0850	B-S700-13-1700H B-S700-13-1275 B-S700-13-0850 B-S700-13-0425 B-S700-15-1700H B-S700-15-1275 B-S700-15-0850 B-700-17-1700H B-700-17-1275 B-700-17-0850	B-S875-13-1700H B-S875-13-1275 B-S875-13-0850 B-S875-15-1700H B-S875-15-1275 B-S875-15-0850 B-S875-17-1700H B-S875-17-1275 B-S875-17-0850
10.5 Inch Height	12.25 Inch Height	14 Inch Height	15.75 Inch Height
B-S1050-13-1700H B-S1050-13-1275 B-S1050-13-0850 B-S1050-15-1700H B-S1050-15-1275 B-S1050-15-0850 B-S1050-17-1700H B-S1050-17-1275 B-S1050-17-0850 B-S1050-21-1700H B-S1050-21-1275 B-S1050-21-0850	B-S1225-13-1700H B-S1225-13-1275 B-S1225-13-0850 B-S1225-15-1700H B-S1225-15-1275 B-S1225-15-0850 B-S1225-17-1700H B-S1225-17-1275 B-S1225-17-0850	B-S1400-13-1700H B-S1400-13-1275 B-S1400-13-0850 B-S1400-15-1700H B-S1400-15-1275 B-S1400-15-0850 B-S1400-17-1700H B-S1400-17-1275 B-S1400-17-0850	B-S1575-17-1700 B-S1575-17-1275 B-S1575-17-0850 B-S1575-21-1700 B-S1575-21-1275 B-S1575-21-0850

SRK/CRK series Seven-eighths-spacing Rack-mounting Kits

Stocked for one-day shipping in your choice of 28 combinations of seven heights and four front-to-back depths, and with $\frac{7}{8}$ " vertical and $\frac{1}{2}$ " horizontal hole pattern, this SRK/CRK line of chassis drawers can be assembled in a vast variety of configurations without special hole drilling or punching. Double bends in side

frame flanges & heavy-duty aluminum materials make them extra sturdy. Order today, and they're on their way to you tomorrow! Phone toll-free number below and request your free full-color SRK/CRK catalog, which includes slides, card cages and many other mounting accessories.

SRK Kits and Parts



A basic SRK kit is ordered by adding dash numbers for any of seven heights and four depths. The kit will consist of one FP Front Panel; two OSH Oval-Section Handles, [clear or black anodized]; two SF-SE Side Frames with Seven-eighths-inch [vert-spacing] hole pattern; two HMP Heavy-duty Mounting Panels [one for use as a rear panel, the other as an internal mounting panel];

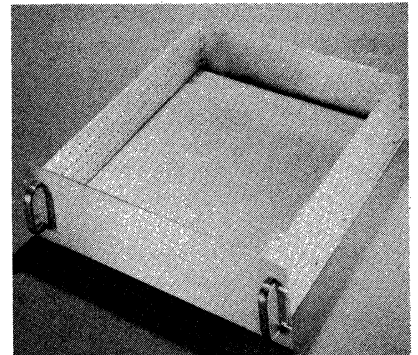
two PANC Perforated Aluminum Non-sliding Covers [top/bottom]; and all assembly hardware. Drop down front panels, card cages, full-bottom plates & thousands of other variations of parts and accessories can be ordered by adding dash numbers; or for even wider varieties & more combinations, order by individual part numbers from our complete inventory.

CRK Kits and Parts

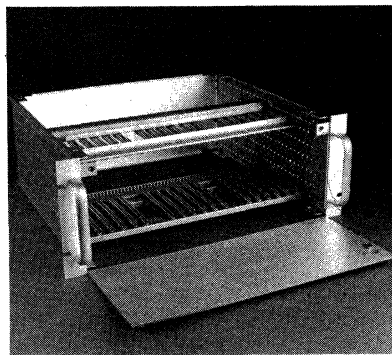
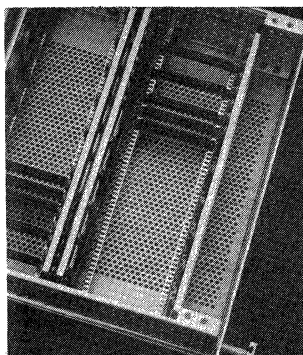
A basic CRK kit consists of one FP Front Panel, which like the SRK line is notched for assembling to tapped rails of rack; two OSH Oval Section Handles, clear anodized; two SF-SE Side Frames with Seven-eighths vert-spaced hole pattern; one HMP Heavy-Duty Mounting Panel [for use as rear panel]; one FBP Full-Bottom Plate for use as a chassis base, and cap-

itive nuts [pre-installed]. All parts except handles and covers are clear-chem-filmed [clear inidited]. All assembly hardware included.

As with the SRK line, thousands of options can be ordered by the use of dash numbers. For example, use kit number CRK-8H-15D to obtain the kit for the assembly shown at right.



QCC Card Cage Kits and Parts



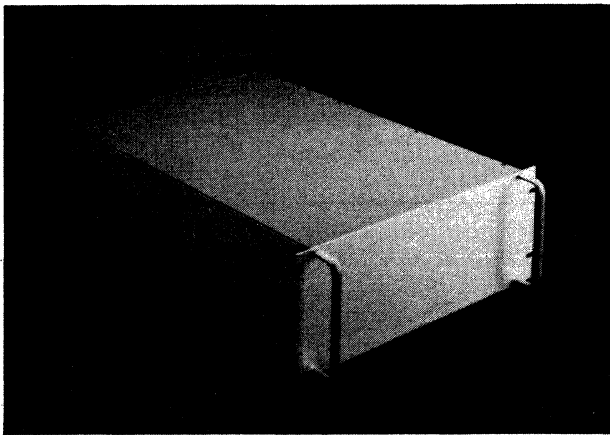
One of the most popular series of auxiliary parts of the SRK/CRK line are these QCC Quarter-inch Card Cage kits & parts with .25-inch pitch. They include connector rails which will accommodate almost any card connectors & backplanes, guide frames and snap-in card guides in your choice of three guide lengths: 3.15", 4.65" and 6.15". They assemble for front, back, top or bottom loading. Because the assembly method permits much variability, a large selection of card lengths and widths can be accommodated.

Techmar Corporation, 4150-A Glencoe Avenue, Marina Del Rey, CA 90292
Phone (310) 827-8897, 800-TECHMAR (832-4627), FAX No. 310-827-2572

BKCD series BasiKit Chassis Drawer

We Are Proud to Introduce the most recent member of the Techmar family of product lines: the BasiKit Chassis Drawer. This new enclosure line is the result of feedback from our customers, who have asked us to design a simpler and more economical packaging system. The BasiKit is just that, and more... it offers the same quality of design and materials, ease of assembly, strength and flexibility as all of our other products. And it is even less expensive, because we designed it to be exactly what it implies: BASIC. These sturdy aluminum kits include the standard EIA-notched, .125" thick horizontal-grained front panel; two side panels available from stock with or without rows of assembly holes, so you can either drill your own right

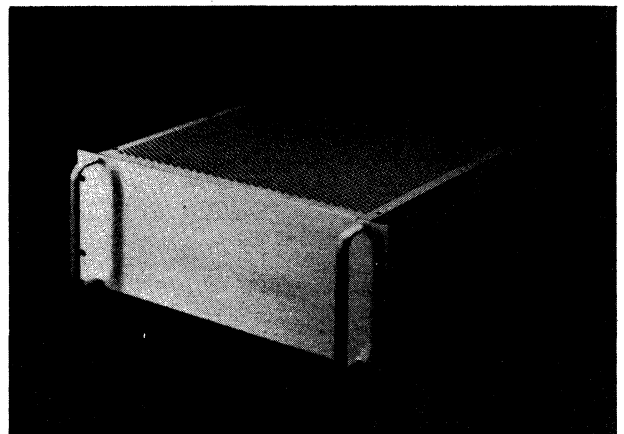
where you want them or utilize our pre-punched hole pattern; a rear panel of .090 thick heavy-duty aluminolloy, with no flanges (for easy machining) and with six mounting holes for assembly to side panels and covers for added stability; top and bottom covers are .063 thick aluminolloy, available from stock with or without an all-over perforated hole pattern—the solid cover is less expensive, and many customers prefer to punch their own slots or holes in the areas where cooling is needed. Extra sturdy .090 CHASSIS BASES (solid aluminolloy bottom plates) also available from stock. Each kit includes two satin-grained oval-section handles, finished in either clear or black anodize; they are cost-effective, functional and attractive. All kits and parts include assembly hardware.



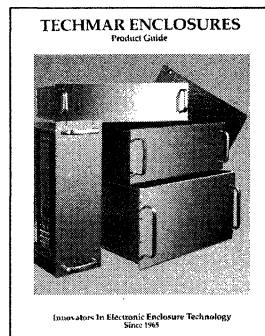
Kit shown above: **BK-7H-18D** with solid side panels (no assy. hole rows), solid top/bottom covers (no perforations), standard EIA front panel, heavy-duty rear panel (no flanges), & clear-anodized oval-section handles.

Kit shown at right: **BK-8H-24D-WHR-2PC** With Hole Rows in side panels, and Two Perforated Covers.

15 Combinations in Stock for Same or Next Day Shipping: 3, 5, 7, 8 & 10" nom. heights; 12, 18 & 24" nom. depths.



Or you may choose to ORDER A LA CARTE BY INDIVIDUAL PART NUMBERS for an even wider range of designs and configurations.



TECHMAR

For catalog & applications assistance: 1-800-TECHMAR

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310-827-2572

VCD series

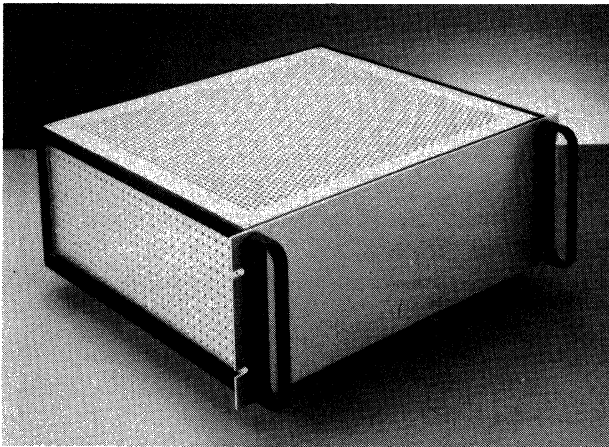
Variable Chassis Drawer

V for VARIABLE: VCDs can be assembled into even more thousands of configurations than any of Techmar's previous widely used enclosure lines.

CD for CHASSIS DRAWERS: VCDs are for assembly in EIA racks and rack cabinets. Among many new design improvements:

- Assembly-hole pattern is on $7/16$ " centers both vertically and horizontally, $1/4$ of the EIA height increment.

FOR YOUR CONVENIENCE: This 90-degree symmetry allows you to mount card cages for front, rear, top or bottom loading, without having to drill special holes, while retaining Techmar's long-time previous hole pattern's advantage of regularizing the locatability of internal parts relative to



tops, bottoms & centers of your chassis drawers. And the new hole patterns give you the help of smaller pitches for locating internal parts.

- Your choice of color combinations: all clear (silver), clear/black or all black.
- You can machine your mounting surfaces in the flat before you assemble edge-stiffeners.
- Convertibility between VCD rackmount and VSA stand-alone models for benchtop applications. [see below].
- General purpose card cages, slides and many other mounting accessories available.

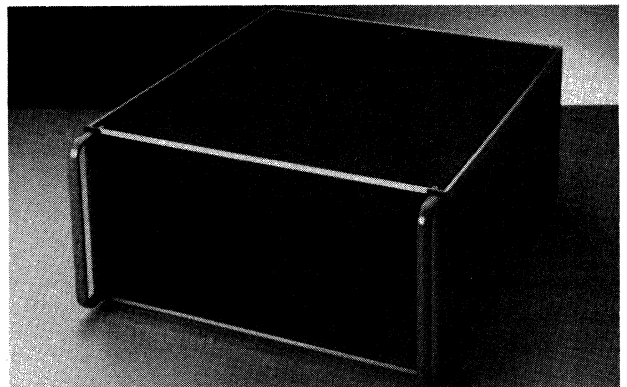
VCD Kits

If you order a standard kit by height, depth and color but no other dash or dot numbers, you will receive the parts & hardware for an assembly which includes a 12-piece frame of extrusions, standard front panel, handles, structural side panels with assembly-hole pattern, top/bottom perforated covers, & outside back panel, all in whatever color combination you specify. By adding a dot SC, you also receive Side Covers to hide the assembly holes and screwheads on the side panels. Some of the thousands of other kit options ready for immediate shipment are shown in our catalog, including the much larger number of configurations that are available to you whether you choose to order as kits or as individual parts.

VSA series

Variable StandAlones

This is an exceptionally sturdy and decorative enclosure line for benchtop/desktop instrumentation. Its parts are the same as for a VCD kit of the same height, depth and colors, with the following exceptions: The front panel is normally 17 wide and recessed instead of 19 wide; handles are backed by spacers instead of panel ears; side covers & rubber feet are included; one-third perforated covers are standard unless otherwise specified. And as with the VCD line, you can choose from a large variety of options & accessories, including card cages & other internal mounting parts. Call the number below for free catalog and/or applications assistance.



Techmar Corporation, 4150-A Glencoe Avenue, Marina Del Rey, CA 90292
Phone (310) 827-8897, 800-TECHMAR (832-4627), FAX No. 310-827-2572



TECHMAR

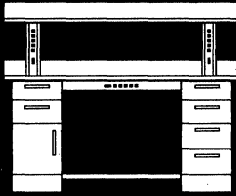
For catalog & applications assistance: 1-800-TECHMAR

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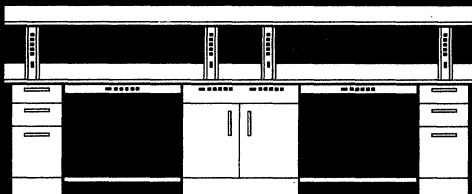
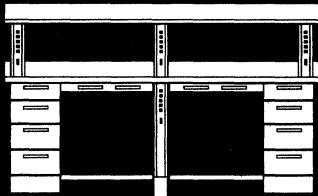
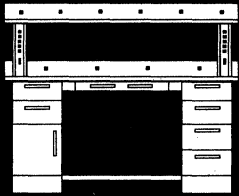
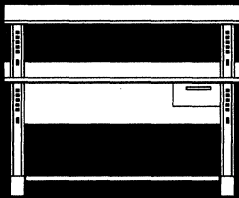


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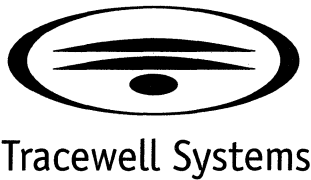
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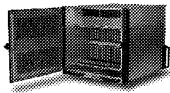


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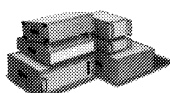
<http://www.teclab-bench.com>



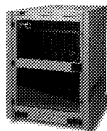
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Tempest



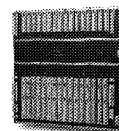
Instrumentation Enclosures



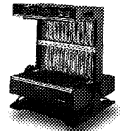
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CompactPCI T-Frame

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product overview (more information is available at: www.tracewell.com)

CompactPCI — We will design and manufacture to your specifications

MODEL	PRODUCT OVERVIEW	MODEL	PRODUCT OVERVIEW
CompactPCI Power Supply	<ul style="list-style-type: none"> • High-performance power supply for use in 6U CompactPCI computer, test and telecom systems. Meets all PICMG CompactPCI specification requirements plus N+1 redundant and hot swap. • High-density cooling fins are positioned directly in the airstream. • All input and output connections are through the backplane using new high-current Ziatech/Tracewell/Positronic connector. LED status indicators and a push-button inhibit switch are located on the front panel. 	cPCI T-Frame™	<ul style="list-style-type: none"> • Unique, patented desktop test, development and verification system eliminates the need for extender boards. removable translucent side panels slide out for unrestricted access to installed modules. • Digital readouts for voltage are displayed on front panel. • Fully assembled, wired and tested • 350-watts or dual redundant with two, 350-watt pluggable supplies
cPCI Card Cage	<ul style="list-style-type: none"> • Our family of formed metal cPCI card cages offer you maximum airflow, nylon card guides, exceptional strength, low cost and are fully compliant with the IEEE11.01.10 specification. they are available in any slot size. 	CompactPCI Backplane	<ul style="list-style-type: none"> • Standard available in both 3U & 6U format with a choice of 3-8 slots and bridge versions available with up to 16 slots • Supports all the hot swap features of cPCI specifications and conforms to PICMG 1.0 11-95 • We will design to meet unique specifications and bus combinations

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VME BUS Systems

● We will design and manufacture to your specifications

MODEL	PRODUCT OVERVIEW	MODEL	PRODUCT OVERVIEW
System 19	<ul style="list-style-type: none"> • Desktop 20 Slot • 6U and 9U • Desktop system with recessed 6U/9U x 160 - 400mm card cage. • Aluminum construction with die cast bezels and recessed handles. • Subdivided subrack is optional. Fully assembled, wired and tested. • Power Supply: 500 - 1600W. • Cooling intake: Bottom, • Exhaust: Top. 	System 20	<ul style="list-style-type: none"> • 19" Rack Mount • 7 Slot, 6U • Space-saving, horizontal (board) mount system offers precision die cast handles that act as structural members and permit removal of the top, front and rear panel while leaving the sub assembly intact. • Recessed subrack, allows routing of I/O to rear. Drive bays provided with power harnesses. • Power Supply: 500W. Cooling: Side to Side
System 21	<ul style="list-style-type: none"> • 19" Rack Mount • 21 Slot, 6U and 9U • Popular front loading system features recessed subrack, cable-way for routing I/O to rear, removable air filter, removable translucent front panel, die cast handles. Fully assembled, wired and tested. • Power Supply: 500 - 1600W • Cooling intake: Front and Sides • Exhaust: Top Rear 	System 22	<ul style="list-style-type: none"> • 19" Rack Mount or Table Top 21- 42 Slot • 6U • Heavy duty unit with .250" machined side plates (.125" optional) provides a 21 slot flush mount card cage in the front while offering an optional 21 slot flush mount card cage (or transition rack) in the rear. Fully assembled, wired and tested. • Power Supply: 500 - 1600W • Cooling intake: Sides • Exhaust: Top
System 24	<ul style="list-style-type: none"> • 6U, 9U, C and D Size • Compact 7 slot VME (5 slot VXI) desktop system offers complete access to the backplane and power supply outputs. Operates vertically or horizontally. Optional drive bays available. Fully assembled, wired and tested. • Power Supply: 200W (VME), 800W (VXI) • Cooling intake: Bottom • Exhaust: Top 	System 25	<ul style="list-style-type: none"> • 19" Rack Mount, Desktop, Portable, Tower • 1 - 7 Slot, 6U • Versatile system offers rugged die cast aluminum sides w/ retractable handle, recessed front loading subrack and a 6U x 80mm transition rack positioned in the rear. Optional hardware allows system to be configured for rack mount or tower operation. • Power Supply: 65 - 350W. • Cooling: Side to Side (Bottom to Top, Tower).
System 27	<ul style="list-style-type: none"> • 19" Rack Mount • 12 Slot, 6U, with 12 Slot 6U Transition Rack • Economically-priced unit with quality features. Standard configuration features a flush mount 6U x 160mm subrack in the front and a 6U x 80mm transition rack in the back. Handles and drive bays are optional. Fully assembled, wired and tested. • Power Supply: 500W • Cooling intake: Front and Sides • Exhaust: Rear 	T Frame	<ul style="list-style-type: none"> • Unique, patented desktop test, development and verification system eliminates the need for extender boards. Removable translucent side panels slide out for unrestricted access to installed modules. Digital readouts for voltage, current, and temperature are displayed on front panel. Fully assembled, wired and tested. • Power supply: 500W (VME), 800W (VXI) • Cooling intake: Bottom • Exhaust: Top, (other Buses Available) • US PATENT# 5,416,427

VXI BUS Systems

● We will design and manufacture to your specifications

System 24	<ul style="list-style-type: none"> • 6U, 9U, C and D Size • Compact 7 slot VME (5 slot VXI) desktop system offers complete access to the backplane and power supply outputs. Operates vertically or horizontally. Optional drive bays available. Fully assembled, wired and tested. • Power Supply: 200W (VME), 800W (VXI) • Cooling intake: Bottom • Exhaust: Top 	System 90	<ul style="list-style-type: none"> • 19" Rack-mount, 13 Slot, C&D Size • Only VXI system package to safeguard test modules through automatic monitoring of power supply outputs, airflow, and standby power. • Temperature controlled fans. Fully assembled, wired and tested. • Power supply: 1200W • Cooling intake: Sides • Exhaust: Top Rear • US PATENT# 5,168,171
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Special Systems

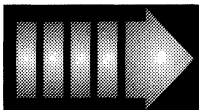
● We will design and manufacture to your specifications

Test & Measurement	<ul style="list-style-type: none"> • Custom VXI design incorporates standard 13 slot "C" size VXI chassis into single 19" rack mount enclosure. Dual 2000-watt pluggable power supplies permit redundant operation. Pluggable fan module cools up to 200-watts/slot. System monitoring of air temp, fan rotation and voltages. 	Full Custom	<ul style="list-style-type: none"> • Example of a portable VXI "B" sized test instrument. Case is designed to operate in high shock & vibration environments encountered in military field use. It also had to meet strict size and weight constraints.
Tempest	<ul style="list-style-type: none"> • 19" Rack mount 21 slot VME system with drive bays • Fully Tempest compliant 	Telecom	<ul style="list-style-type: none"> • 21 slots, 48V or wide ranging AC input, direct pluggable fan tray, tach sensed fans, NEBS compliant design, 19" or 23" rack mount, rear I/O options
COTS	<ul style="list-style-type: none"> • We build COTS versions of most standard systems 	Cooling	<ul style="list-style-type: none"> • Push-Pull Cooling Tray incorporates 8, 40 CFM fans and isolates airflow from chassis stacked above and below in a rack. 2U/AC or DC/monitoring available.
Video	<ul style="list-style-type: none"> • 1U high up to 150-watts • Pluggable power and fan module 	Prototype	<ul style="list-style-type: none"> • Vertically integrated for fast prototyping
Industrial	<ul style="list-style-type: none"> • PC chassis, 12 slots, ISA bus, designed for harsh environments • 250-watt, peripheral bays • 19" rack mount 	System Monitoring	<ul style="list-style-type: none"> • System Monitor gives you all the features you want on a single board. Temperature per slot, up to 7 voltages, differential temperatures/maximum temperature, tach sense monitor, relay closures for remote alarms, surface mount construction

Backplanes

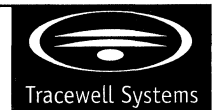
● We will design and manufacture to your specifications

Std. VME	<ul style="list-style-type: none"> • This J1/J2 monolithic backplane is specially designed for high frequency applications. 100% SMT components and extensive ground guarding of signal tracks produce very low signal noise & crosstalk. 	Telecom	<ul style="list-style-type: none"> • Designed to meet special requirements of the telecom industry • Up to 32 layers
VME64	<ul style="list-style-type: none"> • This new backplane has been designed to comply with VITA 1.1-199x Draft 1.9. Use of all surface mount components produces excellent signal integrity and improved manufacturability 	CompactPCI	<ul style="list-style-type: none"> • Standard available in both 3U & 6U format with a choice of 3-8 slots and bridge versions available with up to 16 slots • Supports all the hot swap features of cPCI specifications and conforms to PICMG 1.0 11-95 • We will design to meet unique specifications and bus combinations
VME PowerPlane	<ul style="list-style-type: none"> • 400-800 watt power supply mounts directly onto Tracewell's 6U standard VME backplane. Provides all system control functions and peripheral output voltages. Rugged die-cast aluminum heatsink uses system air flow for cooling. Direct connection from power supply onto backplane eliminates all power wiring & improves supply dynamic current response. 	VXI	<ul style="list-style-type: none"> • 4 - 13 slots • "C" or "D" size available • Surface mount construction



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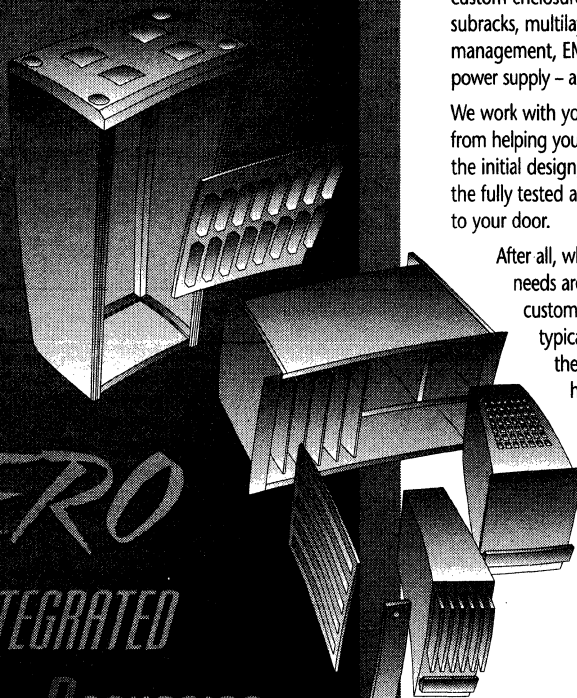
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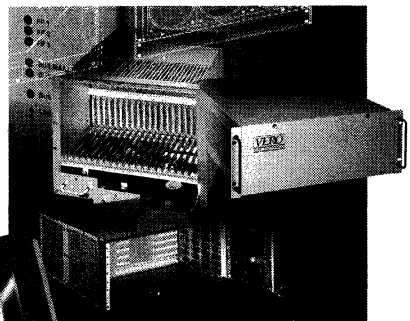
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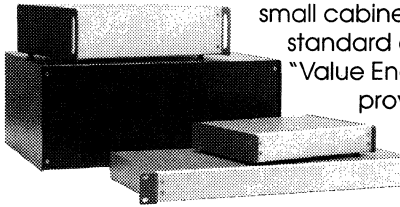
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MOD-U-LINE® CHASSIS

Mod-u-line is a line of quality small cabinets, available in standard off-the-shelf sizes. "Value Engineered" to provide the optimum in versatility, strength and economy.

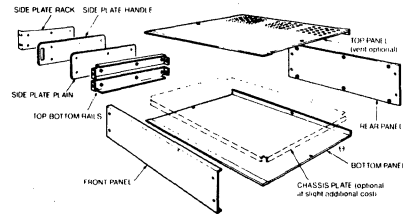


Features:

- Construction:** Made from aluminum for lightweight strength and ease of handling. Side panels are .125" aluminum. All other components are .062" aluminum. Side panels and chassis plates are ordered separately.
- Ease of Assembly:** Mod-u-line cabinets are designed to assemble in minutes. The top cover is easily removed for complete and immediate access to the inside.
- Replacement parts:** All components of Mod-u-line may be replaced in seconds with stock panels. This feature reduces damage or redesign costs by eliminating need to repaint or replace the entire unit.
- Colors & Finish:** Cabinets are finished with oven-baked, EPA-approved paint. All exterior parts have a textured finish, except the front panel, which has a smooth finish. Standard colors are:

Top, Bottom & Rear Panels	Front Panel	Side Panels
*Blue	*Off-White	*Blue
Charcoal	Light Grey	Charcoal
Black	Black	Black
Tan	Tan	Tan

* Note: Blue and Off-White components in stock for immediate. Call for current availability of other standard color combinations. Chassis plate and interior rails are gold anodized.



PART NUMBER	INSIDE DIMS.		INCHES DEPTH	RECOMMENDED CHASSIS PLATE
	HEIGHT	WIDTH		
1 INCH HEIGHT				
MCLS 1-9-7	1 5/16	8	6 7/8	CP 9-7
MCLS 1-17-7	1 5/16	16	6 7/8	CP 17-7
MCLS 1-17-9	1	16	8 7/8	CP 17-9
2 INCH HEIGHT				
MCLS 2-8-9	2	8	8 7/8	CP 8-9
MCLS 2-17-9	2	16	8 7/8	CP 17-9
MCLS 2-17-12	2	16	11 7/8	CP 17-12
3 INCH HEIGHT				
MCLS 3-7-7	3	6	8 7/8	CP 7-7
MCLS 3-9-7	3	8	6	CP 9-7
MCLS 3-9-9	3	8	8 7/8	CP 9-9
MCLS 3-12-7	3	11	6 7/8	CP 12-7
MCLS 3-12-9	3	11	8	CP 12-9
MCLS 3-12-12	3	11	11 7/8	CP 12-12
MCLS 3-17-7	3	16	6 7/8	CP 17-7
MCLS 3-17-9	3	16	8	CP 17-9
MCLS 3-17-12	3	16	11	CP 17-12
MCLS 3-17-14	3	16	13	CP 17-14
5 INCH HEIGHT				
MCLS 5-7-7	5	6	6 7/8	CP 7-7
MCLS 5-9-7	5	8	6 7/8	CP 9-7
MCLS 5-9-9	5	8	8	CP 9-9
MCLS 5-9-12	5	9	11	CP 9-12
MCLS 5-12-7	5	11	8	CP 12-7
MCLS 5-12-9	5	11	8	CP 12-9
MCLS 5-12-12	5	11	11	CP 12-12
MCLS 5-17-7	5	16	8	CP 17-7
MCLS 5-17-9	5	16	8	CP 17-9
MCLS 5-17-12	5	16	11	CP 17-12
MCLS 5-17-14	5	16	13	CP 17-14
7 INCH HEIGHT				
MCLS 7-9-12	6	8	11	CP 9-12
MCLS 7-12-9	6	11	8	CP 12-9
MCLS 7-12-12	6	11	11	CP 12-12
MCLS 7-17-9	6	16	8	CP 17-9
MCLS 7-17-12	6	16	11	CP 17-12
MCLS 7-17-14	6	16	13	CP 17-14
8 INCH HEIGHT				
MCLS 8-17-12	6	16	11	CP 17-12
MCLS 8-17-14	8	16	13	CP 17-14
10 INCH HEIGHT				
MCLS 10-17-14	10	16	13	CP 17-14

* Note: This size Mod-u-line with rack side panels is a perfect fit for 19" wide Modular Vertical Enclosures.

HOW TO ORDER: A complete cabinet is order in three segments. 1) Mod-u-line Cabinet Less Sided (MCLS) includes: front, back, top and bottom panels plus interior rails. 2) Side panels are ordered by style. Side Panel Plain (SPP) Side Panel Rack (SPR), Side Panel Handle (SPH); by size and color. Side panels are symmetrical-there are no righthand or lefthand panels. 3) Optional Chassis Plate (CP) is ordered individually according to table below. For example a 3 1/2" x 16 1/2" x 11 1/4" cabinet with a BLUE exterior and OFF-WHITE front panel which has BLUE RACK side panels and a 16 1/2" x 11 1/4" chassis plate is ordered as: MCLS 3-17-12 BLUE/OFF-WHITE, plus SPR 3-12 BLUE, CP 17-12.

STANDARD VENTED TOP AND BOTTOM PANELS ORDERING INSTRUCTION: A 1" wide ventilation strip comprised of 1/8" holes and 1/4" centers may be ordered on either top (VT) or bottom (VB) panels or on both (VTB). If desired. Example: An MCLS 3-17-12 VTB TAN/WHITE would be vented on both top and bottom panels.

Mod-u-line Side Panels

PLAIN SIDES		RACK SIDES		HANDLE SIDES	
SIZE INCHES H x D	PART NUMBER	SIZE INCHES H x D	PART NUMBER	SIZE INCHES H x D	PART NUMBER
1 x 7	SPP1-7	1 x 7	SPR1-7	—	—
1 x 9	SPP1-9	1 x 9	SPR1-9	—	—
2 x 9	SPP2-9	2 x 9	SPR2-9	—	—
2 x 12	SPP2-12	2 x 12	SPR2-12	—	—
3 x 7	SPP3-7	3 x 7	SPR3-7	3 x 7	SPH3-7
3 x 9	SPP3-9	3 x 9	SPR3-9	3 x 9	SPH3-9
3 x 12	SPP3-12	3 x 12	SPR3-12	3 x 12	SPH3-12
3 x 14	SPP3-14	3 x 14	SPR3-14	3 x 14	SPH3-14
5 x 7	SPP5-7	5 x 7	SPR5-7	5 x 7	SPH5-7
5 x 9	SPP5-9	5 x 9	SPR5-9	5 x 9	SPH5-9
5 x 12	SPP5-12	5 x 12	SPR5-12	5 x 12	SPH5-12
5 x 14	SPP5-14	5 x 14	SPR5-14	5 x 14	SPH5-14
7 x 9	SPP7-9	7 x 9	SPR7-9	7 x 9	SPH7-9
7 x 12	SPP7-12	7 x 12	SPR7-12	7 x 12	SPH7-12
7 x 14	SPP7-14	7 x 14	SPR7-14	7 x 14	SPH7-14
8 x 12	SPP8-12	8 x 12	SPR8-12	8 x 12	SPH8-12
8 x 14	SPP8-14	8 x 14	SPR8-14	8 x 14	SPH8-14
10 x 14	SPP10-14	10 x 14	SPR10-14	10 x 14	SPH10-14

Mod-u-line Chassis Plate

PART NO.	WIDTH INCHES	DEPTH INCHES	PART NO.	WIDTH INCHES	DEPTH INCHES	PART NO.	WIDTH INCHES	DEPTH INCHES
CP-77	6.63	5.12	CP-127	11.63	5.12	CP-177	16.63	5.12
CP-89	8.19	7.12	CP-129	11.63	7.12	CP-179	16.63	7.12
CP-97	8.63	5.12	CP-1212	11.63	10.12	CP-1712	16.63	10.12
CP-99	8.63	7.12	CP-1714	16.63	12.12			
CP-912	8.63	10.12						

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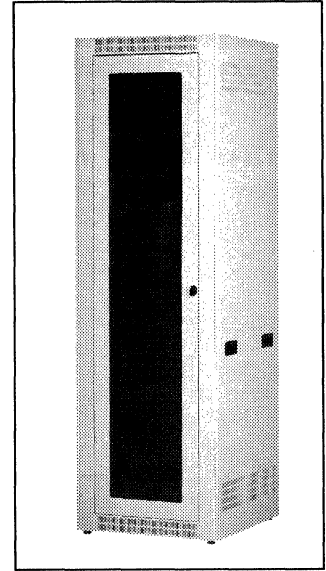
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CABINETS AND RACKS

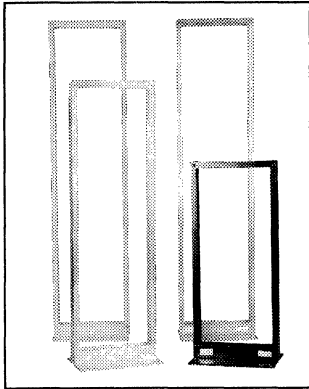
Express Rack

- No assembly required
- 70" and 78" standard height
- 19" and 23" standard widths
- 25" and 30" standard depths
- Extra wide frame allows more room for cable management
- 12 gauge steel equipment mounting rails are tapped with 10-32 thread in EIA universal pattern
- Left and right side quick release hinges
- Extra deep to handle large equipment
- Off the shelf models ready to go!



Express Rack Complete Models

XA1907825	19.125	18.313	17.813	78.813	25.75	26.75	85.013
XA1907025	19.125	18.313	17.813	70.063	25.75	16.75	76.263
XA1907830	19.125	18.313	17.813	78.813	25.75	31.75	85.013
XA1907030	19.125	18.313	17.813	70.063	25.75	31.75	76.263
XA2307825	23.125	22.313	21.813	78.813	29.75	26.75	85.013
XA2307025	23.125	22.313	21.813	70.063	29.75	26.75	76.263
XA2307830	23.125	22.313	21.813	78.813	29.75	31.75	85.013
XA2307030	23.125	22.313	21.813	70.063	29.75	31.75	76.263



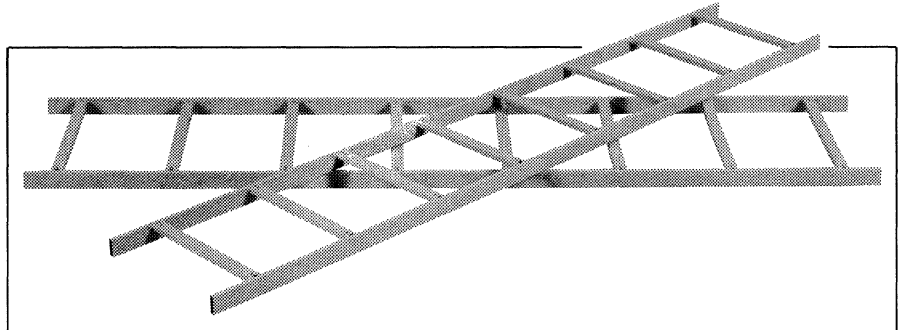
Relay Rack

Perfect for mounting electronic equipment, patch panels, shelves, data communications equipment, telecommunications equipment as well as other cabling and rack mount products

- Six standard heights
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- Only 12 bolts required for quick assembly
- Ships UPS for exceptional freight savings

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- 16 gauge steel tubing
- Used with ZERO PFT Relay Racks & Cable Management Racks
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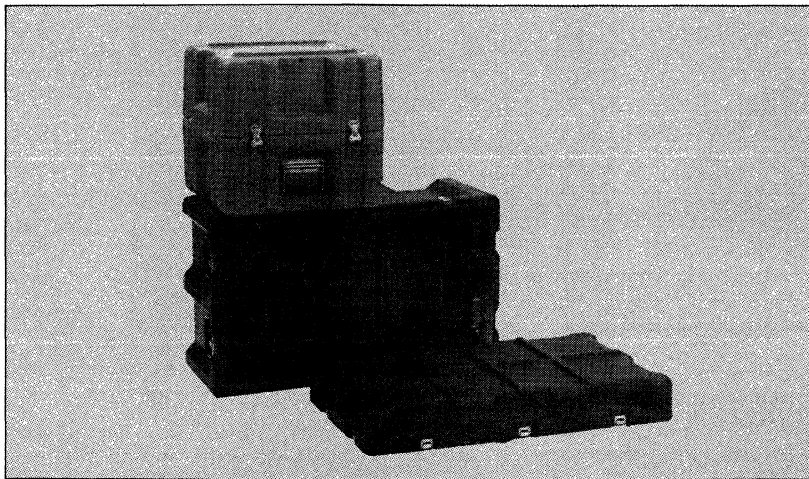
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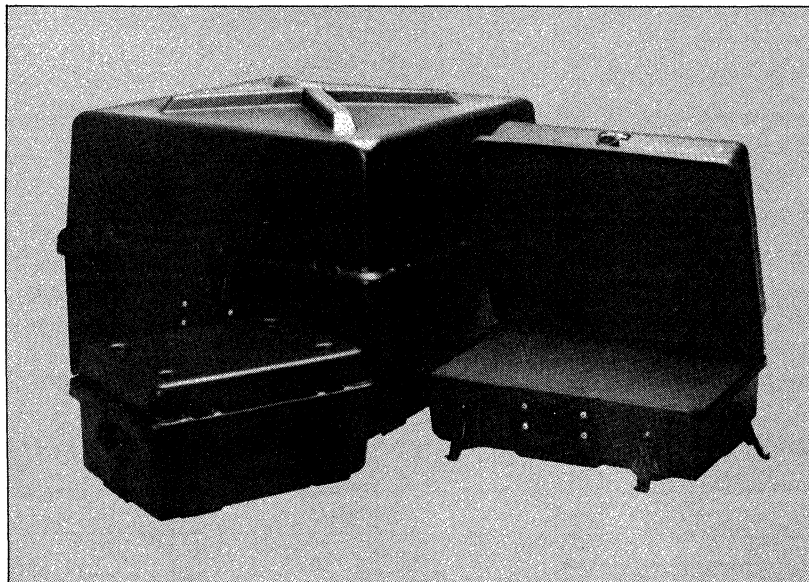
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- Resists most chemicals
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Features:

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- Recessed hardware for added protection
- Numerous sizes available from 6x6x10 to 48x52x19 from stock

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**Applications:**

- Meets tough military specs at a low cost
- Makes your equipment transportable via common carrier, truck, airline or hand carry

Benefits:

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- Proven performance and reliability

Features:

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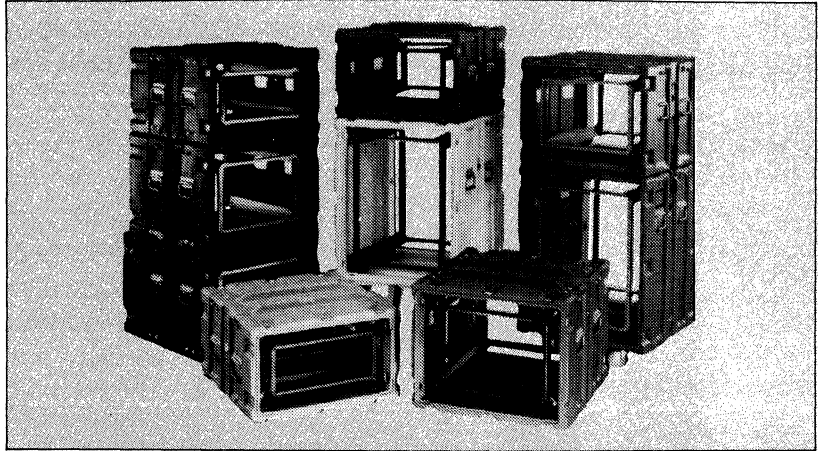
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Benefits:

- Quick and easy installation of rack-mounted equipment
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- Portable unit for testing and diagnostic equipment
- Product display and samples

Benefits:

- Multiple sizes on both standard and heavy duty styles
- Lightweight and durable
- High impact plastic shells

Features:

- Constructed from textured ABS thermoformed plastic
- Black or grey morocco grain outside, smooth finish inside
- Available options include separable hinged cover, inner lid assembly, flanged closure, flange hole patterns with floating #10-32 threaded inserts and gaskets. (All flange hole patterns must be supplied by customer.)
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- Panel mounting brackets and locking latches



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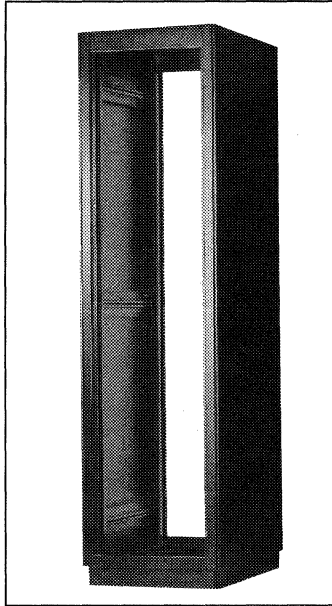
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VERTICAL CABINETS



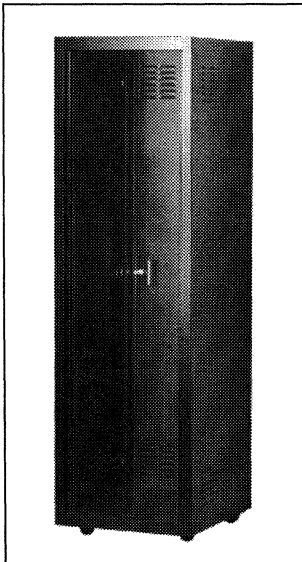
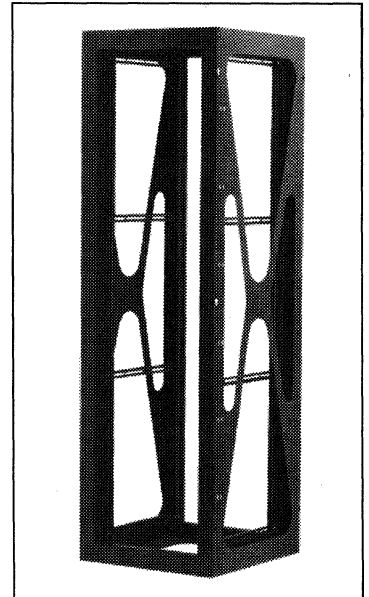
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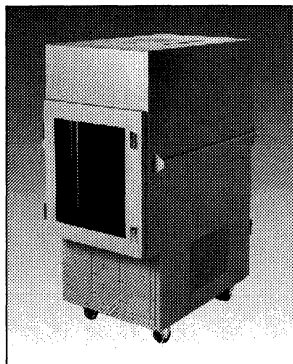

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CUSTOM CABINET DESIGNS

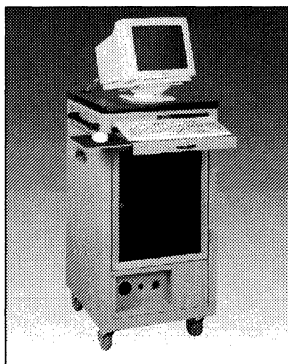
We specialize in design and construction of custom cabinets to meet most electronic packaging requirements. Our custom enclosures encompass aluminum and steel constructions that are ruggedized, shielded or unshielded. Custom options include skewed monitors, phenolic work surfaces, unique custom mounting surfaces and cable management systems. Our full capability offering provides cost-effective solutions to meet your custom enclosure needs. Some examples are shown below:



Custom Guardian Shielded for Telecommunications High Speed Video Transmissions

Standard Features:

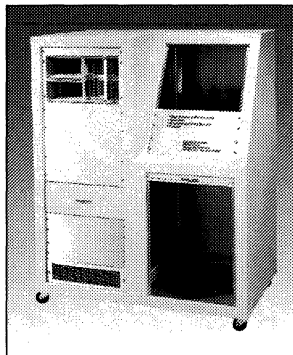
- EMI shielded
- Plexiglas front door
- Recessed front panel
- Side bars
- Vented top



Custom Cabinet for Medical Diagnostic Equipment

Standard Features:

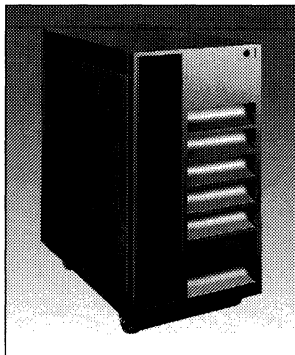
- Plexiglas door
- Cable management system
- Keyboard shelves and writing surface
- Easy roll casters



Two Bay Guardian for Custom Test Unit

Standard Features:

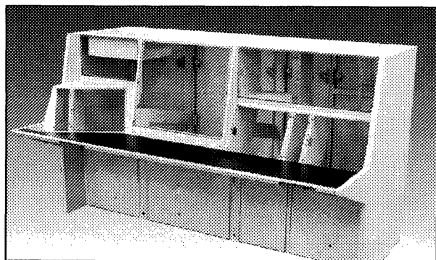
- One piece steel frame design
- One bay vertical. One bay sloped
- Full rear doors
- Auxiliary front door with power panel
- Equipment drawer
- Blower
- Card Cage
- Pull out work surfaces
- Casters



Custom Cabinet for Computer Storage Device

Standard Features:

- One piece custom body design
- 16 GA Steel welded construction
- Lift off door panels
- Plexiglas door with easy push button latches
- Easy roll casters



Custom Telephone and Video System

Standard Features:

- Skewed monitors
- EMI shielded
- Steel welded construction
- Phenolic work surface and trim
- Equipment mounting surfaces
- Multiple access doors
- Cable management system
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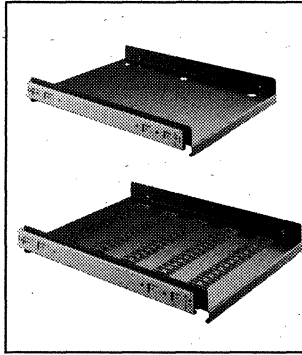
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A ZERO Corporation Company

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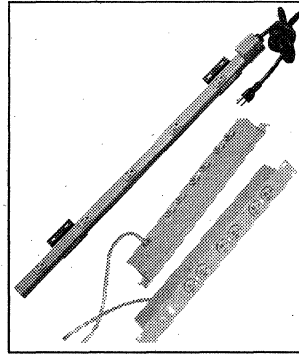
CABINET ACCESSORIES



Shelves

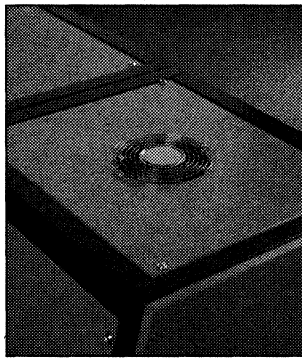
Perfect for monitors, VCR's, computers and other accessories

- Stationary
- Sliding
- Cantilevered
- Vented



Power Strips

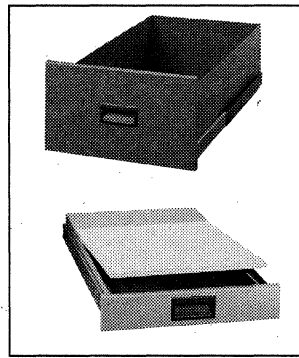
- Vertical
- Horizontal rack mount



Cooling

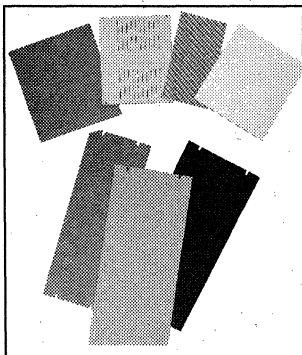
ZERO Stantron offers the most complete line of cooling products.

- Packaged Blowers
- Fan Trays
- Fan Panel



Drawers

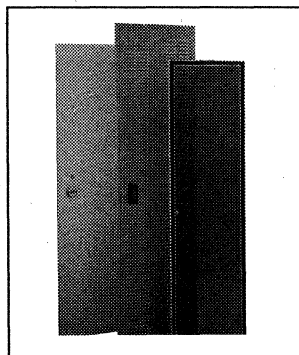
- Equipment drawers
- Sliding drawers with writing surfaces
- Retractable writing surfaces



Panels

Available in 54 standard sizes

- Flat
- Formed
- Vented
- Perforated
- Aluminum and Steel



Doors

- Face mount
- Flush mount
- Plaxi
- Louvered

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McLean Midwest, Refer to Fans & Blowers Section 2600

ZERO Electronic Solutions, Refer to Cabinets & Enclosures Section 1400

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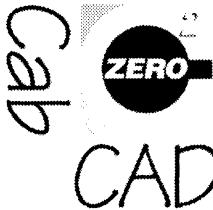
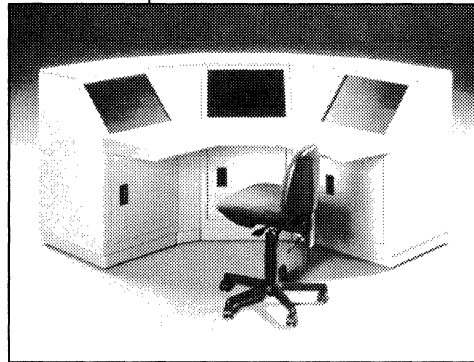
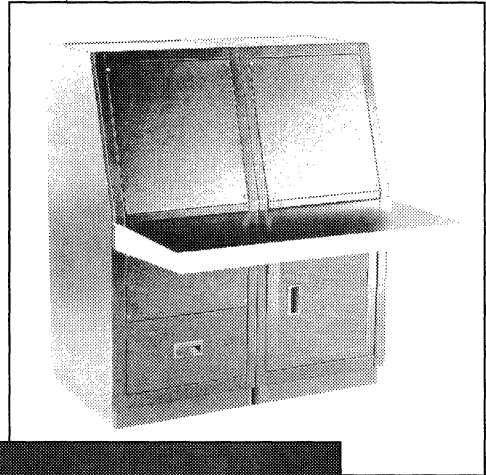
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CONSOLES

Sloping Consoles

Create a console to meet your requirements with the added benefits of being ergonomic, cost effective and fully modular.

- Fully welded, rugged construction
- Interchangeable modular components for expandability
- Six sloping frames available in both 19" and 24" widths with 25" & 30" depths
- Models available with 19°, 30° and 45° sloping panel spaces
- Fully adjustable tapped mounting rails included
- Writing surface custom designed for each application
- 30°, 45° and 90° wedges available for multi-bay applications



CabCAD-FREE CABINET DESIGN SOFTWARE

- Allows you to add all standard accessories and user defined equipment into panel space
- Complete design of cabinets system
 - Doors, shelves, drawers, bases, writing surfaces, panels
- Displays and prints bill of material with part numbers and pricing
- Plan, elevation and ISO views with overall dimensions
- Designs can be exported to AutoCAD (DXF) or as bitmaps for use in popular word processing and spreadsheet documents

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Deep Drawn Aluminum 100,000 Equals **ZERO**



Size Range:
0.1 cubic inch to
8.8 cu. ft.



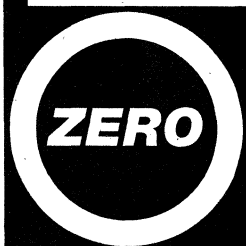
Fast turnaround!

- Round, Rectangular, Flanged, ARINC Style.
- Seamless, Airtight Construction.
- Full Range of Modifications/ Secondary Operations.
- Custom Applications Welcome.
- No Setup cost on 45,000 Stock Sizes.
- Additional 55,000 Sizes Pre-Tooled.
- Mu-Metal, Steel, Brass and Copper in Select Sizes.



ZERO Enclosures is the leader in quantity, quality and delivery of deep drawn aluminum enclosures. Offering over 100,000 pre-tooled sizes, each is created with a standard tool, ensuring consistency. For seamless construction in aluminum enclosures, look to ZERO.

Precision deep drawn miniature enclosures are also part of the ZERO product group. For steel, copper, brass, mu-metal, as well as aluminum, ZERO precision miniatures feature the same seamless, deep drawn construction.



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ZERO

Why Choose Aluminum Enclosures?

- High strength-to-weight ratio.
- Tough and impervious to corrosion.
- Natural RFI/EMI shielding.
- Excellent heat dissipation.
- Safe electrical grounding to housing.
- Odorless, tasteless, non-toxic, non-sparking and non-magnetic.

Why Choose ZERO Deep Drawn Enclosures?

- High structural integrity.
- Dust and waterproof seamless construction.
- Almost unlimited secondary operations.
- Pre-Engineered.

Why Choose ZERO Enclosures?

- No tooling or set up cost on 45,000 stock sizes.
- No tooling cost on 55,000 pre-tooled sizes.
- Free trimming to height specification.
- Low minimum order (\$50).
- Quick turnaround.

Size Range:

Round enclosures and covers are offered with diameters from 0.375" to 15.00", in depths up to 10.00".

Rectangular enclosures and covers are available ranging in size from 0.19" wide x 0.80" long to 28.0" wide x 54.19" long, in depths to 15.00".

Material: Selected aluminum alloys and gauge designations are used. Other aluminum alloys can be drawn on special order. Mu-Metal, cold-rolled steel, brass, copper and stainless steel are available for selected sizes.

Heat Treat: Readily available.

Accessories: Various covers and nutplates available.

Modifications And Custom Applications

ZERO Enclosures is also the source for total custom draw or modifications capabilities. For aluminum deep drawn enclosures, or precision miniatures in a multitude of materials, call ZERO Enclosures first.

Secondary Operations

ZERO Enclosures provides complete secondary metalworking operations for requirements such as extenders, fasteners, flanges and access ports, as well as a full line of finishing services.

- **Secondary Operations:** piercing, welding, trimming, louvers, heat treating, painting, anodizing, silk screening or engraving.
- **Secondary Operations For Select Sizes:** soldering, brazing and special finishes.
- **Finishing Services:** mechanical brushing and polishing; paint, lacquer, enamel and powder coatings; anodize and irridite finishing.
- **Accessories:** nutplate assemblies, gaskets and various covers.
- **Custom sizes and shapes available on special order.**

Engineering Support

ZERO provides a seasoned engineering department for professionally designing enclosures to meet specific requirements.



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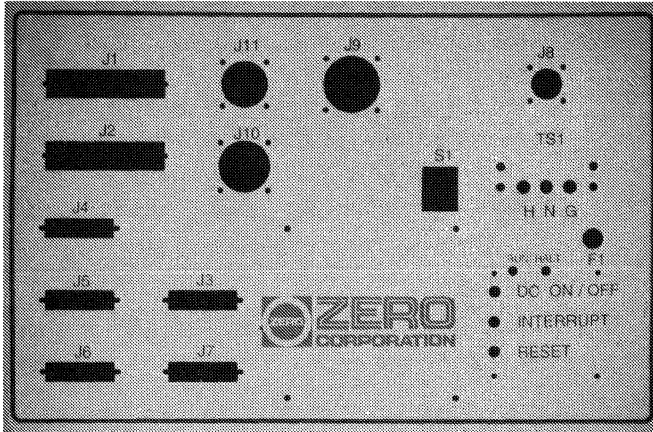
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ELECTRO-GRAPHICS™ ALUMINUM IMAGING



This ZERO Enclosures imaging process seals lettering/graphics into metal surfaces for maximum durability. The result: a beautiful, smooth-surfaced image, highly resistant to water.

The Imaging Alternative To:

- Silkscreening
- Aluminum Etching or Engraving
- Plastic Overlays
- Photographic Aluminum Imaging

Facts:

- Imaged onto high strength, tempered alloy.
- Fully anodized finish, no raw edges on ends/punch outs.
- Will meet most every specification.
- Wide choice of colors.

Ideal For Applications Such As:

- Diagnostic/Test Equipment Control Panels
- Heavy Equipment Faceplates
- Aircraft Equipment Panels
- Audio System Faceplates
- 19" Rack Panels
- Desktop or Console Control Panels

Call today for a detailed catalog with process description and specification.



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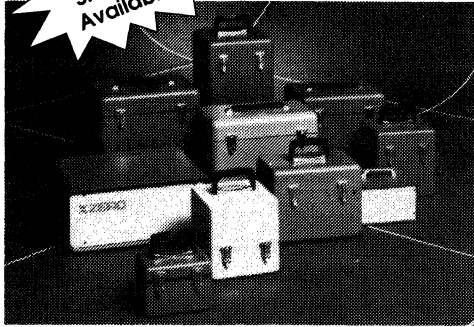
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Packaging?

ZERO Enclosures is the source.

Call 1-800-209-9922 today.

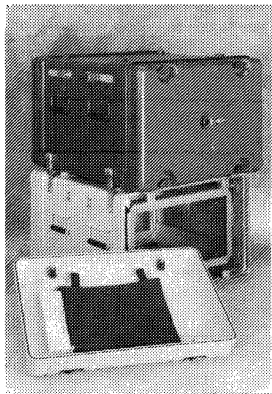
Next Day
Shipping
Available



Commercial Carrying and Instrument Cases

Put two deep drawn rectangular enclosures together, add hinges, latches and a handle and a case is formed.

- Over 30 sizes in stock, with thousands of additional sizes pre-tooled.
- Three styles: double-ended, instrument or standard carrying case.
- Modifications and custom applications.



Double-Ended Containers

- Portable.
- Stackable.
- Lightweight.
- Watertight.
- Holds standard 19" rack mounted electronics.
- Natural EMI shielding, grounding protection and heat dissipation.
- Options: shock mount, EMI gasketed, environmentally protected panels.

Now Available In Composite Material

Ruggedized Transit Cases

- Watertight.
- Lightweight.
- Thousands of standard sizes.
- Range of accessories and options.
- To meet military or commercial specifications.



For deep drawn or fabricated aluminum boxes, cans, housings, cases, enclosures or packaging, ZERO Enclosures is the complete source to satisfy your requirements. Call today to receive a catalog and engineering assistance.



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Certified

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ZERO Centurion® Elite Carrying Cases Maximum Durability, ZERO Styling

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 catalog!

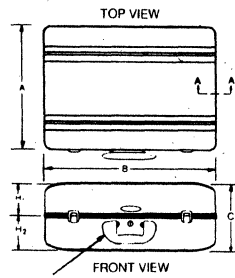
**Next Day
 Shipping
 Available**



**Carrying cases
 designed to last
 and last!**

NOTE: Width and length are outside dimensions, height is an inside dimension. Lower shell of Models 114X, 116X and 132X complete with spot welded wrap-around riser section.
IMPORTANT: If you are planning to install a panel in your case please check dimensioning of closure extrusion illustrated.
TO ORDER: Specify model and finish.
Sl=silver anodized. ON=onyx (black) powder paint.

- Deep-drawn aircraft quality aluminum.
- Strength-to-weight ratio 4X greater than cold-rolled-steel.
- Immune to cracking from aging or cold.
- Virtually unlimited secondary operations and finishes.
- Customized interiors to meet exact needs.
- Odorless, non-toxic and naturally EMI shielded.
- High strength.
- Light weight.
- Weather resistant.
- Dustproof and heat dissipating.
- Wide selection of sizes.
- Engineered interiors: EMI Gaskets, Snap-In Panel Mounts, Foam Inserts, Cushioned Dividers.
- Watertight available.

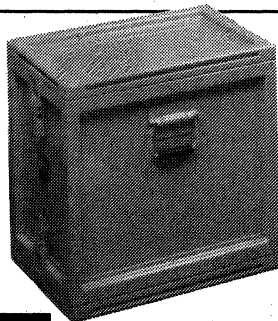


Handle located on top for 101X, 116X and 132X cases.

100X Series (standard configuration)

Measurements shown in inches

MODEL	OUTSIDE		INSIDE HEIGHT	H1 UPPER SHELL HEIGHT I.D.	H2 LOWER SHELL HEIGHT I.D.	MATERIAL THICKNESS	APPROX. NET WEIGHT LBS.
	WIDTH	LENGTH					
*132X <i>Sl</i>	8.50	19.75	14.43	1.20	13.23	.051	8.1
100X <i>Sl</i>	9.00	12.00	5.00	2.00	3.00	.040	3.3
101X <i>Sl</i>	9.00	16.00	7.75	2.50	5.25	.051	5.0
116X <i>Sl</i>	9.00	16.00	14.50	2.50	12.00	.051	7.2
*128X <i>Sl</i>	10.00	36.00	3.92	1.96	1.96	.040	7.0
*130X <i>Sl</i>	10.00	48.50	3.92	1.96	1.96	.040	9.2
*138X <i>Sl</i>	11.25	16.50	3.25	1.50	1.75	.040	4.4
*140X <i>Sl</i>	12.00	32.50	4.50	1.50	3.00	.040	8.0
102X <i>Sl</i>	13.00	18.00	4.50	2.00	2.50	.040	5.0
103X <i>Sl</i>	13.00	18.00	6.00	2.50	3.50	.040	5.4
*104X <i>Sl</i>	13.00	18.00	3.50	1.50	2.00	.040	5.0
105X <i>Sl</i>	13.00	21.00	6.50	2.75	3.75	.040	6.1
107X <i>Sl</i>	13.00	21.00	7.50	3.75	3.75	.040	6.3
*134X <i>Sl</i>	13.00	26.50	7.00	3.00	4.00	.051	7.2
*136X <i>Sl</i>	13.58	18.58	7.00	3.00	4.00	.040	5.7
*122X <i>Sl</i>	14.12	49.37	4.37	2.00	2.37	.040	16.8
114X <i>Sl</i>	17.00	18.00	12.00	2.00	10.00	.040	8.6
106X <i>Sl</i>	17.00	21.00	7.50	3.00	4.50	.051	8.4
111X <i>Sl</i>	18.00	24.00	7.00	3.00	4.00	.051	9.5
112X <i>Sl</i>	18.00	24.00	8.00	3.50	4.50	.051	10.0
113X <i>Sl</i>	18.00	24.00	8.50	4.00	4.50	.051	10.0
109X <i>Sl</i>	18.00	26.00	8.50	3.75	4.75	.051	10.7
110X <i>Sl</i>	18.00	26.00	9.00	4.25	4.75	.051	10.8
*142X <i>ON</i>	18.00	26.00	10.25	3.25	7.00	.063	14.3
*126X <i>Sl</i>	19.10	50.35	6.25	2.25	4.00	.051	17.3
129X <i>Sl</i>	20.00	29.00	9.94	4.97	4.97	.051	13.8



Fabricated Shipping Containers

- Unlimited sizes and configurations.
- Designed to meet shock and vibration requirements.
- Professional engineering staff support.

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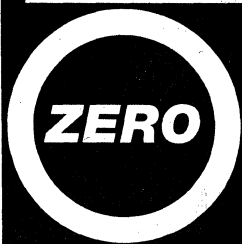


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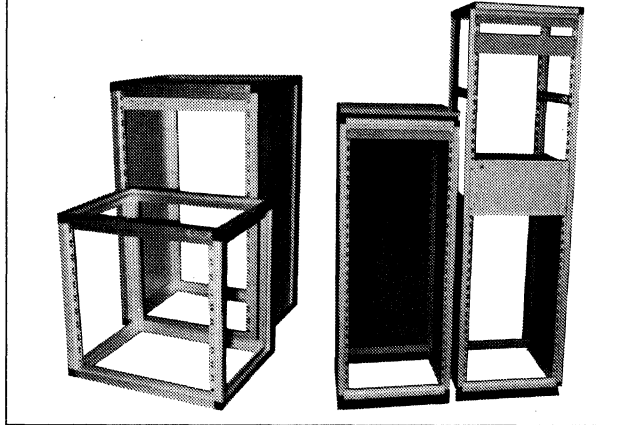


ZIP-RACK

EXTRUDED ALUMINUM MODULAR EQUIPMENT RACK FRAMES

DESK TOP AND FULL CABINET HEIGHTS

19" RACK
MOUNTING
PROCESS
CONTROLLERS
AUDIO VISUAL
STANDS
CABLE TV
MODULES



NETWORKING
CHASSIS
TELECOM
BOXES
BUILDING
MANAGEMENT
MEDICAL
ELECTRONICS

AN ECONOMIC SOLUTION FOR AN EQUIPMENT RACK SYSTEM

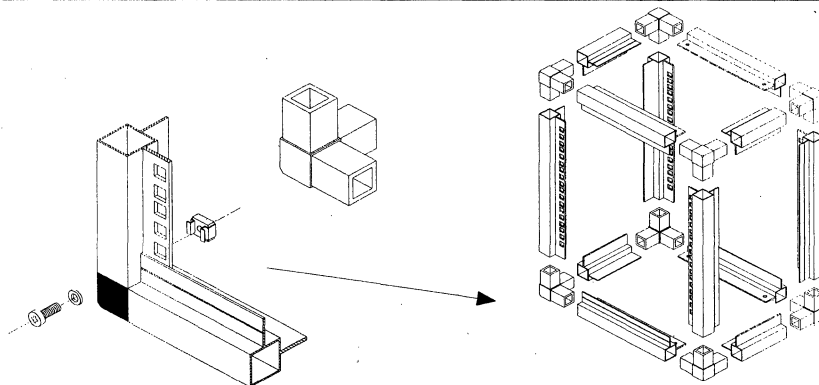
FEATURES

- Unique Design – Hollow Extruded Aluminum Tube
 - Rugged, patented 3-way corner piece
 - Knock Together Components
- Simple & Easy Construction
- Multiple Heights, Widths & Depths
- Accessories – Shelves, Covers, Side Panels

BENEFITS

- + Light weight, strong and great appearance
- + Plastic molded corner for tight fit & easy assembly
- + Minimize Freight costs, fast assembly
- + Self aligning & standard fasteners
- + Assembly skills kept to a minimum
- + 19" & 24" widths, Multiple "U" heights
- + Frame first, then options & add ons

SYSTEM CONCEPTS & COMPONENTS



U.S. Patent
826,578

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THE ENGINEER'S MAGAZINE OF PRODUCT TECHNOLOGY

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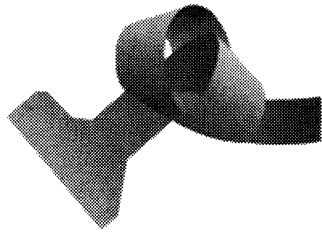
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Today's Flexible Circuits are used as the SOLUTION to a packaging problem—not just an interconnect device from one circuit board to another.

PRODUCTS

- Single Sided, Double Sided, 3 and 4 layer
- Polyimide and Polyester

ONE DAY QUOTING

- Customer Fax
- Phone Call
- Modem Data
- E-mail

PROTOTYPE/SHORT RUN

- Under 2 weeks
- First Article
- 5 to 1000 Pieces

QUICK TURN

- Production Under 4 Weeks
- Low to Medium Volume

GOLD PLATING

- Wire Bondable Gold
- Hard Gold

UL CERTIFIED SUPPLIER

SPECIALTY CIRCUITS

- Z Link
- MAXI-FLEX
- Controlled Impedance

ASSEMBLY & VALUE-ADDED SERVICES

- Electrical Testing
- Connector, Folding, Forming
- SMT Available
- Heat Sinks

ENGINEERING SUPPORT

- CAD/CAM
- Design
- Chemical
- Mechanical

Pads designed to mate with ZIF (Zero Insertion Force) connector

Recessed cut to assist in folding of tail—reduces stress at fold point

Gold plated dome switch pads for membrane switch applications

Surface mount LED access openings

Wide conductors carry power on same layer as signal lines

FR 4 stiffeners for rigidizing in the connector area

FR4 stiffeners for rigidizing in the connector area

Actual length of MAXI-FLEX circuits in 48"

Circuit branches out to accommodate packaging needs

Stiffener under pads meets ZIF connector thickness requirements

Pads designed to mate with ZIF (Zero Insertion Force) connector

Exposed pads on top and bottom of circuit allow soldering from both sides

the flexibility to meet your needs

Primary Markets Served

INDUSTRIAL
MEDICAL
INSTRUMENTATION
TELECOMMUNICATIONS

Other Markets Served

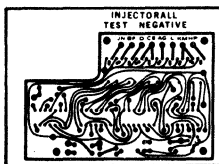
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PROTOTYPE & QUICK TURN
LOW VOLUME SPECIALTY CIRCUITS
LARGE, LIGHT-WEIGHT MAXI-FLEX™ CIRCUITS

QUALITY PRODUCTS FOR PROFESSIONAL RESULTS

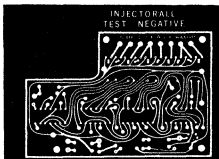
MAKE YOUR OWN PC BOARDS Fast-Easy-Inexpensive



COPPER CLAD LAMINATES



POSITIVE ARTWORK



NEGATIVE ARTWORK

Copper clad laminates available as:
 1. Uncoated;
 2. Negative resist coating; or
 3. Positive resist coating.

SERVICES AVAILABLE: PROTO-TYPES AND SMALL TO LARGE RUNS, MULTI-LAYER BOARDS, PHOTOPLOTTING, CONTRACT SILK-SCREENING, HOT AIR LEVELING, CONTRACT RESIST COATING.

UNCOATED COPPER CLAD LAMINATES

Size	Copper Thickness		CEM Cat. Nos.		FR4 Cat. Nos.		Copper Thickness		FR4 Cat. Nos.		Copper Thickness		FR4 Cat. Nos.	
	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides
3x4.5	1 oz.	PC1-CEM	PC9-CEM	PC5	PC40	2 oz.	PC9	PC51	1 oz.	PC55	PC44	2 oz.	PC4	PC79
4x6	1/16"	PC2-CEM	PC10-CEM	PC6	PC41	1/16"	PC10	PC52	1/2"	PC56	PC45	1/2"	PC6	PC80
4.5x7		PC2-CEM-C	PC10-CEM-C	PC6-C	PC41-C		PC10-C	PC52-C		PC56-C	PC45-C		PC65-C	PC80-C
6x6		PC2-CEM-S	PC10-CEM-S	PC6-S	PC41-S		PC10-S	PC52-S		PC56-S	PC45-S		PC65-S	PC80-S
6x9		PC3-CEM	PC11-CEM	PC7	PC42		PC11	PC53		PC57	PC46		PC66	PC81
*4.5 x 9.5				PC6B	PC41B		PC10B	PC52B		PC56B	PC45B		PC65B	PC80B
12x12		PC3-CEM-T	PC11-CEM-T	PC7-T	PC42-T		PC11-T	PC53-T		PC57-T	PC46-T		PC66-T	PC81-T
12x18		PC4-CEM	PC12-CEM	PC8	PC43		PC12	PC54		PC58	PC47		PC67	PC82
18x18		PC4-CEM-E	PC12-CEM-E	PC8-E	PC43-E		PC12-E	PC54-E		PC58-E	PC47-E		PC67-E	PC82-E
24x36		PC4-CEM-1	PC12-CEM-1	PC8-1	PC43-1		PC12-1	PC54-1		PC58-1	PC47-1		PC67-1	PC82-1
36x48		PC4-CEM-2	PC12-CEM-2	PC8-2	PC43-2		PC12-2	PC54-2		PC58-2	PC47-2		PC67-2	PC82-2

POSITIVE RESIST BOARDS (BLACK BAG-BLUE HEADER) USE WITH INJECTORALL D3 DEVELOPER

Size	Copper Thickness		CEM Cat. Nos.		FR4 Cat. Nos.		Copper Thickness		FR4 Cat. Nos.		Copper Thickness		FR4 Cat. Nos.	
	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides
3x4.5	1 oz.	PC1-CEMP	PC9-CEMP	PC17P	PC40P	2 oz.	PC9P	PC51P	1 oz.	PC55P	PC44P	2 oz.	PC4P	PC79P
4x6	1/16"	PC2-CEMP	PC10-CEMP	PC18P	PC41P	1/16"	PC10P	PC52P	1/2"	PC56P	PC45P	1/2"	PC6P	PC80P
4.5x7		PC2-CEMP-C	PC10-CEMP-C	PC18P-C	PC41P-C		PC10P-C	PC52P-C		PC56P-C	PC45P-C		PC65P-C	PC80P-C
6x6		PC2-CEMP-S	PC10-CEMP-S	PC18P-S	PC41P-S		PC10P-S	PC52P-S		PC56P-S	PC45P-S		PC65P-S	PC80P-S
6x9		PC3-CEMP	PC11-CEMP	PC19P	PC42P		PC11P	PC53P		PC57P	PC46P		PC66P	PC81P
*4.5 x 9.5				PC6BP	PC41BP		PC10BP	PC52BP		PC56BP	PC45BP		PC65BP	PC80BP
12x12		PC3-CEMP-T	PC11-CEMP-T	PC19P-T	PC42P-T		PC11P-T	PC53P-T		PC57P-T	PC46P-T		PC66P-T	PC81P-T
12x18		PC4-CEMP	PC12-CEMP	PC19AP	PC43P		PC12P	PC54P		PC58P	PC47P		PC67P	PC82P
18x18		PC4-CEMP-E	PC12-CEMP-E	PC19AP-E	PC43P-E		PC12P-E	PC54P-E		PC58P-E	PC47P-E		PC67P-E	PC82P-E

DRY FILM NEGATIVE RESIST BOARDS (BLACK BAG-GREEN HEADER) USE WITH INJECTORALL D1 DEVELOPER

Size	Copper Thickness		CEM Cat. Nos.		FR4 Cat. Nos.		Copper Thickness		FR4 Cat. Nos.		Copper Thickness		FR4 Cat. Nos.	
	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides	1 side	2 sides
3x4.5	1 oz.	PC1-CEMF	PC9-CEMF	PC17F	PC40F	2 oz.	PC9F	PC51F	1 oz.	PC55F	PC44F	2 oz.	PC4F	PC79F
4x6	1/16"	PC2-CEMF	PC10-CEMF	PC18F	PC41F	1/16"	PC10F	PC52F	1/2"	PC56F	PC45F	1/2"	PC6F	PC80F
4.5x7				PC18F-C	PC41F-C		PC10F-C	PC52F-C		PC56F-C	PC45F-C		PC65F-C	PC80F-C
6x6				PC18F-S	PC41F-S		PC10F-S	PC52F-S		PC56F-S	PC45F-S		PC65F-S	PC80F-S
6x9		PC3-CEMF	PC11-CEMF	PC19F	PC42F		PC11F	PC53F		PC57F	PC46F		PC66F	PC81F
*4.5 x 9.5				PC6BF	PC41BF		PC10BF	PC52BF		PC56BF	PC45BF		PC65BF	PC80BF
12x12		PC4-CEMF	PC12-CEMF	PC19AF	PC43F		PC12F	PC54F		PC58F	PC47F		PC67F	PC82F
12x18				PC19AF-T	PC43F-T		PC12F-T	PC54F-T		PC58F-T	PC47F-T		PC67F-T	PC82F-T

* NOTCHED TO FIT 22/44 CARD EDGE CONNECTOR. NOTCHED BOARDS AVAILABLE IN ANY SIZE.

Special cuts available in sensitized boards to 18" x 18", non-sensitized boards available to 36" x 48". There is no charge for special cuts. Please specify coating and type from above chart. Perforated breadboards available in various sizes and patterns: .042, .062, .093. MICROWAVE MATERIAL AVAILABLE.

NEW DRILLED BREADBOARDS

Unclad; 1 oz. 1 side copper;
 1 oz. 2 sides copper. Glass epoxy, "P" pattern, .042 holes on .1 centers. Available up to 12"x18"

ELECTRONIC CHEMICALS

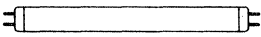
NEW POSITIVE PHOTO RESIST #PC197

A liquid Positive Photo Resist which is used to coat your own materials in order to make them photo-sensitive. A high quality Positive Resist which will cause less pinholing. Available in 2 oz., 8 oz., 16 oz., 32 oz., 1 gal. sizes.



For the preparation and preservation of your PC Boards and Electronic Devices.
COMPUTER CLEANER-NO CFCs
CONFORMAL COATINGS-NO CFCs
DEGREASERS
DEVELOPERS
DRIVE WHEEL CLEANER
ETCHANTS-ferric chloride, sodium persulfate
FREEZER SPRAY-NO CFCs
PENETRATING OIL
PLOTTER PEN RESIST INK AND SOLVENT
RESIST INK PENS-med./fine, extra fine STRIPPERS
TAPE HEAD CLEANER
TAPE HEAD CLEANING STICKS & FOAM SWABS
THINNERS

No. PC557F ULTRAVIOLET LIGHT SOURCE



Use to expose positive or negative sensitized material. 15W 18" bi-pin.

CIRCUIT BOARD DRILL BITS



Specially designed for smooth, burr-free drilling in printed circuit boards. Made of high speed tool steel or CARBIDE.

Drill Bit	Diameter	No. PC300-80
80	.0135	10 pcs. of #80
75	.021	No. PC300-75
69	.029	10 pcs. of #75
		No. PC300-69
66	.033	10 pcs. of #69
		No. PC300-66
60	.040	10 pcs. of #66
		No. PC300-60
55	.052	10 pcs. of #60
		No. PC300-55
52	.062	10 pcs. of #55
		No. PC300-52
		10 pcs. of #52
No. PC300-Kit		7 bits (1 of each)

CARBIDE BITS AVAILABLE IN THE ABOVE SIZES

NEW CONTRACT DIP COATING

We will dip coat YOUR MATERIAL, exotic or ordinary, up to 18" x 18", in our newly improved facility. Our positive photo resist will make your material photo-sensitive, enabling you to get 5 MIL line registration.

NEW EXPOSURE GUIDE

Use this inexpensive guide to aid you in making the proper exposure, development and etching for your positively coated P.C. boards. Reusable.
 No. PC50A

DRAFTING AIDS

PC22	PC23	PC28
DRAFTING TAPE 648' rolls of etch resist tape in widths of: .031, .042, .062, .080, .093, .125, .156, .200 and 250 inches. Pressure sensitive.	DONUT TERMINAL PADS Pressure sensitive, etch resistant in sizes from .062" with .031 hole up to .500" with .062" hole in ten sizes. Pkgs. of 40, 250 or 1000 depending on size.	DUAL IN-LINES Pressure sensitive, .002" accuracy. 1:1 and 2:1 ratio. Pin pads: 8, 14, 16, 18, 20, 22, 24, 28 and 40. Pkgs. of 8 or 100.

KIT 650 NEW KIT 750 KIT 850

Photo-etch kit using boards with negative DRY FILM resist: 2-3" x 4" neg. sensitized single side boards, exposure glass, tray, chemicals, drill bit, spring clips and complete instructions and exposure lamp.	Photo-etch kit using 2 sided boards with either negative Dry Film or Positive Acting Resist. Specify 750F or 750P. Contains: 2-3" x 4" sens. boards, exposure glass, spring clips, chemicals, exposure lamp, drill bit and more. Complete instructions.	Photo-etch kit using boards with positive resist: 2-3" x 4" pos. sensitized single side boards, glass, tray, pen, art aids, chemicals, clips, drill bit, exposure lamp and complete instructions.

ETCHANTS For Printed Circuit Boards

LIQUID ETCHANT: FERRIC CHLORIDE

A solution used to remove excess copper from printed circuit boards. 42° Baume. Triple filtered electronic grade which means no sludge and meets the most stringent requirements of the industry.

No. PC 199P PINT
 No. PC 199Q QUART
 No. PC 199G GALLON

DRY ETCHANT: SODIUM PERSULFATE

Crystal form; YOU mix with filtered water which means a savings on shipping costs. Use instead of Ammonium Persulfate. ODORLESS. Safer to use. Does not migrate with the water vapor to affect the surrounding work area. Starts clear and remains clear during the whole process which avoids constant handling of the boards. 1/2 pound yields one gallon, 10 pounds yield 20 gallons.

No. PC 200 1/2 lb No. PC 200-10 10 lbs

HEALTH AND SAFETY

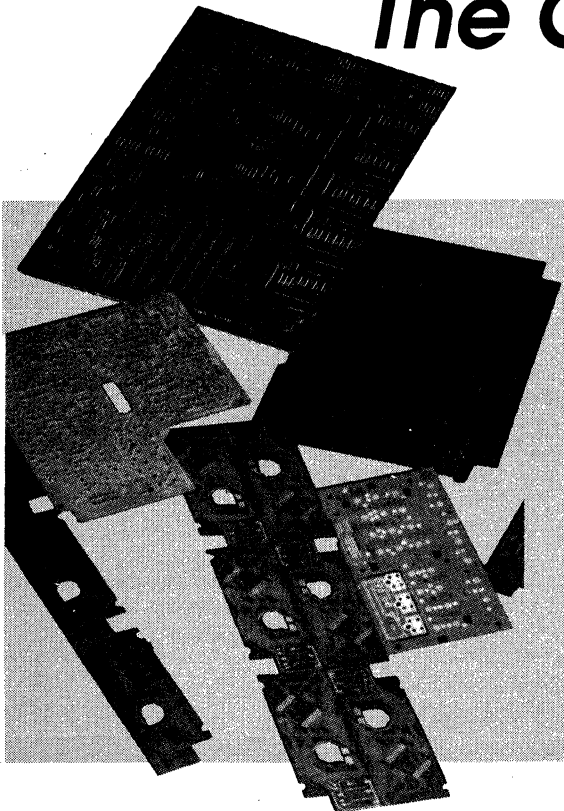
WATER PURIFIERS & REPLACEMENT FILTERS
NITRILE & NYLON GLOVES
ORGANIC VAPOR MASKS
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The OMNI Switch PCB



Membrane Switches
Flexible Printed Circuits
Printed Circuit Boards

- Single, Double, Multi-Layers PCB
- Carbon-Printed Through Holes PCB
- Silver Ink Jumper PCB

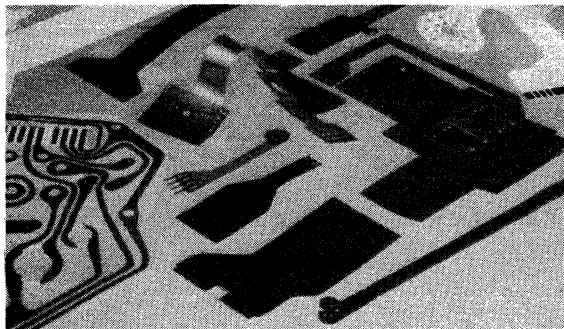
Besides the good quality, price, and delivery of OSI, there's more you can rely on:

• **Fast Shipping**

You can receive the board in two days by airfreight. (Production time is three weeks.)

• **Quality Shipping**

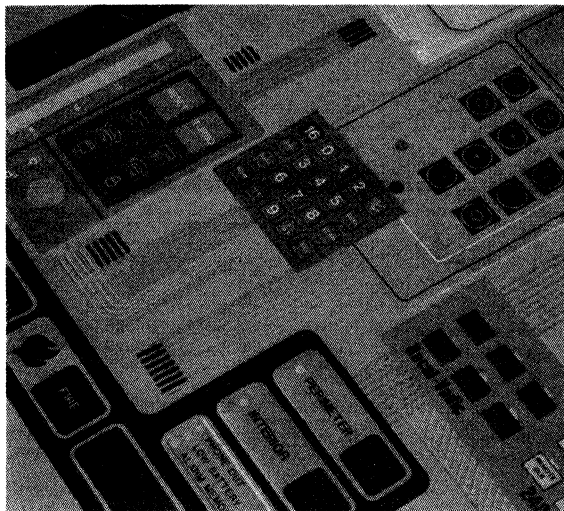
Although you won't have a problem with OSI, we still guarantee you the full replacement or compensation of loss for defective PCB.



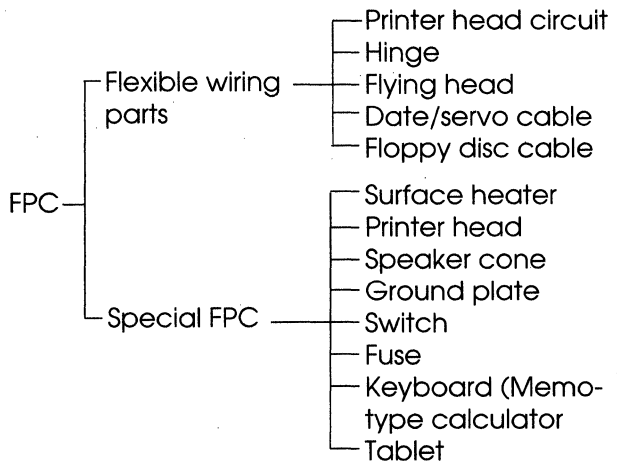
Membrane Switch

Examples of what OMNI Does On Membrane Switches:

- Embossed Overlays
- Polyester and Metal domes
- UV Curing on face
- EMI, REI, and ESD shielding
- Graphics in Polyester or Polycarbonate
- Keyboard
- Solder pin Attachment
- Multi-color, reverse side printing



Flexible Printed Circuit (F.P.C.)

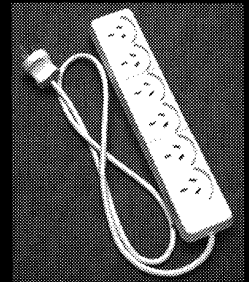
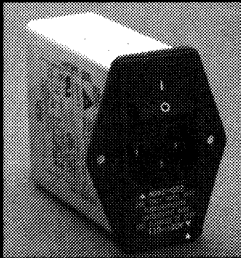


O.S.I.
OMNI SWITCH INC.

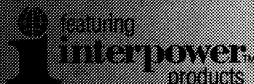
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Toll Free: 1-800-806-6685
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SOCKETS

Manufacturer	Starting EEM Page No.	IC	DIP/SIP	Pin Grid Array	Carrier	Translator	Crystal	Battery/Lamp	Relay	Tube	Test	Adapter
Advanced Interconnections Corp.	C-1133	√	√	√							√	√
AMP	C-1138	√	√	√	√	√						√
ANDON Electronics Corp.	C-1145	√	√	√	√	√	√	√				√
Aries Electronics	C-1148	√	√									√
Berg Electronics	C-1152	√	√	√	√							√
Century Interconnect Products	C-1177	√	√	√	√							
Comm Con Connectors, Inc.	C-1178		√									
Concord Electronics Corp.	C-1182					√					√	
EBY Company	C-1197	√	√			√	√		√	√	√	
Electronic Precision Technology Inc.	C-1199	√	√	√								
International Configurations, Inc.	C-1225										√	√
Ironwood Electronics, Inc.	C-1231	√	√	√	√						√	√
Jettron Products, Inc.	C-1238									√		
Jolo Industries, Inc.	C-1242	√	√								√	√
Kycon Cable & Connector, Inc.	C-1244				√							√
LEOCO (USA) Corporation	C-1255		√	√	√							
Major League Electronics Incorporated	C-1277		√						√			
Maxconn, Inc.	C-1278	√										
Meritec	C-1294	√										
Mill-Max Manufacturing Corp.	C-1305	√§	√§	√§	√§							√§
Multi-Contact U.S.A.	C-1307										√	√
ODU - USA, Inc.	C-1310										√	
Omega Engineering Inc.	C-1311											√
Power Dynamics, Inc.	C-1328	√	√							√		
Robinson Nugent	C-1348	√	√	√								
Samtec, Inc.	C-1351	√	√	√								√
Schurter Inc.	C-1357							√			√	
Shogyo International Corp.	C-1361							√				√
Shokai Far East Limited	C-1366	√	√	√				√		√		
Sullins Electronics Corp.	C-1371		√								√	√

CONNECTORS, CABLE-TO-CABLE/PANEL

Manufacturer	Starting EEM Page No.	Series Model No.	Type Connector					Connection		No. Conductors		Angle		Special Features
			Circular	Coax/Triax	Flat Cable	Rectangular	D-Subminiature	Solder	Solderless	Single	Multi	Right Angle	Parallel	
Alden Products Company	C-1134		√							√	√	√	√	
AMP	C-1138		√	√	√	√	√	√	√	√	√	√	√	SMC
Anderson Power Products	C-1144					√		√	√	√	√			Modular Genderless Color Keyed
Berg Electronics	C-1152			√	√	√	√	√		√	√	√	√	
Bomar Interconnect Products	C-1158	D100-900		√			√	√	√	√	√	√	√	
BTC Electronic Components	C-1160		√				√	√	√		√			
Caton Connector Corp.	C-1172		√	√		√		√	√	√	√	√	√	High voltage assemblies, molded-on connectors, special silicone inserts
Century Interconnect Products	C-1177				√		√	√	√		√	√	√	
Comm Con Connectors Inc.	C-1178				√			√	√					
Concord Electronics Corp.	C-1182			√				√	√	√	√	√		
Connector Technology, Inc. (CTI)	C-1184	851 Clippes - D38989	√	√			√	√	√		√			
Connectronics Corp.	C-1189		√	√	√	√	√	√	√	√	√	√	√	Custom
CUI Stack Inc.	C-1191		√	√				√	√	√	√	√	√	SMT, Power

§ Surface Mount

CONNECTORS, CABLE-TO-CABLE/PANEL (cont'd.)

Manufacturer	Starting EEM Page No.	Series Model No.	Type Connector					Connection		No. Conductors		Angle		Special Features
			Cir- cular	Coax/ Triax.	Flat Cable	Rect- an- gular	D- Sub- min- iature	Sol- der	Sol- der- less	Single	Multi	Right Angle	Par- allel	
Direct Sound Corp.	C•1195		✓	✓				✓			✓			Waterproof, Hermetically sealed receptacles, Nonwaterproof, Quick connect-disconnect, Byonet type
EDAC Inc.	C•1198	516, 621		✓		✓	✓	✓	✓		✓	✓	✓	
Electronic Precision Technology Inc.	C•1199				✓				✓				✓	IDC
ERNI Components	C•1200		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
Fischer Connectors, Inc.	C•1204		✓	✓				✓	✓	✓	✓	✓		Quick disconnect; sealed & unsealed; plastic and metal shell; patented locking system; high voltage and high vacuum; standard and custom; meet EMC92 and rated up to IP68; designed and manufactured per ISO9001
Fujipoly America Corp.	C•1214					✓	✓							Elastomeric Connectors
Fujitsu Takamisawa America, Inc.	C•1218				✓	✓	✓	✓	✓	✓	✓	✓	✓	
Globtek Inc.	C•1220		✓				✓	✓	✓	✓	✓	✓		
Harting Inc. of North America	C•1222		✓	✓	✓		✓	✓	✓		✓	✓		
Honda Connectors/Mhtronics	C•1224				✓	✓	✓	✓				✓		
International Configurations	C•1225					✓		✓	✓		✓			
Jaeger Connecteurs	C•1236		✓					✓	✓		✓	✓	✓	
Jettron Products, Inc.	C•1238		✓						✓	✓		✓		
Johnson Components	C•1240			✓				✓	✓	✓		✓	✓	
Kycon Cable & Connector, Inc.	C•1244		✓	✓			✓	✓	✓	✓	✓	✓	✓	
LEMO U.S.A., Inc.	C•1250		✓	✓				✓	✓	✓	✓	✓	✓	
LEOCO (USA) Corporation	C•1255		✓	✓	✓		✓							
LZR Electronics, Inc.	C•1260		✓	✓	✓		✓	✓	✓			✓	✓	
Major League Electronics	C•1277					✓		✓	✓		✓	✓	✓	
Maxconn, Inc.	C•1278	Centronix			✓	✓	✓	✓			✓	✓	✓	440 Jackscrew insert, Grounding brackets
Meritec	C•1294			✓	✓	✓		✓	✓	✓	✓	✓	✓	
Metuchen Capacitors, Inc.	C•1296						✓					✓		
Mill-Max Manufacturing Corp.	C•1305							✓	✓			✓	✓	
Multi-Contact USA	C•1307		✓	✓				✓	✓	✓	✓	✓	✓	Locking
ODU - USA, Inc.	C•1310		✓		✓	✓	✓	✓	✓		✓	✓	✓	
Omega Engineering	C•1311	Sub-mini, Standard, Low Noise, High Temp., Ferrite noise suppressors				✓	✓	✓	✓		✓		✓	Thermocouple applications, Low noise versions, RF noise suppression version
Omnetics	C•1313		✓		✓	✓		✓	✓	✓	✓	✓	✓	Nano connectors
Panel Components Corp.	C•1314							✓	✓			✓		
Power Dynamics Inc.	C•1328		✓		✓		✓	✓	✓	✓	✓	✓		
RDI Electronics Inc.	C•1343	multiple	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Robinson Nugent	C•1348				✓						✓			
Samtec, Inc.	C•1351	IDX, TCX, FFSD Series			✓					✓	✓	✓	✓	Low Profile
Schurter Inc.	C•1357					✓	✓	✓	✓	✓	✓	✓	✓	
Shogyo International Corp.	C•1361		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
Shokai Far East Limited	C•1366		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Siemens Electromechanical	C•1367		✓	✓	✓	✓	✓	✓	✓	✓			✓	
Sonic Connections	C•1368								✓		✓		✓	Very high density
Spectrum Control Inc.	C•1369		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Sullins Electronics Corp.	C•1371	EZC, PZC, RXB						✓		✓	✓	✓	✓	Surface mount on EZC and RXB
Virginia Plastics Comp.	C•1376	Connectors			✓	✓		✓		✓	✓	✓		
Weidmuller Inc.	C•1378	SLDF							✓		✓		✓	

CONNECTORS, RACK AND PANEL

Manufacturer	Starting EEM Page No.	Series/Model No.	Terminals		Two Piece Mating	Special Features							
			Pin	Carti-lover		Crmp	Wire-wrap	DIP Solder	Cup/Eye Solder	Locking	Heads	Jack Screw	Hi Rel. Mil.
2E Syscom	C•1375		√		√		√		√			√	
AMP	C•1138		√		√		√		√			√	√
Anderson Power Products	C•1144					√							
Berg Electronics	C•1152		√	√	√					√			
Bomar Interconnect Products	C•1158	26	√	√		√	√	√	√		√	√	
Caton Connector Corp.	C•1172					√							√
Comm Con Connectors Inc.	C•1178				√								
Connectronics Corp.	C•1189		√		√				√	√			√
CW Industries	C•1194							√					
EBY Company	C•1197		√				√						
EDAC Inc.	C•1198	516	√		√	√	√	√	√	√		√	√
Electronic Precision Technology Inc.	C•1199		√		√		√	√					
ERNI Components, Inc.	C•1200		√		√	√	√		√	√		√	√
Fujitsu Takamisawa America, Inc.	C•1218		√		√	√	√		√	√	√	√	
Harting, Inc. of North America	C•1222				√	√	√		√	√		√	√
Honda Connectors/Mhotronics	C•1224		√	√	√			√		√		√	
International Configurations, Inc.	C•1225		√										
Ironwood Electronics, Inc.	C•1231						√						
Kycon Cable & Connector, Inc.	C•1244		√				√	√				√	
LEOCO (USA) Corporation	C•1255		√			√	√	√	√	√	√		
Major League Electronics Incorporated	C•1277				√		√						
Maxconn, Inc.	C•1278				√	√	√	√	√			√	
Mill-Max Manufacturing Corp.	C•1305		√			√	√	√	√				
NAS Electronics	C•1308		√					√					
ODU - USA, Inc.	C•1310		√		√	√							
Omega Engineering	C•1311	Sub-mini, Standard Low Noise, Sealed, Hi Temp., Ferrite Noise Suppressors	√		√	√	√		√	√	√	√	
Plastics One	C•1327				√								
Power Dynamics Inc.	C•1328		√	√		√		√	√	√		√	
RDI Electronics Inc.	C•1343							√	√			√	
Samtec, Inc.	C•1351		√					√		√	√		
Schurter, Inc.	C•1357		√		√	√	√	√	√	√		√	
Shogyo International Corp.	C•1361		√	√	√	√	√	√	√	√	√	√	
Siemens Electromechanical	C•1367		√		√	√	√	√	√				
Spectrum Control Inc.	C•1369		√				√		√	√	√	√	√
Sullins Electronics Corp.	C•1371	PZC, EZC, RXB	√	√		√	√	√	√	√	√		
Turck Inc.	C•1374		2-6		√	√			√	√			
Vishay Dale Electronics	C•1377	MM22 MM24 SM20			√		√	√	√	√	√	√	√
Weidmuller Inc.	C•1378				√	√							

CONNECTORS, PCB/FLAT CABLE

Manufacturer	Starting EEM Page No.	Series/ Model No.	Board to Chassis/ Mother Board		Board to Cable/ I/O		For Ext. Board	Type or Feature	Contact Style			Special Features
			One Piece	Two Piece	One Piece	Two Piece			Cantilever	Pin	Below	
2 E Syscom	C-1375			√		√				√		
AMP	C-1138		√	√	√	√	√					
Anderson Power Products	C-1144			√		√						Modular Genders
Berg Electronics	C-1152		√	√	√	√	√		√	√		
Bomar Interconnect Products	C-1158	360										
Bourns, Inc.	C-1159								√			Battery connector, SMT
Caton Connector Corp.	C-1172		√	√	√	√						
Century Interconnect Products	C-1177		√	√	√	√						
Comm Con Connectors Inc.	C-1178			√		√						
Connectronics Corp.	C-1189		√	√	√	√	√			√		Custom
EBY Company	C-1197		√	√	√	√				√		Custom
EDAC Inc.	C-1198	300, 700, 400	√	√			√		√	√	√	
Electronic Precision Technology Inc.	C-1199			√						√		2.5mm
ERNI Components, Inc.	C-1200			√	√	√	√			√		
Fujitsu Takamisawa America, Inc.	C-1218		√	√	√	√	√		√	√	√	
Harting, Inc. of North America	C-1222		√	√	√	√	√				√	
Honda Connectors/Mhotronics	C-1224			√		√				√	√	
JAE Electronics, Inc.	C-1232	WR, KX14/15, IL-310, IL-312, KX20, TX20, TX20A, RL01, IL-402/402R, IL-FHR, IL-FPR, IL-FHJ, FI		√		√				√		
Jaeger Connecteurs	C-1236		√		√					√		
Jolo Industries	C-1242	Various	√	√	√				√	√		
Kycon Cable and Connector, Inc.	C-1244				√					√		
LEOCO (U.S.A.) Corporation	C-1255				√	√						
Major League Electronics Incorporated	C-1277									√		
Maxconn Inc.	C-1278			√	√	√			√			
Meritec	C-1294			√	√	√	√		√	√		
NAS Electronics	C-1308		√	√				Solder & Flux bearing edge clips		√		
ODU - USA, Inc.	C-1310				√							
Omega Engineering Inc.	C-1311	Sub-mini, Standard			√				√			Thermacouple alloys available
Plastics One	C-1327					√		PCB mount jack, panel mount jack				
Power Dynamics	C-1328		√	√		√				√		
RDI Electronics	C-1343		√									
Robinson Nugent	C-1348			√		√	√	Blind Mating		√	√	

CONNECTORS, PCB/FLAT CABLE (cont'd.)

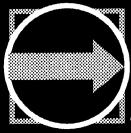
Manufacturer	Starting EEM Page No.	Series/ Model No.	Board to Chassis/ Mother Board		Board to Cable/ I/O		For Ext. Board	Type or Feature	Contact Style			Special Features
			One Piece	Two Piece	One Piece	Two Piece			Can't-lever	Pin	Del-low	
Samtec, Inc.	C-1351	All	√	√	√	√						
Schurter, Inc.	C-1357		√		√		√			√		
Shogyo International Corp.	C-1361		√	√	√	√	√		√	√		
Shokai Far East Ltd.	C-1366		√	√	√	√			√	√	√	
Siemens Electromechanical	C-1367		√	√	√	√				√		
Sonic Connections	C-1368					√				√		Sonicrimp process, No solder
Sullins Electronics Corp.	C-1371	EZC, PZC, RXB	√		√		√		√	√	√	Surface mount on EZC and RXB Series
Teka Interconnection Systems	C-1372		√	√				Card Edge, Receptacle, PC/104, PCMCIA, CompactFlash	√	√	√	Solder-Flux Bearing Leads
Vishay Dale Electronics	C-1377	EB4 EB6 EB7 EB8 EBT86	√ √ √ √ √		√ √ √ √ √		√ √ √ √ √		√ √		√ √	Tuning Fork contact
Weidmuller	C-1378			√		√						

CONNECTORS, POWER

Manufacturer	Starting EEM Page No.	Battery	AC	DC	High Voltage (500 Volts & Over)	Special Features
2 E Syscom	C-1375			√	√	Custom connectors for automobile electronics
AMP	C-1138	√	√	√	√	
Anderson Power Products	C-1144	√	√	√	√	Genderless color keyed
Connectronics Corp.	C-1189			√	√	Custom
CUI Stack	C-1191			√		
Electronic Precision Technology, Inc.	C-1199			√		DIN 41612
ERNI Components, Inc.	C-1200		√	√		
Globtek, Inc.	C-1220	√	√	√		
Harting, Inc. of North America	C-1222		√		√	
International Configurations Inc.	C-1225		√			
Jaeger Connecteurs	C-1236		√	√	√	
Kycon Cable and Connector, Inc.	C-1244			√		
LEMO USA	C-1250				√	
LZR Electronics, Inc.	C-1260	√	√	√		
Multi-Contact USA	C-1307		√	√	√	
ODU - USA, Inc.	C-1310		√	√	√	
Panel Components Corp.	C-1314		√			
Plastics One	C-1327		√	√		Audio and Power Plugs
Power Dynamics, Inc.	C-1328	√	√	√		
RDI Electronics Inc.	C-1343		√	√		
Robinson Nugent	C-1348					2PC PCB, 30 Amp Future Bust (Metpak2), 2 Amp (Pak50)
Schurter Inc.	C-1357		√	√		
Shokai Far East Limited	C-1366	√	√	√		
Spectrum Control	C-1369		√	√	√	250VAC Terminal Block Filtered UL-recognized

JACKS, PLUGS, ADAPTERS, PINS

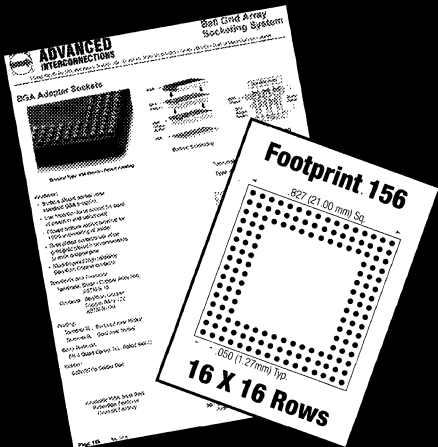
Manufacturer	Starting EEM Page No.	Jacks	Jack Adapters	Plug & Jack Sets	Plugs, Electric	Plug Adapters	Binding Posts	Pins, Elec. Cond.	Contacts Electrical	Plugs Power	Modules/Receptacles Power	Jumpers, Circuit Board	Clips, Test	Leads, Test	High Voltage
Advanced Interconnections Corp	C-1133	✓	✓						✓						
Alden Products	C-1134				✓	✓		✓	✓						✓
Altech Corp.	C-1137			✓	✓					✓	✓				
AMP	C-1138	✓		✓					✓						
ANDON Electronics Corp.	C-1145	✓						✓	✓			✓			
Berg Electronics	C-1152	✓													
Bomar Interconnect Products	C-1158	✓	✓	✓		✓									
Bourns, Inc.	C-1159								✓						
Century Interconnect Products	C-1177	✓	✓	✓											
Concord Electronics Corp.	C-1182	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
Connectronics Corp.	C-1189	✓		✓	✓			✓		✓	✓				✓
Corcom, Inc.	C-1190	✓													
CUI Stack	C-1191	✓		✓	✓										
Direct Sound Corp.	C-1195	✓													
Eastland Electronics	C-1196	✓	✓	✓		✓				✓					
EBY Company	C-1197	✓	✓		✓									✓	
ERNI Components, Inc.	C-1200			✓											
Fujitsu Takamisawa America Inc.	C-1218									✓	✓				
Globtek Inc.	C-1220	✓	✓	✓	✓	✓			✓	✓	✓				✓
Honda Connectors/Mhtronics	C-1224		✓	✓											
International Configurations, Inc.	C-1225		✓	✓	✓	✓				✓	✓				
Ironwood Electronics, Inc.	C-1231												✓	✓	
Jaeger Connecteurs	C-1236								✓						✓
Jettron Products, Inc.	C-1238														✓
Jolo Industries, Inc.	C-1242	✓	✓					✓	✓			✓	✓	✓	
Kycon Cable and Connector, Inc.	C-1244	✓	✓	✓					✓						
LZR Electronics Inc.	C-1260	✓	✓	✓	✓	✓				✓	✓				
Major League Electronics Incorporated	C-1277											✓			
Mill-Max Manufacturing Corp.	C-1305							✓				✓			
Multi-Contact USA	C-1307	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NAS Electronics	C-1308							✓	✓				✓	✓	
ODU - USA, Inc.	C-1310				✓			✓	✓	✓	✓				✓
Omega Engineering	C-1311	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓
Panel Components Corp.	C-1314				✓					✓	✓				
Plastics One	C-1327			✓											
Power Dynamics Inc.	C-1328	✓	✓	✓	✓					✓	✓	✓			✓
RDI Electronics, Inc.	C-1343	✓	✓	✓	✓	✓				✓	✓				
Schurter Inc.	C-1357	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
Shogyo Interantional Corp.	C-1361	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
Shokai Far East Limited	C-1366	✓	✓	✓	✓	✓	✓				✓				
Siemens Electromechanical	C-1367			✓											
Sonic Connections	C-1368	✓	✓	✓											
Spectrum Control	C-1369					✓									
Stewart Connector Systems, Inc.	C-1370	✓		✓											
Sullins Electronics Corp.	C-1371									✓		✓		✓	
Virginia Plastics Company	C-1376	✓		✓											



ADVANCED INTERCONNECTIONS

Innovative Interconnect Solutions Featuring a Wide Variety of Standard and Custom:

- Ball Grid Array (BGA) Sockets and Adapters
- DIP & SIP Sockets and Adapters
- Peel-A-Way® Removable Terminal Carriers
- Terminals and Test Jacks
- Pin Grid Array (PGA) Sockets
- K-TEA™ Test Emulator Adapters
- Patented Solder Preform Sockets
- Advanced® Adapters
- Relay and Power Module Sockets
- Board to Board Interconnects



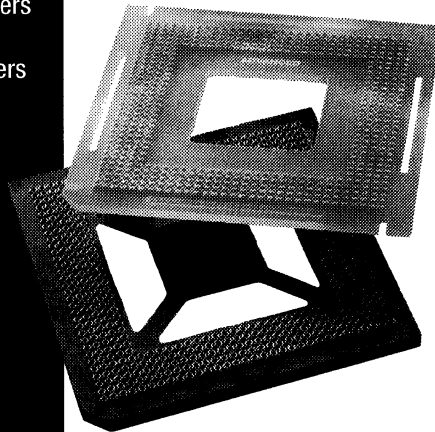
**Complete Data Sheets including
How To Order and hundreds of
BGA Footprint Drawings are
available in PDF files from the
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World's Leading Designer and Manufacturer of Ball Grid Array Interconnect Solutions

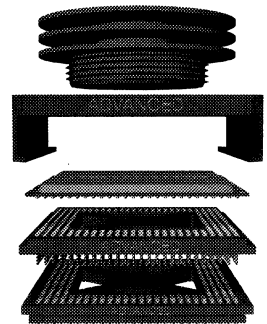
Ball Grid Array (BGA) Socket Adapter System

- Same footprint as BGA device — hundreds of footprints available
- Low insertion force socket is same size as BGA package
- Eutectic solder ball terminals offers superior solderability
- Available with optional guide posts and extraction slots for insertion alignment and easy withdrawal
- Tape and Reel packaging available for automated assembly
- Available in 1.27mm and 1.0mm pitch, consult factory for finer pitch products

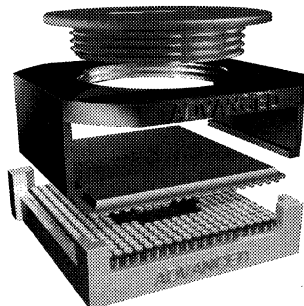


Pop-Top® Ultra-Low Extraction BGA Socket Adapter System

- Patented limited insertion/extraction stroke design protects devices and fragile solder joints
- Same footprint as device
- Available with Coin Screw or integral, finned Heat Sink Sliding Retention Clamp
- Available in 1.27mm pitch
- For 1.0mm and smaller pitch, consult factory



True BGA Socket For Production & Test Applications



- No soldering of BGA device required
- Same footprint as device
- Sliding Heat Sink Retention Clamp
- Maximizes PC board real estate, only 1.30" (3.3mm) larger than BGA package (up to 48mm square)
- Available in 1.27mm pitch, consult factory for finer pitch products

*Products are covered by patents issued and/or pending.
Specifications are subject to change.*

**ISO
9001**

ALDEN

The Interconnect Solutions Provider!

Alden Products offers connectors, cable assemblies, custom moldings, contract manufacturing, and systems packaging services. We are a company committed to helping make technology work for you.

Alden's interconnect solutions are used in a wide range of industries around the world. Examples include medical, industrial, telecommunication, scientific instrumentation, business equipment, transportation, marine, and power generation applications. Alden, Interconnect System Engineers, are available to discuss your specific application.

Got a lot to Connect? Alden has experience combining low voltage, high voltage, high current, fiber optics, and hydro/pneumatics into a single cable assembly.

Intelligent Cable Assemblies

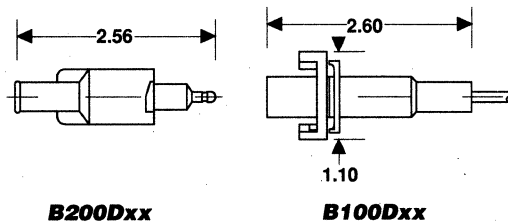
Complementing a diverse line of high-performance connectors, Alden Products is also a manufacturer of custom cable assemblies. Alden can combine a standard connector, custom connector, or custom molding into a completed cable assembly capable of performing to the most demanding industry standards. In house capabilities include design, solid modeling, prototyping, and mold fabrication.

Like to Know What You've Plugged In? Alden can deliver a cable with intelligence by incorporating a passive, active, or mechanical component into the assembly. From diodes to E-PROMS, Alden is a leader in the field of encapsulating electronic componentry utilizing the insert molding process.

All dimensions are in inches

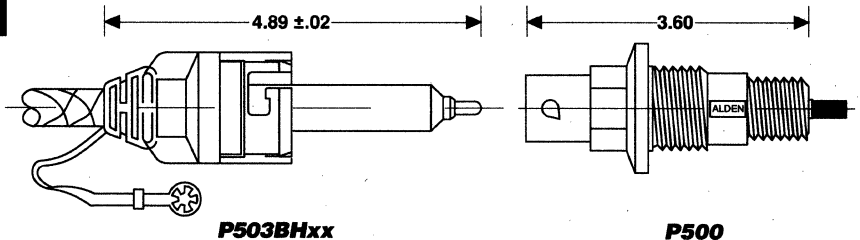
35KVDC

- Twist-locking with moisture resistant seal
- 40 KVDC UL/CSA listed wire (xx specifies length)
- Molded directly to wire for optimum performance
- Other wires and custom modifications available



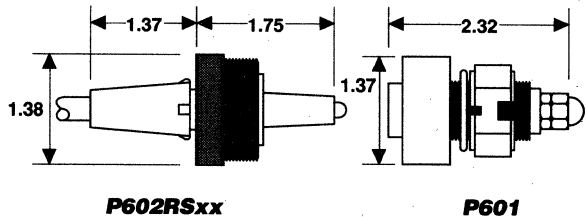
55KVDC

- Oil tight receptacle
- Right angle plug option
- Low profile options
- J-slot mating action
- Mammography x-ray standard



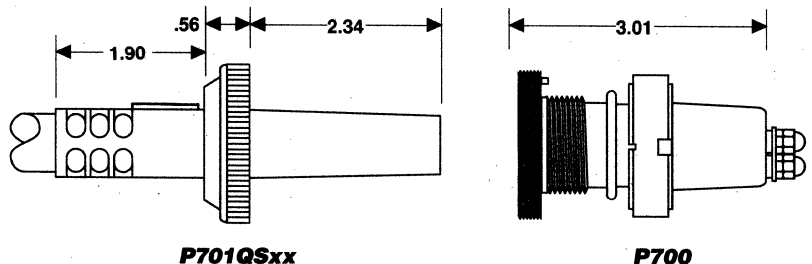
60KVDC

- Miniature size
- Oil tight receptacle
- Square or round flange option
- Self-grounded, fully shielded design
- Easily installed, no potting needed



75KVDC

- Half the size of federal standard 72
- Oil tight receptacle
- Dry mate, no grease required
- 1-4 pins available
- Polarized for easy keying

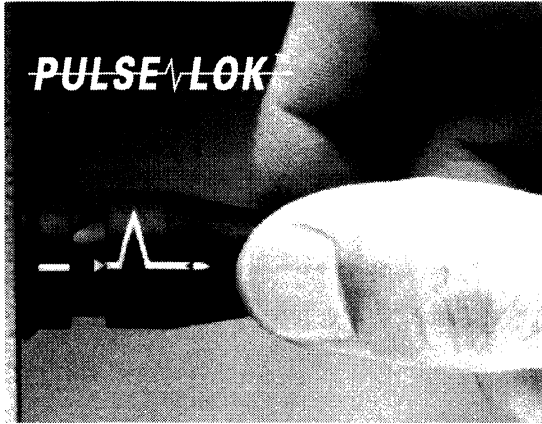


ALDEN Products Company • FAX Service 508-583-0164

PO Box 510 • 117 N. Main Street • Brockton, MA 02403 • Telephone: (508) 583-1620

ALDEN

Auto-Coupling Connector Systems



Features

- Autocoupling self-locking, quick release
- Blind mating aids positive, sequential keying
- Environmentally sealed splash-proof, submersible
- Corrosion resistant rugged, lightweight plastic housing
- Low insertion force precision formed, gold plated contacts

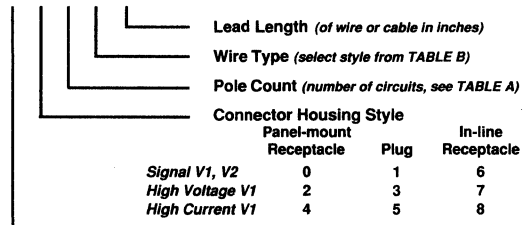
Alden Product's V1 Series, *PULSE-LOK* connector system features an innovative coupling mechanism that sets new performance standards for multi-pole interconnects. This user-friendly connector provides both audible and visible feedback that connector pairs are fully mated. Fool-proof, quick-mate features qualify this package as an ideal candidate for instrumentation, emergency medical and consumer applications.

Our Standard, Your Custom

PULSE-LOK connectors are available in several standard contact and wire configurations to meet most signal, high current and high voltage applications. Custom contact requirements are easily accommodated by the *PULSE-LOK* connector's modular construction.

V1 and V2 Series Part Numbering Code Table

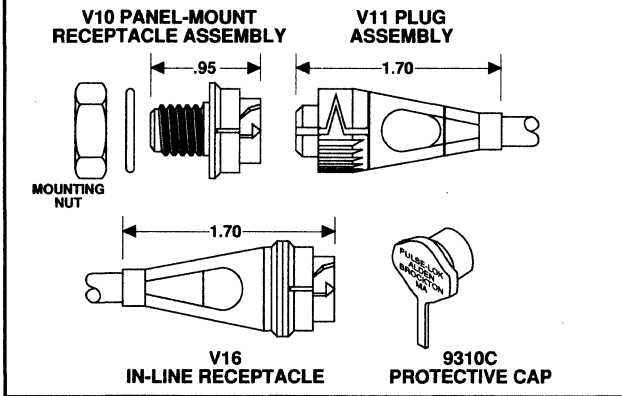
V1 0 4 JC 12



V1 Pulse-Lok or V2 Mini Pulse (signal only)

PULSE-LOK™

AVAILABLE HOUSING STYLES



mini-pulse

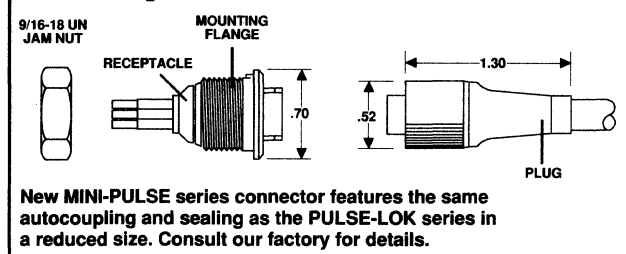


Table A

Format	Contact Arrangement	# of Poles	Standard Wire Size	Operating Voltage	Contact Isolation	Operating Amperage	Receptacle P/N	Plug P/N
Signal		1	24 AWG	300V	NA	3 AMPS	V101	V111
		2	24 AWG	300V	2.5KVDC	3 AMPS	V102	V112
		3	24 AWG	300V	2.5KVDC	3 AMPS	V103	V113
		4	24 AWG	300V	2.0KVDC	3 AMPS	V104	V114
		5	24 AWG	300V	2.0KVDC	3 AMPS	V105	V115
		6	24 AWG	300V	2.0KVDC	3 AMPS	V106	V116
		7	24 AWG	300V	2.0KVDC	3 AMPS	V107	V117
High-Voltage to 15KVDC		1	22 AWG	15KVDC*	NA	5 AMPS	V121	V131
		2	22 AWG	12KVDC*	12KVDC*	5 AMPS	V122	V132
High-Current to 35AMPS		1	16 AWG	300V	NA	20 AMPS**	V141(TC)	V151(TC)
		2	16 AWG	300V	2.0KVDC	13 AMPS**	V142	V152
		1	12 AWG	600V	NA	30 AMPS**	V141(YA)	V151(YA)
High Density		12	VO Series Connector, Size 22, 600V. Custom configurations are available to address unique requirements.					

Table B

Application	Wire Code	No. of Conductors	AWG	Nom. O.D.	Insulation	Voltage	Standards
Signal	JC	1	22 (7x30TC)	.050"	PVC Teflon	600V	MIL-W-16878E/4 200°C
	LC	2	24 (7x32TC)	.150"	PVC JKT/Foil Shld./PVC	300V	UL246A.CSA 80°C
	MC	3	24 (7x32TC)	.168"	PVC JKT/Foil Shld./PVC	300V	UL246A.CSA 80°C
	NC	4	24 (7x32TC)	.190"	PVC JKT/Foil Shld./PVC	300V	UL246A.CSA 80°C
	QC	5	24 (7x32TC)	.195"	PVC JKT/Foil Shld./PVC	300V	UL246A.CSA 80°C
	RC	6	24 (7x32TC)	.215"	PVC JKT/Foil Shld./PVC	300V	UL246A.CSA 80°C
	SC	7	24 (7x32TC)	.215"	PVC JKT/Foil Shld./PVC	300V	UL246A.CSA 80°C
High-Voltage	GA	1	22 (7x30TOC)	.103"	CROSS LINKED PVC	15KVDC	UL3239WV1 & CSATV-15 105°C
High-Current	TC	1	10 (26x30TC)	.094"	PVC	300V	UL1007.CSA 80°C
	UC	2	16 (26x30TC)	.240"	PVC/SHIELD/PVC	350V	UL2095 80°C
	YA	1	12 (65x30TC)	.158"	PVC	600V	UL1015.CSA 105°C

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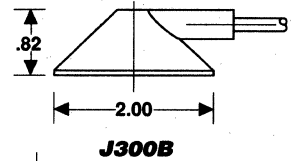
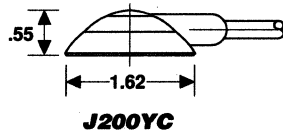
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ALDEN

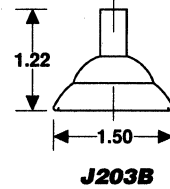
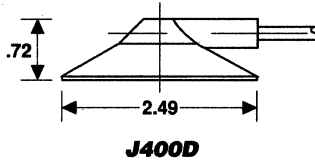
All dimensions are in inches

CRT Anode Connectors

J200YCxx For JEDEC styles J1-21, J1-22, J1-30
Silicone rubber insert molded boot



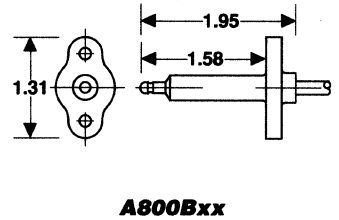
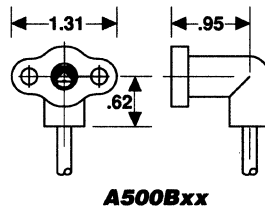
J300Bxx For JEDEC style J1-21 with thermoplastic elastomer cap
J400Bxx



J203Bxx For JEDEC style J1-21
Silicone rubber cap

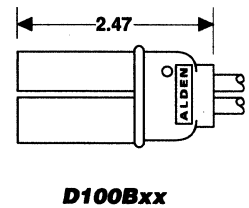
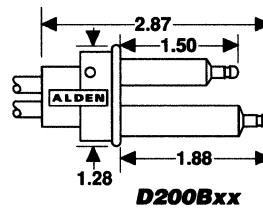
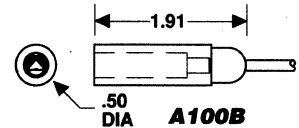
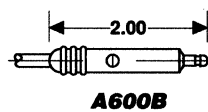
10KVDC

- Molded in 94V-O flame retardant polypropylene
- 30 KVDC UL/CSA listed wire (xx specifies length)
- Molded directly to wire for optimum performance
- Other styles and custom modifications available



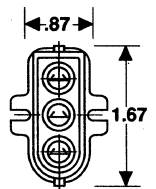
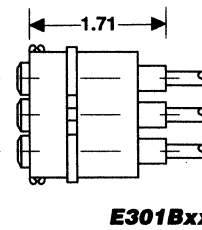
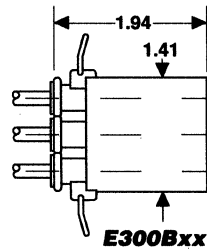
15KVDC

- Molded in 94V-O flame retardant polypropylene
- 30 KVDC UL/CSA listed wire (xx specifies length)
- Molded directly to wire for optimum performance
- Other styles and custom modifications available
- Industry standard for HeNe lasers
- Panel mount styles available



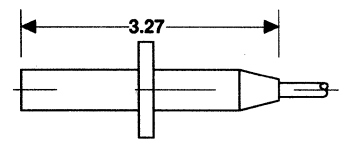
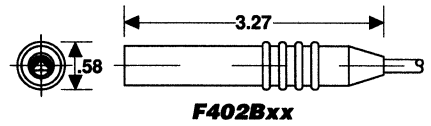
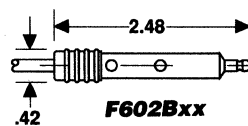
20KVDC

- Polarized 2 and 3 circuit connectors
- Molded in 94V-O flame retardant polypropylene
- 30 KVDC UL/CSA listed wire (xx specifies length)
- Molded directly to wire for optimum performance
- Locking rings for added retention
- Custom modifications available



30KVDC

- Molded in 94V-O flame retardant polypropylene
- 30 KVDC UL/CSA listed wire (xx specifies length)
- Molded directly to wire for optimum performance
- Other styles and custom modifications available



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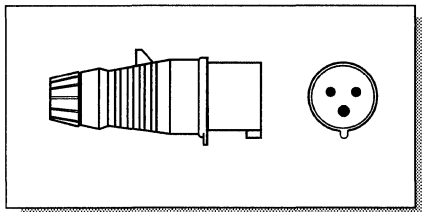
PO Box 510 • 117 N. Main Street • Brockton, MA 02403 • Telephone: (508) 583-1620

Altech Corp.

35 Royal Road • Flemington, NJ 08822-6000
Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

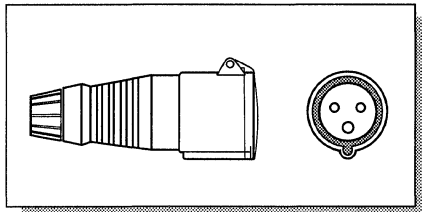
ABL 17, Pin and Sleeve Devices (IEC 309-CEE17)

ABL 17, Pin and Sleeve Devices are manufactured for use on heavy duty equipment such as machine tools, welders and other industrial equipment. The industrial plugs and receptacles are color coded based on voltage rating and frequency to provide visual identification. The position of the ground contact also varies with voltage rating and frequency. This positioning simulates a key, to insure that only electrical connections of the same rating can be established. The ABL 17, Pin and Sleeve Devices comply with international and national standards, making them interchangeable with different manufacturers.



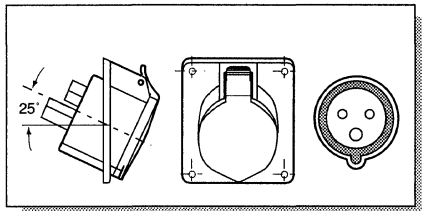
Plugs

Available in:	2 pole – 3 wire, 3 pole – 4 wire, 4 pole – 5 wire grounding configurations
Amp Rating:	IEC: 16A, 32A, 63A, 125A; UL: 20A, 30A, 60A, 100A
Voltage Ratings: (Color Code)	IEC: 100 – 130V, (yellow); 200 – 250V, (blue); 380 – 415V, (red) UL: 125V, (yellow); 250V, (blue); 480V, (red)
Frequency:	IEC: 50 – 60 Hz, 100 – 300 Hz, 301 – 500 Hz; UL: 50 – 60 Hz
Protection Rating: (Cable Entry)	IP x4 – Splash Proof, (cable sleeve or cable gland) IP x7 – Water Tight, (cable gland)
Design:	Straight (shown), Right Angle Type
Material:	Polyamide 6, UL 94-V2



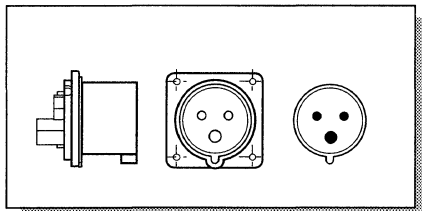
Connectors

Available in:	2 pole – 3 wire, 3 pole – 4 wire, 4 pole – 5 wire grounding configurations
Amp Rating:	IEC: 16A, 32A, 63A, 125A; UL: 20A, 30A, 60A, 100A
Voltage Ratings: (Color Code)	IEC: 100 – 130V, (yellow); 200 – 250V, (blue); 380 – 415V, (red) UL: 125V, (yellow); 250V, (blue); 480V, (red)
Frequency:	IEC: 50 – 60 Hz, 100 – 300 Hz, 301 – 500 Hz; UL: 50 – 60 Hz
Protection Rating: (Cable Entry)	IP x4 – Splash Proof, (cable sleeve or cable gland) IP x7 – Water Tight, (cable gland)
Design:	Straight (shown), Right Angle Type
Material:	Polyamide 6, UL 94-V2



Receptacles

Available in:	2 pole – 3 wire, 3 pole – 4 wire, 4 pole – 5 wire grounding configurations
Amp Rating:	IEC: 16A, 32A, 63A, 125A; UL: 20A, 30A, 60A, 100A
Voltage Ratings: (Color Code)	IEC: 100 – 130V, (yellow); 200 – 250V, (blue); 380 – 415V, (red) UL: 125V, (yellow); 250V, (blue); 480V, (red)
Frequency:	IEC: 50 – 60 Hz, 100 – 300 Hz, 301 – 500 Hz; UL: 50 – 60 Hz
Protection Rating:	IP x4 – Splash Proof, IP x7 – Water Tight
Design:	Panel Mount Straight, Panel Mount Angle Type (shown), Surface Mount with box
Material:	Polyamide 6, UL 94-V2



Inlets

Available in:	2 pole – 3 wire, 3 pole – 4 wire, 4 pole – 5 wire grounding configurations
Amp Rating:	IEC: 16A, 32A, 63A, 125A; UL: 20A, 30A, 60A, 100A
Voltage Ratings: (Color Code)	IEC: 100 – 130V, (yellow); 200 – 250V, (blue); 380 – 415V, (red) UL: 125V, (yellow); 250V, (blue); 480V, (red)
Frequency:	IEC: 50 – 60 Hz, 100 – 300 Hz, 301 – 500 Hz; UL: 50 – 60 Hz
Protection Rating:	IP x4 – Splash Proof, IP x7 – Water Tight
Design:	Panel Mount Straight (shown), Panel Mount Angle Type, Surface Mount with box
Material:	Polyamide 6, UL 94-V2



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- End-to-end systems
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Optoelectronics

- Transceivers
- Passive devices
- Cable management systems



Interconnection solutions

- Antennas and wireless
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- PC boards
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- Assembly services
- Design, modeling, and simulation

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Circular Pin and Socket Connectors

Circular Plastic Connectors (CPC) — Series 1 for Cable and Panel Mount

Material

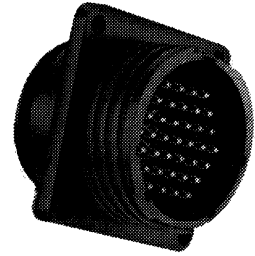
Housing — Thermoplastic, 94V-0 rated, black

Contacts — Order separately



Standard Sex Connectors

Shell Size/ No. of Cavities	Part Numbers			
	Receptacles Square Flange With Inserts	Receptacles Square Flange Without Inserts	Receptacles Free-Hanging	Plug Assemblies
11/4	—	206061-1	206153-1	206060-1
13/9	—	206705-1	—	206708-1
17/16	—	206036-1	206036-3	206037-1
23/24	—	206838-1	206838-2	206837-1
23/37	—	206151-1	206151-2	206150-1



Reverse Sex Connectors

Shell Size/ No. of Cavities	Part Numbers			
	Receptacles Square Flange With Inserts	Receptacles Square Flange Without Inserts	Receptacles Free-Hanging	Plug Assemblies
11/4	211102-1	206430-1	206430-2	206429-1
17/14	—	206043-1	206043-3	206044-1
23/37	—	206306-1	206306-2	206305-1

Circular Plastic Connectors (CPC) — Series 1 VDE Tested for Cable and Panel Mount

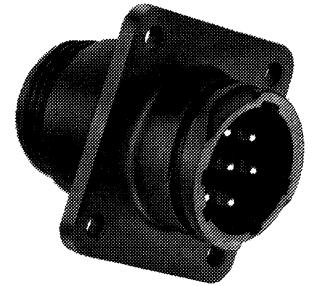
Material

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Order separately

Standard Sex Connectors

Shell Size/ No. of Cavities	Part Numbers	
	Receptacles Square Flange Without Inserts	Plug Assemblies
13/7	211401-1	211399-1
17/9	211767-1	—



Reverse Sex Connectors

Shell Size/ No. of Cavities	Part Numbers	
	Receptacles Square Flange Without Inserts	Plug Assemblies
13/7	211398-1	211400-1
17/9	211769-1	211768-1
23/19	211773-1	211772-1

Circular Plastic Connectors (CPC) — Series 1 Receptacle for PC Board Mount (With .025 [0.64] Square Solder Tails)

Material and Finish

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Duplex plated gold flash on entire contact with .000030 [0.00076] min. gold on contact engagement area, tin-lead on termination area

Circular Plastic Connectors (CPC) — Series 1 Receptacle with Square Flange and Round Posted Contacts (Size 16)

Material and Finish

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Brass, plated tin over .000050 [0.00127] min. nickel on entire contact

Circular Plastic Connectors (CPC) — Series 1 Receptacle for Feed-Through (Pressure Rating up to 30 psi)

Material and Finish

Housing — Thermoplastic, 94V-0 rated, black

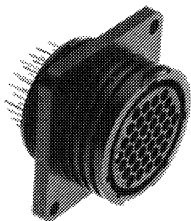
Contacts — Copper alloy, plated gold over nickel

Circular Plastic Connectors (CPC) — Series 2 Receptacles for Feed-Through (Pressure Rating up to 30 psi)

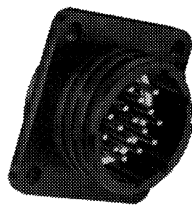
Material and Finish

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Copper alloy, plated gold over nickel



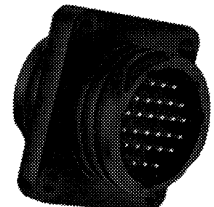
Shell Size 13/9Pos. w/Mtg. Holes
Part No. 208223-1
(37 pos. shown in photo)



Shell Size 17/16 Pos.
Part No. 207292-1



Shell Size 17/16 Pos.
Part No. 206552-1



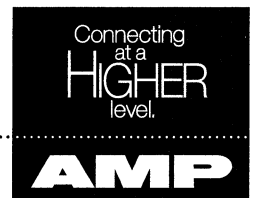
Shell Size 11/8 Pos.
Part No. 205838-1
(28 pos. shown in photo)

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Circular Pin and Socket Connectors (Continued)

Circular Plastic Connectors (CPC) — Series 2 for Cable and Panel Mount

Material

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Order separately



Standard Sex Connectors

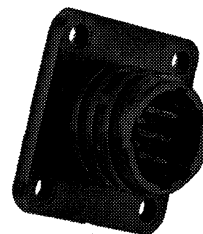
Shell Size/ No. of Cavities	Part Numbers		
	Receptacles Square Flange Without Inserts	Receptacles Free-Hanging	Plug Assemblies
11/8	205841-1	205841-2	205838-1
11/9	206486-1	206486-2	206485-1
17/28	205840-3	206152-1	205839-3
23/63	205843-1	—	—

Note: Receptacles accept Size 20 DM or DF Pin Contacts. Plugs accept Size 20 DM or DF Socket Contacts. Max. wire insulation diameter is .220 [5.59].

Reverse Sex Connectors

Shell Size/ No. of Cavities	Part Numbers		
	Receptacles Square Flange Without Inserts	Receptacles Free-Hanging	Plug Assemblies
11/8	206433-1	206433-2	206434-1
17/28	206038-1	206038-2	206039-1
23/57	206438-1	—	206437-1

Note: Receptacles accept Size 20 DM or DF Socket Contacts. Plugs accept Size 20 DM or DF Pin Contacts. Max. wire insulation diameter is .220 [5.59].



Circular Plastic Connectors (CPC) — Series 3

Material

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Order separately

Standard Sex Connectors

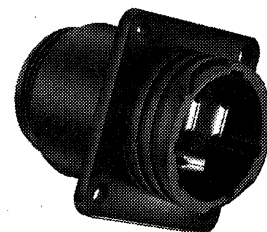
Shell Size/ No. of Cavities	Part Numbers		
	Receptacles Square Flange Without Inserts	Receptacles Free-Hanging	Plug Assemblies
17/3	—	206207-1	—
23/7	206137-1	—	206136-1

Note: Receptacles accept XII Pin Contacts. Plugs accept Type XII Socket Contacts. Max. wire insulation diameter is .220 [5.59].

Reverse Sex Connectors

Shell Size/ No. of Cavities	Part Numbers		
	Receptacles Square Flange Without Inserts	Receptacles Free-Hanging	Plug Assemblies
17/3	206425-1	206425-2	206426-1
23/7	206227-1	—	206226-1

Note: Receptacles accept XII Socket Contacts. Plugs accept Type XII Pin Contacts. Max. wire insulation diameter is .220 [5.59].



Circular Plastic Connectors (CPC) — Series 4

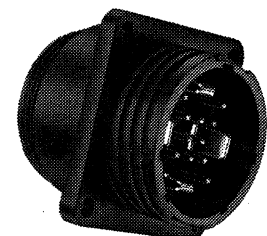
Material

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Order separately

Shell Size	No. of Cavities		Part Numbers	
	Power	Multimate	Receptacles Free-Hanging	Plug Assembly
23-16M	4	12	207486-1	207485-1
23-22M	2	20	206613-1	206612-1

Note: Max. wire insulation diameter is .150 [3.81] for Multimate Contacts and .220 [5.59] for Power Contacts.

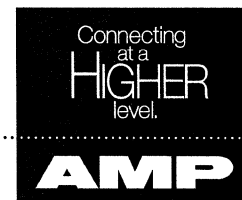


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Circular Pin and Socket Connectors (Continued)

Circular Plastic Connectors (CPC) — Cable Clamps

Material Housing — Thermoplastic, heat stabilized, fire-resistant, self-extinguishing, 94V-1 rated, black

Standard Size Cable Clamps

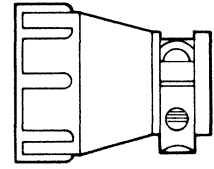
Shell Size	Cable O.D. Max.	Thread Size	Part Numbers	
			Individually Packaged	Bulk Packaged
11	.329	5/8-24	206062-3	206062-4 ¹
	8.36	UNEF-2B		
13	.453	3/4-20	206966-1	206966-2 ²
	11.51	UNEF-B		
17	.453	15/16-20	206070-1	206070-3 ²
	11.51	UNEF-B		
23	.703	1-3/8-18	206138-1	206138-2 ²
	17.86	UNEF-B		

Minimum quantity that can be ordered in multiples:
¹ 400, ² 200, ³ 100

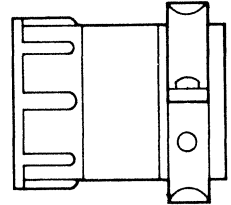
Large Size Cable Clamps

Shell Size	Cable O.D. Max.	Thread Size	Part Numbers	
			Individually Packaged	Bulk Packaged
11	.453	5/8-24	206358-1	206358-2 ¹
	11.51	UNEF-2B		
13	.703	3/4-20	207008-1	207008-2 ²
	17.86	UNEF-B		
17	.703	15/16-20	206322-1	206322-2 ²
	17.86	UNEF-B		
23	1.125	1-3/8-18	206512-1	206512-2 ³
	28.58	UNEF-B		

Minimum quantity that can be ordered in multiples:
¹ 200, ² 100, ³ 75



Standard Size

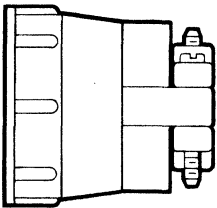


Large Size

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Circular Plastic Connectors (CPC) — Cable Clamps, Self-Centering (Shell Size 23)

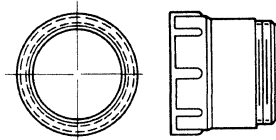
Material Housing — Thermoplastic, black



Part No. 207774-1 Individual Pack
 Part No. 207774-2 Bulk Pack

Circular Plastic Connectors (CPC) — Back-Shell Extender (Shell Size 23)

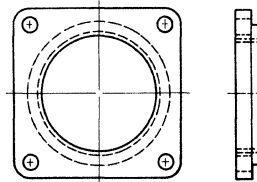
Material Housing — Glass-filled thermoplastic, black



Part No. 207055-1

Circular Plastic Connectors (CPC) — Panel Mount Flanges (Plugs Only)

Material Housing — Thermoplastic, black

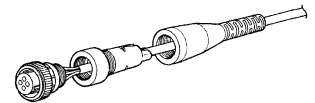


Part No. 207299-2 Shell Size 13
 Part No. 207299-3 Shell Size 17

Circular Plastic Connectors (CPC) — Flexible Cable Boot and Internal Cable Grip (Shell Size 11)

Material Housing — Thermoplastic, black

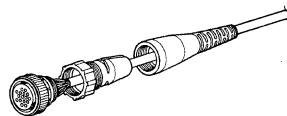
Cable Range — .150-.250 [3.81-6.35]



Part No. 207489-1 Cable Boot
 Part No. 207490-1 Cable Grip

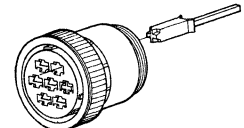
Circular Plastic Connectors (CPC) — Flexible Cable Boot and Internal Cable Grip (Shell Size 17)

Material Housing — Thermoplastic, black



Part No. 207241-1 Cable Boot
 Part No. 207387-1 Cable Grip (for Cable Range of .200-.250 [5.08-6.35])
 Part No. 207387-2 Cable Grip (for Cable Range of .250-.350 [6.35-8.89])

Circular Plastic Connectors (CPC) — Keying Plugs, Series 3 and 4 for Type XII Contacts



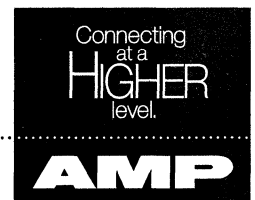
Part No. 206508-1 Socket Cavities
 Part No. 207597-1 Pin Cavities

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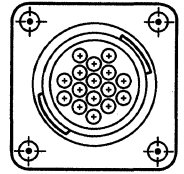
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Circular Pin and Socket Connectors (Continued)

Circular Plastic Connectors (CPC) — Sealed, Special Series I Receptacle with Pre-Installed, Bonded Peripheral Seal

Shell Size	No. of Pos.	Sex	Part Numbers	
			Square Flange Receptacle	Mates with Plug
17	16	Standard	206036-4	206037-1



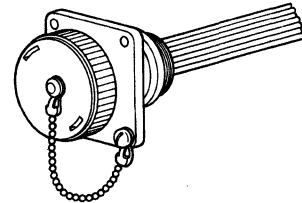
Material

Housing — Thermoplastic, 94V-0 rated, black

Seal — Elastomer, gray

Circular Plastic Connectors (CPC) — Sealing Caps for Receptacles

Shell Size	Series	Part Numbers	
		With Plastic Strap	With Metal Bead Chain
11	1 & 2	206903-1	208800-1
13	1	211870-1	213485-1
17	1, 2 & 3	207445-1	208652-1
23	1, 3 & 4	207446-1	208680-1



Material and Finish

Cap — Thermoplastic, heat stabilized, fire-resistant, self-extinguishing, 94V-1 rated, black

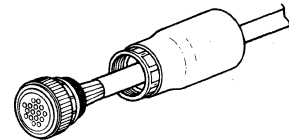
Sealing Gasket — Neoprene, black

Bead Chain — Steel, plated nickel

Bead Chain Coupling — Brass, plated nickel

Circular Plastic Connectors (CPC) — Cable Entry Seals, Heat Shrinkable

Shell Size	Sealing Range Diameter	Part Number
11	.260-.600	54010-1
	6.60-15.25	
13	.300-.725	54123-1
	7.62-18.42	
17	.400-.875	54011-1
	10.16-22.22	
23	.550-1.250	54012-1
	13.97-31.75	

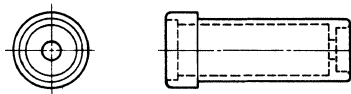


Material

Internal Sleeve — Nylon

Outer Tubing — Polyolefin

Circular Plastic Connectors (CPC) — Rubber Boot

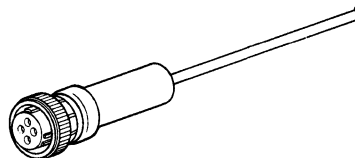


Material

Neoprene, black

Cable Range — .219-.438 [5.56-11.13]

Note: For use with jacketed cable and can be used on all plugs and receptacles except Series 2 connectors.



Shell Size 11
Part No. 206304-1

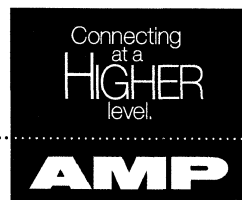


For Complete Product Information, Order Catalog 82021

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Circular Pin and Socket Connectors (Continued)

Circular Plastic Connectors (CPC) — Metal Shell Series 1, Standard Sex

Material and Finish

Housing — Thermoplastic, 94V-0 rated, black

Metal Shell — Zinc alloy, plated nickel

Grooved Pin — Steel alloy, plated nickel

Tetraseal — Florocarbon

Retainer Ring — Stainless steel

Coupling Ring — Zinc alloy, plated nickel

Contacts — Order separately

Shell Size/ No. of Cavities	Part Numbers	
	Receptacles Square Flange	Plugs without Tetraseal
14/15	208719-1	208718-1
14/7	208715-1	208714-1
22/16	208489-1	208488-1
28/24	208459-1	208457-1
28/37	208471-1	208470-1

Note: Maximum wire insulation diameter is .100 [2.54], except arrangements 14/5 and 28/24 are .150 [3.81] max.



Circular Plastic Connectors (CPC) — Metal Shell Series 1, Reverse Sex

Material and Finish

Housing — Thermoplastic, 94V-0 rated, black

Metal Shell — Zinc alloy, plated nickel

Grooved Pin — Steel alloy, plated nickel

Tetraseal — Florocarbon

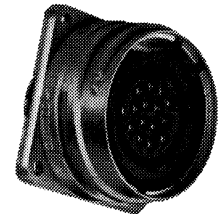
Retainer Ring — Stainless steel

Coupling Ring — Zinc alloy, plated nickel

Contacts — Order separately

Shell Size/ No. of Cavities	Part Numbers	
	Receptacles Square Flange	Plugs without Tetraseal
14/15	208721-1	208720-1
14/7	208717-1	208716-1
22/14	208487-1	208486-1
28/37	208473-1	208472-1

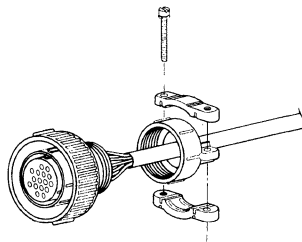
Note: Maximum wire insulation diameter is .100 [2.54], except arrangements 14/5 and 28/24 are .150 [3.81] max.



Circular Plastic Connectors (CPC) — Metal Shell Cable Clamps

Material and Finish

Zinc alloy, nickel plated



Shell Size	Cable O.D. Range	Thread Size	Part Number
14	.225-.562	7/8-20 UNEF-3B	208945-5
	5.71-14.27		
22	.325-.750	1-3/16-18 UNEF-3B	208945-7
	8.26-19.05		
28	.450-.938	1-7/16-18 UNEF-3B	208945-8
	11.43-23.83		

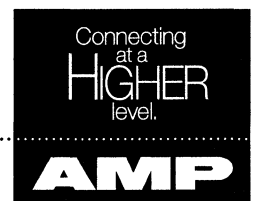
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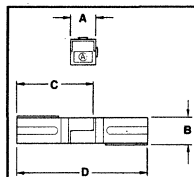
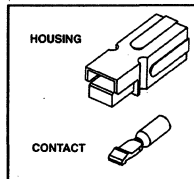
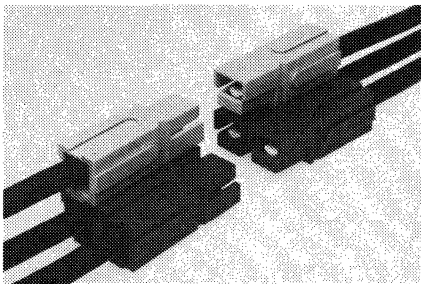
Anderson Power Products®.....

"YOUR BEST CONNECTION"



POWERPOLE® Modular Connectors

The powerpole® is a unique connector designed with flexibility and high reliability for wire-to-wire and wire-to-board applications. It can be assembled into a multipole configuration and customized



Loose piece contacts are available in 10, 15, 30, 45, 75, 120 and 180 amps. Reel contacts are available in 10, 25, 30, 45, 60 and 75 amps.

Current Rating	A		B		C		D	
	inches	mm	inches	mm	inches	mm	inches	mm
10amp	.32	7.9	.32	7.9	.97	24.6	1.63	41.3
15amp	.32	7.9	.32	7.9	.97	24.6	1.63	41.3
30amp	.32	7.9	.32	7.9	.97	24.6	1.63	41.3
45amp	.32	7.9	.32	7.9	.97	24.6	1.63	41.3
60amp	.63	15.9	.63	15.9	1.88	47.6	3.2	81.4
75amp	.63	15.9	.63	15.9	1.88	47.6	3.2	81.4
120amp	.88	22.2	.88	22.2	2.75	69.9	4.63	117.5
180amp	1.13	28.6	1.13	28.6	3.25	82.6	5.50	139.7

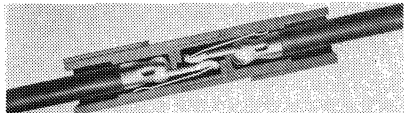
with a variety of colors. Applications include power electronics and any electrical requirements that requires a quick disconnect.

FEATURES	BENEFITS
Identical, interchangeable genderless halves	Makes assembly quick and easy and reduces the number of parts ordered
Self-polarizing	Connectors can only be mated the right way
Stackable and color-coded	Can be stacked into customized multipole configurations with visual color coding to match wire color
Wiping action contacts	Allows minimal contact resistance at high currents while keeping contact surfaces clean.

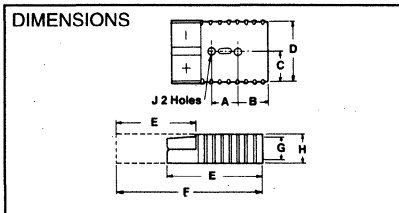
CATALOG NUMBERS

Housing Only (Color)	10amp	15amp 30amp 45amp	60amp 75amp	120amp	180amp
Red	N/A	1327	5916G7	1321G3	1381G3
Green	1204G1 1205G1	1327G5	5916G6	1321G4	1381G4
Black	N/A	1327G6	5916G4	1321G1	1381G1
White	N/A	1327G7	5916G5	1321G2	1381G2
Blue	N/A	1327G8	5916	1321	1381
Orange	N/A	1327G17	N/A	N/A	N/A
Gray	N/A	1327G18	N/A	N/A	N/A
Brown	N/A	1327G21	N/A	N/A	N/A
Pink	N/A	1327G22	N/A	N/A	N/A
Purple	N/A	1327G23	N/A	N/A	N/A

The SB® Series Connector 2 pole 50, 175, 350 Ampere, 600 volt Connectors



The SB® Connector was designed by Anderson Power Products® and has 30 years performance on electric vehicles. Other applications include quick disconnect for computer systems, uninterrupted power and power distribution systems.



FEATURES	BENEFITS
Single piece housing:	Unitized construction provides industrial quality durability
Individually replaceable contacts:	Enables safe replacement of contacts.
Spring loaded silver plated contoured contacts:	Self-wiping cleaning action assures greater conductivity and longer life.
Polycarbonate housing:	Non-conductive material.
Mechanically keyed and color identified:	Prevents mismatching of voltage.

Model	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
SB50	0.750	19.0	0.250	6.4	0.718	18.2	1.437	36.5	1.875	47.6
SB175	1.125	28.5	0.437	11.0	1.093	27.8	2.187	55.6	3.125	79.4
SB350	1.125	28.5	1.375	35.0	1.375	35.0	2.750	69.8	4.250	108.0
Model	F		G		H		J dia.			
	in.	mm	in.	mm	in.	mm	in.	mm		
SB50	3.187	80.9	0.453	11.5	0.625	15.9	0.144	3.7		
SB175	5.250	133.3	0.750	19.0	1.000	25.4	0.265	6.7		
SB350	7.187	182.6	1.062	27.0	1.312	33.3	0.265	6.7		

SB® 50 SERIES CONNECTORS 2-POLE

Description	Housing Color	AWG Wire Size solder*	crimp**	Cable Well Diameter in.	mm	Catalog Number
Housing with springs and 2 contacts	Gray	6 to 16		.221	5.613	6319
		10 to 12	10 to 12	.136	3.454	6319G1
	Red	6 to 16		.221	5.613	6331G1
		10 to 12		.136	3.454	6319G2

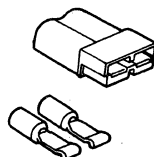
* See cable clamps ** See reducing bushings

SB® 175 SERIES CONNECTORS 2-POLE

Description	Housing Color	Wire Size AWG	sq. mm	Cable Well Diameter in.	mm	Catalog Number
Housing with springs and 2 contacts	Gray	1/0	53.50	.437	11.099	6324G1
	Red					6325G1

SB® 350 SERIES CONNECTORS 2-POLE

Description	Housing Color	Wire Size AWG	sq.mm.	Cable Well Diameter in.	mm	Catalog Number
Housing with springs and 2 contacts	Blue	2/0	67.43	.484	12.294	6320G1
		3/0	85.01	.578	14.681	6321G5
		4/0	107.20	.641	16.281	6321G2
	Yellow	300MCM	152.00	.765	19.431	6321G4
		2/0	67.43	.484	12.294	6323G1
		3/0	85.01	.578	14.681	6323G5
Green	4/0	107.20	.641	16.281	6323G2	
	300MCM	152.00	.765	19.431	6323G4	
	2/0	67.43	.484	12.294	6324G1	
	3/0	85.01	.578	14.681	6324G5	
		4/0	107.20	.641	16.281	6324G2
		300MCM	152.00	.765	19.431	6324G4



Anderson Power Products/Anderson-Carbolon Group DIVISION OF HIGH VOLTAGE ENGINEERING

P.O. Box 579 • 13 Pratts Junction Road, Sterling, MA 01564-0579 • Tel: 978-422-8101 • Fax: 978-422-8005 • Net: <http://www.andersonpower.com>



Andon Electronics Corporation

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Tel: (401) 333-0388 • Fax: (401) 333-0287

E-mail: info@andonelect.com • Web site: www.andonelect.com



WELCOME TO ANDON, THE COMPANY WITH answers to complex interconnect problems-- your "one stop" shopping source for a full range of IC sockets, interconnects and loose terminal products.

For over 3 decades, Andon's precision machined socket contact design has set the industry standard for quality and reliability. Over the years, our reputation for innovation has grown. Leading OEMs continue to look to us for socket and interconnect solutions that are inherently smart, simple and cost-effective.

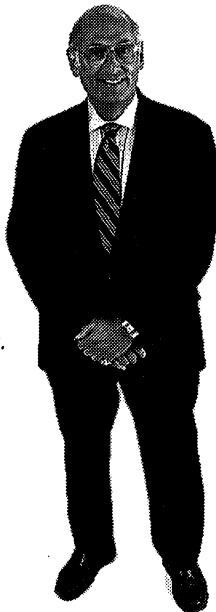
Our approach to problem-solving starts by listening carefully to our customers. Then, our experienced team goes to work, applying their in depth knowledge of metallurgy, stamping, plating, high temperature plastics and screw machine technology to deliver optimum solutions, not just stock answers.

One Stop Shopping

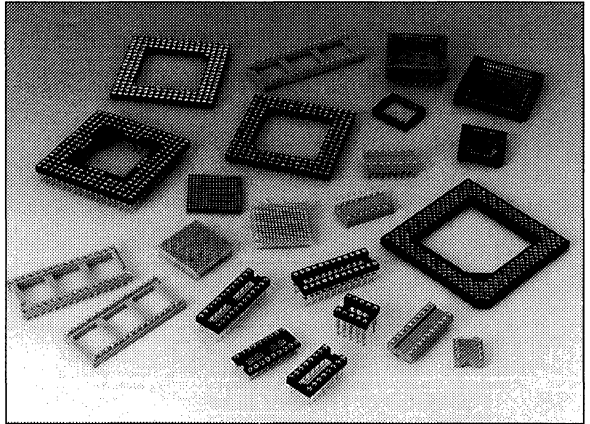
Andon has complete design engineering and manufacturing resources. Here in our ISO 9001 certified facility you'll find turnkey solutions, with in-house tooling, insert molding, stamping tools and automated assembly to go along with our extensive screw machine and plating capabilities--everything needed to respond quickly with standard or custom sockets and interconnects.

For fast prototypes, samples or large and small volume production, turn to Andon for answers.

John O. Tate, President of Andon, is a pioneer in the design of high reliability interconnects for military, aerospace and commercial applications. In 1965, he invented the stamped and formed 4-finger precision IC contact which remains the preferred method for connecting microprocessors and other critical components. Mr. Tate remains actively involved with Andon customers, applying his knowledge and expertise to our engineered solutions.



Need simple interconnect SOLUTIONS?...



Andon offers thousands of off-the-shelf interconnects, plus custom designed products:

- BGA Sockets and Adapters
- IPGA Sockets and Interconnects
- Carrier Sockets
- Battery Sockets/Holders
- Fuse Sockets
- Gull Wing and "J" Lead DIP Sockets
- SMD Floating Pin Sockets
- PGA Sockets and Adapters
- DIP and SIP Sockets
- PLCC Sockets
- SOJ Sockets
- Jumpers and Pin Headers
- High Temp. Products
- Loose Socket Assemblies
- Screw Machined Parts
- Custom Products

ANDON has the ANSWERS ←.....

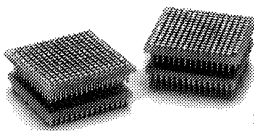


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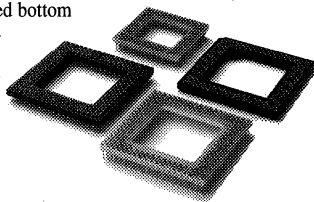


BGA SOCKETS AND ADAPTERS

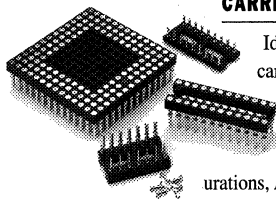
provide an ideal method for mounting ball grid array devices onto a PCB. The device is soldered to the adapter, greatly simplifying solder verification and testing. The adapter then plugs into the BGA socket which is permanently soldered to the PCB. The BGA adapter is offered with either flat or countersunk heads. Our BGA sockets can be surface or thru-hole mounted. Socket insulators are made of FR-4 to withstand convection or IR soldering. Andon BGA sockets and adapters are available in virtually any size or configuration, using off-the-shelf or custom designed screw machined terminals.

IPGA SOCKETS AND INTERCONNECTS

Connect high pin count ICs with interstitial footprints with Andon IPGA sockets and interconnects. Socket insulators are made of FR-4 or molded plastic UL-94VO to withstand wave, IR or convection soldering. Precision machined pins offer the lowest possible profile. The closed bottom design eliminates flux and solder contamination. Our exclusive 1oz. socket contact design reduces damage to both the device and the substrate.



CARRIER SOCKETS

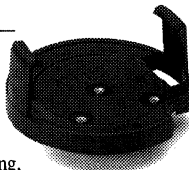


Ideally suited for "pick and place", Andon carrier sockets provide a convenient way to load groups of receptacles onto a PCB, reducing profile by eliminating the need for an insulator. Available in many configurations, Andon's rigid carrier pin assemblies offer significant advantages over "flexible" carriers.

Individual receptacles remain properly aligned during insertion and soldering. After soldering, the rigid pin carrier is removed and can be recycled. For Hi-Rel military applications, Andon's patented Cari-Loc ball release pins protect the inner contacts from contamination during soldering and cleaning. Molded standoffs hold the barrel of the terminal clear of the mounting holes to assure proper solder flow.

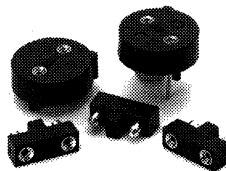
BATTERY SOCKETS/HOLDERS

Andon offers a growing family of sockets that permit quick and reliable battery replacement. The battery socket can be production soldered to the PCB, avoiding the need to hand solder batteries in place. Use of a battery socket also eliminates desoldering, blistering or delaminating the PCB when the battery needs replacement. Andon battery sockets feature molded clips that prevent the battery from being dislodged by shock and vibration. Andon battery sockets provide quick and reliable solutions for critical applications such as CMOS memory back-up, and primary power for portable or remote equipment.



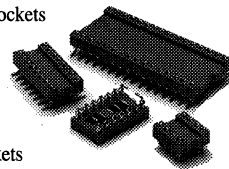
FUSE SOCKETS

For many electronics applications, fuse replacement is common. But fuse replacement can involve risk of damage to the PCB loaded with expensive components, especially while fuse posts are being soldered or de-soldered. Andon fuse sockets offer a quick and easy answer. They are available in a variety of configurations for thru-hole or SMD, including 2-pin SIPs, as well as high temperature SIP and TO-5 sockets. The standard SIP socket features an insulator made of glass filled PBT or Black Nylon 46. Our high temperature SIP and TO-5 fuse sockets are made with molded plastic UL-94VO. All fuse sockets feature Hi-Rel BeCu multi-finger contacts.



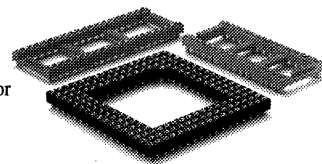
SMD GULL WING AND "J" LEAD DIP SOCKETS

Andon surface mount gull wing and "J" lead DIP sockets are ideally suited for "pick and place". Our gull wing sockets provide maximum strength solder joints as well as easy in-circuit testing. Andon gull wing DIP sockets are available in a wide variety of configurations, including open and solid frame varieties. Andon "J" lead DIP sockets are specially designed for soldering to existing footprints. Both gull wing and "J" lead DIP sockets are available with insulators made of molded plastic UL-94VO or blue FR-4 epoxy, suitable for IR or convection soldering. All sockets feature Hi-Rel 4-finger socket contacts.



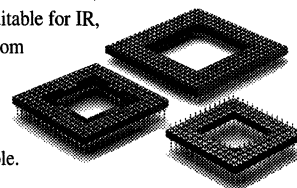
SMD FLOATING PIN SOCKETS

Pin sockets with virtually any DIP or PGA footprint can be supplied with unique floating terminals that compensate for uneven PCB surfaces, eliminating coplanarity problems. Floating pin sockets are available in open frame DIP sockets, as well as closed frame DIP (with and without mounting holes) and PGA versions for "pick and place" equipment. Offered in a wide selection of terminals and contact sizes.



PGA SOCKETS AND ADAPTERS

Andon pin grid array sockets and PGA adapters are perfect for high pin count microprocessors. Andon offers the widest selection of standard footprints, from 5x5 to 26x26, as well as custom designed PGA sockets. Andon PGA sockets offer a choice of insertion and extraction forces, including Andon's exclusive 1oz. ultra low force contact. Standard insulators are made of high temp. Nylon 46, suitable for IR, convection and wave soldering. Custom PGA sockets are available with insulators made of thick glass epoxy FR4 or polyimide. Many terminals and pin lengths are available.



▶ **ANDON has the ANSWERS**

Andon Electronics Corporation

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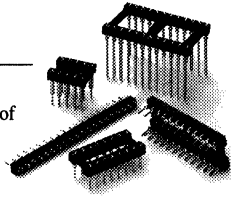
Tel: (401) 333-0388 • Fax: (401) 333-0287

E-mail: info@andonelect.com • Web site: www.andonelect.com



DIP & SIP SOCKETS

Utilizing our famous Hi-Rel multi-finger contact, Andon offers thousands of versions of DIP and SIP sockets. Our catalog features 11 different types of open frame DIP sockets, ranging from low profile and ultra low profile versions, to surface mount, shrink dip, component adapter/headers, as well as varieties with raised interconnects and crossbars. Andon also offers 11 different types of closed frame DIP sockets, including varieties with and without mounting holes, surface mount, shrinkdip, crystal and relay, adapter/headers, board to board, raised interconnects, LED, Zig-Zag and transistor sockets. We also offer a huge selection of SIP sockets, including adapters, solid and snap-off packages, board to board, pin headers and pin receptacles.



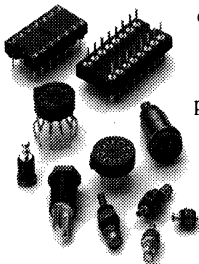
SURFACE MOUNT SOJ SOCKETS

Made of high temperature PPS insulator material, Andon SOJ sockets can withstand convection and IR soldering processes. Available in .317" and .421" centers, Andon SOJ sockets have spring leaf contacts which easily accept .050" DRAM and VRAM devices, providing an extremely low profile and low cost solution. Can be supplied in tubes, trays or tape and reel.

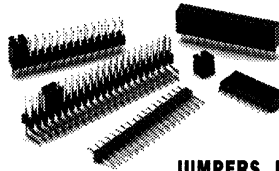
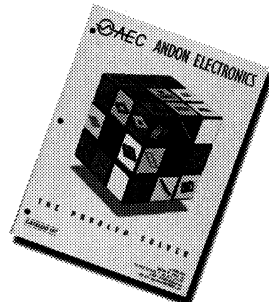


HI TEMPERATURE PRODUCTS

Specialists in high temperature interconnects, Andon employees have over 3 decades of experience in metal insert molding with high temperature thermoset insulator materials. Many of these products are miniature and ultraminiature, precisely molded to achieve close tolerances. Andon offers Press-It™ press-in terminals for critical applications such as gyro motors, potentiometers and synchros, as well as other rotating components. These products are available as stand-offs or feed-thrus for threaded and non-threaded applications. Andon also produces a wide variety of DIP sockets, TO-5 sockets, test jacks and lamp sockets for Hi-Rel military and aerospace applications involving severe shock and vibration.



Smart interconnect solutions start with our 128 page Problem Solver catalog. For your free copy, call us today at (401) 333-0388 or check our website: www.andonelect.com

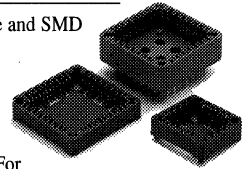


JUMPERS, PIN HEADERS AND RECEPTACLES

Andon pin headers, jumpers and receptacle headers provide ideal board-to-board interconnections. Andon pin headers are X/Y stackable, available in 2.54 mm or 2.00 mm pitch, with round or square posts, single or dual row, with straight or right angle terminals. Standard lengths are up to 40 pin positions (80 pin positions for dual in line). Other miniature sizes are available upon request. We offer mini shorting jumpers in 2.54 mm and 2.00 mm pitch, as well as a multi-jumper. There's also a family of 2.54 mm pitch receptacle headers, including both single and dual row versions, with either straight or right angle terminals.

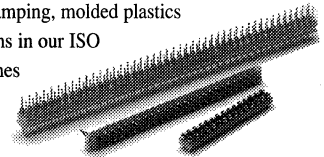
PLCC SOCKETS

Andon offers a wide variety of thru-hole and SMD PLCC sockets to accept JEDEC type substrates. For High-Rel, high shock and high vibration applications, Andon offers PLCCs with edge wipe contacts made of flat heavy gauge copper alloy. For low cost computer applications, Andon utilizes face wipe contacts made of rolled-leaf copper alloy. All sockets use UL-94VO insulators. Available in tubes, tray or tape and reel.



CUSTOM PRODUCTS

Andon remains highly flexible to respond to individual design needs, offering unique capabilities to provide emergency product assistance, including expert custom design support. We offer a number of specialty sockets and connectors through our catalog, including PLCC and LCC adapters, zero insertion force sockets and SIMM sockets. We also welcome difficult challenges that result in entirely new products and interconnect solutions. Putting our many years of experience to work, we combine specialized knowledge of screw machining, stamping, molded plastics and plating, devising smart solutions in our ISO 9001 certified facility. When it comes to custom solutions, Andon has the answers.



Andon has fast answers

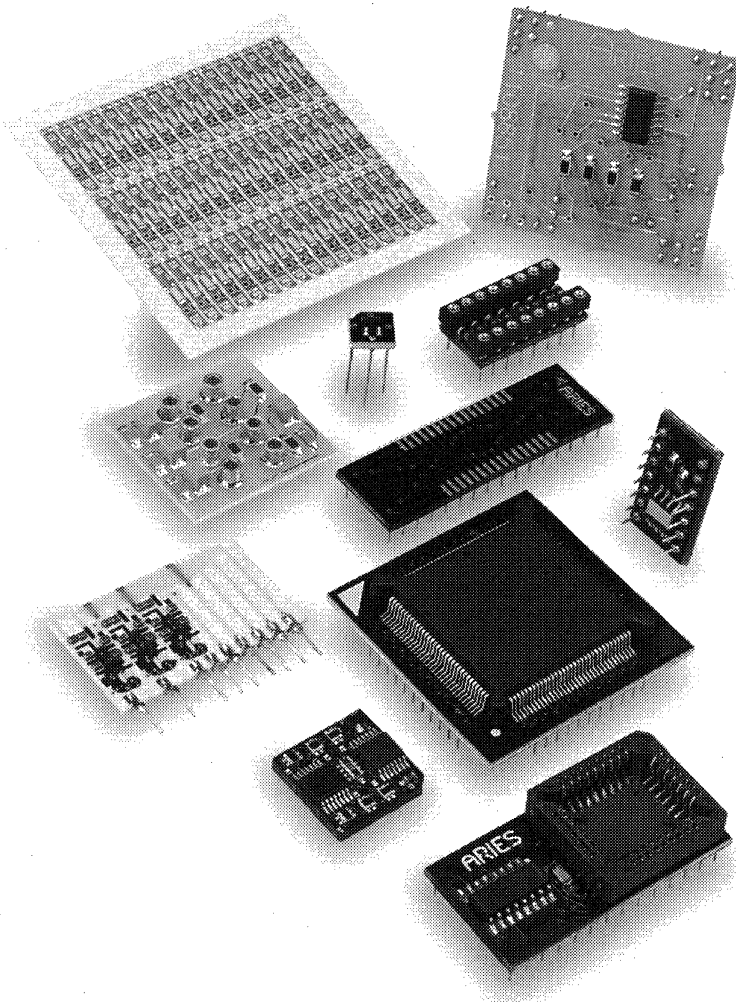
- Quick quotations
- Product samples
- Prototypes
- Custom design services

ANDON has the ANSWERS ←.....

Relax...
call Aries

Upgrades by Design, not Redesign...

Aries Correct-A-Chip™



Whoever said "the more things change, the more they stay the same" sure wasn't referring to *your* business! Change is what drives the business and it's also what can drive you crazy when it comes to designing new devices into your existing products. That's precisely why Aries Correct-A-Chip™ technology is so popular with designers who are always looking to upgrade: it lets them (and you) take advantage of device enhancements *without* board rework, redesign or delays.

Change is good. With Correct-A-Chip, it's also easy!

With Correct-A-Chip, you can change from one footprint or package type to another, from surface mount to through-hole, from one pinout to another, from one...you get the picture. If there's a way to upgrade your product with a new chip, there's a Correct-A-Chip that lets you do it quickly and economically.

With Correct-A-Chip, you can even add additional componentry and circuitry while you upgrade to a new device – all in the same space! And, for even greater miniaturization and performance, Aries also provides fast-turn MCMs.

The Proof Awaits You

Correct-A-Chip isn't magic. It just works like it. Want proof? Visit our comprehensive website or call for our catalog. We'll show you how easy it is to change... for the good.



P.O. Box 130 Frenchtown, NJ 08825
(908) 996-6841 fax: (908) 996-3891
e-mail: info@arieselec.com
web: www.arieselec.com

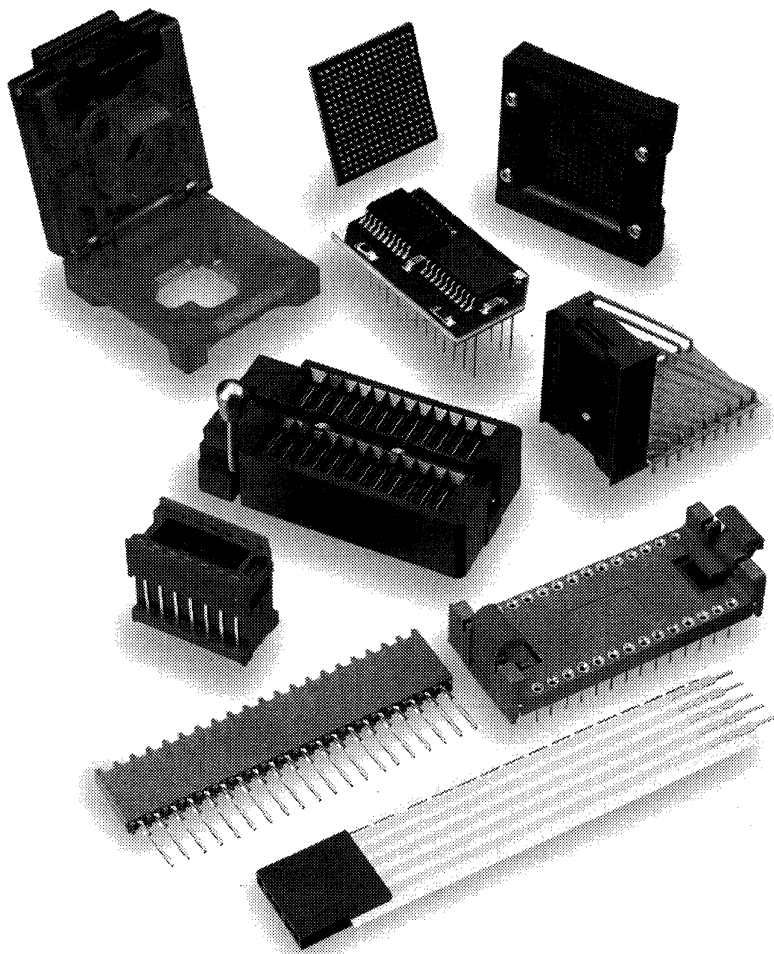


Sensible Solutions... Fast!

For complete details on these and other Aries Interconnect Solutions, visit our comprehensive website at: www.arieselec.com

Relax...
call Aries

At Aries, we make the toughest interconnections seem easy.



Sometimes the toughest part of the job is finding just the right interconnect. At Aries, we make it easy for you to get those hard-to-find products. Without paying a premium, waiting a lifetime or requiring a custom part.

The Unusual as Usual

Aries makes tough interconnect solutions seem easy. From unusual packages and configurations that would be custom products – or simply not available elsewhere – to great old standby products that nobody seems to make, let alone stock, anymore.

We offer DIP & SIP sockets and headers, square pin product and cable jumper assemblies in every imaginable (and some unimaginable!) size and configuration plus special height and special angle elevator sockets, stackable interconnects, programming devices, universal and ZIF test sockets and so much more. Fact is, Aries has what you need. And so do our distributors.

The Proof Awaits You

Want proof? Visit our comprehensive website or call for our catalog.

Oh, and by the way, on the outside chance we *don't* have what you need, we *will* custom design it for you!

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ELECTRONICS, INC.

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e-mail: info@arieselec.com
web: www.arieselec.com

ISO 9002
Certified



Sensible Solutions... Fast!

For complete details on these and other Aries Interconnect Solutions, visit our comprehensive website at: www.arieselec.com

Aries High Performance Interconnects

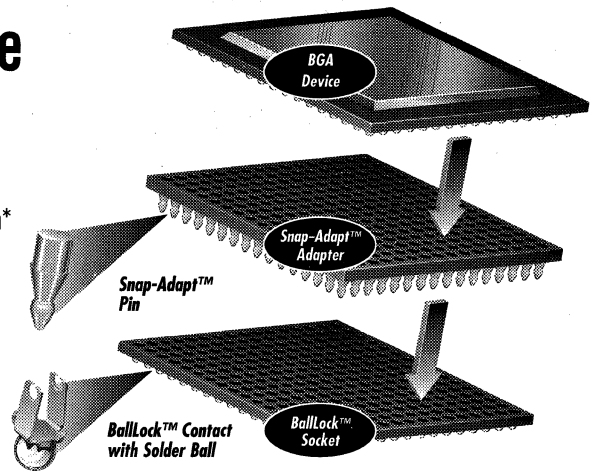
Finally, Making Your Device BGA Socketable *is a Snap!*

Leave it to Aries to give you the perfect way to BGA socket your devices without changing boards. Our unique Snap-Adapt™ Pluggable BGA System* makes any device BGA socketable, features low insertion force and adds less than .150" total height!

Once you mount your device to our Snap-Adapt Adapter, it can be socketed or mounted directly to BGA pads as if it were a BGA device. We'll even mount your device to our adapter for you.

At last, BGA socketing is a snap.

*Pat. Pend.



Ultra-High Frequency Test Sockets...

Higher Performance, Longer Life and Lower Cost!

Only Aries' ultra high frequency (10 GHz and above) test sockets offer you:

- Higher Performance — 1 dB loss at 10 GHz
- Longer Life — tested to more than a half million insertions with no loss in electrical performance
- Lower Cost — approximately half the cost of other versions
- Ideal for zero insertion force installation QFP, SOIC, Flatpacks and other high density devices
- Adapters available to match existing board footprints
- Delivery in just 4-6 weeks

In every respect, Aries RF sockets will pass your toughest tests!



For automatic (left) and manual (right) applications

Advanced Chip & Wire Technology

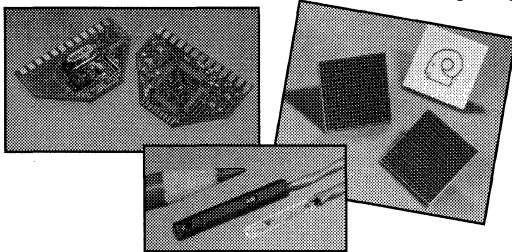
Fast Turn, Low NRE for COB, MCM and Thick & Thin Film Hybrid Packages

Aries gives you all the advantages of chip and wire technology...and we do it faster and more cost-effectively than you ever imagined.

- Complete chip & wire capabilities: COB, MCM, thick & thin film hybrids
- Latest configurations, including BGA, LGA and other advanced packages
- From design and engineering to circuit analysis to complete manufacture and assembly
- Prototypes from scratch in 6-8 weeks

Let Aries give you the higher performance, lower size and weight, reduced interconnects for higher reliability and lower overall system cost of chip & wire technology.

Let Aries provide your next generation of high density interconnects!



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Sensible Solutions... Fast!

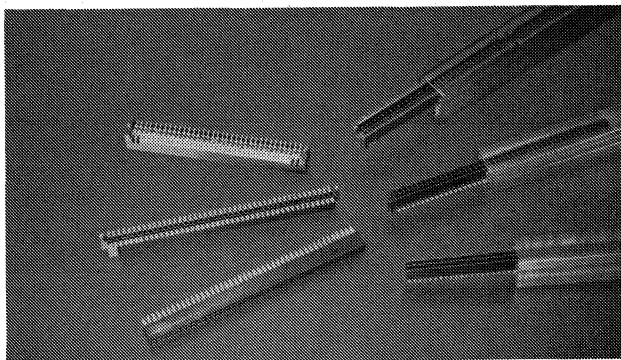
For complete details on these and other Aries Interconnect Solutions, visit our comprehensive website at: www.arieselec.com



THERMAL CONDUCTIVITY OF DIELECTRICS AT ROOM TEMPERATURE

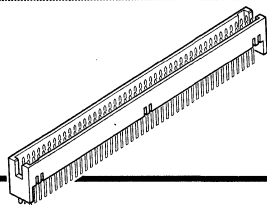
Material	Thermal Conductivity, J/ (m.K)
Diamond	658
BeO	167
Graphite	117-200
Bonded SiC	42
MgO	42
Al ₂ O ₃	33
TiC	33
BN	28
Mullite	6.3
Titania	3.3-4.2
Porcelain	1.7
Fused silica glass	1.5
Soda-lime glass	0.8
Cast epoxies	0.17-1.3
Wood	0.5-2.5
Melamines	0.3-0.7
Mica	0.3-0.7
Phenolics (molded)	0.17-0.67
Polyethylenes	0.33
Nylons	0.17-0.25
TFE fluorocarbons	0.25
Elastomers	0.08-0.17
Foams	0.003-0.04

Berg Electronics Connectors

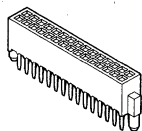


Rib Cage™ 0.050 Inch Pin and Socket Connectors

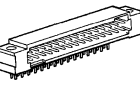
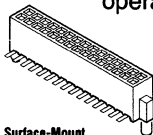
- Modular connector family providing 2 x 5 to 2 x 50 positions in increments of five contacts per row.
- 100 gram normal force providing high shock and vibration resistance.
- 0.045 inch contact wipe assures reliable contact even in extreme environmental conditions.
- Duplex plated contacts in high temperature LCP housings are compatible with all SMT soldering operations.



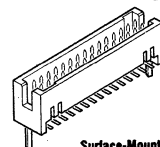
Through-Mount
Right-Angle Shrouded Headers



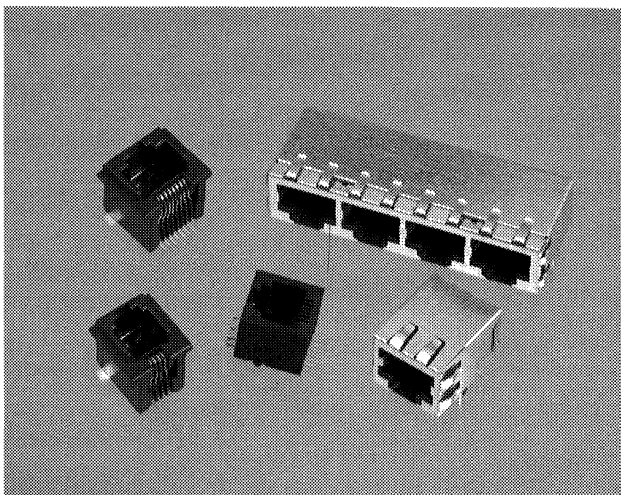
Surface-Mount
Receptacle Assemblies



Through-Mount
Receptacle Assemblies

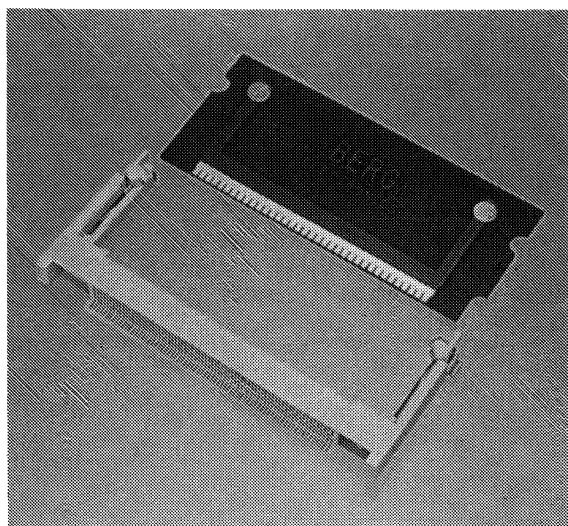


Surface-Mount
Vertical Shrouded Headers



Modular/Gang PCB Jacks

- Vertical or horizontal - RJ11, RJ12, RJ45.
- Unshielded, front shielded, fully shielded.
- Through-mount or surface-mount.
- Filtered Jacks - RJ45 footprint compatible.
- Gang Jacks - 1 to 12 ports.
- Gang Jacks - single row or double deck.



Right Angle Small Outline DIMM

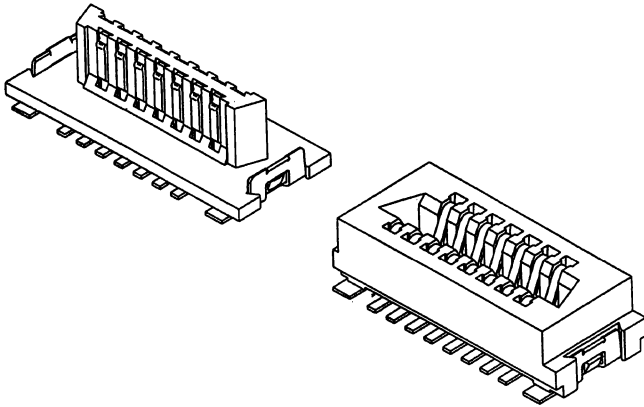
- Heights off the board of 5.5mm or 7.9mm.
- 3.3 volt or 5.0 volt versions available.
- Surface mount soldertails on 0.025 inch pitch.
- 0.050 inch staggered contacts at the module interface.
- Optional locating pegs for pick-and-place equipment.
- Module stays in the connector after unlatched for easy removal.
- Accepts all JEDEC standard modules.

See our pages in Volume C pages C•1328-1329

BERG™
ELECTRONICS

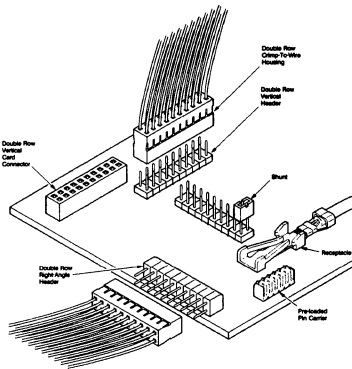
Tel: 1-800-237-2374 (USA & Canada)
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Berg Electronics Connectors



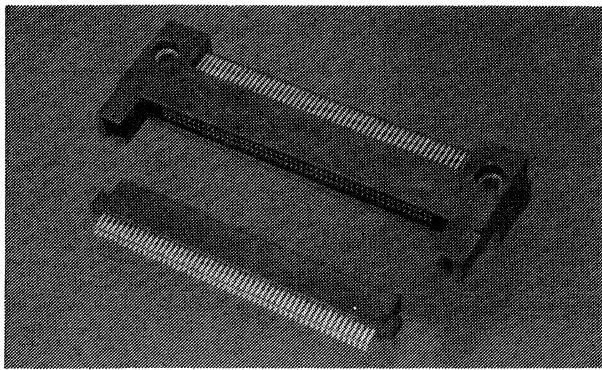
Conan™ Microminiature Connector System

- Compact 1.0mm pitch
- Surface mount
- Low 4.15mm, 4.50mm, 5.00mm, 5.5mm, 6.0mm, or 7.0mm mated heights for parallel board stacking
- Robust blade-on-beam contact design
- Passive latching feature and soldered mechanical hold downs for long term reliability
- 9, 11, 15, 21, 25, 31, 41, 51, or 69 positions available
- Packaged in tubes or on tape-and-reel



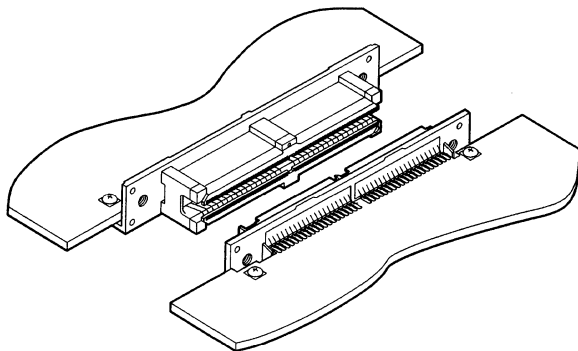
Minitek™ 2.0mm Connectors

- Modular system supports a broad range of applications with:
 - Board mounted receptacle assemblies
 - Unshrouded and shrouded headers
 - Crimp contacts and housings
 - Flat cable IDC receptacle assemblies
 - Shunts
- 36% space savings compared to 0.100 in. pitch systems
- Low profile SMT receptacles offer 4.0mm, 3.0mm, 2.3mm, or 2.1mm body heights
- SMT connectors available in tape-and-reel



Small PCI

- PCI bus interconnect in PCMCIA packaging format
- Double row 2 x 54
- 0.8mm contact pitch
- Straddle mount receptacle
- R/A header
- Low insertion force/high normal force
- Keying for 3.3 volt, 5.0 volt, and universal card



Micropax™

- 0.025 inch contact pitch
- Internal ground plane, low cross talk.
- Blade-on-beam contacts low insertion force
- Impedance controlled
- Die cast metal housing, ESD shielding
- Available in vertical throughmount, straddlemount, surface mount, and right angle configurations

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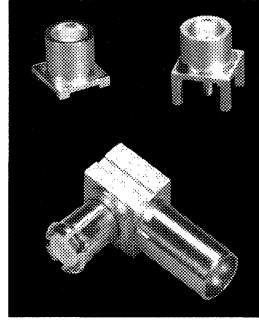
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Berg Electronics RF Division Connectors



SMA

- 50 ohm impedance
- Semi-rigid and Flexible cable
- Gold plated BeCu contacts
- Brass plated and passivated stainless steel shells
- Low VSWR up to 18 GHz



MCX

- Small profile
- Push-pull/snap-on mating
- Brass bodies with gold or nickel plating
- Contacts of gold plated brass and copper alloy
- For applications to 6 GHz



SMB, SMC

- 50 and 75 ohm impedance
- SMB with snap coupling
- SMC with threaded coupling
- Gold plated copper alloy contacts
- Gold plated and nickel plated shells



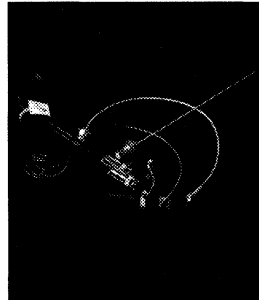
Adapters

- In-series and between-series
- Straight, right angle and T styles
- Various mounting styles
- Extensive product availability
- Various connector platings available



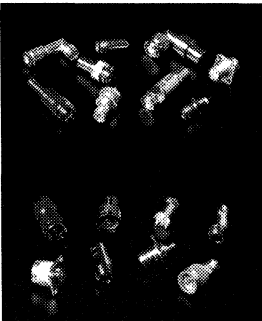
BNC

- 50 and 75 ohm impedance
- Terminates to a wide range of cable sizes
- Numerous mounting styles
- Bayonet locking
- Meets Mil-C-39012 requirements
- Low VSWR up to 4 GHz



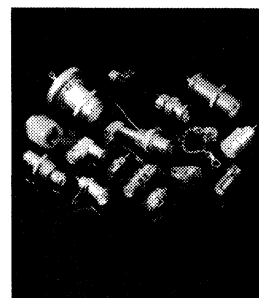
Cable Assemblies

- High quality custom cable assemblies
- Short lead-times



TNC, N

- 50 and 75 ohm impedance
- Terminates to a wide range of cable sizes
- Numerous mounting styles
- Threaded coupling
- Meets Mil-C-39012 requirements
- Low VSWR up to 11 GHz
- Withstands high vibration requirements



Capabilities

- Full design and manufacturing capability
- Vertically integrated facility
- Custom products are our core strength

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ELECTRONICS

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Berg Electronics Connectors

LEVEL 1 – DIRECT ATTACH TO BOARD

All interconnections are within the device

LEVEL 2 – CONNECTIONS BETWEEN THE DEVICE AND PRINTED CIRCUIT BOARD OR SUBSTRATE

Sockets Including:

- | | | | |
|--------------------|----------------------------|-------------|-----------|
| • DIMM | • MINISERT DISCRETE SOCKET | • PGA | • SO DIMM |
| • DIP | • PLCC | • PRESS FIT | • SOJ |
| • INTERSTITIAL PGA | | • SIMM | • ZIP |
| | | • SIP | • ZIF |

LEVEL 3 – BOARD-TO-BOARD CONNECTIONS/BACKPANEL SYSTEMS

Board to Board Connectors:

On .100 inch centerlines

- BERGSTIK™ headers to BERGCON™/DUBOX™ PCB Receptacles

On 2mm centerlines

- MINTEK™ connectors

On .050 inch centerlines

- RIBCAGE™ connectors
- PCI buss connector

On 1mm centerlines

- CONAN™ connectors

On .8mm centerlines

- BERSTAK™ connectors
- Small PCI buss connector

On .5mm centerlines

- BERGSTAK™ connectors

Backpanel Systems:

On .125 inch centerlines

- FASTECH™ system

On .50 inch centerlines

- SCA 2 connectors

On .100 inch centerlines

- DIN system
- HPC™ (HIGH PIN COUNT) SYSTEM

On 2mm centerlines

- METRAL™ system

On .025 inch centerlines

- MICROFAX™ system

LEVEL 4 – WIRE TO BOARD CONNECTING TWO SUB ASSEMBLIES INSIDE THE BOX

For Discrete Wire:

- PV™ terminal/latch housing system on .100 inch centerlines
- DURAMATE™ terminals/housings on 2mm centerline
- RELIMATE™ terminals/housings on 2.5mm centerline

For round conductor ribbon cable:

- QUICKIE™ IDC connector system

For Flat Conductor Flat Cable:

- CLINCHER™ connector system

For flexible circuits:

- CLINCHER™ connector system on .100 centerlines
- 0.50 Flex connectors on .050mm centerlines

LEVEL 5 – I/O CONNECTORS

RF/COAX Connectors Including:

- Adaptors, SMA, SMB, SMC, N, BNC, TNC, MCX, and MMCX

MODULAR JACKS Including:

- PCB jacks, filtered jacks, shielded jacks and gang jacks

PCMCIA headers and eject mechanisms

VHDCI connectors

Fibre Channel connectors

P1394 connector

Universal Serial Bus connectors

LEVEL 6 – CONNECTIONS BETWEEN PIECES OF EQUIPMENT

CABLE ASSEMBLIES Including Following Types:

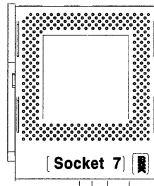
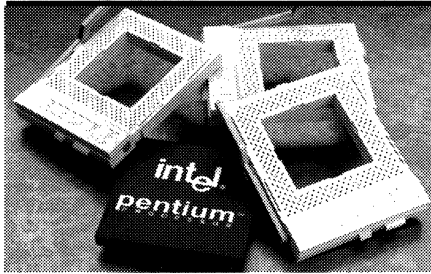
- | | | | |
|--------------------------------|-------------------------------|-----------------|--------------------------|
| • SCSI I, II, III | • Universal Serial Bus | • Smart cables | • Video cables |
| • Molded "D"/ Subminiature "D" | • LATCH-N-LOK™ flat/coil cord | • ULTRA SCSI | • Hi-Speed RF/COAX |
| • VHDCI | • Transmission Line | • HPIB/GPIB | • Custom molded/shielded |
| | | • Fibre Channel | • METRAL™ I/O assemblies |

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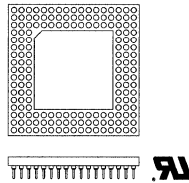
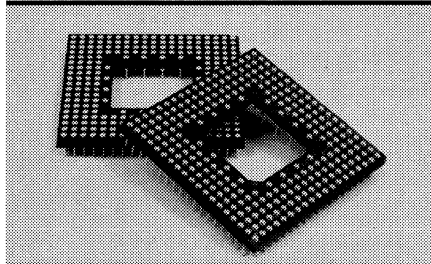
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Berg Electronics ASM/Socket Division - IC Sockets & Adapters



ZIF PGA Sockets — Sockets 3,5 & 7

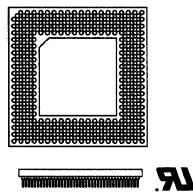
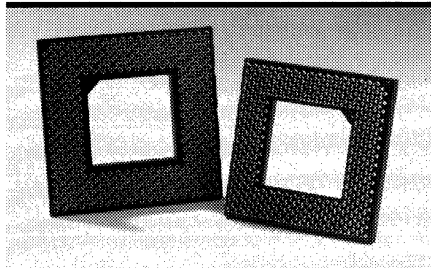
- Patented contact design delivers maximum performance and reliability.
- Stand-offs on the bottom side of the socket allow for easy post-solder cleaning.
- The socket body has integrally molded tabs to which a heat sink can be attached.
- Open center construction enables other components to be placed on the PCB in the center of the socket.
- Intel approved upgrade sockets.



Product Code PGA

PGA Sockets

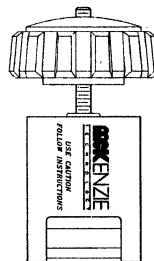
- Largest selection of molded PGA footprints.
- Widest variety of contact styles.
- Insulator materials that meet your toughest high-temp application needs.
- Contact options that ensure the lowest possible insertion and extraction forces.
- Custom patterns and high pin count PGA's are our specialty.
- Solder preforms available as an option.



Product Code PZA

PGA Sockets — Interstitial

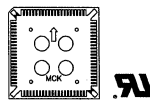
- Six finger screw machine contact with Ultra Low Insertion Force (ULIF™) inner clips.
- Molded in high-temp PPS for perfect parts.
- No other supplier has as many Interstitial PGA footprints tooled.
- Socket shown is the 447 pin for the MIPS R4400 RISC Processor.



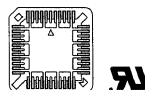
Product Code TOL

PGA Insertion and Extraction Tools

- PGA insertion tools ensure parallel insertion and even distribution of forces across device.
- Available in specific size and adjustable size models.
- PGA Extraction Tools remove both standard socketed and flush socketed devices.
- Adjustable extraction tool allows for extraction of devices with heat sinks attached.
- All array sizes available.



Thru-Hole PLCC
Product Code PLC



Surface Mount PLCC
Product Code PLC

Thru-Hole & SMT PLCC Sockets

- Phosphor bronze contacts with tin plating over nickel.
- Sizes: 20, 28, 32, 44, 52, 68, 84, 100.
- High-temp PPS thermoplastic (UL 94V-0) is infrared and vapor phase compatible.
- SMT are Low Profile — .175" (44,45mm).
- Open frame on SMT sockets allows for visual inspection and repair of solder joints.
- Optional alignment pegs for SMT parts.
- SMT Coplanarity of $\pm .004$ " max (0,1mm).
- Available in tubes or tape and reel.

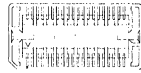
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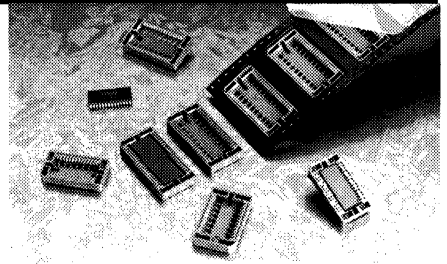
Berg Electronics ASM/Socket Division - IC Sockets & Adapters

SOJ Sockets

- Low profile of just .180" above the board.
- Same footprint as the device they socket.
- Molded a high temperature PPS.
- Optional alignment pegs for hand loading.
- All solderjoints are 100% inspectable.
- Available in tape and reel.
- .300" and .400" row-to-row spacings.

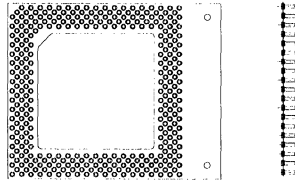


Product Code SOJ

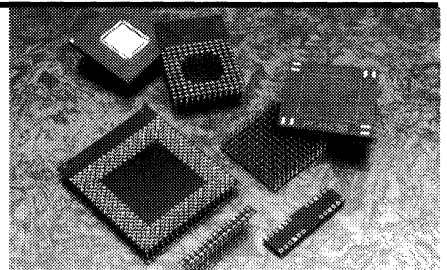


Tape Pin Carrier (TPC) Sockets

- Kapton tape is removable.
- Low profile pins of .030".
- Available in DIP, PGA and Interstitial PGA.
- Used for sockets and board-to-board interconnect.
- Custom patterns accommodated.

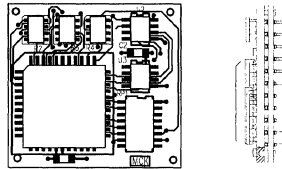


Product Code TPC

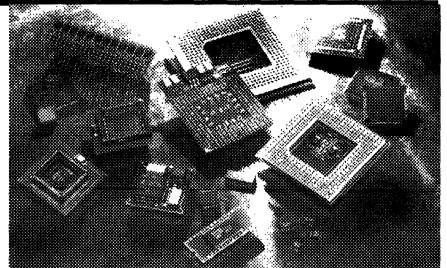


Application Specific Modules (ASM's)

- Turnkey Manufacturing.
- PCB and interconnect design.
- Fine pitch SMT component placement.
- Consignmented or purchased components.
- On site testing available.

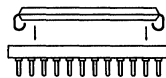


Product Code ASM

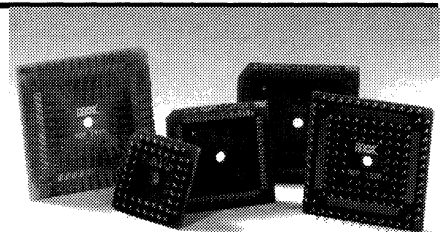


PLCC and QFP Adapters

- PLCC Adapter converts JEDEC plastic leaded chip carrier to standard PGA footprint.
- Turns a SMT PLCC into a thru-hole device.
- Available in all standard pin counts.
- QFP Adaptor converts JEDEC or EIAJ gull wing devices to .100" (2,54mm) grid.
- Allows for easy testing and prototyping.
- Customs and net list conversions readily available.

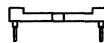


Product Code ADP



DIP, SIP, and ZIP Sockets

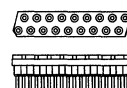
- Many contact options available including low profile, pressfit, wire wrap and clinchable.
- DIP Row-to-row spacings of .300", .400", .600", and .900"
- SIP single and dual row options.
- .100" and .070" (shrink DIP) contact pitches.
- Closed and open frame socket bodies.
- End-to-end and side-to-side stackable.
- All pin counts available.



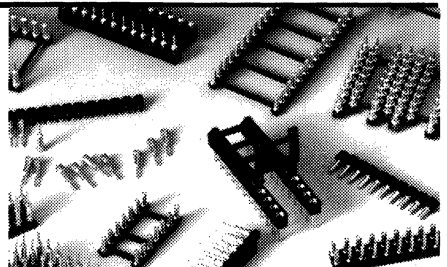
Product Code DIP



Product Codes
SST, SHS, SIP



Product Code ZIP



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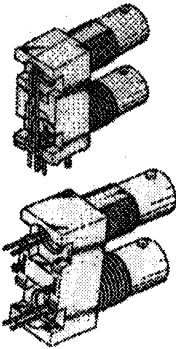


Connectors for Data and Broadcast Transmission

Dual BNC PCB Jacks

New Dual BNC PCB jacks allow for either stacking connectors vertically or horizontally. Increases installation speed and reduces PCB space on vertical stacks. Versions for right angle and vertical mounting, in 50 and 75 ohms and in black or white Valox constructions are available.

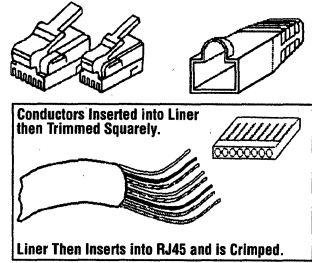
Mfr.'s Type	Description
364A2595	Right Angle, 50 Ohm, White
364A2595B	Right Angle, 50 Ohm, Black
364S2595	Vertical, 50 Ohm, White
364S2595B	Vertical, 50 Ohm, Black
364A2795	Right Angle, 75 Ohm, White
364A2795B	Right Angle, 75 Ohm, Black
364S2795	Vertical, 75 Ohm, White
364S2795B	Vertical, 75 Ohm, Black



RJ45 Category-5 Plugs & Boots

Category 5 Liner Plugs are supplied with an insertable liner for the conductors. The separated conductors are inserted into the liner, cut off squarely at bottom, inserted into the RJ45 plug, then properly crimped. CXB300 series boots finishes the installation with a color coded strain relief assuring optimum performance.

Part Number	Description
300568	8P8C Category 5 Plug For Round Twisted Pair, Solid
300568L	8P8C Category 5 Liner Plug For Round Twisted Pair, Solid
300568S	8P8C Shielded Category 5 Liner Plug For Round, Solid
CXB300BG	RJ45 Strain Relief Cable Boots, Beige
CXB300BK	RJ45 Strain Relief Cable Boots, Black
CXB300BL	RJ45 Strain Relief Cable Boots, Blue
CXB300GN	RJ45 Strain Relief Cable Boots, Green
CXB300GY	RJ45 Strain Relief Cable Boots, Gray
CXB300RD	RJ45 Strain Relief Cable Boots, Red
CXB300WT	RJ45 Strain Relief Cable Boots, White
CXB300YL	RJ45 Strain Relief Cable Boots, Yellow

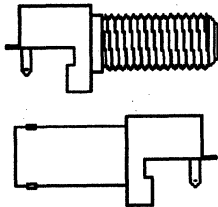


V-Bite™ BNC and "F" PC Board Edge Mount Jacks

This exclusive Bomar design allows the connector to be snapped into and locked into the PC board. The PC board slot in the connector prevents rotation and removes strain from the posts and contact.

The in-line contact has no right angle bend, so VSWR is 1.15:1.

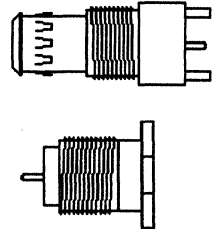
A .235 inch profile height is the lowest available anywhere.



"G" Connectors

New "G" style connectors are used where blind mating is required. The beryllium spring contact on the females make a positive ground connection while offering a secure press-fit connection.

Available in standard and many custom configurations.

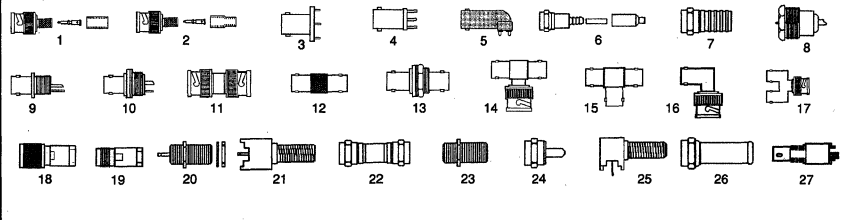


RF Connectors For Data Interconnect

BNC 3 Piece Crimp Plugs For Cable Mount

These 3 piece, dual crimp connectors feature Post-Click contacts that "click" into place when installed insuring a perfect assembly. All crimp pins are gold plated and have a vent hole for optional soldering.

Mfr.'s Type	RG/U Cable	Fig.
310A208A	6	1
310A205F	58 Stranded, 141	1
310A205FS	58 Solid Cond.	1
310A205FV	Thin-Net Plenum	2
310A205FV2	RGB Monitor Cable	2
310A204G	59, 62, 210	1
310A205M	174, 188, 316	1
310A205N	179, 187	1
310A205P	223	1
310B205Q	True 75 ohm/8281	1
310A204T	59, 62 Plenum	2
310A208W2	Mini 62 Coax	1



These high quality RF connectors are approved for use by the major manufacturers of computer networks and are used extensively for all interconnecting and accessory cables and panels

Broadcast Grade BNC Cable Plugs

SBC Specialty Broadcast Connectors are the finest broadcast quality. These connectors are made of precision machined brass, not die-cast brass like some competitive types. They are heavier, and more rugged and are supplied with a true 75 ohm impedance matched Teflon insulator and gold plated semiconducting pin. Designed specifically to fit the high-quality standardized broadcast cables currently used. Your existing crimp tooling will work with these connectors, or can be provided by Bomar.



Mfr.'s Type	RG/U Cable	Fig.
SBC1505A	Belden 1505A	1
SBC1694A	Belden 1694A	1
SBC1695A	Belden 1695A	1
SBC8241	Belden 8241	1
SBC8281	Belden 8281	1

BNC Bulkhead Jacks

Versions available for front mounting (F/M), rear mounting (R/M), crimp types, panel grounded, or isolated. These jacks are held in the panel by a hex-nut and lock washer. All units feature nickel plated brass bodies, gold/phosphor bronze contacts.

Mfr.'s Type	RG/U Cable	Fig.
321A245A	R/M Crimp RG6 1/2"	7
321A245F	R/M Crimp RG 58, Thin 1/2"	7
321A245FV	R/M Crimp Thin Plenum 1/2"	7
321A245G	R/M Crimp 59, 62, 214 1/2"	7
321A245M	R/M Crimp 174, 178, 196 1/2"	7
326A515	R/M Solder (Grounded) 3/8"	8
326R515*	R/M Solder (Isolated) 3/8"	9
326Q556	R/M Solder (Isolated) 1/2"	10

* Available in blue, green, red and white.

BNC Adapters and "The Goalie"

The internal design offers the lowest possible reflected signal (VSWR) and guarantees no oxidation at the internal contact points as the connector ages.

Mfr.'s Type	RG/U Cable	Fig.
330A505	Male/Male Inline Splice	11
332A505	Fem./Fem. Inline Splice	12
335A544	Fem./Fem. Bulkhead	13
335R544	Fem./Fem. Bulkhead Isolated	13
343A505	Fem./Male/Fem. "T"	14
345A505	Fem./Fem./Fem. "T"	15
351A505	Fem./Male Right Angle	16
383U505	The Goalie with Clip	17

F Connector

F type plugs are available in several different crimp styles: two piece with separate ferrules, one piece crimp with a short crimp body and a one piece crimp with a long body. Also, a twist-on type and the new patented Push-EZ™ for tool-less installations. Jacks for bulkhead, inline, or PC board including the V-Bite™, and a variety of adapters are all machined brass construction.

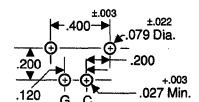
Mfr.'s Type	Description	Fig.
810A209MV	4 Pc For RG 174	6
810E209A	1 Pc For RG 6	7
810E209G	1 Pc For RG 59	7
810PE209A	Push-EZ™ For RG 6	26
810PE209G	Push-EZ™ For RG 59	26
816B519	Male Bulkhead Receptacle	8
826B519	Bulkhead Jack, Solder Tab	20
830A509	In-line male adapter	22
832A519N	Female In-line adapter w/Nut	23
861A509	PCB Jack, Vertical	21
864B509	PCB Jack, Long Version	25
864B509S	PCB Jack, Short Version	25
F0884	75 Ohm Terminator	24

Modular Jacks

303066MFL	6P6C Mini Low Profile Right Angle, Flangeless
303088BL	8P8C Standard Low Profile, with Flange
303458S	8P8C 45 degree Angle PC Mount Jack, Shielded
303088VFL	8P8C Vertical Mount, Flangeless
303088FLS	8P8C Shielded Side Entry, Covered Back, Flanges with Ground Tabs
303064BFL	6P4C Standard Low Profile Without Flange
301664-02	6P4C Multi-Port Press-Fit Jack, 2 Port
301666-08	6P6C Multi-Port Press-Fit Jack, 8 Port
301204S	4 Port RJ45, 8 Position, 8 Contact Ea. Port, Shielded

Printed Circuit Board BNC Jacks

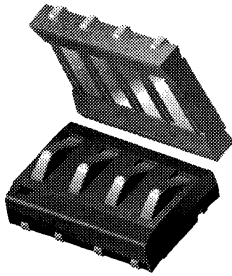
These popular BNC board jacks meet or exceed the highest industry standards. They are available in many standard configurations as shown. Additional versions are available upon request. All isolated jacks are constructed with molded Valox, in White or Black, over nickel plated zinc bodies. Contacts are Phosphor Bronze and plated with tin or gold. All metal versions are fully shielded. They are nickel plated zinc and utilize the same phosphor bronze contacts in either tin or gold plating.



Mfr.'s Type	Type	Description	Fig.
3271505	Vertical	BNC Vertical Panel Jack	3
361A505	Vertical	BNC Vertical 4 Post Jack	4
364M095	Right Angle	BNC R/A 4 Post Jack 50 Ω	5
364M0975	Right Angle	BNC R/A 4 Post Jack 75 Ω	5
364A595	Right Angle	Hi-Profile, White, Gold	26
364A595B	Right Angle	Hi-Profile, Black, Gold	26
364A595BL	Right Angle	Lo-Profile, White, Gold	26
364A595BLB	Right Angle	Lo-Profile, Black, Gold	26
364M595	Right Angle	Hi-Profile, Metal, Gold	26
364M595L	Right Angle	Lo-Profile, White, Gold	26
364S595	Vertical	Hi-Profile, White, Gold	27
364S595B	Vertical	Hi-Profile, Black, Gold	27
364S595M	Vertical	Hi-Profile, Metal, Gold	27
364LW	Hardware	Lock Washer For Mounting	—
364NT	Hardware	Hex Nut For Mounting	—



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 www.bourns.com



Model 70AD Male/Female Modular Contacts

- Low Profile
- Rugged Design
- Vertical or Horizontal Entry
- Tape & Reel Packaging Available

HOW TO ORDER

70AD J - 003 - M L O

Model _____

Terminal Style _____
 J = SMT
 H = Through-hole

Number of Contacts _____
 002 through 006

Gender _____
 M = Male
 F = Female

Height _____
 L = Low Profile

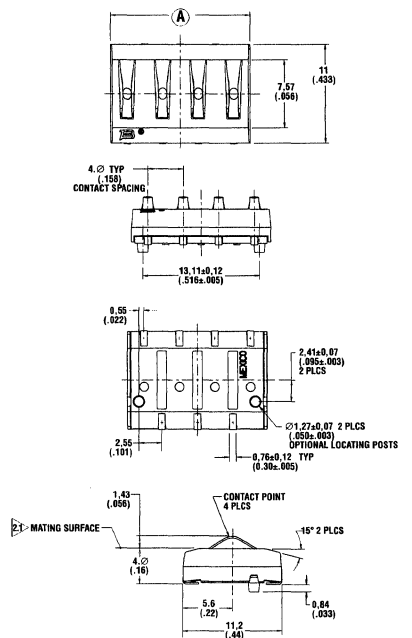
Options _____
 0 = Standard
 1 = Locator Pins

Operating Characteristics

Electrical
 Current ratingDC 3A/contact
 Voltage ratingDC 30V
 Contact resistance25 milliohms max
 Dielectric voltageAC 500V
 Insulating resistance500 megaohms min at 500V DC

Operating temperature-55°C to 125°C

Mechanical
 Contact normal force100 grahms min at 0.51 (.020) from mating surface



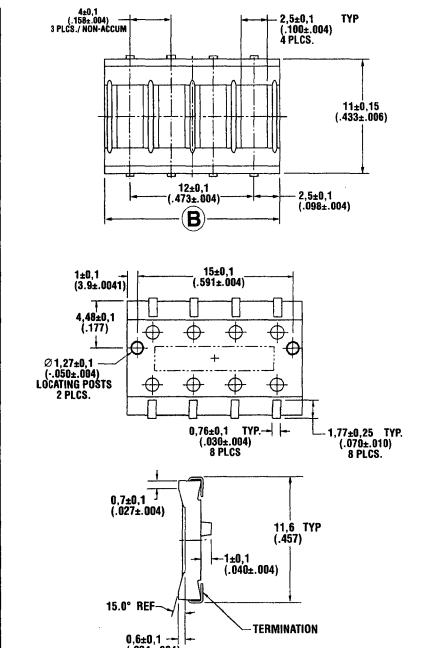
Number of Contacts	Dimension A
2	7.7 (.303)
3	11.7 (.461)
4	15.7 (.618)
5	19.7 (.776)
6	23.7 (.933)

Patent #: 5, 378, 160

Contact wipe..... .031 (.150) min under the max deflection
 Durability (Mating/Unmating)5,000 min without degradation of performance with corresponding Bourns manufactured assembly.

Materials & Finishes

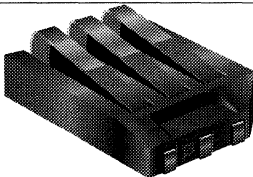
InsulatorGlass reinforced thermoplastic UL 94 V-O rated, black
 ContactCopper alloy



Number of Contacts	Dimension B
2	9.0 (.350)
3	13.0 (.511)
4	17.0 (.669)
5	21.0 (.826)
6	25.0 (.984)

Finish
 UnderplatingNickel
 Contact area0000762
 Termination area(0.00030) min gold over nickel
 Termination areaTin alloy (meets solderability requirements per mil-std-202, method 208)

Specifications subject to change without notice.



Model 70AA Male Modular Contacts

- 2.54mm pitch & height
- End-to-end stackable
- Twin hot contacts
- Pick 7 place compatible

HOW TO ORDER

70AA J - 003 - M O

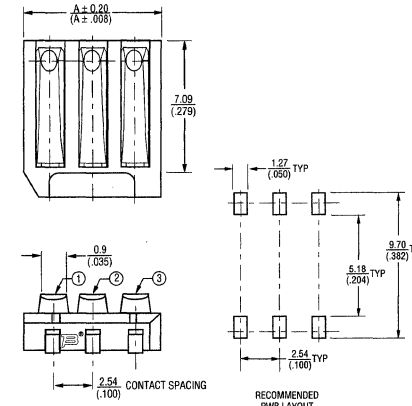
Model _____

Terminal Style _____
 J = SMT

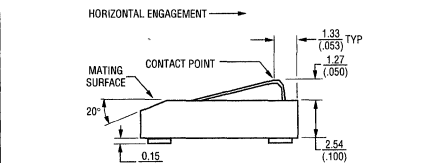
Number of Contacts _____
 002 through 003

Gender _____
 M = Male

Options _____
 0 = Standard



Model	Positions	Dim A
70AAJ003MO	3	7.54 (.297)
70AAJ002MO	2	5.00 (.197)



Materials & Finishes

InsulatorGlass reinforced thermoplastic UL 94 V-O rated, black
 ContactCopper alloy
 Finish
 UnplatingNickel
 Contact area30µ Au over nickel
 TerminationTin alloy (meets MUIL-STD-202, method 208)

Operating Characteristics

Electrical
 Current ratingDC 3A/contact
 Voltage RatingDC 60V
 Contact Resistance30mΩ min.
 Dielectric VoltageAC 500V
 Insulation Resistance100mΩ min.
 Operating temperature-55°C to +125°C

Mechanical

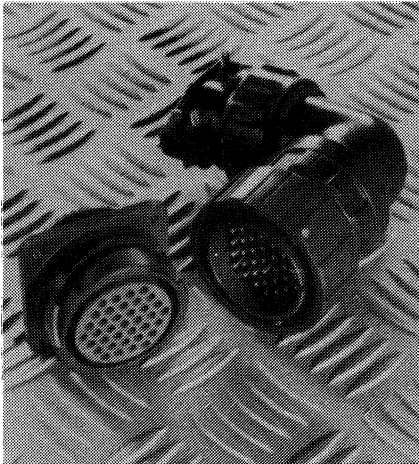
Normal Force30 grams min.
 Durability10,000 cycles



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electronic components

BTC Bayonet Connectors



The BTC Bayonet Connectors series is based on the MS series of connectors conforming to U.S.A. specification MIL-C-5015. Originally developed for aerospace applications, the connector is now used extensively throughout the mass transportation, military fighting vehicle, commercial land and sea transport, communication and general industrial markets.

BTC bayonet connectors are interchangeable with all corresponding MS types and feature identical panel mounting dimensions and contact arrangements. Positive coupling is indicated by an audible snap and visually by the alignment of three colored spots on the receptacle and coupling nut of the plug connector.

To prevent excessive wear taking place through severe vibration or repeated matting, the CIR variant features stainless steel pins at the critical points of the receptacle connector cam track.

Protection against water ingress is provided by the use of a dynamic sealing ring under the coupling nut and by grommet wire sealing at the rear of the connector. A wavy washer assembly, also situated under the coupling nut, and a comprehensive range of accessories, ensure excellent continuity and shielding characteristics between mated connectors in applications where EMI/RFI must be eliminated and shell continuity assured.

In response to modern environmental pressure, BTC Bayonet connectors can be specified with reduced hazard, low halogen mouldings and cadmium free plating finishes.

Product approvals include British Standard 9522 F0032 and German standard VG 95234. The connectors are also designed to meet the requirements of railway specifications TDE 77/R/42 and RSE/STD/024 and NF F 16-101, (Railway Rolling Stock Fire Behavior, Choice of Materials).

GENERAL INFORMATION

MATERIALS: BTCB/BTCCIR Series HT BTCB Series
Shell: Aluminum alloy
Insulator: Polychloroprene or Low Halogen Flouro-carbon (Viton)
Grommet: Polychloroprene or Low Halogen Flouro-silicone
Contacts: Copper Alloy
Accessory Hardware: Aluminum alloy

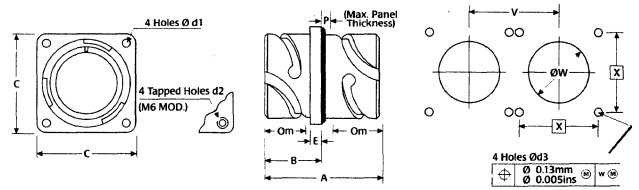
PLATING FINISHES:
Shell: Olive drab chromate over cadmium plate.
Contacts: Hard silver over nickel or gold over nickel.
Accessory Hardware: Olive drab chromate over cadmium plate.
 Consult factory for alternative shell and accessory finishes.

MECHANICAL FEATURES:
Shell Size: In sixteenths of an inch
Coupling: Bayonet
Number of Ways: 1 - 61
Contact Termination: Crimp or solder
Sealing: Dynamic sealing ring & grommet

TECHNICAL DATA: BTCB/BTCCIR Series HT BTCB Series
Temperature Range: -55°C to +125°C -40°C to +190°C
Voltage at Sea Level: (a) Working Voltage — d.c. or a.c. peak 350V to 1750V.
 (b) Proof Voltage — d.c. or a.c. peak 1050V to 3000V
Environmental Ratings: (A) Shock severity: 75g.
 (B) Vibration: 5-500 Hz long endurance 30 hr test at 10g.
 (C) Acceleration: 50g.
 (D) Humidity severity: H6 (6 cycles acc 56 days).

Bulkhead Receptacle

Style: ABB07/ABB07...M6 • BS Style: No. C2507/C2508
ABCIR07/ABCIR07...M6 • VG Style: C2/C1

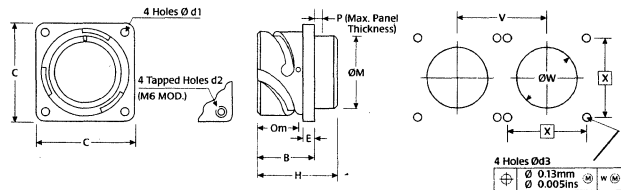


SHELL SIZE	A max	B max	C max	Ød1 +0.2-0 +0.008-0	D2 Thread	E max	P	Øm min. overlap mated	Ød3 H13	V	W	X
10 SL	38.2	17.6	25.7	3.2	M4	3.0	3.3	11.1	3.4	26.6	18.58	18.2
14 S	38.2	18.0	30.3	3.2	M4	3.4	3.3	11.1	3.4	31.6	24.98	23.0
16 S	38.2	18.0	32.8	3.2	M4	3.4	3.3	11.1	3.4	34.4	27.78	24.6
16	52.1	22.8	32.8	3.2	M4	3.4	3.3	15.85	3.4	34.4	27.78	24.6
18	52.1	23.6	35.3	3.2	M4	4.2	3.3	15.85	3.4	38.3	31.18	27.0

Additional Shell Sizes available contact factory for information

Square Flange Receptacle Front Mounting (No Acc. Thd.)

Style: ABB00A/ABB00A...M6
ABCIR00A/ABCIR00A...M6 • VG Style: A

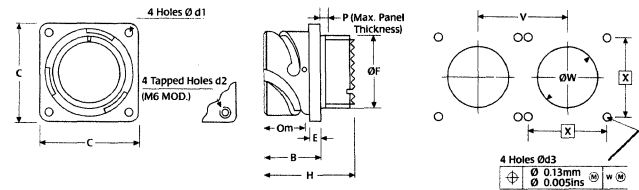


Shell Size	B max	C max	Ød1 +0.2-0 +0.008-0	d2 Thread	E max	ØM max	H max	P	Øm min. overlap mated	Ød3 H13	V	W	X
10 SL	17.6	25.7	3.2	M4	3.0	16.1	24.7	3.3	11.1	3.4	26.6	17.0	18.2
14 S	18.0	30.3	3.2	M4	3.4	19.2	24.7	3.3	11.1	3.4	31.6	20.0	23.0
16 S	18.0	32.8	3.2	M4	3.4	22.4	24.7	3.3	11.1	3.4	34.4	23.0	24.6
16	22.8	32.8	3.2	M4	3.4	22.4	33.8	3.3	15.85	3.4	34.4	23.0	24.6
18	23.6	35.3	3.2	M4	4.2	25.6	33.8	3.3	15.85	3.4	38.3	26.0	27.0

Additional Shell Sizes available contact factory for information

Square Flange Receptacle (with Acc. Thd.)

Style: ABB00T/ABB00T...M6 • BS Style: C2503/C2504.
ABCIR00T/ABCIR00T...M6



Shell Size	B max	C max	Ød1 +0.2-0 +0.008-0	d2 Thread	E max	ØF Thread dia Class2A	H max	P	Øm min. overlap mated	Ød3 H13	V	W	X
10 SL	17.6	25.7	3.2	M4	3.0	3/8" 24 UNEF	29.5	3.3	11.1	3.4	26.6	16.13	18.2
14 S	18.0	30.3	3.2	M4	3.4	3/4" 20 UNEF	29.5	3.3	11.1	3.4	31.6	19.3	23.0
16 S	18.0	32.8	3.2	M4	3.4	7/8" 20 UNEF	29.5	3.3	11.1	3.4	34.4	22.48	24.6
16	22.8	32.8	3.2	M4	3.4	7/8" 20 UNEF	42.0	3.3	15.85	3.4	34.4	22.48	24.6
18	23.6	35.3	3.2	M4	4.2	1" 20 UNEF	42.0	3.3	15.85	3.4	38.3	25.65	27.0

Additional Shell Sizes available contact factory for information

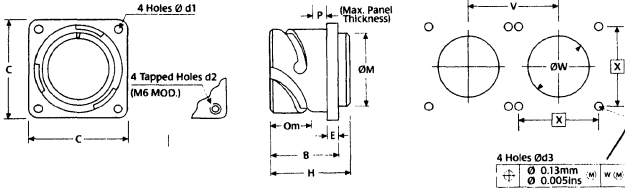


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electronic components

Square Flange Receptacle Rear Mounting (No Acc. Thd.)

Style:ABB03A/ABB03A...M6 • BS Style: C2758/C2759.
 ABCIR03A/ABCIR03A...M6 • VG Style: B2/B1.

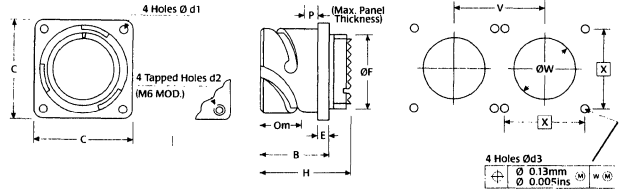


Shell Size	B max	C max	Ød1 +0.2-0 -0.008-0	d2 Thread	E max	ØM max	H max	P	Om min. overlap mated	Ød3 H13	V	W	X
10 SL	18.6	25.7	3.2	M4	3.0	16.2	24.7	3.3	11.1	3.4	26.6	18.58	18.2
14 S	18.6	30.3	3.2	M4	3.4	19.2	24.7	3.3	11.1	3.4	31.6	24.98	23.0
16 S	18.6	32.8	3.2	M4	3.4	22.4	24.7	3.3	11.1	3.4	34.4	27.78	24.6
16	21.9	32.8	3.2	M4	3.4	22.4	33.8	3.3	15.85	3.4	34.4	27.78	24.6
18	23.45	35.3	3.2	M4	4.2	25.6	33.8	3.3	15.85	3.4	38.3	31.18	27.0

Additional Shell Sizes available contact factory for information

Square Flange Receptacle

Style:ABB03T/ABB03T...M6
 ABCIR03T/ABCIR03T...M6

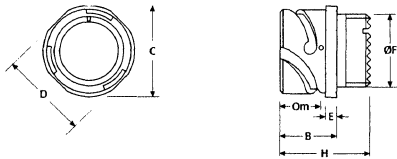


Shell Size	B max	C max	Ød1 +0.2-0 -0.008-0	d2 Thread	E max	ØF Thread dia. Class2A	H max	P	Om min. overlap mated	Ød3 H13	V	W	X
10 SL	18.6	25.7	3.2	M4	3.0	5/8" 24 UNEF	29.5	3.3	11.1	3.4	26.6	18.58	18.2
14 S	18.6	30.3	3.2	M4	3.4	3/4" 24 UNEF	29.5	3.3	11.1	3.4	31.6	24.98	23.0
16 S	18.6	32.8	3.2	M4	3.4	7/8" 24 UNEF	29.5	3.3	11.1	3.4	34.4	27.78	24.6
16	21.9	32.8	3.2	M4	3.4	7/8" 24 UNEF	42.0	3.3	15.85	3.4	34.4	27.78	24.6
18	23.45	35.3	3.2	M4	4.2	1" 24 UNEF	42.0	3.3	15.85	3.4	38.3	31.18	27.0

Additional Shell Sizes available contact factory for information

Cable Mounted Receptacle

Style:ABB01T • BS Style: C2509
 ABCIR01T

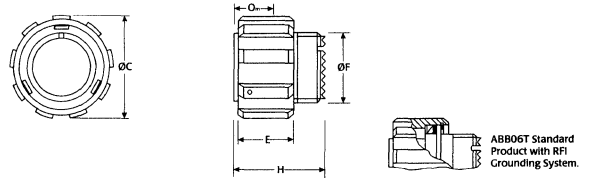


Shell Size	B max	C max	D max	E max	ØF Thread dia. Class2A	H max	Om min. overlap mated
10 SL	17.6	25.2	20.8	3.0	5/8" x 24 UNEF	29.5	11.1
14 S	18.0	29.8	25.6	3.4	3/4" x 20 UNEF	29.5	11.1
16 S	18.0	32.3	28.8	3.4	7/8" x 20 UNEF	29.5	11.1
16	22.8	32.3	28.8	3.4	7/8" x 20 UNEF	42.0	15.85
18	23.6	34.8	31.9	4.2	1" x 20 UNEF	42.0	15.85

Additional Shell Sizes available contact factory for information

Arctic Grip Coupling Nut

Style:ABB06T/ABBNS06T
 BS Style: C2502/C2501

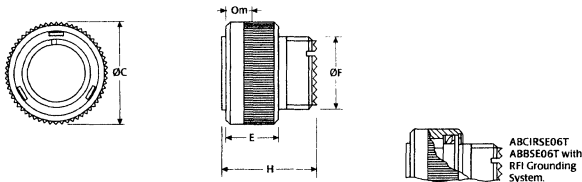


Shell Size	ØC max	E max	ØF Thread dia. Class2A	H max	Om min. overlap mated
10 SL	25.2	3.0	5/8" x 24 UNEF	29.5	11.1
14 S	29.8	3.4	3/4" x 20 UNEF	29.5	11.1
16 S	32.3	3.4	7/8" x 20 UNEF	29.5	11.1
16	32.3	3.4	7/8" x 20 UNEF	42.0	15.85
18	34.8	4.2	1" x 20 UNEF	42.0	15.85

Additional Shell Sizes available contact factory for information

Plug - Fine Knurl Coupling Nut

Style:ABBE06T/ABBSE06T • BS Style: C2528/C2529
 ABCIR06T/ABBCIRSE06T

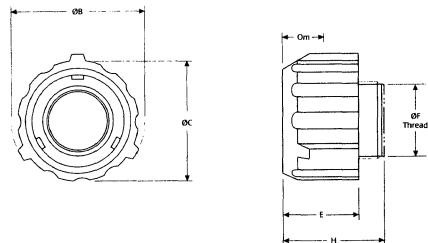


Shell Size	ABBE06T ABBSE06T ABCIR06T	ØC max	E max	ØF Thread form Class2A	H max	Om min. overlap mated
10 SL	22.8	24.2	17.5	5/8" x 24 UNEF	29.5	11.1
14 S	29.2	30.6	17.5	3/4" x 20 UNEF	29.5	11.1
16 S	32.4	33.4	17.5	7/8" x 20 UNEF	29.5	11.1
16	32.4	33.4	24.0	7/8" x 20 UNEF	42.0	15.85
18	36.5	37.3	24.0	1" x 20 UNEF	42.0	15.85

Additional Shell Sizes available contact factory for information

Plug - Rubberised Coupling Nut

Style:ABBCIRP06RT



Shell Size	B max	C max	E max	ØF Thread dia. Class2A	H max	Om min. overlap mated
10 SL	33.5	28.5	19.4	5/8" x 24 UNEF	29.55	13.1
14 S	40.2	35.2	19.4	3/4" x 20 UNEF	29.55	13.1
16 S	43.88	38.9	19.4	7/8" x 20 UNEF	29.55	13.1
16	43.88	38.9	27.1	7/8" x 20 UNEF	37.07	17.85
18	49.0	43.5	27.1	1" x 20 UNEF	37.07	17.85

Additional Shell Sizes available contact factory for information



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electronic components

HERMETICALLY SEALED

MIL-C-5015
 GENERAL INFORMATION

BTC's hermetically sealed BA receptacles are designed to accommodate plugs per MIL-C-5015. Their mating dimensions are in accordance with MIL-C-5015 and they meet the environmental and electrical requirements of MIL-C-5015, such as thermal shock, air leakage, salt spray, vibration, physical shock, contact and insulation resistance.

The construction of the receptacles is the "all metal" type, and the hermetic sealing is accomplished by the use of individual pieces of vitreous material around each contact.

The receptacles meet the instrument service rating of MIL-C-5015 (1000 volts ac rms at sea level). Insert arrangements are shown on the following page. The index shows shell size, contacts, contact size and alternate insert positions. Receptacles with higher voltage ratings are available on special order, providing the insert layout will accommodate larger than normal individual glass inserts or if an "all glass" insert is available.

The standard BA receptacles are supplied with eyelet, solder cup and short solder cup contacts. They are supplied less the interfacial seal. Interfacial seals can be supplied upon request.

Various special materials and finishes for shell and contacts, as well as weld-mounts and thermocouple applications, are available.

STANDARD MATERIALS AND FINISHES

FERROUS ALLOY SHELLS

Material: Cold rolled steel per ASTM A 108.
 Finish: Tin per MIL-T-10727, type I over cadmium per QQ-P-416, type I over copper per MIL-C-14550.

STAINLESS STEEL SHELLS

Material: Corrosion resistant steel per QQ-S-764, type 303.
 Finish: Passivated.

CONTACTS

Material: Nickel-iron alloy per MIL-I-23011, class 2.
 Finish: a—Used with ferrous alloy shells; tin per MIL-T-10727, type I over cadmium per QQ-P-416, type I over copper per MIL-C-14550.
 b—Used with stainless steel shells; 50 microinches minimum gold per MIL-G-45204 over copper per MIL-C-14550.

INSERTS

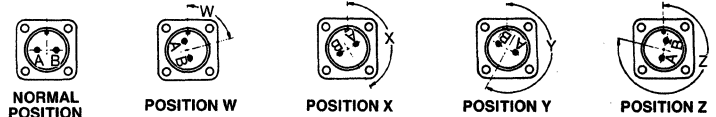
Material: Glass.

DESCRIPTION	BTC DESIGNATION	MILITARY DESIGNATION
BOX MOUNT	BA31-.*P-20	MS3142HS*C*P
	BA31-.*P-10	MS3142HS*Y*P
	BA30-.*P-20	MS3142HT*C*P
	BA30-.*P-10	MS3142HT*Y*P
SOLDER MOUNT CIRCULAR FLANGE	BA21-.*P-20	MS3143HS*C*P
	BA21-.*P-10	MS3143HS*Y*P
	BA20-.*P-20	MS3143HT*C*P
	BA20-.*P-10	MS3143HT*Y*P
SOLDER MOUNT FLANGELESS	BA10-.*P-20	NO CLASS H SPECIFIED
	BA10-.*P-10	NO CLASS H SPECIFIED
JAM NUT MOUNT	BA50-.*P-20	NO CLASS H SPECIFIED
	BA50-.*P-10	NO CLASS H SPECIFIED
MATING PLUG	MS3106 - MS3406 - MS3456	

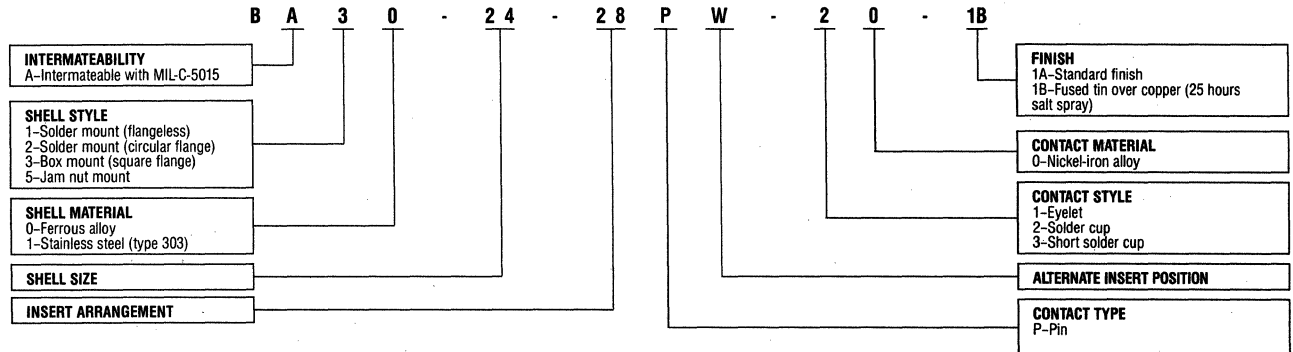
INDEX OF INSERT ARRANGEMENTS

INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE					ALTERNATE INSERT POSITIONS (DEGREES)			INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE					ALTERNATE INSERT POSITIONS (DEGREES)			INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE					ALTERNATE INSERT POSITIONS (DEGREES)				
		16	12	8	4	0	W	X	Y			Z	16	12	8	4	0	W	X			Y	Z	16	12	8	4	0	W	X	Y	Z
8S-1	1	1								16-11	2	2				35	110	250	325	20-29	17	17						80			280
10SL-3	3	3								16-13	2	2				35	110	250	325	20-33	11	11									
10SL-4	2	2								18-1	10	10				70	145	215	290	22-2	3		3				70	145	215	290	
12S-3	2	2				70	145	215	290	18-4	4	4				35	110	250	325	22-14	19	19					80	110	250	280	
12S-10	4	4								18-8	8	7	1			70			290	22-22	4			4				110	250		
14S-2	4	4					120	240		18-9	7	5	2			80	110	250	280	22-27	9	8	1				80		250	280	
14S-5	5	5					110			18-11	5		5			170	265		22-36	8		8				90		270			
14S-6	6	6								18-22	3	3				70	145	215	290	24-2	7		7			80			280		
14S-7	3	3				90	180	270		20-4	4		4			45	110	250		24-7	16	14	2			80	110	250	280		
14S-9	2	2				70	145	215	290	20-14	5	3	2			80	110	250	280	24-10	7			7		80			280		
16S-1	7	7				80			260	20-15	7		7			80			280	24-22	4			4		45	110	250			
16S-5	3	3				70	145	215	290	20-16	9	7	2			80	110	250	280	24-28	24	24				80	110	250	280		
16S-8	5	5					170	265		20-22	6	3	3			80	110	250	280	28-1	9			6	3	80	110	250	280		
16-9	4	2	2			35	110	250	325	20-24	4	2	2			35	110	250	325	28-12	26	26				90	180	270			
16-10	3		3			90	180	270		20-27	14	14				35	110	250	325	28-17	15	15				80	110	250	280		

ALTERNATE INSERT POSITIONS FRONT FACE OF PIN INSERT SHOWN



PART NUMBER EXPLANATION





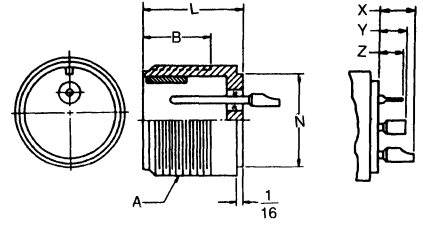
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electronic components

MIL-C-5015 (cont'd.)

SOLDER MOUNT FLANGELESS—BA10 RECEPTACLES

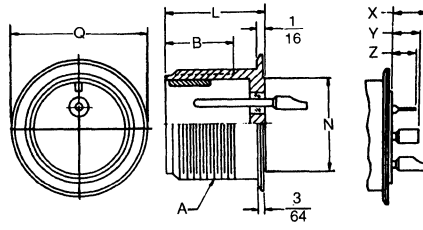
SIZE	PART NUMBER	A THREAD CLASS 2A	B MIN. USABLE THREAD	L + .005 - .010	N + .000 - .010
8S	BA10-8S(**)P(**)	.500-28 UNEF	3/8	23/32	.437
10SL	BA10-10SL(**)P(**)	.625-24 UNEF			.500
12S	BA10-12S(**)P(**)	.750-20 UNEF			.656
14S	BA10-14S(**)P(**)	.875-20 UNEF			.718
16S	BA10-16S(**)P(**)	1.000-20 UNEF			.844
16	BA10-16(**)P(**)	1.000-20 UNEF			.844
18	BA10-18(**)P(**)	1.125-18 NEF	5/8	29/32	.968
20	BA10-20(**)P(**)	1.250-18 NEF			1.156
22	BA10-22(**)P(**)	1.375-18 NEF			1.250
24	BA10-24(**)P(**)	1.500-18 NEF			1.375
28	BA10-28(**)P(**)	1.750-18 NS			1.625
32	BA10-32(**)P(**)	2.000-18 NS			1.875



CONTACT SIZE	X MAX	Y MAX	Z MAX
16	3/8	1/4	7/32
12	33/64	21/64	9/32
8	23/32	15/32	-

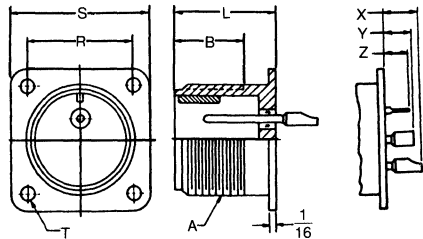
SOLDER MOUNT CIRCULAR FLANGE—BA20 RECEPTACLES (REF. MS3143)

SIZE	PART NUMBER	A THREAD CLASS 2A	B MIN. USABLE THREAD	L + .005 - .010	N + .000 - .010	Q ± .010
8S	BA20-8S(**)P(**)	.500-28 UNEF	3/8	23/32	.437	3/4
10SL	BA20-10SL(**)P(**)	.625-24 UNEF			.500	7/8
12S	BA20-12S(**)P(**)	.750-20 UNEF			.656	1
14S	BA20-14S(**)P(**)	.875-20 UNEF			.718	1 1/8
16S	BA20-16S(**)P(**)	1.000-20 UNEF			.844	1 1/4
16	BA20-16(**)P(**)	1.000-20 UNEF			.844	1 1/4
18	BA20-18(**)P(**)	1.125-18 NEF	5/8	29/32	.968	1 3/8
20	BA20-20(**)P(**)	1.250-18 NEF			1.156	1 1/2
22	BA20-22(**)P(**)	1.375-18 NEF			1.250	1 5/8
24	BA20-24(**)P(**)	1.500-18 NEF			1.375	1 3/4
28	BA20-28(**)P(**)	1.750-18 NS			1.625	2
32	BA20-32(**)P(**)	2.000-18 NS			1.875	2 1/4



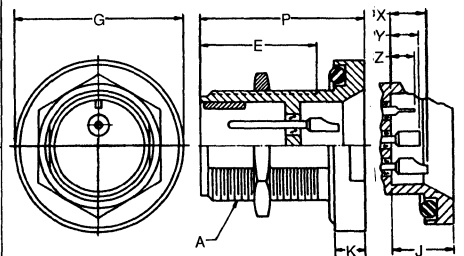
BOX MOUNT—BA30 RECEPTACLES (REF. MS3142)

SIZE	PART NUMBER	A THREAD CLASS 2A	B MIN. USABLE THREAD	L + .005 - .010	R ± .005	S ± 1/32	T ± .005
8S	BA30-8S(**)P(**)	.500-28 UNEF	3/8	23/32	.594	7/8	.120
10SL	BA30-10SL(**)P(**)	.625-24 UNEF			.718	1	
12S	BA30-12S(**)P(**)	.750-20 UNEF			.812	1 3/32	
14S	BA30-14S(**)P(**)	.875-20 UNEF			.906	1 3/16	
16S	BA30-16S(**)P(**)	1.000-20 UNEF			.968	1 9/32	
16	BA30-16(**)P(**)	1.000-20 UNEF			.968	1 9/32	
18	BA30-18(**)P(**)	1.125-18 NEF	5/8	29/32	1.062	1 3/8	
20	BA30-20(**)P(**)	1.250-18 NEF			1.156	1 1/2	
22	BA30-22(**)P(**)	1.375-18 NEF			1.250	1 5/8	
24	BA30-24(**)P(**)	1.500-18 NEF			1.375	1 3/4	
28	BA30-28(**)P(**)	1.750-18 NS			1.562	2	
32	BA30-32(**)P(**)	2.000-18 NS			1.750	2 1/4	.173



JAM NUT MOUNT—BA50 RECEPTACLES

SIZE	PART NUMBER	A THREAD CLASS 2A	E MIN. USABLE THREAD	G ± .015	J REF.	K ± .010	P ± .015
8S	BA50-8S(**)P(**)	.500-28 UNEF	11/16	1.062	1 1/32	1/4	1 1/16
10SL	BA50-10SL(**)P(**)	.625-24 UNEF		1.187			
12S	BA50-12S(**)P(**)	.750-20 UNEF		1.312			
14S	BA50-14S(**)P(**)	.875-20 UNEF		1.437			
16S	BA50-16S(**)P(**)	1.000-20 UNEF	1 3/32	1.562	1 9/32	1 1/2	
16	BA50-16(**)P(**)	1.000-20 UNEF		1.562			
18	BA50-18(**)P(**)	1.125-18 NEF		1.687			
20	BA50-20(**)P(**)	1.250-18 NEF		1.812			
22	BA50-22(**)P(**)	1.375-18 NEF		1.937			
24	BA50-24(**)P(**)	1.500-18 NEF		2.062			
28	BA50-28(**)P(**)	1.750-18 NS	1 3/32	2.312	1 9/32	1 1/2	
32	BA50-32(**)P(**)	2.000-18 NS		2.562			



ALTERNATE INSERT POSITION INDICATOR TO BE PLACED AFTER "P" NO INDICATOR REQUIRED FOR NORMAL POSITION



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electronic components

HERMETICALLY SEALED

MIL-C-26482

GENERAL INFORMATION

BTC's hermetically sealed BC and BK receptacles are designed in accordance with MIL-C-26482, series 1 and 2 respectively and are the "quick disconnect" bayonet coupling type. The two series of connectors when intermated meet, the minimum requirements of series 1 connectors.

The construction of both series of receptacles is the "all glass" type, i.e., the hermetic sealing is accomplished by the use of one single piece of vitreous material.

BTC's standard BC receptacles (MIL-C-26482, series 1) are supplied with interfacial and peripheral seals. An "O" ring seal can be supplied upon request.

BTC's standard BK receptacles (MIL-C-26482, series 2) have a resilient seal bonded to the glass. The raised tapered barriers around each contact of this interfacial seal lock into the lead-in chambers of the plug insert, providing a positive seal between plug and receptacle.

Various special materials and finishes for shell and contacts, as well as weld-mounts and thermocouple applications, are available.

STANDARD MATERIALS AND FINISHES

FERROUS ALLOY SHELLS

Material: Cold rolled steel per ASTM A 108.

Finish: C receptacles (series 1)
 K receptacles (series 2)
 100 microinches minimum fused tin per MIL-T-10727, type 1 over a suitable underplate.

STAINLESS STEEL SHELLS

Material: Corrosion resistant steel per QQ-S-764, type 303.

Finish: Passivated.

CONTACTS

Material: Nickel-iron alloy per MIL-I-23011, class 2.
 Finish: C receptacles (series 1) with ferrous alloy shells 100 microinches minimum tin per MIL-T-10727, type 1 over a suitable underplate.

C receptacles (series 1) with stainless steel shells 50 microinches minimum gold per MIL-G-45204 over copper per MIL-C-14550 over nickel per QQ-N-290.
 K receptacles (series 2) 50 microinches minimum gold per MIL-G-45204 over copper per MIL-C-14550 over nickel per QQ-N-290.

BAYONET PINS

Material: Corrosion resistant steel per QQ-S-764, type 303.

INSERTS

Material: Glass

INTERFACIAL SEALS

Material: Fluorosilicone rubber per AMS3325

O-RINGS

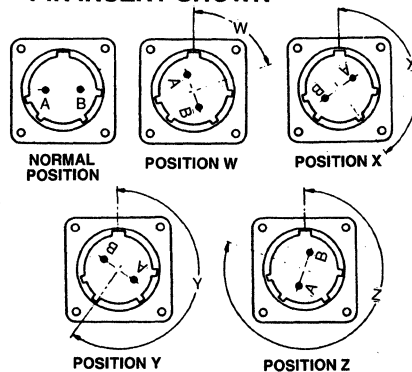
Material: Silicone rubber per AMS3304

DESCRIPTION	BTC DESCRIPTION	MILITARY DESCRIPTION
SOLDER MOUNT	BC21-**-P-20	MS3113H*A*P
	BC21-**-P-10	MS3113H*B*P
	BC20-**-P-20	MS3113H*C*P
	BC20-**-P-10	MS3113H*Y*P
JAM NUT MOUNT	BC51-**-P-20	MS3114H*A*P
	BC51-**-P-10	MS3114H*B*P
	BC50-**-P-20	MS3114H*C*P
	BC50-**-P-10	MS3114H*Y*P
BOX MOUNT	BC30-**-P-20	NO CLASS H SPECIFIED
MATING PLUG	BC30-**-P-10	MS3116
SERIES 2		
BOX MOUNT	BK30-**-PN-20	MS3440H*C*PN
BOX MOUNT (WIDE FLANGE)	BK30A-**-PN-20	MS3442H*C*PN
SOLDER MOUNT	BK20-**-PN-20	MS3443H*C*PN
JAM NUT MOUNT	BK50-**-PN-20	MS3449H*C*PN
MATING PLUG		MS3476

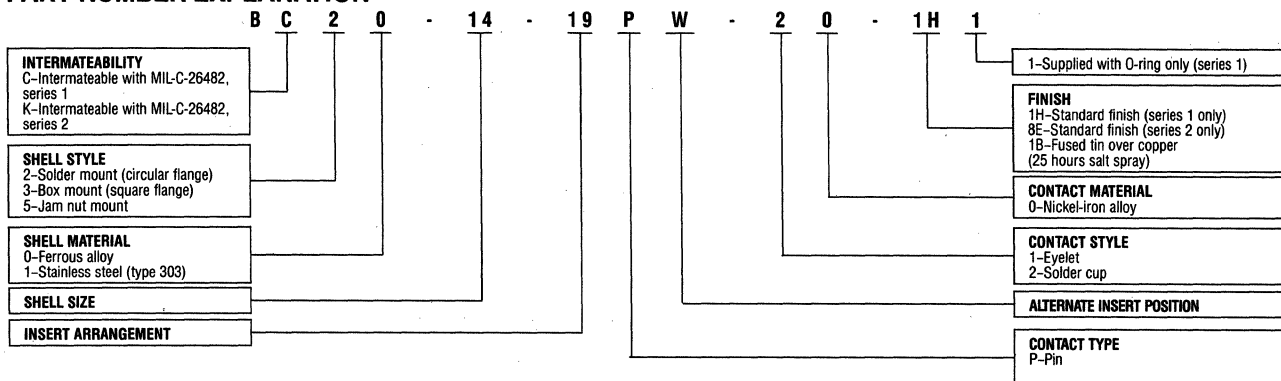
INDEX OF INSERT ARRANGEMENTS

SHELL SIZE	INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE			SERVICE RATING	ALTERNATE INSERT POSITIONS (DEGREES)			SHELL SIZE	INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE			SERVICE RATING	ALTERNATE INSERT POSITIONS (DEGREES)					
			20	16	12		8	W	X				Y	Z	20		16	12	8	W	X	Y	Z
8	8-2	2	2			I	58	122	—	16	16-8	8	8		II	54	152	180	331			
	8-3	3	3			I	60	210	—		16-23	23	22	1		I	158	270	—			
	8-4	4	4			I	45	—	—		16-26	26	26			I	60	—	275	338		
	8-33	3	3			I	90	—	—		18-8	8		8		I	180	—	—	—		
	8-98	3	3			I	—	—	—		18-11	11		11		II	62	119	241	340		
10	10-6	6	6			I	90	—	—	18	18-30	30	29	1		I	180	193	285	350		
	10-98	6	6			I	90	180	240		270	18-32	32	32			I	85	138	222	265	
	12-3	3	3		3	II	—	—	180		20-16	16		16		II	238	318	333	347		
12	12-8	8	8			I	90	112	203	292	20	20-39	39	37	2		I	63	144	252	333	
	12-10	10	10			I	60	155	270	295		20-41	41	41			I	45	126	225	—	
14	14-4	4		4		I	45	—	—	22	20-90	15	3	12		I	18	60	240	270		
	14-5	5	5			II	40	92	184		273	22-21	21		21		II	16	135	175	349	
	14-12	12	8	4		I	43	90	—		24	22-41	41	27	14		I	39	135	264	—	
	14-15	15	14	1		I	17	110	155			234	22-55	55	55			I	30	142	226	314
	14-18	18	18			I	15	90	180			270	24-61	61	61			I	90	180	270	324
14-19	19	19			I	30	165	315	—													

ALTERNATE INSERT POSITION FRONT FACE OF PIN INSERT SHOWN



PART NUMBER EXPLANATION





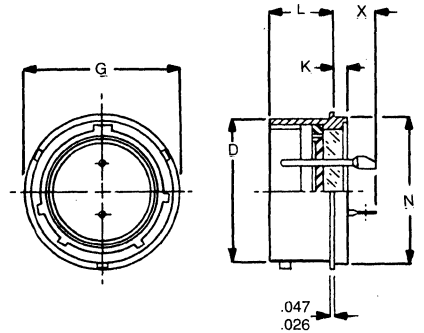
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electronic components

MIL-C-26482 (SERIES I)

SOLDER MOUNT—BC20 RECEPTACLES (REF. MS3113)

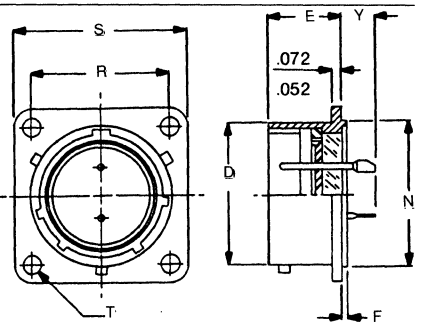
SIZE	PART NUMBER	D +.001 -.005	G ±.010	K ±.010	L ±.010	N +.000 -.005
8	BC20-8(**)P(-)-101	.473	.625	.094	.452	.562
10	BC20-10(**)P(-)-101	.590	.750			.672
12	BC20-12(**)P(-)-101	.750	.844			.781
14	BC20-14(**)P(-)-101	.875	.968			.906
16	BC20-16(**)P(-)-101	1.000	1.094			1.031
18	BC20-18(**)P(-)-101	1.125	1.218			1.156
20	BC20-20(**)P(-)-101	1.250	1.312	.125	.514	1.250
22	BC20-22(**)P(-)-101	1.375	1.438			1.375
24	BC20-24(**)P(-)-101	1.500	1.563			.547	1.500



CONTACT STYLE	X (MAX) CONTACT SIZE	
	20	16 & 20
EYELET	.273	.335
SOLDER POT	.380	.382

BOX MOUNT—BC30 RECEPTACLES (REF. MS3112)

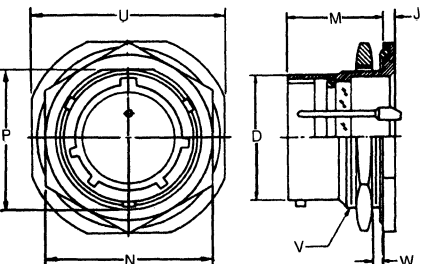
SIZE	PART NUMBER	D +.001 -.005	E ±.010	F ±.010	N +.000 -.005	R BSC	S ±.010	T -.005
8	BC30-8(**)P(-)-101	.473	.500	.047	.562	.594	.812	.120
10	BC30-10(**)P(-)-101	.590			.672	.719	.938	
12	BC30-12(**)P(-)-101	.750			.781	.812	1.031	
14	BC30-14(**)P(-)-101	.875			.906	.906	1.125	
16	BC30-16(**)P(-)-101	1.000			1.031	.969	1.219	
18	BC30-18(**)P(-)-101	1.125			1.156	1.062	1.312	
20	BC30-20(**)P(-)-101	1.250	.562	.078	1.250	1.156	1.438	
22	BC30-22(**)P(-)-101	1.375			1.375	1.250	1.562	
24	BC30-24(**)P(-)-101	1.500			.594	1.500	1.375	1.688	.147



CONTACT STYLE	Y (MAX) CONTACT SIZE	
	20	16 & 12
EYELET	.231	.293
SOLDER POT	.278	.340

JAM NUT MOUNT—BC50 RECEPTACLES (REF. MS3114)

SIZE	PART NUMBER	D +.001 -.005	N ±.016	J ±.015	M +.031 -.000	P +.000 -.010	U ±.010	V THREAD CLASS 2A	W PANEL THICKNESS MIN MAX
8	BC50-8(**)P(-)-101	.473	.750	.117	.691	.530	.938	.5625-24 UNEF	.125
10	BC50-10(**)P(-)-101	.590	.875			.655	1.062	.6875-24 UNEF	
12	BC50-12(**)P(-)-101	.750	1.062			.818	1.250	.8750-20 UNEF	
14	BC50-14(**)P(-)-101	.875	1.188			.942	1.375	1.0000-20 UNEF	
16	BC50-16(**)P(-)-101	1.000	1.312			1.066	1.500	1.1250-18 UNEF	
18	BC50-18(**)P(-)-101	1.125	1.438			1.191	1.625	1.2500-18 UNEF	
20	BC50-20(**)P(-)-101	1.250	1.562	.148	.879	1.316	1.812	1.3750-18 UNEF	.250
22	BC50-22(**)P(-)-101	1.375	1.688			1.441	1.938	1.5000-18 UNEF	
24	BC50-24(**)P(-)-101	1.500	1.812			.912	1.566	2.062		1.6250-18 UNEF



ALTERNATE INSERT POSITION INDICATOR TO BE PLACED AFTER "P"
 NO INDICATOR REQUIRED FOR NORMAL POSITION



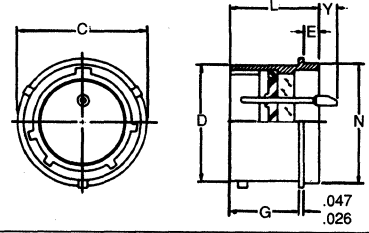
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MIL-C-26482 (SERIES II)

SOLDER MOUNT—BK20 RECEPTACLES (REF. MS3443)

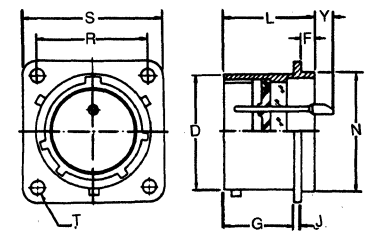
SIZE	PART NUMBER	C +.010	D +.001 -.005	E ±.020	G ±.010	L MAX REF	N +.001 -.005
8	BK20-8(**)P-20	.625	.473	.136	.588	.801	.562
10	BK20-10(**)P-20	.750	.590				.672
12	BK20-12(**)P-20	.844	.750				.781
14	BK20-14(**)P-20	.969	.875				.906
16	BK20-16(**)P-20	1.094	1.000				1.031
18	BK20-18(**)P-20	1.218	1.125				1.156
20	BK20-20(**)P-20	1.312	1.250	.168	.650	.895	.863
22	BK20-22(**)P-20	1.438	1.375				1.250
24	BK20-24(**)P-20	1.564	1.500				1.375
							1.500



CONTACT SIZE	Y (±.030) SHELL SIZES	
	8 - 20	22 - 24
20	.148	.116
16 & 12	.218	.186

BOX MOUNT—BK30 RECEPTACLES (REF. MS3440)

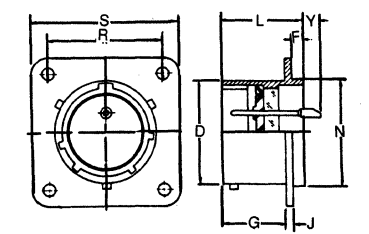
SIZE	PART NUMBER	D +.001 -.005	F ±.010	G ±.010	J ±.016	L MAX REF	NARROW FLANGE			T ±.005
							N +.001 -.005	R ±.005	S ±.015	
8	BK30-8(**)P-20	.473	.115	.588	.062	.801	.562	.594	.812	.120
10	BK30-10(**)P-20	.590					.672	.719	.937	
12	BK30-12(**)P-20	.750					.781	.812	1.031	
14	BK30-14(**)P-20	.875					.906	.906	1.125	
16	BK30-16(**)P-20	1.000					1.031	.968	1.218	
18	BK30-18(**)P-20	1.125					1.156	1.062	1.312	
20	BK30-20(**)P-20	1.250	.083	.650	.094	.863	1.250	1.156	1.437	
22	BK30-22(**)P-20	1.375	.115				1.375	1.250	1.562	
24	BK30-24(**)P-20	1.500	.895				1.500	1.375	1.687	
										.147



CONTACT SIZE	Y (±.030) SHELL SIZES	
	8 - 20	22 - 24
20	.148	.116
16 & 12	.218	.186

BOX MOUNT (WIDE FLANGE)—BK30A RECEPTACLES (REF. MS3442)

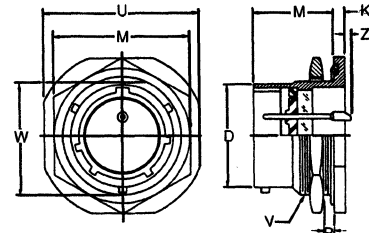
SIZE	PART NUMBER	D +.001 -.005	F ±.010	G ±.010	J ±.016	L MAX REF	WIDE FLANGE			T ±.005
							N +.001 -.005	R ±.005	S ±.008	
8	BK30A-8(**)P-20	.473	.115	.588	.062	.801	.562	.734	1.047	.150
10	BK30A-10(**)P-20	.590					.672	.812	1.125	
12	BK30A-12(**)P-20	.750					.781	.938	1.250	
14	BK30A-14(**)P-20	.875					.906	1.031	1.344	
16	BK30A-16(**)P-20	1.000					1.031	1.125	1.438	
18	BK30A-18(**)P-20	1.125					1.156	1.203	1.516	
20	BK30A-20(**)P-20	1.250	.083	.650	.094	.863	1.250	1.297	1.672	
22	BK30A-22(**)P-20	1.375	.115				1.375	1.375	1.750	
24	BK30A-24(**)P-20	1.500	.895				1.500	1.500	1.875	
										.150



CONTACT SIZE	Y (±.030) SHELL SIZES	
	8 - 20	22 - 24
20	.148	.116
16 & 12	.218	.186

JAM NUT MOUNT—BK50 RECEPTACLES (REF. MS3449)

SIZE	PART NUMBER	D +.001 -.005	H ±.015	K ±.008	M ±.008	P PANEL THICKNESS		U ±.015	V THREAD UNEF - 2A	W ±.005
						MIN	MAX			
8	BK50-8(**)P-20	.473	.750	.105	.699	.062	.187	.938	.5625-24	.525
10	BK50-10(**)P-20	.590	.875					1.062	.6875-24	.650
12	BK50-12(**)P-20	.750	1.062					1.250	.8750-20	.813
14	BK50-14(**)P-20	.875	1.188					1.375	1.0000-20	.937
16	BK50-16(**)P-20	1.000	1.312					1.500	1.1250-18	1.061
18	BK50-18(**)P-20	1.125	1.438					1.625	1.2500-18	1.186
20	BK50-20(**)P-20	1.250	1.562	.138	.763	.250	1.812	1.3750-18	1.311	
22	BK50-22(**)P-20	1.375	1.688				1.938	1.5000-18	1.436	
24	BK50-24(**)P-20	1.500	1.812				2.062	1.6250-18	1.561	



CONTACT SIZE	Z (±.030) SHELL SIZES		
	8 - 18	20 - 22	24
20	.104	.069	.039
16 & 12	.174	.139	.109

ALTERNATE INSERT POSITION INDICATOR TO BE PLACED AFTER "P"
 FOR NORMAL INSERT POSITION USE "N"



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**HERMETICALLY SEALED
MIL-C-38999 (SERIES III)**

GENERAL INFORMATION

BTC's hermetically sealed BP receptacles are designed in accordance with MIL-C-38999, series III and meet the requirements of this specification.

The BP receptacles are "scoop proof," with a quick disconnect triple start thread, designed so that electrical continuity is maintained between mating shells prior to pin and socket engagement and in reverse order during the disconnecting operation. The plug shells are provided with "grounding fingers" for EMR (Electro Magnetic Radiation) or RFI (Radio Frequency Interference) shielding.

The construction of the receptacles in the "all glass" type. The hermetic sealing is accomplished by the use of one single piece of vitreous material. An interfacial resilient seal is bonded to the glass. The raised tapered barriers around each contact of this interfacial seal lock into the lead-in chamfers of the plug insert and provide a positive seal between plug and receptacle.

High density insert arrangements permit these connectors to have twice the number of contacts than previously available in similar shell sizes.

Various special materials and finishes for shell and contacts, as well as weld-mounts and thermocouple applications, are available.

INDEX OF INSERT ARRANGEMENTS

SHELL SIZE	INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE				SERVICE RATING
			22	20	16	12	
9	9-35	6	6				M
	9-98	3		3			I
11	11-4	4		4			I
	11-5	5		5			I
	11-35	13	13				M
	11-98	6		6			I
	11-99	7		7			I
13	11-2	2			2		I
	13-4	4			4		II
	13-8	8			8		I
	13-35	22	22				M
15	13-98	10		10			I
	15-5	5			5		II
	15-15	15		14	1		I
	15-18	18		18			I
	15-19	19		19			I
17	15-35	37	37				M
	15-97	12		8	4		I
	17-6	6				6	II
	17-8	8			8		II
23	17-26	26		26			I
	17-35	55	55				M
	17-99	23		21	2		I

STANDARD MATERIALS AND FINISHES

STAINLESS STEEL SHELLS

Material: Corrosion resistant steel per QQ-S-764, type 303.
 Corrosion resistant steel per QQ-S-763, type 304L.

Finish: Passivated or nickel per QQ-N-290.

CONTACTS

Material: Nickel-iron alloy per MIL-I-23011, class 2.

Finish: 50 microinches minimum gold per MIL-G-45204 over copper per MIL-C-14550 over nickel per QQ-N-290.

INSERTS

Material: Glass.

INTERFACIAL SEALS

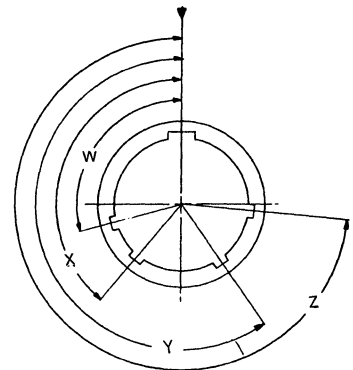
Material: Fluorosilicone rubber per AMS3325.

INDEX (cont)

SHELL SIZE	INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE				SERVICE RATING
			22	20	16	12	
19	19-11	11				11	II
	19-28	28		26	2		I
	19-30	30		29	1		I
	19-32	32		32			I
	19-35	66	66				M
	19-45	67	67				M
	21-11	11				11	I
21	21-16	16			16		II
	21-24	24		24			I
	21-25	25		25			I
	21-27	27		27			I
	21-35	79	79				M
	21-39	39		37	2		I
	21-41	41		41			I
23	23-21	21			21		II
	23-32	32		32			I
	23-34	34		34			I
	23-35	100	100				M
	23-36	36		36			I
	23-53	53		53			I
	23-97	16			16		II
25	23-99	11			11		II
	25-4	56		48	8		I
	25-19	19				19	I
	25-24	24			12	12	II
	25-29	29			29		II
	25-35	128	128				M
	25-43	43		23	20		I
25-61	61		61			I	

DESCRIPTION	BTC DESIGNATION	MILITARY DESIGNATION
BOX MOUNT	BP31-.*PN-20-OP	D38999/21Y**PN
	BP31-.*PN-20-E8	D38999/21N**PN
JAM NUT MOUNT	BP51-.*PN-20-OP	D38999/23Y**PN
	BP51-.*PN-20-E8	D38999/23N**PN
SOLDER MOUNT	BP21-.*PN-20-OP	D38999/25Y**PN
	BP21-.*PN-20-E8	D38999/25N**PN
WELD MOUNT	BP63-.*PN-20-OP	D38999/27Y**PN
	BP63-.*PN-20-E8	D38999/27N**PN
MATING PLUG		D38999/26

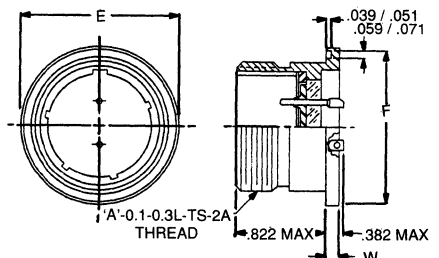
**ALTERNATE KEYWAY POSITIONS
FRONT FACE OF PIN INSERT
SHOWN**



SHELL SIZE	KEYWAY POSITION	W°	X°	Y°	Z°
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
11, 13, and 15	E	91	131	197	240
	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
17, 19, 23, and 25	D	119	146	176	298
	E	51	141	184	242
	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
23, 25	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

WELD MOUNT—BP63 RECEPTACLES (REF. D38999/27)

SHELL SIZE	MILITARY SHELL SIZE CODE	PART NUMBER	A THREAD	E +.011 -.000	F +.000 -.011	W ± .008
9	A	BP63-9-(*PN-20-.**	.6250	.972	.941	.126
11	B	BP63-11-(*PN-20-.**	.7500	1.094	1.063	.126
13	C	BP63-13-(*PN-20-.**	.8750	1.220	1.189	.126
15	D	BP63-15-(*PN-20-.**	1.0000	1.346	1.315	.126
17	E	BP63-17-(*PN-20-.**	1.1875	1.433	1.401	.126
19	F	BP63-19-(*PN-20-.**	1.2500	1.578	1.547	.126
21	G	BP63-21-(*PN-20-.**	1.3750	1.720	1.689	.126
23	H	BP63-23-(*PN-20-.**	1.5000	1.885	1.854	.157
25	J	BP63-25-(*PN-20-.**	1.6250	1.972	1.941	.157



* REPLACE WITH INSERT ARRANGEMENT NUMBER **REPLACE WITH FINISH CODE DESIGNATION
 N REQUIRED FOR NORMAL POSITION, REPLACE WITH APPROPRIATE ALTERNATE KEYWAY POSITION

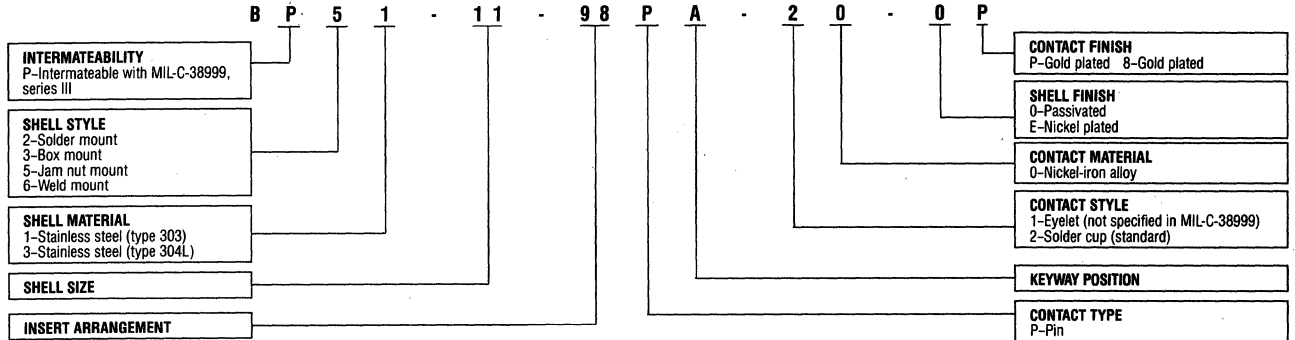


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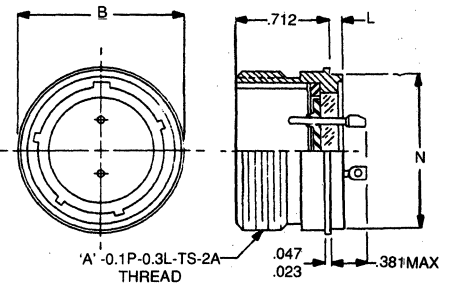
MIL-C-38999 (SERIES III) cont'd.

PART NUMBER EXPLANATION



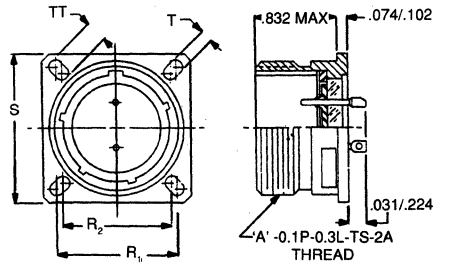
SOLDER MOUNT—BP21 RECEPTACLES (REF. D38999/25)

SHELL SIZE	MILITARY SHELL SIZE CODE	PART NUMBER	A THREAD	B ±.010	L	N +.001 - .005
9	A	BP21-9-(*PN-20-**.	.6250	.750	.094	.672
11	B	BP21-11-(*PN-20-**.	.7500	.844	.094	.781
13	C	BP21-13-(*PN-20-**.	.8750	.969	.094	.906
15	D	BP21-15-(*PN-20-**.	1.0000	1.094	.094	1.031
17	E	BP21-17-(*PN-20-**.	1.1875	1.218	.094	1.156
19	F	BP21-19-(*PN-20-**.	1.2500	1.312	.094	1.250
21	G	BP21-21-(*PN-20-**.	1.3750	1.438	.094	1.375
23	H	BP21-23-(*PN-20-**.	1.5000	1.563	.125	1.500
25	J	BP21-25-(*PN-20-**.	1.6250	1.688	.125	1.625



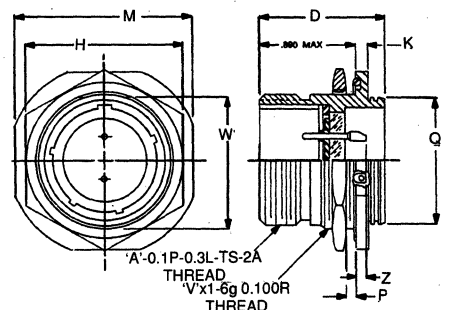
BOX MOUNT—BP31 RECEPTACLES (REF. D38999/21)

SHELL SIZE	MILITARY SHELL SIZE CODE	PART NUMBER	A THREAD	R ₁	R ₂	S ±.010	T ±.008	TT ±.008
9	A	BP31-9-(*PN-20-**.	.6250	.719	.594	.937	.128	.216
11	B	BP31-11-(*PN-20-**.	.7500	.812	.719	1.031	.128	.194
13	C	BP31-13-(*PN-20-**.	.8750	.906	.812	1.126	.128	.194
15	D	BP31-15-(*PN-20-**.	1.0000	.969	.906	1.220	.128	.173
17	E	BP31-17-(*PN-20-**.	1.1875	1.062	.969	1.312	.128	.194
19	F	BP31-19-(*PN-20-**.	1.2500	1.156	1.062	1.437	.128	.194
21	G	BP31-21-(*PN-20-**.	1.3750	1.250	1.156	1.563	.128	.194
23	H	BP31-23-(*PN-20-**.	1.5000	1.375	1.250	1.687	.154	.242
25	J	BP31-25-(*PN-20-**.	1.6250	1.500	1.375	1.811	.154	.242



JAM NUT MOUNT—BP51 RECEPTACLES (REF. D38999/23)

SHELL SIZE	MILITARY SHELL SIZE CODE	PART NUMBER	A THREAD	D ±.015	H ±.010	K +.012 - .004	M ±.016	Q +.012 - .000	V THREAD	±W +.000 - .010	Z MAX
9	A	BP51-9-(*PN-20-**.	.6250	1.125	.875	.102	1.063	.642	M17	.669	.232
11	B	BP51-11-(*PN-20-**.	.7500	1.125	1.000	.102	1.252	.764	M20	.769	.232
13	C	BP51-13-(*PN-20-**.	.8750	1.133	1.250	.102	1.374	.894	M25	.955	.224
15	D	BP51-15-(*PN-20-**.	1.0000	1.133	1.312	.102	1.500	1.020	M28	1.084	.224
17	E	BP51-17-(*PN-20-**.	1.1875	1.133	1.437	.102	1.626	1.142	M32	1.208	.224
19	F	BP51-19-(*PN-20-**.	1.2500	1.165	1.562	.134	1.811	1.268	M35	1.333	.224
21	G	BP51-21-(*PN-20-**.	1.3750	1.165	1.750	.134	1.937	1.394	M38	1.459	.224
23	H	BP51-23-(*PN-20-**.	1.5000	1.165	1.875	.134	2.063	1.520	M41	1.575	.224
25	J	BP51-25-(*PN-20-**.	1.6250	1.165	2.000	.134	2.189	1.642	M44	1.709	.224



N REQUIRED FOR NORMAL POSITION, REPLACE WITH APPROPRIATE ALTERNATE KEYWAY POSITION
 SHELL SIZE 17 HAS MODIFIED MAJOR DIAMETER, 1.2520 - 1.2579
 †RECOMMENDED 'D' HOLE PANEL DIMENSION



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electronic components

HERMETICALLY SEALED
MIL-C-83723 (SERIES III)

GENERAL INFORMATION

BTC's hermetically sealed BM and BL receptacles are designed in accordance with MIL-C-83723, series 3, types B and T respectively and meet all the requirements of this specification.

The BM receptacles have a bayonet coupling mechanism are intermateable and intermountable with MIL-C-26500, type B connectors. The BL receptacles have a thread coupling mechanism and are intermateable and intermountable with MIL-C-26500, type T connectors.

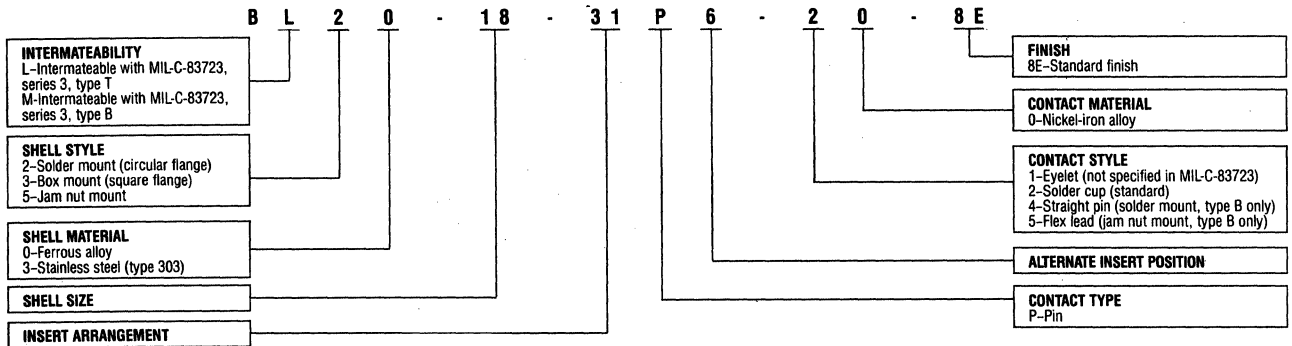
The construction of the receptacles in the "all glass" type. The hermetic sealing is accomplished by the use of one single piece of vitreous material. An interfacial resilient seal is bonded to the glass. The raised tapered barriers around each contact of this interfacial seal

lock into the lead-in chamfers of the plug insert providing a positive seal between plug and receptacle. Various special materials and finishes for shell and contacts, as well as weld-mounts and thermocouple applications, are available.

THREAD COUPLING		
DESCRIPTION	BTC DESIGNATION	MILITARY DESIGNATION
BOX MOUNT	BL30-**-PN-20 BL31-**-PN-20	M83723/88H**N M83723/88Y**N
JAM NUT MOUNT	BL50-**-PN-20 BL51-**-PN-20	M82323/89H**N M83723/89Y**N
SOLDER MOUNT	BL20-**-PN-20 BL21-**-PN-20	M83723/90H**N M83723/90Y**N
MATING PLUG	M83723/86, M83723/91, M83723/95, M83723/97	

BAYONET COUPLING		
DESCRIPTION	BTC DESIGNATION	MILITARY DESIGNATION
BOX MOUNT	BM30-**-PN-20 BM31-**-PN-20	M83723/79H**N M83723/79Y**N
SOLDER MOUNT	BM20-**-PN-20 BM21-**-PN-20 BM20-**-PN-40 BM21-**-PN-40	M82323/80H**N M83723/80Y**N M83723/93H**N M83723/93Y**N
JAM NUT MOUNT	BM50-**-PN-20 BM51-**-PN-20 BM50-**-PN-50 BM51-**-PN-50	M83723/81H**N M83723/81Y**N M83723/94H**N M83723/94Y**N
MATING PLUG	M83723/75-M83723/77	

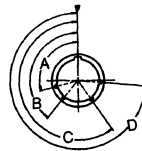
PART NUMBER



INDEX OF INSERT ARRANGEMENTS

SHELL SIZE	INSERT ARRANGEMENT	TOTAL CONTACTS	CONTACT SIZE		
			20	16	12
8	8-2	2	2		
	8-3	3	3		
	8-98	3	3		
10	10-2	2	2		
	10-5	5	5		
	10-6	6	6		
	10-20	2		2	
12	12-3	3		3	
	12-12	12	12		
14	14-4	4			4
	14-7	7		7	
	14-15	15	15		
16	16-10	10		10	
	16-24	24	24		
	18-14	14		14	
18	18-31	31	31		
	20-16	16		16	
	20-41	41	41		
20	22-19	19		19	
	22-32	32	26		6
	22-39	39	27	12	
	22-55	55	55		
	24-61	61	61		
24	24-61	61	61		

ALTERNATE KEYWAY POSITIONS
 FRONT FACE OF PIN INSERT SHOWN



SHELL SIZE	POSITION	A*	B*	C*	D*
8	NORMAL	105	140	215	265
	6	102	132	248	320
	7	80	118	230	312
	8	35	140	205	275
	9	64	155	234	304
	Y	25	115	220	270
12, 14, 16, 18, 20, 22, 24	NORMAL	105	140	215	265
	6	18	149	192	259
	7	92	152	222	342
	8	84	152	204	334
	9	24	135	199	240
	Y	98	152	268	338

*NO POSITION Y PROVIDED FOR SIZE 8 SHELL

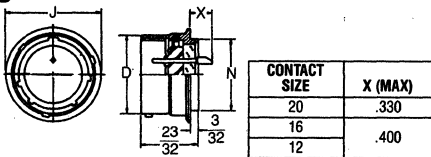


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electronic components

MIL-C-83723 (SERIES III) cont'd.

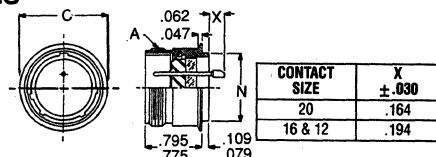
TYPE B
SOLDER MOUNT—BM20
RECEPTACLES
 (REF. M83723/80)



CONTACT SIZE	X (MAX)
20	.330
16	.400
12	.400

SIZE	PART NUMBER	D +.000 -.005	J ±.020	N MAX
8	BM20-8(*)PN-20	.536	.740	.500
10	BM20-10(*)PN-20	.659	.840	.562
12	BM20-12(*)PN-20	.829	1.045	.750
14	BM20-14(*)PN-20	.898	1.090	.812
16	BM20-16(*)PN-20	1.025	1.210	.937
18	BM20-18(*)PN-20	1.131	1.340	1.062
20	BM20-20(*)PN-20	1.256	1.430	1.187
22	BM20-22(*)PN-20	1.381	1.590	1.312
24	BM20-24(*)PN-20	1.506	1.710	1.437

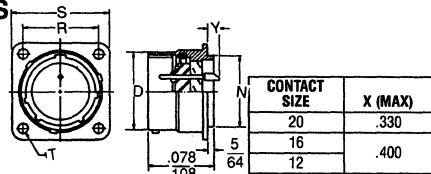
TYPE T
SOLDER MOUNT—BL20
RECEPTACLES
 (REF. M83723/90)



CONTACT SIZE	X ±.030
20	.164
16 & 12	.194

SIZE	PART NUMBER	A THREAD UNEF-2A	C ±.010	N +.000 -.006
8	BL20-8(*)PN-20	.5625-24	.713	.500
10	BL20-10(*)PN-20	.6875-24	.840	.562
12	BL20-12(*)PN-20	.8750-20	1.045	.750
14	BL20-14(*)PN-20	.9375-20	1.090	.812
16	BL20-16(*)PN-20	1.0625-18	1.210	.937
18	BL20-18(*)PN-20	1.1875-18	1.340	1.062
20	BL20-20(*)PN-20	1.3125-18	1.475	1.182
22	BL20-22(*)PN-20	1.4375-18	1.590	1.312
24	BL20-24(*)PN-20	1.5625-18	1.725	1.432

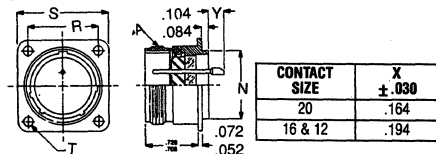
BOX MOUNT—BM30
RECEPTACLES
 (REF. M83723/79)



CONTACT SIZE	X (MAX)
20	.330
16	.400
12	.400

SIZE	PART NUMBER	D +.000 -.005	N MAX	R ±.005	S ±.005	T +.000 -.009	
8	BM30-8(*)PN-20	.536	.500	.594	.812	.125	
10	BM30-10(*)PN-20	.659	.562	.719	.937		
12	BM30-12(*)PN-20	.829	.750	.812	1.031		
14	BM30-14(*)PN-20	.898	.812	.906	1.125		
16	BM30-16(*)PN-20	1.025	.937	.969	1.250		
18	BM30-18(*)PN-20	1.131	1.062	1.062	1.343		
20	BM30-20(*)PN-20	1.256	1.187	1.156	1.437		
22	BM30-22(*)PN-20	1.381	1.312	1.250	1.562		
24	BM30-24(*)PN-20	1.506	1.437	1.375	1.703		.154

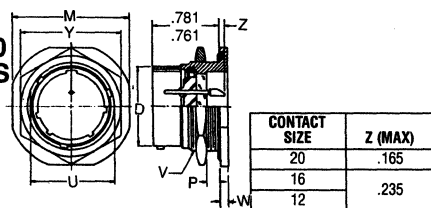
BOX MOUNT—BL30
RECEPTACLES
 (REF. M83723/88)



CONTACT SIZE	X ±.030
20	.164
16 & 12	.194

SIZE	PART NUMBER	A THREAD UNEF-2A	N +.000 -.006	R ±.005	S ±.005
8	BL30-8(*)PN-20	.5625-24	.500	.594	.812
10	BL30-10(*)PN-20	.6875-24	.562	.719	.937
12	BL30-12(*)PN-20	.8750-20	.750	.812	1.031
14	BL30-14(*)PN-20	.9375-20	.812	.906	1.125
16	BL30-16(*)PN-20	1.0625-18	.937	.969	1.250
18	BL30-18(*)PN-20	1.1875-18	1.062	1.062	1.343
20	BL30-20(*)PN-20	1.3125-18	1.182	1.156	1.437
22	BL30-22(*)PN-20	1.4375-18	1.312	1.250	1.562
24	BL30-24(*)PN-20	1.5625-18	1.432	1.375	1.703

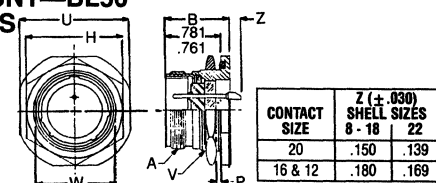
JAM NUT MOUNT—BM50
RECEPTACLES
 (REF. M33723/81)



CONTACT SIZE	Z (MAX)
20	.165
16	.235
12	.235

SIZE	PART NUMBER	D +.000 -.005	M ±.005	P PANEL THICK- NESS ±.003	U ±.003	V THREAD CLASS 2A	W ±.020	Y MAX
8	BM50-8(*)PN-20	.536	.979	.116 MIN - .964 MAX	.593	.6250-20 UN	.117	.828
10	BM50-10(*)PN-20	.659	1.104		.718	.7500-20 UNEF		.953
12	BM50-12(*)PN-20	.829	1.291		.905	.9375-20 UNEF		1.140
14	BM50-14(*)PN-20	.898	1.391		.968	1.0000-20 UNEF		1.250
16	BM50-16(*)PN-20	1.025	1.516		1.093	1.1250-20 UN		1.329
18	BM50-18(*)PN-20	1.131	1.641		1.217	1.2500-18 UNEF		1.455
20	BM50-20(*)PN-20	1.256	1.766		1.342	1.3750-18 UNEF		1.642
22	BM50-22(*)PN-20	1.381	1.954		1.467	1.5000-18 UNEF		1.705
24	BM50-24(*)PN-20	1.506	2.079		1.592	1.6250-18 UNEF		1.892

JAM NUT MOUNT—BL50
RECEPTACLES
 (REF. M83723/89)



CONTACT SIZE	Z (±.030) SHELL SIZES 8 - 18 22
20	.150
16 & 12	.180
	.169

SIZE	PART NUMBER	A THREAD UNEF-2A	B MAX REF	M ±.015	P PANEL THICK- NESS ±.003	U ±.015	V THREAD UNEF-2A	W ±.003	
8	BL50-8(*)PN-20	.5625-24	.918	.812	.062 MIN - .125 MAX	.964	.6250-20	.593	
10	BL50-10(*)PN-20	.6875-24		.937		1.088	.7500-20	.718	
12	BL50-12(*)PN-20	.8750-20		1.125		1.275	.9375-20	.905	
14	BL50-14(*)PN-20	.9375-20		1.187		1.375	1.0000-20	.968	
16	BL50-16(*)PN-20	1.0625-18		1.312		1.500	1.1250-18	1.093	
18	BL50-18(*)PN-20	1.1875-18		1.437		1.625	1.2500-18	1.217	
20	BL50-20(*)PN-20	1.3125-18		1.562		1.750	1.3750-18	1.342	
22	BL50-22(*)PN-20	1.4375-18		1.687		1.938	1.5000-18	1.467	
24	BL50-24(*)PN-20	1.5625-18		.928		1.812	2.063	1.6250-18	1.592

ALTERNATE KEYWAY POSITION INDICATOR TO BE PLACED AFTER "P" FOR NORMAL KEYWAY POSITION USE "N"



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BTC Microminiature "D" Connectors

GENERAL INFORMATION

SPECIFICATIONS:

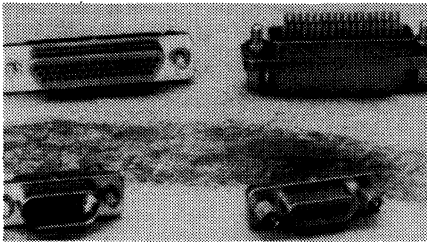
Temperature Rating: -55C to +155°C
Current Ratings: 3 amps max
Insulation Resistance: 5000 megohms
DWV at Sea Level: 600 VAC
DWV at Altitude: 150 VAC @ 70,000 feet
Contact Resistance: 8 milliohms max
Low-level Contact Resistance: 10 milliohms max
Contact Retention: 5lbs minimum axial load
Insertion Retention:
Insertion Force: 6 oz max (MIL SPEC), 4 oz (BTC avg)
Withdrawal Force: .5 oz min (MIL SPEC), 2 oz (BTC avg)

MATERIALS:

Contact Base: MINTEK* -heat-treated beryllium copper
 Receptacles-copper alloy
Contact Plating: Per MIL-C-45204, type II, Grade C, Class I
Epoxy: EP-1730

M83513/ 01 & 02, 03 & 04:

Shell: Aluminum per QQ-A-200/8 or QQ-A-591



M83513/ 01 & 02, 03 & 04:

Shell Finish: Cadmium per QQ-P-416, Type II, Class 3 over electroless nickel per MIL-C-26074 or Electroless nickel per MIL-C-26074, Class 4, Grade B
Insulator: Diallyl Phthalate per MIL-M-14G, Type SDG-F
Interfacial Seal: Fluorosilicone Blend

M83513/ 06 & 07, 08 & 09:

Insulator: Ryton per MIL-M-24519 Type GST-40F

FEATURES:

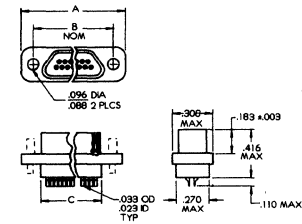
- Plug utilizes MINITEK (patent pending) machined pins of heat treated beryllium copper
- Plastic inserts are "molded-in" for superior insert retention
- Available in both Cadmium and Electroless Nickel shell finish
- Receptacle connector is shipped with a moisture inhibiting interfacial seal
- Material for nickel version have been tested and approved for Space Applications
- Ultra light weight for critical applications
- Applicable materials have been tested and approved for Space Applications
- Wires are pre-installed resulting in a cost savings for the customer (also applies to M83513/01 & 02)

OPTIONS:

- Contact factory for options available that are not covered by QPL
- Connectors can be sold as part of a complete cable or harness assembly. BTC features quick response and versatility. We'll work with all wire types as well as flex circuitry!!!
- BTC will install your QPL'd hardware prior to shipment. Refer to hardware data sheet for specific order instructions
- Connectors with COAX and/or POWER contacts mixed with MINITEK available (M83513/01 & 02 & M83513/03 & 04)

M83513/ 01 & 02

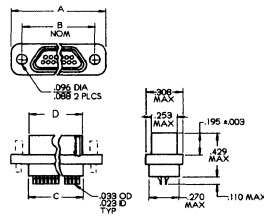
Metal Shell, Solder Cup, Microminiature "D" Connectors



PLUG CONNECTOR

No. of Contacts	A max	B nom	C max
9	.785	.565	.400
15	.935	.715	.550
21	1.085	.865	.700
25	1.185	.965	.800
31	1.335	1.115	.950
37	1.485	1.265	1.100

This is a partial listing of the number of contact options available, contact factory for information

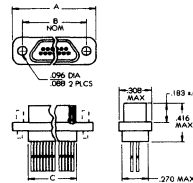


RECEPTACLE CONNECTOR

No. of Contacts	A max	B nom	C max	D max
9	.785	.565	.400	.402
15	.935	.715	.550	.552
21	1.085	.865	.700	.702
25	1.185	.965	.800	.802
31	1.335	1.115	.950	.952
37	1.485	1.265	1.100	1.102

M83513/ 03 & 04

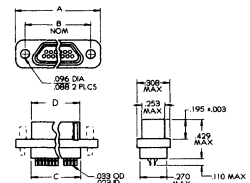
Metal Shell, Crimp (pre-wired), Microminiature "D" Connectors



PLUG CONNECTOR

No. of Contacts	A max	B nom	C max
9	.785	.565	.400
15	.935	.715	.550
21	1.085	.865	.700
25	1.185	.965	.800
31	1.335	1.115	.950
37	1.485	1.265	1.100

This is a partial listing of the number of contact options available, contact factory for information

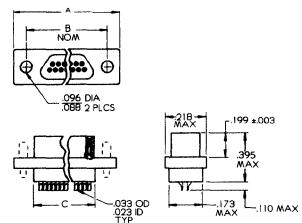


RECEPTACLE CONNECTOR

No. of Contacts	A max	B nom	C max	D max
9	.785	.565	.400	.402
15	.935	.715	.550	.552
21	1.085	.865	.700	.702
25	1.185	.965	.800	.802
31	1.335	1.115	.950	.952
37	1.485	1.265	1.100	1.102

M83513/ 06 & 07

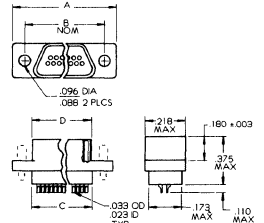
Metal Shell, Solder Cup, Microminiature "D" Connectors



PLUG CONNECTOR

No. of Contacts	A max	B nom	C max
9	.788	.565	.408
15	.938	.715	.558
21	1.088	.865	.708
25	1.188	.965	.808
31	1.338	1.115	.958
37	1.488	1.265	1.108

This is a partial listing of the number of contact options available, contact factory for information

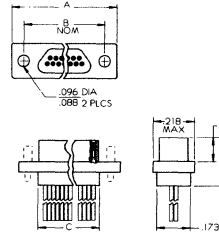


RECEPTACLE CONNECTOR

No. of Contacts	A max	B nom	C max	D max
9	.788	.565	.408	.380
15	.938	.715	.558	.530
21	1.088	.865	.708	.780
25	1.188	.965	.808	.780
31	1.338	1.115	.958	.930
37	1.488	1.265	1.108	1.080

M83513/ 08 & 09

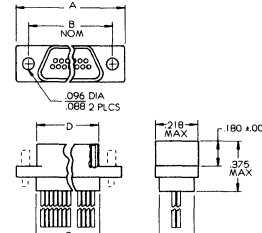
Plastic Shell, Crimp (pre-wired), Microminiature "D" Connectors



PLUG CONNECTOR

No. of Contacts	A max	B nom	C max
9	.788	.565	.408
15	.938	.715	.558
21	1.088	.865	.708
25	1.188	.965	.808
31	1.338	1.115	.958
37	1.488	1.265	1.108

This is a partial listing of the number of contact options available, contact factory for information

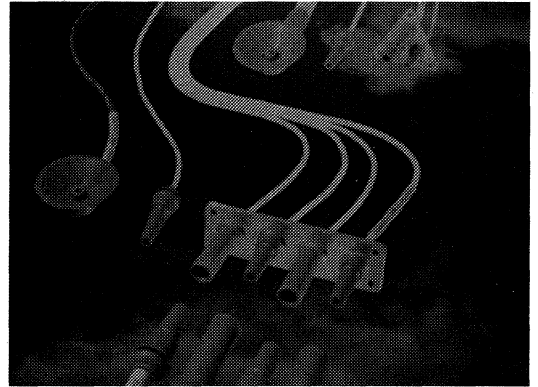


RECEPTACLE CONNECTOR

No. of Contacts	A max	B nom	C max	D max
9	.788	.565	.408	.380
15	.938	.715	.558	.530
21	1.088	.865	.708	.680
25	1.188	.965	.808	.780
31	1.338	1.115	.958	.930
37	1.488	1.265	1.108	1.080

DE Group Series 14

The 14 Series assemblies are single conductor, in-line designs for high voltage applications where a 'steady-state' voltage is required at a cost far below conventional shell type connectors. The silicone body is molded onto the wire for maximum dielectric and physical strength. This "no-shell" design makes it ideal for applications requiring quick connect and disconnect. The connector utilizes Caton's proven tapered interface and patented retention design making the 14 Series ideal for applications subject to high vibrations, shock and humidity. Two voltage configurations are available: 30 and 45 KVDC.



Standard lengths are stocked for quick delivery. Custom length and configurations are available, please consult Caton or your Caton sales representative.

General Design Specifications

1.0) ELECTRICAL (for properly mated assemblies)

- 1.1) Operating Voltage: 30 and 45 KVDC
- 1.2) Current: 7.5 and 10 AMPS

2.0) ENVIRONMENTAL

- 2.1) Operating Temperature Range: -55°C to +125° C

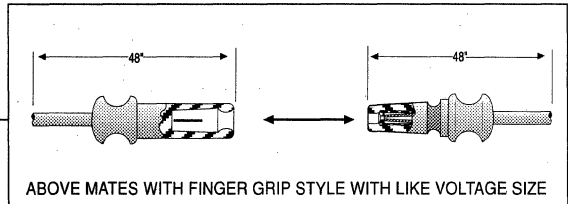
3.0) MECHANICAL



- 3.1) Style: Finger grip
- 3.2) Termination: Molded Directly to Wire

4.0) MATERIALS

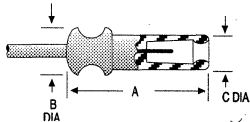
- 4.1) Connector Body: Silicone Rubber Dielectric Per ZZ-R-765
- 4.2) Color: Male Connector; Red - Grade 70
Female Connector; Red - Grade 50
- 4.3) Pin Contact: 1/2 Hard Brass Per QQ-B-626
- 4.4) Socket Contact: Beryllium Copper Alloy M25, 1/2 Hard
- 4.5) Finish: All Contacts are Gold Plated Per MIL-G-45204; Class I; Type II
- 4.6) Wire: Silver Plated Copper, Silicone Insulation
30 KVDC 18 AWG 0.140" dia.
45 KVDC 16 AWG 0.295" dia.

Note: Caton may at no cost to customer, upgrade component material to ensure prompt delivery



INSERT ARRANGEMENT PIN to GROUND OPERATING VOLTAGES CURRENT CAPABILITY NUMBER OF CONDUCTORS	CONNECTOR BODY STYLE	ABOVE MATES WITH FINGER GRIP STYLE WITH LIKE VOLTAGE SIZE	
 30 KVDC - 7.5 AMPS 1 CONDUCTOR	FINGER GRIP	14203-L6 48 inches [1219.2 mm]	14204-L6 48 inches [1219.2 mm]
 45 KVDC - 10 AMPS 1 CONDUCTOR	FINGER GRIP	14303-L6 48 inches [1219.2 mm]	14304-L6 48 inches [1219.2 mm]

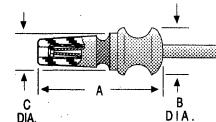
14 SERIES DIMENSION CHARTS



MALE ASSEMBLY

VOLTAGE	A	B	C
30 KVDC	2.16 [54.8]	0.62 [15.7]	0.47 [11.9]
45 KVDC	2.59 [65.8]	0.78 [19.8]	0.59 [15.0]

Dimensions are in inches/millimeters
LEADS ARE BLUNT CUT READY FOR CUSTOMER TERMINATION



FEMALE ASSEMBLY

VOLTAGE	A	B	C
30 KVDC	2.00 [50.8]	0.62 [15.7]	0.47 [11.9]
45 KVDC	2.39 [60.7]	0.78 [19.8]	0.59 [15.0]

For Custom Or Modified Assemblies, Please Consult Factory For Availability.

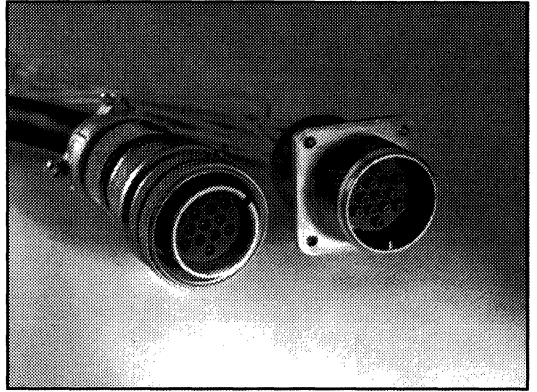
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DE Group Series 16

The 16 Series assemblies are offered in 14 different insert arrangements and 10 shell sizes. Voltage capability is up to 50 KVDC when properly mated and Caton terminated. Shell design is the proven MIL-C-5015 die cast aluminum with bright cad finish. Inserts are manufactured at Caton and are of resilient silicone tapered conical towers to evacuate air during mating providing an interface connection that is impervious to the surrounding environment.



Termination of the connectors to the cable is a unique Caton technique utilizing vacuum degassed two part condensation cure RTV silicone encapsulation. This process together with the Caton designed inserts, provide a termination that is impervious to the surrounding environment and is the same as used on custom requirements demanding performance beyond MIL-C-5015 class E.

Assemblies are DC hi-pot tested to at least 1.5 times the DC working voltage.

General Design Specifications

1.0) ELECTRICAL (when properly mated)

- 1.1) Operating Voltage: 5 thru 50 KVDC
- 1.2) Current: 4 - 26 AMPS

2.0) ENVIRONMENTAL

- 2.1) Altitude: Sea Level to 70,000 Feet
- 2.2) Operating Temperature Range: -55° C to +125° C

3.0) MECHANICAL

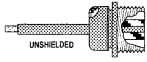






- 3.1) Connector Coupling: Threaded Screw-On
- 3.2) Connector Termination: Vacuum degassed two part condensation cure RTV silicone encapsulation
- 3.3) Interfacial Seal: Tapered conical towers
- 3.4) Shield Termination: 360° compression wedge

4.0) MATERIALS*

- 4.1) Shell Body & Plating: Die Cast Aluminum IAW MIL-C-5015; Bright Cadmium
- 4.2) Inserts: Resilient Silicone; Color Red
- 4.3) Contacts & Sockets: Gold Plated Brass & Beryllium Copper
- 4.4) Cable Shielding: Tinned Copper Braid
- 4.5) Cable Filler: Silicone
- 4.6) Jacket: Silicone; Color Black

*Note: Caton may at no cost to customer, upgrade component material to ensure prompt delivery

STANDARD MATING ASSEMBLY CONFIGURATION

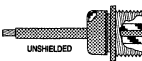
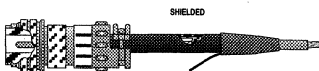









INSERT ARRANGEMENT PIN to SHELL OPERATING VOLTAGE CURRENT CAPABILITY NUMBER OF CONDUCTORS	SHELL SIZE IAW MIL-C-5015 see chart	STANDARD MATING ASSEMBLY CONFIGURATION		STANDARD WIRE
		BULKHEAD MOUNTING  Unshielded Flying Lead(s)	CABLE ASSEMBLY  Overall Shield with Silicone Jacket	
 5 KVDC - 4 AMPS 5 CONDUCTOR	SHELL SIZE 12S	16008-L4 24 inches [609.6 mm]	16002-L7 96 inches [2438.4 mm]	20 AWG
 5 KVDC - 4 AMPS 13 CONDUCTOR	SHELL SIZE 18	16018-L4 24 inches [609.6 mm]	16012-L7 96 inches [2438.4 mm]	20 AWG
 10 KVDC - 6.5 AMPS 1 CONDUCTOR	SHELL SIZE 12S	16028-L4 24 inches [609.6 mm]	16022-L7 96 inches [2438.4 mm]	18 AWG
 15 KVDC - 6.5 AMPS 3 CONDUCTOR	SHELL SIZE 16S	16038-L4 24 inches [609.6 mm]	16032-L7 96 inches [2438.4 mm]	18 AWG
 15 KVDC - 6.5 AMPS 7 CONDUCTOR	SHELL SIZE 16	16058-L4 24 inches [609.6 mm]	16052-L7 96 inches [2438.4 mm]	18 AWG

For Additional Configurations, Please Contact Caton.

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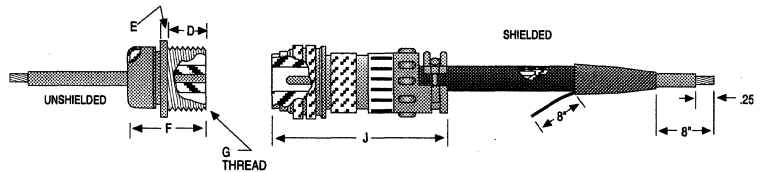
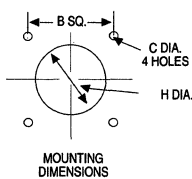
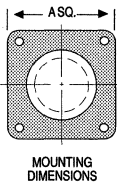
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INSERT ARRANGEMENT PIN to PIN OPERATING VOLTAGE CURRENT CAPABILITY NUMBER OF CONDUCTORS		SHELL SIZE IAW MIL-C-5015 see chart	STANDARD MATING ASSEMBLY CONFIGURATION		STANDARD WIRE
			BULKHEAD  Unshielded Flying Lead(s)	CABLE ASSEMBLY  Overall Shield with Silicone Jacket	
	25 KVDC - 10 AMPS 7 CONDUCTOR	SHELL SIZE 24	16168-L4 24 inches [609.6 mm]	16162-L7 96 inches [2438.4 mm]	16 AWG
	20 KVDC - 16.5 AMPS 1 CONDUCTOR	SHELL SIZE 16	16078-L4 24 inches [609.6 mm]	16072-L7 96 inches [2438.4 mm]	14 AWG
	20 KVDC - 16.5 AMPS 2 CONDUCTOR	SHELL SIZE 16S	16088-L4 24 inches [609.6 mm]	16082-L7 96 inches [2438.4 mm]	16 AWG
	25 KVDC - 16.5 AMPS 5 CONDUCTOR	SHELL SIZE 28	16098-L4 24 inches [609.6 mm]	16092-L7 96 inches [2438.4 mm]	14 AWG
	30 KVDC - 10 AMPS 1 CONDUCTOR	SHELL SIZE 18	16108-L4 24 inches [609.6 mm]	16102-L7 96 inches [2438.4 mm]	16 AWG
	30 KVDC - 16.5 AMPS 2 CONDUCTOR	SHELL SIZE 24	16118-L4 24 inches [609.6 mm]	16112-L7 96 inches [2438.4 mm]	14 AWG
	50 KVDC - 10 AMPS 1 CONDUCTOR	SHELL SIZE 22	16128-L4 24 inches [609.6 mm]	16122-L7 96 inches [2438.4 mm]	16 AWG
	30 KVDC - 26 AMPS 5 CONDUCTOR	SHELL SIZE 36	16158-L4 24 inches [609.6 mm]	16152-L7 96 inches [2438.4 mm]	12 AWG
	30 KVDC - 26 AMPS 2 CONDUCTOR	SHELL SIZE 32	16148-L4 24 inches [609.6 mm]	16142-L7 96 inches [2438.4 mm]	12 AWG

SHELL SIZE	TYPICAL DIMENSIONS FOR CONNECTORS USED IN THE 16 SERIES ASSEMBLIES								
	A	B	C	D	E	F	G-THREAD	H	J
12S	1.09 [27.7]	0.81 [20.57]	0.12 [3.0]	0.56 [14.2]	0.07 [1.8]	1.48 [37.6]	3/4-20 UNEF-2	0.81 [20.6]	2.50 [63.5]
16S	1.28 [32.5]	0.96 [24.38]	0.12 [3.0]	0.56 [14.2]	0.09 [2.3]	1.65 [41.9]	1-20 UNEF-2	1.06 [26.9]	2.69 [68.3]
16	1.28 [32.5]	0.96 [24.83]	0.12 [3.0]	0.75 [19.1]	0.12 [3.0]	1.96 [49.8]	1-20 UNEF-2	1.06 [26.9]	3.06 [77.7]
18M	1.37 [34.8]	1.06 [26.92]	0.12 [3.0]	0.56 [14.2]	0.12 [3.0]	1.77 [45.0]	1 1/8-18 UNEF-2	1.18 [30.0]	3.06 [77.7]
18	1.37 [34.8]	1.06 [26.92]	0.12 [3.0]	0.75 [19.1]	0.12 [3.0]	1.96 [49.8]	1 1/8-18 UNEF-2	1.18 [30.0]	3.32 [84.3]
22	1.62 [41.1]	1.25 [31.75]	0.12 [3.0]	0.75 [19.1]	0.12 [3.0]	2.00 [50.8]	1 3/8-18 UNEF-2	1.44 [36.6]	3.37 [85.6]
24	1.75 [44.5]	1.37 [34.80]	0.15 [3.7]	0.81 [20.0]	0.14 [3.6]	2.00 [50.8]	1 1/2-18 UNEF-2	1.56 [39.6]	3.37 [85.6]
28	2.00 [50.8]	1.56 [39.62]	0.15 [3.7]	0.81 [20.6]	0.14 [3.6]	2.09 [53.1]	1 3/4-18 UNS-2	1.81 [46.0]	3.56 [90.4]
32	2.25 [57.2]	1.75 [44.45]	0.17 [4.4]	0.87 [22.1]	0.14 [3.6]	2.09 [53.1]	2 -18 UNS-2	2.06 [52.3]	3.59 [91.2]
36	2.50 [63.5]	1.94 [49.28]	0.17 [4.4]	0.87 [22.1]	0.14 [3.6]	2.09 [53.1]	2 1/4-18 UNS-2	2.31 [58.7]	3.65 [92.7]

Dimensions are in inches/millimeters



For Additional Configurations, Please Contact Caton.

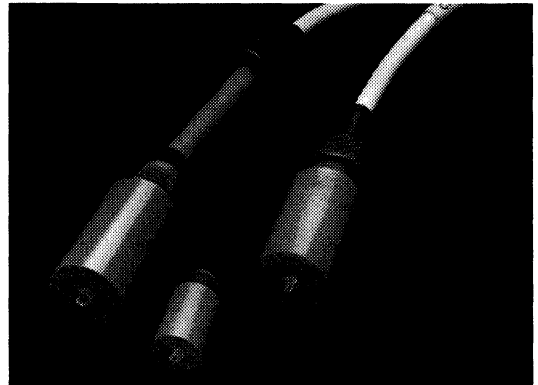
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DE Group Series 17

In addition to being an alternate to the AMP LGH product, the 17 Series offers reliability and affordability at costs below conventional shell type connectors. Each are single conductor for high voltage application where a "steady-state" voltage is required. The plug connector interface body is molded directly onto the wire for maximum dielectric and physical strength. Four voltage designs are available: 10, 15, 25 and 40 KVDC.



General Design Specifications

1.0) ELECTRICAL (when properly mated)

- 1.1) Operating Voltage Range: 10 thru 40 KVDC
- 1.2) Current Range, Continuous: 6.5 - 10 AMPS

2.0) ENVIRONMENTAL





- 2.1) Altitude: Sea Level to 70,000 Feet
- 2.2) Operating Temperature Range: -55° C to +125° C

3.0) MECHANICAL

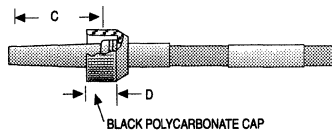
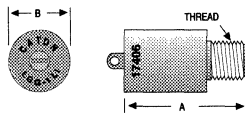
- 3.1) Connector Coupling: Threaded Screw-On
- 3.2) Connector Termination: Molded on to wire
- 3.3) Interfacial Seal: Tapered Conical Tower

4.0) MATERIALS

- 4.1) Plug Coupling Ring & Ferrule: Black Polycarbonate
- 4.2) Plug Connector: Resilient Silicone; Color, Red
- 4.3) Contacts & Sockets: Gold Plated Brass & Beryllium Copper
- 4.4) Receptacle Body: Green Thermoset Diallyl Phthalate
- 4.5) Wire: 10 KVDC 18 AWG Silicone Insulation .160" dia.
15 KVDC 18 AWG Silicone Insulation .160" dia.
25 KVDC 18 AWG Silicone Insulation .230" dia.
40 KVDC 16 AWG Silicone Insulation .290" dia.

INSERT ARRANGEMENT PIN to GROUND OPERATING VOLTAGES CURRENT CAPABILITY NUMBER OF CONDUCTORS	INTERFACE STYLE	POTTED STYLE	CABLE ASSEMBLY	WIRE
 10 KVDC - 6.5 AMPS 1 CONDUCTOR	LGG 1/2 I	17106	17105-L6 48 inches [1219.2 mm]	18 AWG .160 Dia.
 15 KVDC - 6.5 AMPS 1 CONDUCTOR	LGG 1/2 LI	17206	17205-L6 48 inches [1219.2 mm]	18 AWG .160 Dia.
 25 KVDC - 6.5 AMPS 1 CONDUCTOR	LGG 1 LI	17406	17405-L6 48 inches [1219.2 mm]	18 AWG .230 Dia.
 40 KVDC - 10 AMPS 1 CONDUCTOR	LGG 3 I	17606	17605-L6 48 inches [1219.2 mm]	16 AWG .290 Dia.

POTTED STYLE



VOLTAGE	A	B	THREAD
10 KVDC	0.63 [16.0]	0.31 [7.9]	5/16-32 UNEF-2A
15 KVDC	1.00 [25.4]	0.50 [12.7]	5/16-32 UNEF-2A
25 KVDC	1.81 [46.0]	0.75 [19.0]	1/2-20 UNEF-2A
40 KVDC	1.94 [49.3]	0.75 [19.0]	3/4-16 UNEF-2A

VOLTAGE	C	D	THREAD
10 KVDC	0.54 [13.7]	0.38 [9.70]	0.16 [4.1]
15 KVDC	0.89 [22.6]	0.43 [10.9]	0.16 [4.1]
25 KVDC	1.69 [42.9]	0.53 [13.5]	0.23 [5.8]
40 KVDC	1.81 [46.0]	0.53 [13.5]	0.29 [7.4]

*Dimensions are in inches / millimeters

* LEADS ARE BLUNT CUT READY FOR CUSTOMER TERMINATION

For Custom Or Modified Assemblies, Please Consult Factory For Availability. For More Information On Corona, Please Consult Factory.



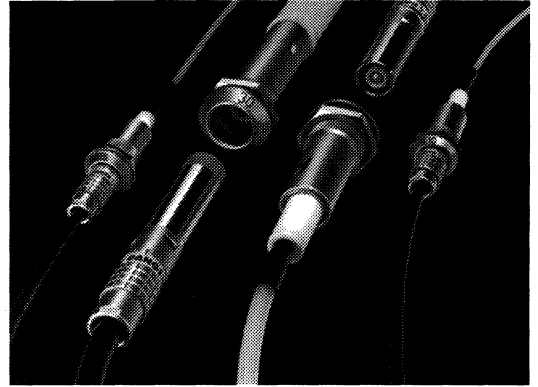
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DE Group Series 20

The 20 Series is the most technically advanced single conductor design offering quick connect-disconnect coupling. This feature along with the high quality chrome plated shell bodies make it aesthetically attractive for front mounting onto instrumentation. Assemblies are terminated using standard RG 58C/U and RG 213/U coaxial cable. All product is hi-pot tested 1.5 times working voltage. Available in 5 thru 30 KVDC assemblies.



General Design Specifications

1.0) ELECTRICAL (when properly mated)

- 1.1) Operating Voltage: 5 to 30 KVDC
- 1.2) Current: 8-15 AMPS

2.0) ENVIRONMENTAL





- 2.1) Operating Temperature: -55° C to +125° C

3.0) MECHANICAL

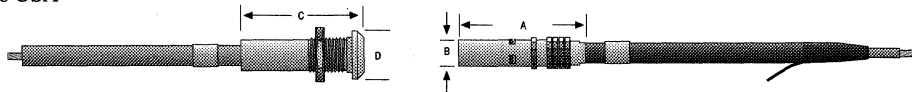
- 3.1) Connector Coupling: Quick Connect/Disconnect
- 3.2) Connector Termination: 360° Compression and Crimp

4.0) MATERIALS

- 4.1) Connector Body: Chrome Plated Brass
- 4.2) Inserts: PTFE
- 4.3) Contacts and Sockets: Gold Plated Brass & Beryllium Copper
- 4.4) Cable: RG-58 C/U; RG-213/U

INSERT ARRANGEMENT PIN to GROUND OPERATING VOLTAGES CURRENT CAPABILITY NUMBER OF CONDUCTORS		CONNECTOR COUPLING STYLE	BULKHEAD MOUNTING 24"	CABLE ASSEMBLY 96"	WIRE
	5 KVDC - 8 AMPS 1 CONDUCTOR	QUICK-LOK™ SELF-LATCHING	20103-L4 24 inches [609.6 mm]	20102-L7 96 inches [2438.4 mm]	RG58 C/U
	10 KVDC - 8 AMPS 1 CONDUCTOR	QUICK-LOK™ SELF-LATCHING	20203-L4 24 inches [609.6 mm]	20202-L7 96 inches [2438.4 mm]	RG58 C/U
	15 KVDC - 15 AMPS 1 CONDUCTOR	QUICK-LOK™ SELF-LATCHING	20303-L4 24 inches [609.6 mm]	20302-L7 96 inches [2438.4 mm]	RG213/U
	30 KVDC - 15 AMPS 1 CONDUCTOR	QUICK-LOK™ SELF-LATCHING	20403-L4 24 inches [609.6 mm]	20402-L7 96 inches [2438.4 mm]	RG213/U

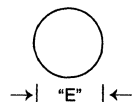
TM—Lemo USA



VOLTAGE	A	B	C	D	E
5 KVDC	2.25 [57.20]	0.50 [12.7]	2.79 [70.9]	0.78 [19.8]	0.63 [16.0]
10 KVDC	3.00 [76.30]	0.50 [12.7]	3.00 [76.2]	0.78 [19.8]	0.63 [16.0]
15 KVDC	4.00 [101.6]	0.75 [19.1]	3.50 [88.9]	1.22 [31.0]	0.95 [24.1]
30 KVDC	5.00 [120.0]	0.75 [19.1]	5.00 [127.0]	1.22 [31.0]	0.95 [24.1]

Dimensions are in inches / millimeters

PANEL CUT-OUT



For Custom Or Modified Assemblies, Please Consult Factory For Availability. For More Information On Corona, Please Consult Factory.

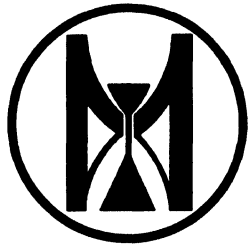
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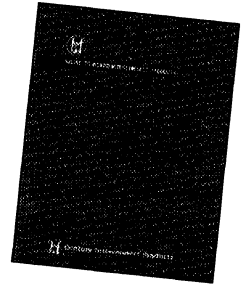
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Century Interconnect Products

Detailed information on the connectors listed below is available in our **BOARD-TO-BOARD INTERCONNECT PRODUCTS** catalog

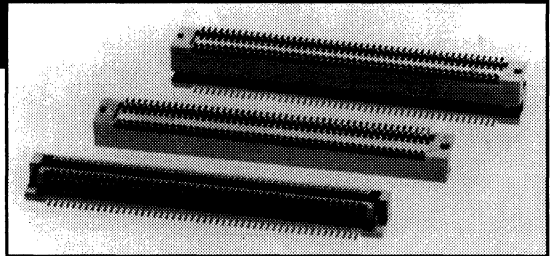
Call 800-221-3576 for a copy



HIGH DENSITY BOARD-TO-BOARD INTERCONNECT PRODUCTS

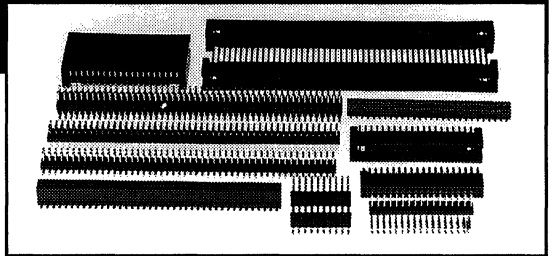
0.80mm Series Hermaphroditic SMT Connector

- Dual row - 20 to 200 positions
- Allows PCB stacking separation heights from 4.5mm to 20mm
- Insulator material - LCP, natural or black color
- Contact plating options
- Tube or tape & reel packaging



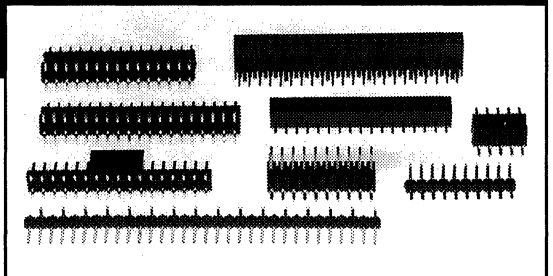
1.27mm Series SMT & Through-Board Pin Headers & Receptacles

- Dual row - 04 to 100 contacts
- Double base (1.27mm x 1.27mm spacing) (1.27mm x 2.54mm spacing)
- Low Profile
- Box header types
- Polarized housing, posts available
- Contact plating options



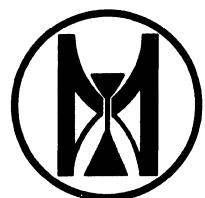
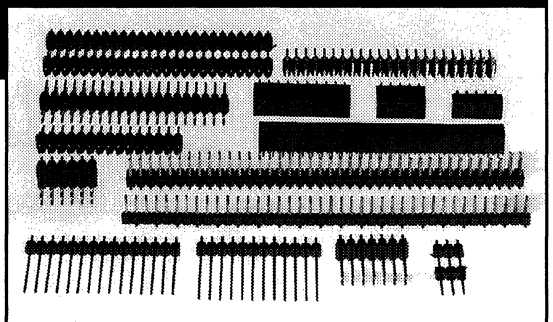
2.00mm Series SMT & Through-Board Pin Headers, Receptacles & Shunts

- Single row - 01 to 40 contacts
- Dual row - 04 to 64 contacts
- Double base
- Straight & right angle (1.50mm & 3.50mm bases)
- Box header types
- Shunts - open & closed
- Options:
- Insulator height
- Retention contact options
- Contact plating options
- Post, pad, support block, taped face



2.54mm Series SMT & Through-Board Pin Headers, Receptacles & Shunts

- Single row - 01 to 40 contacts
- Dual row - 04 to 80 contacts
- Triple row - 09 to 120 contacts
- Dual insulator, single or dual row
- Straight & right angle
- Low & very low profile receptacles
- Post options
- Shunts - open top, open top with handle, closed top, multiple positions
- Contact plating options



Century Interconnect Products

1895 Stratford Avenue, Stratford, CT 06497

800-221-3576 203-375-5344 Fax: 203-375-1631

Web Site: www.centuryinterconnect.com

COMM CON CONNECTORS INC.

"ORDER IT YOUR WAY!"



**COMM CON
CONNECTORS INC.**
"THE UNCOMMON CONNECTOR COMPANY"

Today's diverse electronic interconnect packaging requirements have pushed designers to sandwich more computing power into less space. COMM CON CONNECTORS, INC. has always allowed designers the ability to customize our P.C.B. connectors to the configurations needed to create the most desirable and cost effective solutions possible. To overcome these design constraints, we ask you to tantalize your interconnection taste buds and "ORDER IT YOUR WAY." Adding some of COMM CON's spicy 2mm Bottom Entry Socket Salsa, .100 Hot Mustard Spacer Headers, or any one of our "40 Million Varieties" of .100, 2mm, or .050 center products can bring your designs to life.

So don't put up with the average, bland standard interconnects any longer. Call our COMM CON chefs at 818-301-4200 to have your P.C.B. interconnect sandwich customized to your exact requirements. "ORDER IT YOUR WAY" today and experience the COMM CON difference!

1848 Evergreen Street
Duarte, CA 91010
(818) 301-4200
(818) 301-4212 FAX

Comm Con Connectors Inc. was established in 1982. From inception, our plan has been to offer the Electronics O.E.M. Marketplace a variety of P.C.B. interconnects not available from the more traditional connector companies. Our initial product offerings were .100 center, .025 sq. headers, to which we added mating sockets and shunts a short time later. As we progressed, we adjusted our processes to accommodate a wide variety of specials, using our standard pins, and plastic, so we are at a point now where we produce more "specials", than "standards". This development led us to our "Order It Your Way" theme as illustrated by our front cover and various ads and trade show booths.

In 1988, it appeared to us that a new P.C.B. standard was being developed, with 2mm x 2mm spacing between pins. We began development of a full line of these interconnects to match our .100 center products in product breadth and depth. It is our feeling that the package of 2mm products illustrated in our catalog is the broadest available from any connector manufacturer.

By 1992, continued miniaturization at our customers created a demand for .050 center products. Our catalog illustrates our current offerings in this product area, with many more to be added in the future. Continued miniaturization allows us to now begin offering 1mm center products.

As our only product interest is P.C.B. interconnects, we will continue to monitor the needs of our customers in this one area, and develop new products and families of products early in the demand cycle. Call us with your specific requirements, whether they be .100, .050, 2mm, 1mm, or special centers.

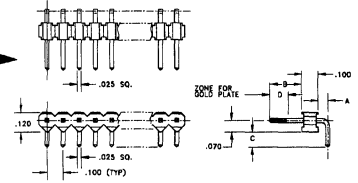
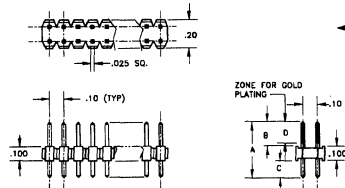
COMM CON CONNECTORS, INC.

1848 Evergreen Street, Duarte, California 91010 • (626) 301-4200 • FAX: (626) 301-4212
Internet: www.commcon.com

.100 CENTER HEADER, SOCKET, SHUNT PRODUCTS

← **SINGLE, DOUBLE, TRIPLE ROW STRAIGHT HEADERS .025 SQ. CONTACT**

These thru hole headers are available in 14 different pin lengths (.330 to 1.435). In addition to 40 standard "B" and "C" dimension parts, we offer an unlimited variety of customer specified lengths.



SINGLE, DOUBLE, TRIPLE ROW RIGHT ANGLE HEADERS .025 SQ. CONTACT →

Thru hole right angle headers are available in both low and high profile designs. In addition to standard contact lengths, customer specified lengths are available.

← **SINGLE AND DOUBLE ROW SURFACE MOUNT HEADERS .025 SQ. CONTACT**

High temp insulators are rated to 260C, various header pin heights available.

SINGLE, DOUBLE, TRIPLE ROW MICRO HEIGHT HEADERS .025 SQ. CONTACT →

We utilize a .060 thick plastic, and .330 pins to create a very low PCB interface to low profile shunts, or board to board solder.

← **SINGLE, DOUBLE, TRIPLE ROW SPACER HEADER INTERCONNECTS .025 SQ. CONTACT**

This concept allows the design freedom of interconnecting two PCB's with a pre specified mating length. Eliminates other spacers.

SINGLE AND DOUBLE ROW THRU HOLE RECEPTACLES FOR .025 SQ. CONTACT →

Available in heights as low as .165 to as tall as .775 from board surface. We utilize both stamped and screw machine sockets.

← **SINGLE AND DOUBLE ROW THRU HOLE RIGHT ANGLE RECEPTACLES FOR .025 SQ. CONTACT**

Available with both stamped and screw machine contacts.

SINGLE AND DOUBLE ROW THRU HOLE BOTTOM ENTRY RECEPTACLES FOR .25 SQ. CONTACT →

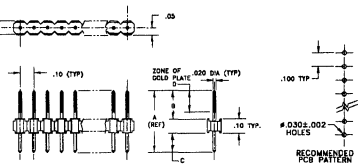
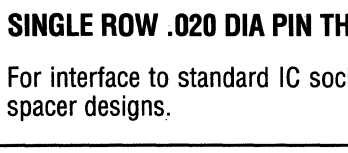
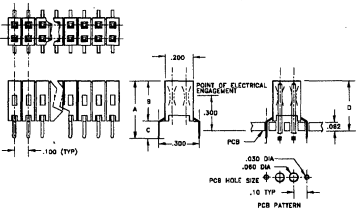
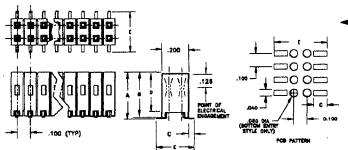
Eliminates hand soldering by placing the receptacle on the same surface as all other components. Access of the pin is through the PCB, into bottom of the socket.

← **SINGLE AND DOUBLE ROW SURFACE MOUNT BOTTOM ENTRY RECEPTACLES FOR .025 SQ. CONTACT**

Same benefits of the thru hole version, with the added benefit of surface mount processing.

SINGLE ROW .020 DIA PIN THRU HOLE HEADERS →

For interface to standard IC sockets, these headers are available in both regular and spacer designs.

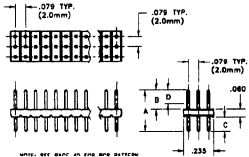
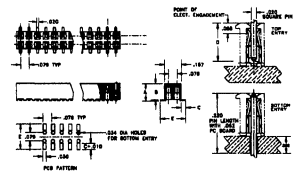


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 Internet: www.commcon.com

2mm (.079) CENTER HEADER, SOCKET, SHUNT PRODUCTS (continued)

SINGLE AND DOUBLE ROW SURFACE MOUNT RECEPTACLES FOR BOTH .020 SQ. AND DIA. →

Same benefits of the thru hole version, with the added benefit of surface mount processing.

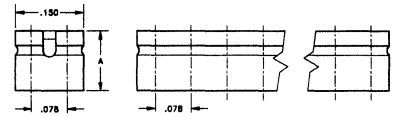


← SINGLE ROW .020 DIA PIN THRU HOLE HEADERS

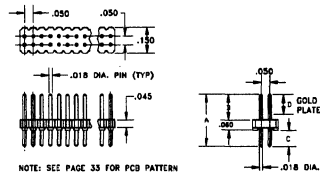
For interface to standard IC sockets.

SINGLE AND MULTIPLE SHUNT JUMPERS →

Shunts are available in from 1 to 10 positions, in an assortment of heights ranging from .138 to .175.



.050 CENTER HEADERS, SOCKET PRODUCTS

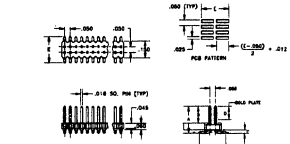
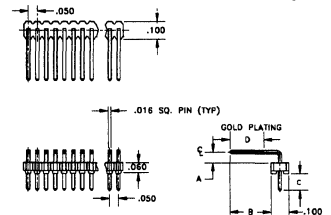


← SINGLE AND DOUBLE ROW STRAIGHT HEADERS .016 SQ. AND .018 DIA CONTACT

These thru hole headers are available in 12 different pin lengths (.250 to .735). In addition to 12 standard "B" and "C" dimension parts, we offer an unlimited variety of customer specified lengths.

SINGLE AND DOUBLE RIGHT ANGLE HEADERS .016 SQ. CONTACT →

Thru hole right angle headers are available in both low and high profile designs. In addition to standard contact lengths, customer specified lengths are available.

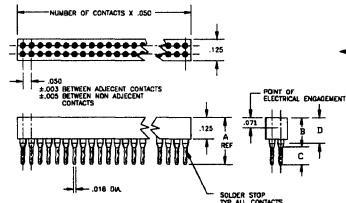
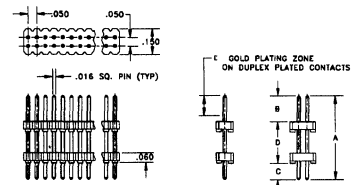


← SINGLE AND DOUBLE ROW SURFACE MOUNT HEADERS .016 SQ. CONTACT

High temp insulators are rated to 260C, various header pin heights available.

SINGLE AND DOUBLE ROW SPACER HEADER INTERCONNECTS .016 SQ. CONTACT →

This concept allows the design freedom of interconnecting two PCB's with a pre specified mating length. Eliminate other spacers.

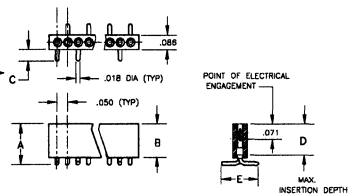


← SINGLE AND DOUBLE ROW THRU HOLE RECEPTACLES ACCEPTS BOTH .016 SQ. AND .018 DIA.

Available in heights as low as .165 to as tall as .200 from board surface. We utilize stamped sockets.

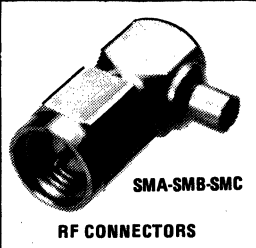
SINGLE AND DOUBLE ROW SURFACE MOUNT RECEPTACLES ACCEPTS BOTH .016 SQ. AND .018 DIA. →

Low profile sockets are fabricated from BE CU.



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 Internet: www.commcon.com

Presenting . . .



SMA-SMB-SMC

RF CONNECTORS



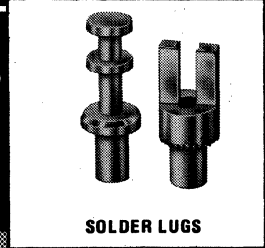
TEFLON* TERMINALS



HEXHEAD
BINDING POST



WASHERS & GROMMETS



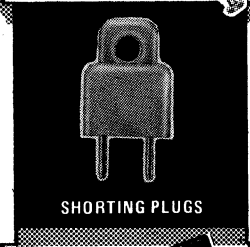
SOLDER LUGS



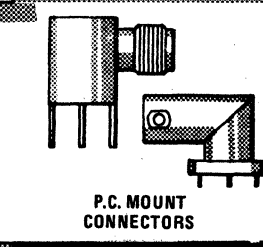
MINIATURE
STACKING
BANANA PLUG TO
STANDARD STACKING
BANANA PLUG



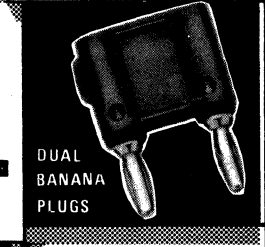
SAFETY HOOK TEST CLIPS



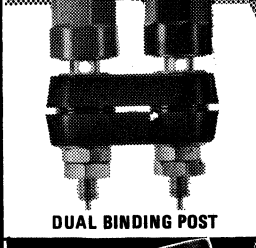
SHORTING PLUGS



P.C. MOUNT
CONNECTORS



DUAL
BANANA
PLUGS



DUAL BINDING POST



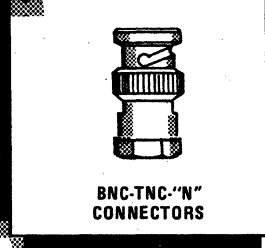
BANANA PLUGS



SEND
FOR
CATALOG



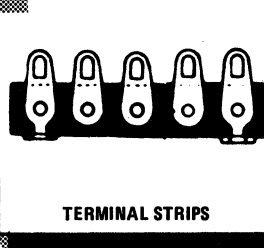
SOLDER LUGS



BNC-TNC-"N"
CONNECTORS



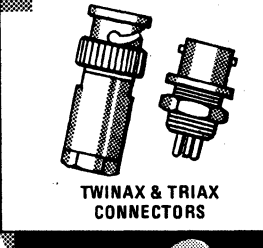
MINIATURE
DOUBLE
BANANA
PLUG WITH
SOLDER TERMINALS



TERMINAL STRIPS



HEXHEAD NYLON
FEED THRU



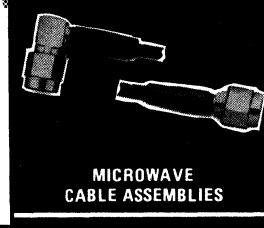
TWINAX & TRIAX
CONNECTORS



P.C. CARD SUPPORTS



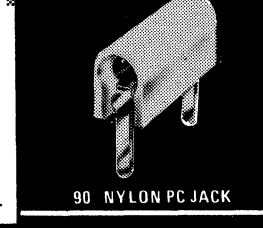
INSULATED TIP PLUGS



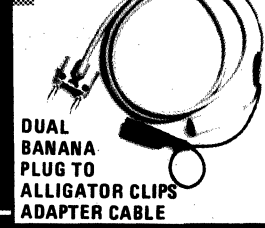
MICROWAVE
CABLE ASSEMBLIES



BNC MALE TO BINDING POST



90° NYLON PC JACK



DUAL
BANANA
PLUG TO
ALLIGATOR CLIPS
ADAPTER CABLE

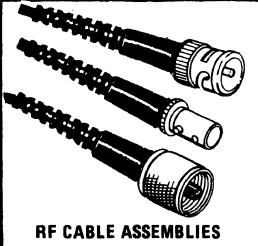
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THE DEPENDABLE COMPONENT SOURCE

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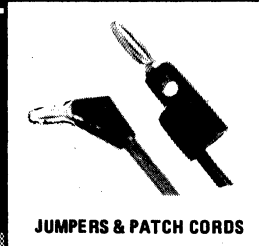
THE WORLD'S GREATEST COLLECTION



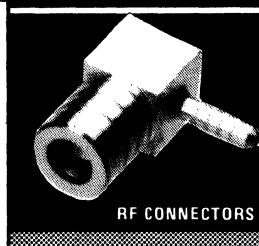
RF CABLE ASSEMBLIES



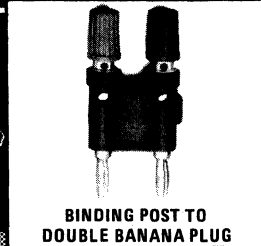
SOLDERLESS LUGS & TERMINALS



JUMPERS & PATCH CORDS



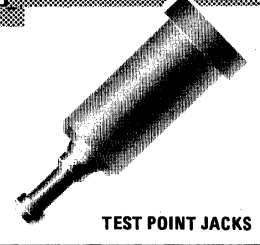
RF CONNECTORS



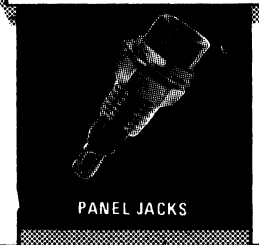
BINDING POST TO DOUBLE BANANA PLUG



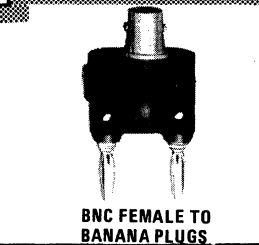
KNOBS



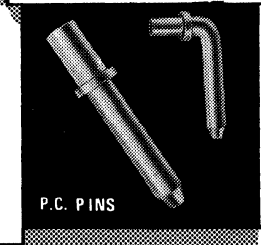
TEST POINT JACKS



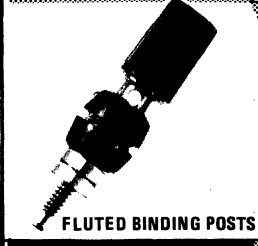
PANEL JACKS



BNC FEMALE TO BANANA PLUGS



P.C. PINS

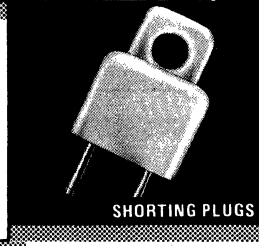


FLUTED BINDING POSTS



BREAKOUTS BNC AND ALLIGATOR CLIP

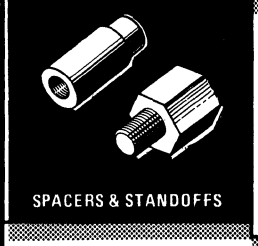
TEST ACCESSORIES



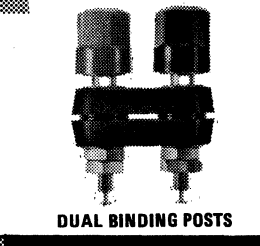
SHORTING PLUGS



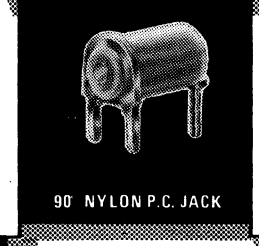
OSCILLOSCOPE PROBES



SPACERS & STANDOFFS



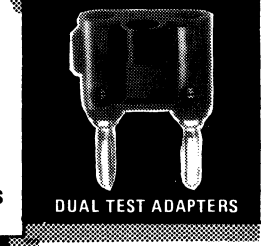
DUAL BINDING POSTS



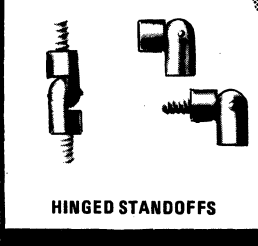
90° NYLON P.C. JACK



MIL-C-39024 JACKS



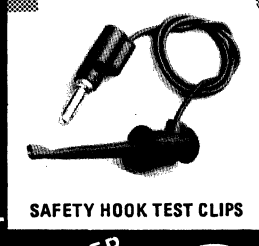
DUAL TEST ADAPTERS



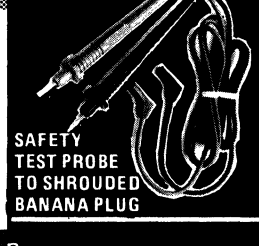
HINGED STANDOFFS



TEFLON* PANEL JACKS



SAFETY HOOK TEST CLIPS



SAFETY TEST PROBE TO SHROUDED BANANA PLUG



HANDLES

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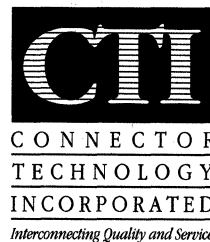
THE MANUFACTURER'S MANUFACTURER CONCORD[®]

THE DEPENDABLE COMPONENT SOURCE

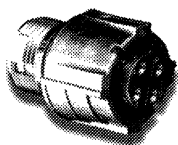
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Connector Technology Incorporated

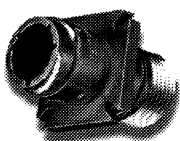
Interconnecting Quality and Service
1.800.458.5646



Specializing in commercial, industrial, military and harsh environment connectors, CTI's main focus is meeting your urgent demand for high-quality products.



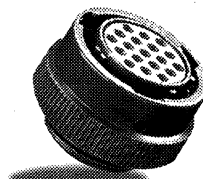
THE CLIPPER™



MIL-C 38999



MIL-C 26482



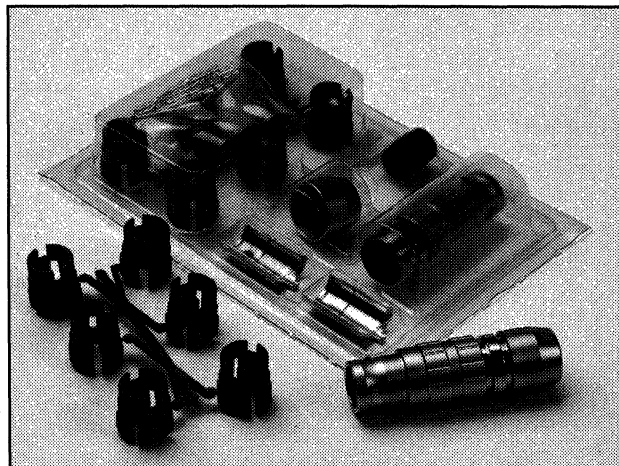
JBX™ SERIES



JBX™ Series from Jupiter features push-pull, self-latching design.

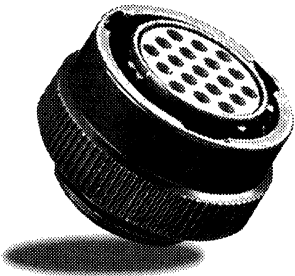
These rugged chrome plated connectors feature a push-pull, self-latching design that is ideal for high reliability applications such as medical and factory automation equipment and other industrial applications. The connectors are supplied in a convenient kit complete with 6 different collets that will accept a variety of cable diameters.

- High contact density in small space (from 2 to 30 contacts)
- Solder, crimp, PCB tails (elbow or straight available) contacts
- Several shell sizes (from shell size 00 to shell size 3)
- Intermateable with LEMO B series



JKX waterproof version available (sealed version of the JBX series)

NEW JERSEY: Tel: 1-800-458-5646 Fax: 732-828-9142 • GEORGIA: Tel: 1-800-446-5024 Fax: 770-924-4826
 MONTANA: Tel: 1-888-640-7278 Fax: 406-756-0775 • INTERNET: www.connectech.com



MIL-C 26482 Series I

851 Series -

Description

- bayonet coupling
- environmental and hermetic versions
- solder, crimp, straight spills and wire wrap versions
- thermocouple contacts available
- cadmium free plating (Zinc Cobalt) version

Characteristics

Mechanical

• Shell:

- environmental version: aluminum alloy plating:
 - olive green cadmium
 - black anodized
 - white cadmium
 - satin finish bright nickel
 - zinc cobalt (olive green)
- hermetic version: steel
- plating: - iridescent yellow cadmium
- nickel

Standards

- MIL-C 26482 G series 1
- NFC 93422-He 301 B
- VG 95328
- BS 9522 F 0017
- GAM T1 list
- QPL approved (solder version)

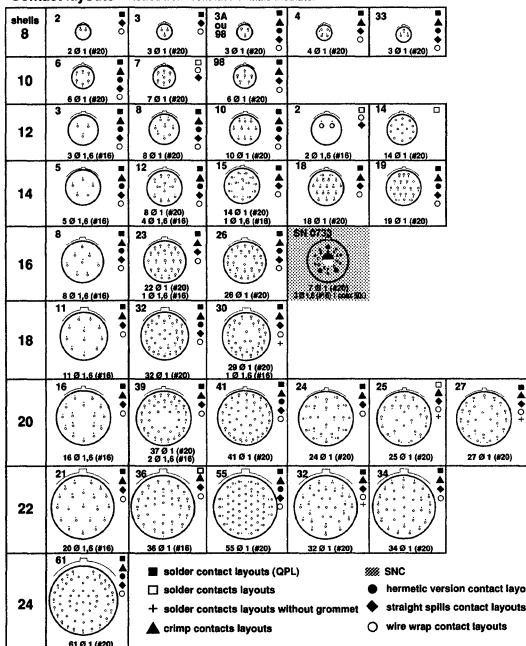
Ordering Information

basic series	solder version	851 -00	E	8 -	3A	P	•	50	***
	crimp version	851 -00	R	8 -	3A	P	•	50	***

shell type:	crimp	MS 3110 00 00	- square flange receptacle accepting backshells
	solder	MS 3111 01 01	- cable connecting receptacle
		MS 3112 02E 02R	- square flange receptacle not accepting backshells
		MS 3114 07 07	- jam nut receptacle accepting backshells
		MS 3114 07A 07A	- jam nut receptacle not accepting backshells
		MS 3116 06 06	- plug for use with straight backshells
		MS 3116 08 08	- plug for use with 90° backshells
		MS 3116 36 36	- screened plug for use with straight backshells
		MS 3116 76 76	- screened plug with lock finger

backshell type:	see table p.18
shell size:	8 - 10 - 12 - 14 - 16 - 18 - 20 - 22 - 24
contact layout:	see table p.18
contact type:	P = male S = female
orientation:	normal (not included in part number) W, X, Y, Z, see table p.18
obligatory suffix:	50 gold plated crimp contacts - solder contacts size 20 - contacts with a gold plated active zone and tin plated terminations - other gold plated terminations 51 solder contacts gold plated size 20 52 zinc cobalt olive green plated (contacts: idem specif. 50)
specification:	01 olive green cadmium plate (without spec. 50/51/52) 02 white cadmium plate 03 black anodized (solder contacts) 04 black anodized (crimp contacts) 05 nickel plate 06 nickel plate 07 nickel plate 08 olive green cadmium plate } backshell type T and RT

Contact layouts - Viewed from front face of male insulator



Electrical

- Dielectric withstanding voltage:
 - at standard pressure: mated and unmated connectors
 - 1 500 Vrms between size 20 contacts (service 1)
 - 2 300 Vrms between size 16 contacts (service 2)
 - 1 500 Vrms between mixed size 20 and 16 contacts (service 1)
- at reduced pressure (10 mbar): connectors mated and unmated
 - 200 Vrms between size 20 contacts (service 1)
 - 300 Vrms between size 16 contacts (service 2)
- Insulation resistance:
 - ≥ 5000 MΩ under 500 Vdc.
- Current rating per contact:
 - size 20 : 7,5 A size 16 : 13 A
- Contact resistance:
 - environmental version: size 20 : 4 mΩ size 16 : 3 mΩ

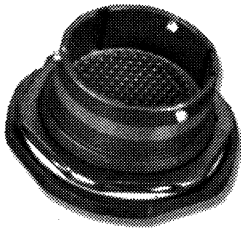
Climatic

- Working temperature:
 - 55° C to + 125° C
- Sealing: crimp contact version, 1 bar differential pressure, leakage ≤ 8 cm3/hr
- solder contact version, 2 bar differential pressure, leakage ≤ 16 cm3/hr
- Hermiticity: 1 bar differential pressure leakage ≤ 2,8 mm3/hr
- Chemical resistance: to MIL-C 26482 G series 1 and NFC 93422-HE 301 B code A
- Resistance to salt spray: 48 hours at environmental temperature
- damp heat : 21 days
- Vibration: to NFC 20-616



"Value-Added Service"

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MIL-C 38999

MIL-C 38999 Series I 8LT SERIES-

Description

- High density connector from 1 to 128 contacts
- Sizes 22D, 20, 16, 12, #16 coax and #8 triax
- Bayonet locking system
- 100% scoop proof

Applications

High density connectors for all military and aeronautical purposes

Standards

Mil-C 38999 series I - QPL approved
 NFC 93422 HE 308
 DTAT-C 5935 X 0005 (HE 308 standard)
 GAM/T1 list

MIL-C 38999 Series I part numbers

basic series	MS	27466	T	13	B	35	P	•
shell type :	27466 - square flange receptacle (front mounting) 27656 - square flange receptacle (rear mounting) 27468 - jam nut receptacle 27467 - plug with RFI shielding							
class :	T - with thread for backshell, supplied less backshell							
shell size :	09-11-13-15-17-19-21-23-25							
plating :	R - olive green cadmium F - nickel							
contact layout :	- see table p.118							
contact type :	P - male A - male connector supplied less contact or with specific contacts S - female B - female connector supplied less contact or with specific contacts							
polarization :	N - Normal (not included in part number) A - B-C-D - see table p.77							

Note : connectors supplied with MIL-C contacts

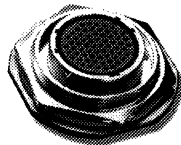
MIL-C 38999 Series II 8T SERIES- Low Profile

Description

- High density connectors from 1 to 128 contacts
- Sizes 22D, 20, 16, 12
- A compact profile
- Bayonet locking system
- An excellent shock vibration and fluid resistance

Applications

Compact profile and high density connectors for all military and aeronautical purposes



MIL-C 38999 Series II part numbers

basic series	MS	27497	T	14	B	35	P	•
shell type :	27508 - square flange receptacle without thread for back fitting 27497 - square flange receptacle (rear mounting) 27474 - jam nut receptacle 27473 - plug							
class :	T - with thread for backshell, supplied without backshell E - without thread for backshell only for MS 27508							
shell size :	08-10-12-14-16-18-20-22-24							
plating :	R - olive green cadmium F - nickel C - hard anodized							
contact layout :	- see table p.118							
contact type :	P - male A - male connector supplied less contact or with specific contacts S - female B - female connector supplied less contact or with specific contacts							
polarization :	N - Normal (not included in part number) A - B-C-D - see table p.100							

MIL-C 38999 Series III

Description

- High density connector from 1 to 128 contacts
- Sizes 22D, 20, 16, 12, #16 coax and #8 triax
- A quick screw coupling with anti-decoupling mechanism
- 100% scoop proof
- An EMI/RFI reinforced shielding with grounding fingers

Applications

High density connectors for all military and aeronautical purposes with severe vibration environment.



"Value-Added Service"

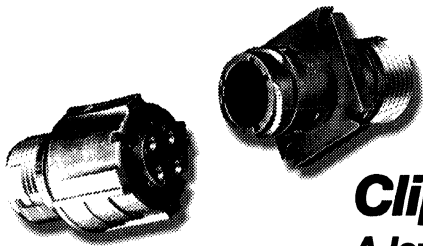


MIL-C 38999 Series III part numbers

basic series	D 38999/	20	W	B	35	P	N
shell type :	20 - square flange receptacle 24 - jam nut receptacle 26 - plug with RFI shielding						
plating :	W - olive green cadmium F - nickel						
shell size :	A to J 09 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 A | B | C | D | E | F | G | H | J						
contact layout :	- see table p.118						
contact type :	P - male A - male connector supplied less contact or with specific contacts S - female B - female connector supplied less contact or with specific contacts						
polarization :	N - normal A-B-C-D-E - see table p.100						

All standard military connectors can be filtered with planar or tubular filters. Consult CTI for exact specifications.

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Clipper™

A low cost, plastic, watertight connector



Description

An ergonomically designed, low cost, plastic connector suitable for many industrial applications. This watertight connector features a patented concept of contact insertion/extraction without the need of a tool. Clipper accepts all styles of electrical PG thread backshells.

Characteristics Mechanical

- Monobloc shell and insulator in thermoplastic material self-extinguishing to UL 94 VO
- 180° screw coupling with positive audible safety latch
- Scoop proof
- Copper alloy contacts, machined or stamped and formed:
 - plating: gold flash on active part
- Mechanical endurance:
 - connector: 250 cycles mating/unmating
 - retention plate: 50 cycles mating/unmating
- Retention force:
 - ∅ 1.6mm=90N

- Vibration:
 - frequency range: 10-2000Hz, 20g
 - 10 cycles in accordance with CEI 68-2-6
 - shock IPXX5 in accordance with DIN 40050

Electrical

- Withstand voltage: 1500 Vrms min or in accordance with DIN 57110b.
- Contact resistance < 10 mΩ.
- Current rating per contact:
 - machined contacts: ∅ 1.6 mm (13 A).
 - stamped and formed contacts: ∅ 1.6 mm (10 A).

Environmental

- Working temperature: -40° C to + 125° C
- Sealing
- Examples:
 - connector + sealing gland : IP67.
 - connector + grommet : IP67.
- Resistance to salt spray: 48 h min > 1000 h (sealed mated connectors).
- Resistance to fluids:
 - oil
 - petrol, fuel
 - lubricants
 - other fluids : consult FCI

Clipper "30"

IP 68 version for deluge and shallow water immersion Market needs

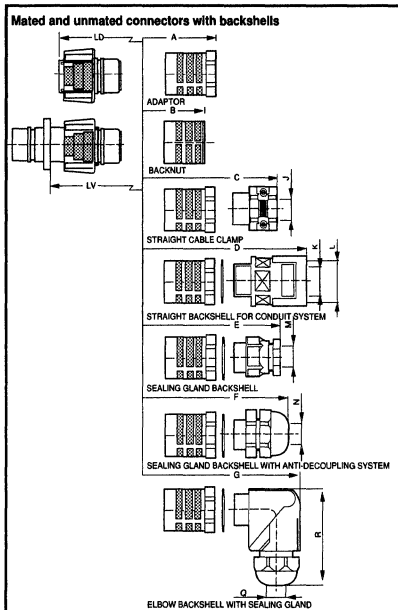
Industries working in harsh and shallow water environments require electrical connectors with 4 to 40 contacts, efficient sealing for the worst weather conditions and field installation capability with principal industrial cables available on the market.

Key Features

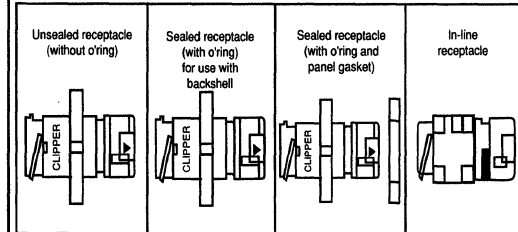
- Clipper "30" offers:**
- a permanent IP 68 waterproof level when immersed at depths down to 30 meters
 - a high corrosion resistance
 - a simple design allowing 100% toolless, insertion/extraction of the contacts and field repair capability
 - a cost effective product



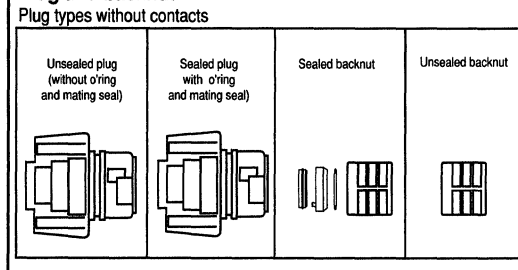
Wall mount receptacle and in-line receptacle & Plug and backnut Contact layouts



Wall mount receptacle and in-line receptacle

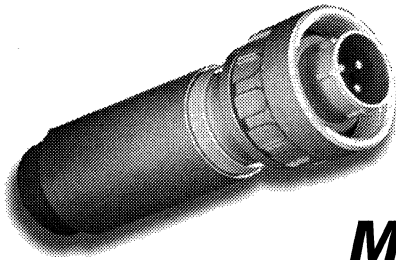


Plug and backnut



Shell Sizes	Contact layouts
1	4 cts #16 Class 2-VDE 380 V
	9 cts #20
2	9 cts #16 Class 2 - VDE 250 V
	14 cts #20
3	18 cts #16 Class 2 - VDE 250V
	31 cts #20
4	26 cts #16 Class 2 - VDE 250 V
	40 cts #16

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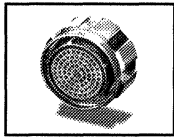


CONNECTOR
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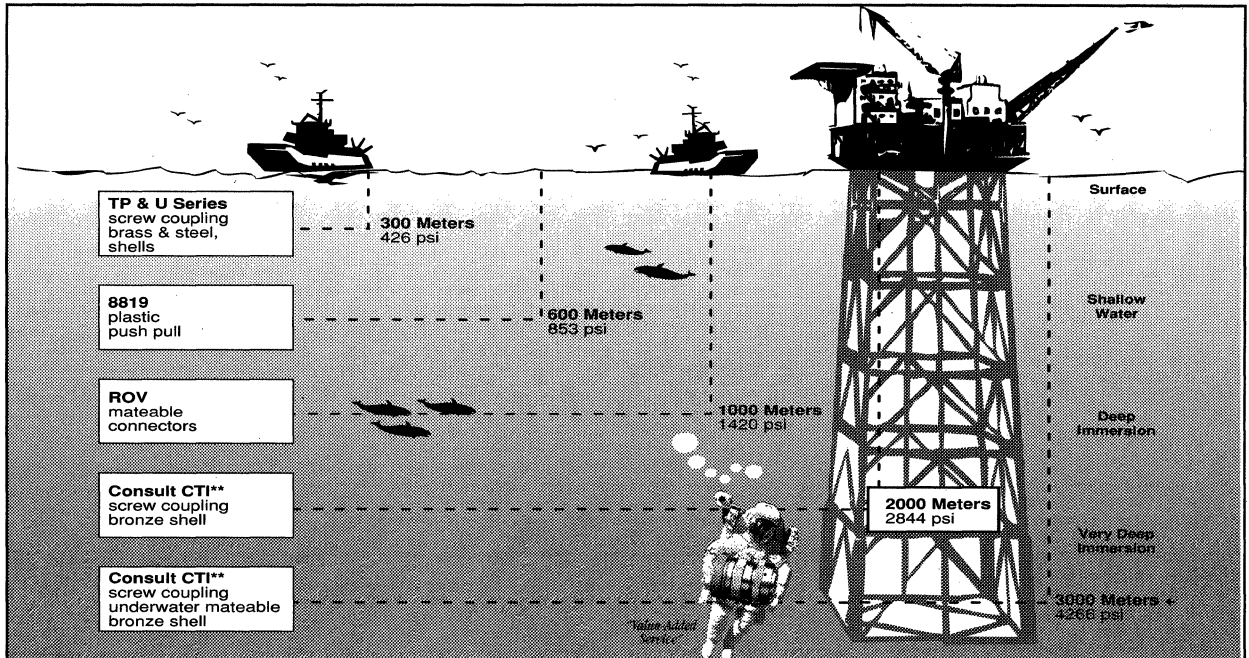
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Marine Connectors-

From Surface to Deep Water Environments



← Ruggedized version available in bronze →

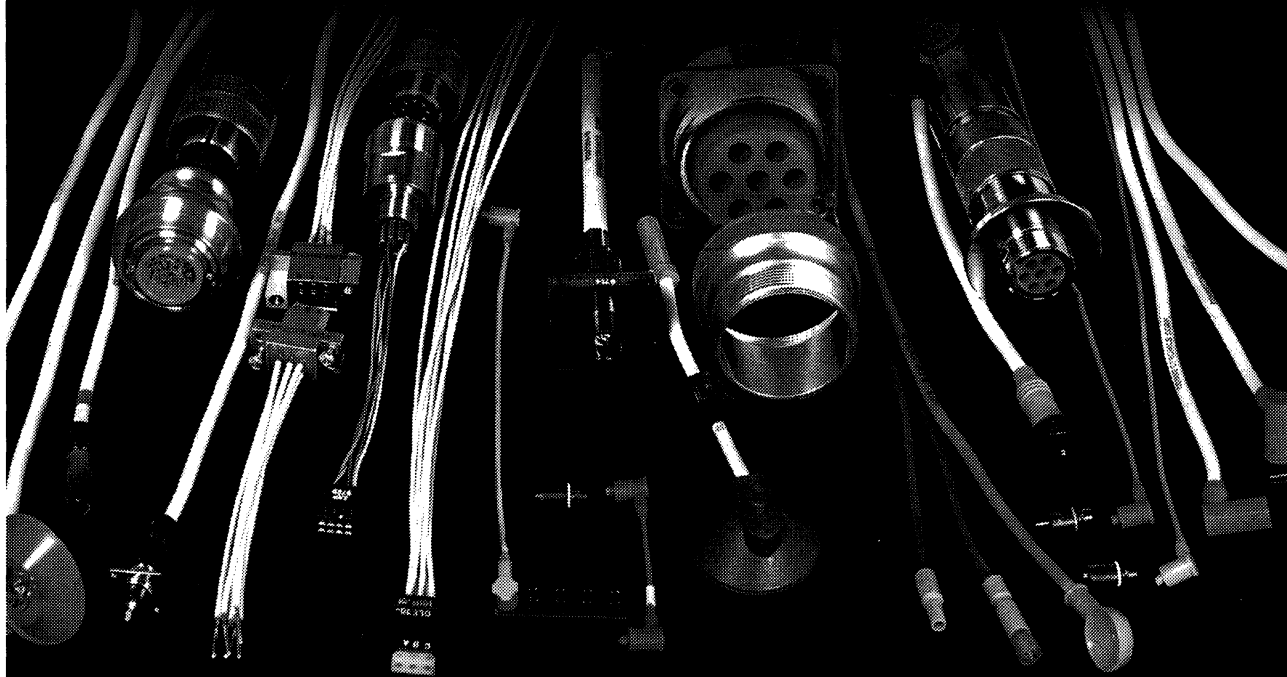


**Due to extreme environments and highly specific customer requirements at these depths, consult CTI on the basic styles available and specific modifications possible within them.

Shell size	Type of contact	Maximum current per contact	Resistance
8TP	20	7	≤4
	16	14	≤3
10TP	14	20	≤2.5
14TP	12	26	≤2
20TP	6	65	≤1
	2	115	≤0.6
10TP	coaxial 50Ω	20	≤2.5
	coaxial 75Ω	7	≤4
10TP	coaxial 50Ω	7	≤4
20TP	coaxial 50Ω	4	≤5
10TP	coaxial 75Ω	40	≤1.5
20TP	coaxial 75Ω	26	≤2
14TP	coaxial 50Ω		
	triaxial 50Ω	14	≤3
	triaxial 75Ω		
10TP-14TP	high voltage	14	≤3
20TP	high voltage	20	≤2.5

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Filtered Modular Jack

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Corcom's Signal Sentry Filtered Modular Jack provides a space saving and cost effective solution to signal line RFI emissions and susceptibility problems in telecommunications equipment, computers, terminals, workstations and peripherals.

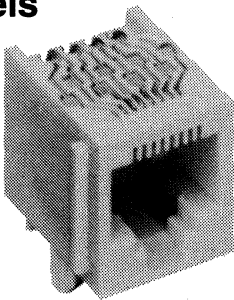
Conventional protection places separate filtering components on the printed circuit board near the connector, which adds to design/redesign requirements, uses valuable space, and sacrifices performance. The unique Corcom design, however, provides interference

suppression at its optimal location by integrating filtering into the RJ11 (6 position)/RJ45 (8 position) jack itself.

The Corcom Signal Sentry Filtered Modular Jack is the ideal connector to solve the RFI problems in your LAN, PBX, local I/O and ISDN interfaces to twisted pair or other multi-conductor cabling systems.

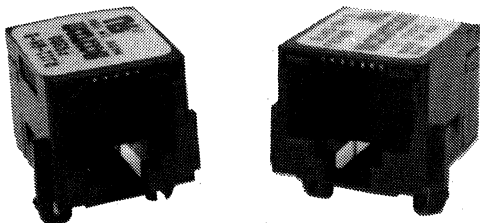
For detailed information, dimensions and PC board layout call or write for a Signal Sentry Brochure.

L Models



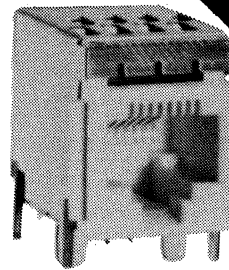
- Direct retrofit to standard unfiltered jacks
- RJ11, RJ145 and handset jacks
- Optional shielding
- Ferrite sleeves or ferrite block

N Models



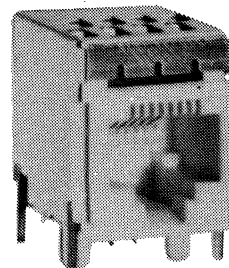
- Low profile version of our L series
- RJ11, RJ45
- Optional cable grounded shielding
- Ferrite sleeves or ferrite block

LC Models



- 820pF capacitor version of the L series
- RJ11, RJ45
- Panel and/or board grounded shielding
- Ferrite sleeves or ferrite block

LCT Models



- 82pF version of the LC series
- RJ11, RJ45
- Panel and/or board grounded shielding
- Ferrite sleeves or ferrite block

Ask about Corcom's NEW ganged filtered jacks

SIGNALSENTRY™

See our pages in Vol. A Section 2700

connectors

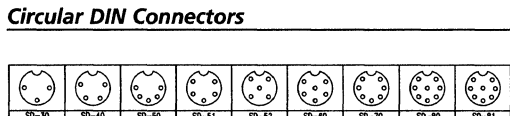
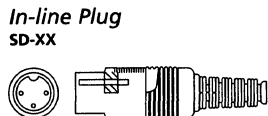
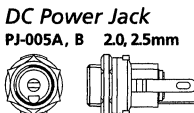
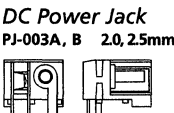
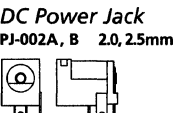
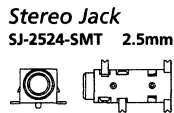
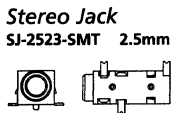
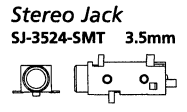
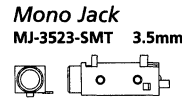
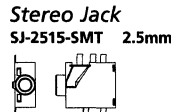
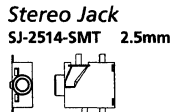
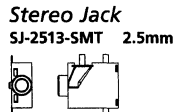
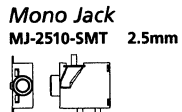
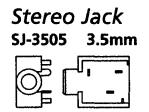
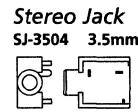
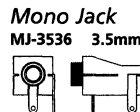
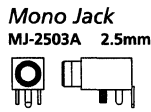
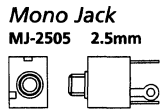
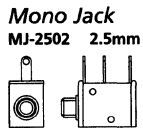
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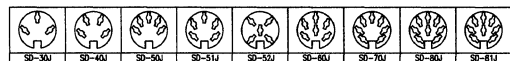
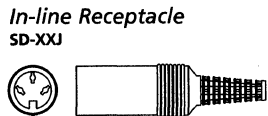


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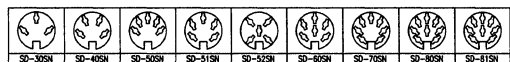
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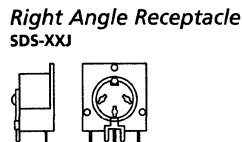
Description	Mfg. Part No.
3-Pin In-Line Plug	SD-30
4-Pin In-Line Plug	SD-40
5-Pin In-Line Plug	SD-50, -51, -52
6-Pin In-Line Plug	SD-60
7-Pin In-Line Plug	SD-70
8-Pin In-Line Plug	SD-80



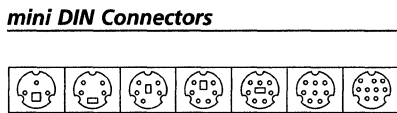
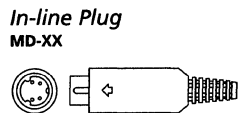
3-Pin In-Line Jack	SD-30J
5-Pin In-Line Jack	SD-50J, -51J, -52J
6-Pin In-Line Jack	SD-60J
7-Pin In-Line Jack	SD-70J
8-Pin In-Line Jack	SD-80J



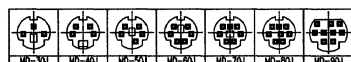
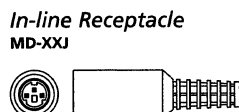
3-Pin Panel Mount Receptacle	SD-30SN
4-Pin Panel Mount Receptacle	SD-40SN
5-Pin Panel Mount Receptacle	SD-50SN, -51SN, -52SN
6-Pin Panel Mount Receptacle	SD-60SN
7-Pin Panel Mount Receptacle	SD-70SN
8-Pin Panel Mount Receptacle	SD-80SN



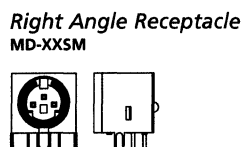
3-Pin Right Angle Receptacle	SDS-30J
4-Pin Right Angle Receptacle	SDS-40J
5-Pin Right Angle Receptacle	SDS-50J, -51J
6-Pin Right Angle Receptacle	SDS-60J
7-Pin Right Angle Receptacle	SDS-70J
8-Pin Right Angle Receptacle	SDS-80J



Description	Mfg. Part No.
3-Pin In-Line Plug	MD-30
4-Pin In-Line Plug	MD-40
5-Pin In-Line Plug	MD-50
6-Pin In-Line Plug	MD-60
7-Pin In-Line Plug	MD-70
8-Pin In-Line Plug	MD-80
9-Pin In-Line Plug	MD-90



3-Pin In-Line Receptacle	MD-30J
4-Pin In-Line Receptacle	MD-40J
5-Pin In-Line Receptacle	MD-50J
6-Pin In-Line Receptacle	MD-60J
7-Pin In-Line Receptacle	MD-70J
8-Pin In-Line Receptacle	MD-80J
9-Pin In-Line Receptacle	MD-90J



3-Pin Shielded Right Angle Receptacle	MD-30SM
4-Pin Shielded Right Angle Receptacle	MD-40SM
5-Pin Shielded Right Angle Receptacle	MD-50SM
6-Pin Shielded Right Angle Receptacle	MD-60SM
7-Pin Shielded Right Angle Receptacle	MD-70SM
8-Pin Shielded Right Angle Receptacle	MD-80SM
9-Pin Shielded Right Angle Receptacle	MD-90SM

More models available. Call for catalog and specifications.

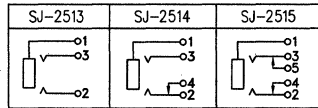
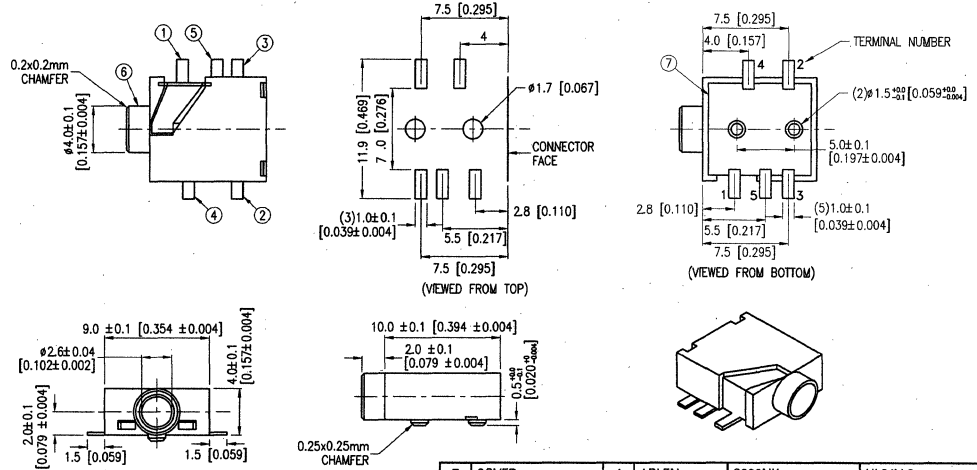
connectors

2.5mm surface mount jacks

Minimum Specifications

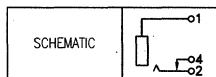
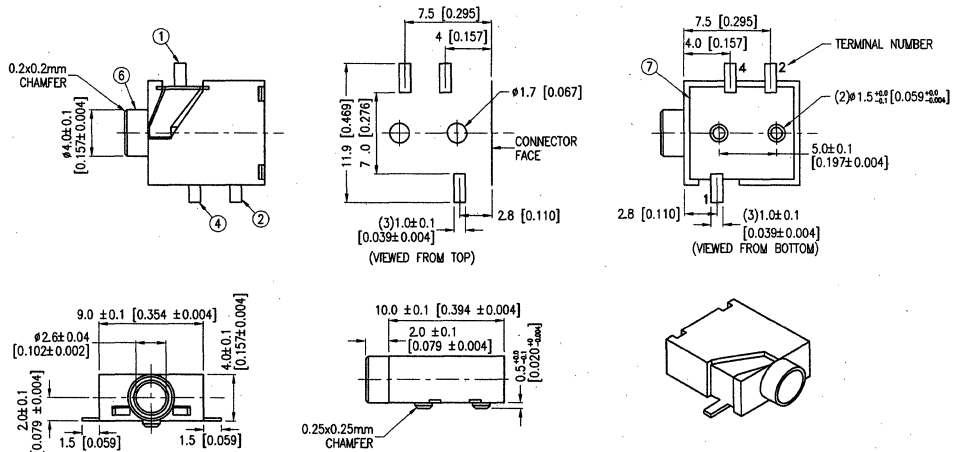
1. Insulation resistance of adjacent open terminals shall not be less than 50 MΩ when measured with 100 Volts resistance meter.
2. Connector shall withstand 250 Volts (RMS) between adjacent open terminal for one minute.
3. Contact resistance of normally closed terminals shall not exceed 0.03Ω when measured at a current of 1A by Voltage drop method.
4. After exposed at temperature of 40+2C and at room temperature for 30 minutes, insulation resistance shall not be less than 30MΩ.
5. Connector shall withstand 5,000 cycles of insertions and withdrawal with testing plug. Contact resistance shall not exceed 0.1Ω.

Surface Mount
Audio Jack - Stereo
SJ-2513-SMT
SJ-2514-SMT
SJ-2515-SMT



7	COVER	1	ARLEN	C230NK	UL94V-0
6	HOUSING	1	ARLEN	C230NK	UL94V-0
5	SHUNT TERMINAL-B	1	BRASS 0.3t	5-10u" electroless Gold over 50u" min nickel	
4	SHUNT TERMINAL-A	1	BRASS 0.3t	5-10u" electroless Gold over 50u" min nickel	
3	RING SPRING	1	PBS 5210 0.2t	5-10u" electroless Gold over 50u" min nickel	
2	TIP SPRING	1	PBS 5210 0.2t	5-10u" electroless Gold over 50u" min nickel	
1	EARTH TERMINAL	1	PBS 5210 0.3t	5-10u" electroless Gold over 50u" min nickel	
P/N	PART NAME	QTY	MATERIAL	PLATING	REMARKS

Surface Mount
Audio Jack - Mono
MJ-2510-SMT



5	COVER	1	ARLEN	C230NK	UL94V-0
4	HOUSING	1	ARLEN	C230NK	UL94V-0
3	SHUNT TERMINAL-A	1	BRASS 0.3t	5-10u" electroless Gold over 50u" min nickel	
2	TIP SPRING	1	PBS 5210 0.2t	5-10u" electroless Gold over 50u" min nickel	
1	EARTH TERMINAL	1	PBS 5210 0.3t	5-10u" electroless Gold over 50u" min nickel	
P/N	PART NAME	QTY	MATERIAL	PLATING	REMARKS

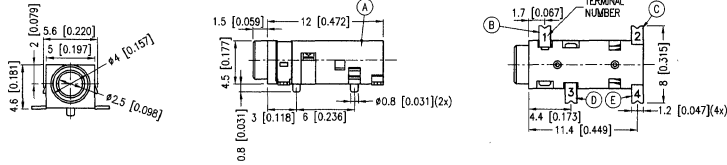
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Beaverton, OR 97005
www.cuistack.com

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ph 503-643-4899
fax 503-643-6129

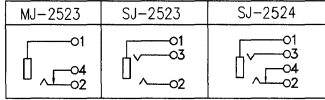


On top of it.™

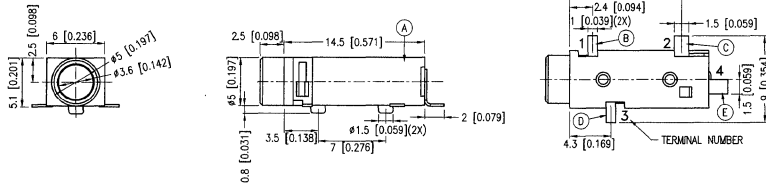
Surface Mount
Audio Jack - Mono/Stereo
MJ-2523-SMT
SJ-2523-SMT
SJ-2524-SMT



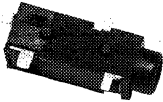
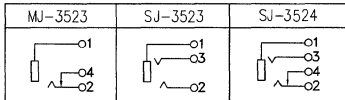
MATERIAL:
A (HOUSING):PBT.
B COPPER ALLOY.
C COPPER ALLOY.
D COPPER ALLOY.
E BRASS.



Surface Mount
Audio Jack - Stereo
MJ-3523-SMT
SJ-3523-SMT
SJ-3524-SMT



MATERIAL:
A (HOUSING):PBT.
B COPPER ALLOY.
C COPPER ALLOY.
D COPPER ALLOY.
E BRASS.



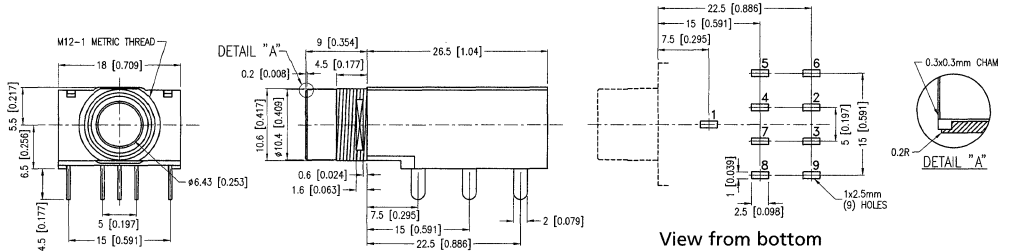
6.5mm audio jacks

Minimum Specifications

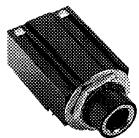
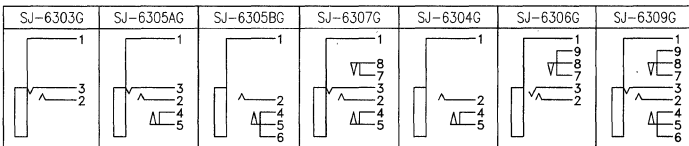
- Rating: 12V DC @ 1A
- Contact Resistance: 100mA and @ Freq. of 1KHZ before test or initial: 30mΩ MAX
- Insulation Resistance: 100MΩ MIN @ 500V DC
- Voltage Withstand: 500V AC RMS for 1 minute
- After Life Test: 60mΩ MAX @ below 100mA and @ freq. of 1KHz

Audio Jack - Stereo

- SJ-6309G
- SJ-6303G
- SJ-6305AG
- SJ-6305BG
- SJ-6307G
- SJ-6304G
- SJ-6306G



View from bottom



More models available. Call for catalog and specifications.

CW

Connect With CW

If you are looking for the highest quality connectors ... exceptional service ... fast delivery of samples and finished product ... and very competitive pricing ... you've found the right supplier!

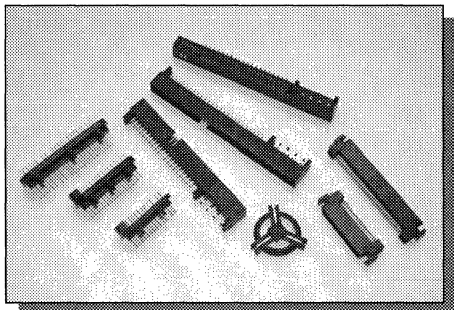
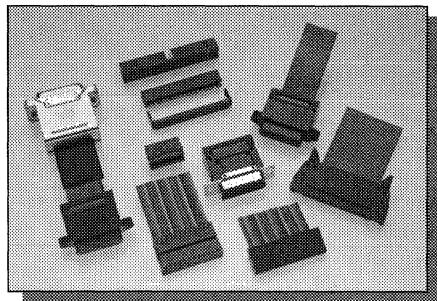
From your initial contact through the delivery of your finished connectors, you will discover that CW is a different breed of company. The difference is our uncompromising craftsmanship and dedication to developing and manufacturing the best connectors — quickly, reliably, and inexpensively. You'll find that the features and advantages of our connectors will add value to your product. And if one of our standard products does not suit your requirements, you may be pleasantly surprised how our design experts can inexpensively modify a standard design to create a custom connector.

Our unique vertical integration and fully automated production are two of the keys to our high quality and responsive service. Beyond our design engineering expertise, we mold, stamp, plate, assemble, and test in-house virtually every part used in each of our products. We design and build our own molds and dies. We even design and custom build our automated assembly equipment. Our products are certified to all major agency standards and our testing laboratories are UL and Defense Logistics Agency qualified.

Our complete in-house control of the connector design and manufacturing process not only guarantees you a superior product, it ensures that your connectors are delivered on-time and on-budget. That's why so many customers have chosen to "Connect with CW!"

IDC Connectors

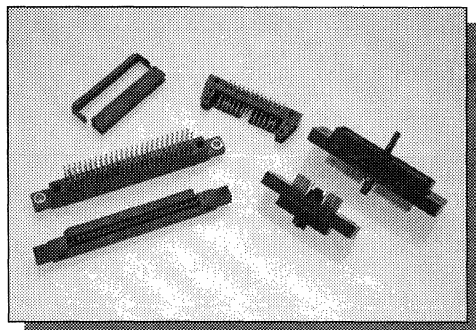
CW supplies a comprehensive line of IDC Connectors including Sockets, Headers, D-Subminiature, Card Edge, Dips, and PCBs. Patented Torq-Tite™ contact design ensures highly reliable, long term, gas tight connection of cable to connectors. Offering a variety of plating and insulator material options, CW connectors are designed to meet your specific requirements.



Disk Drive Connectors

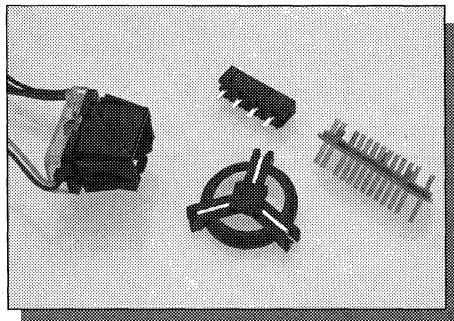
Standard as well as Custom Designs

SCA 2 and Fibre Channel Connectors conform to SFFC requirements. Combination I/O Connectors incorporate the power and signal functions into one connector. Insert molded HDA header connectors provide a high quality, reliable, 2 mm product at an attractive price. Call today with your specific needs.



Military Connectors

CW offers a full line of Military IDC Connectors, qualified to Mil-C-83503 and Mil-C-24308 specifications. The rectangular high density connectors are qualified to Mil-C-28804. In-house test facilities are qualified by the Department of Defense to ensure high quality and conformance to all mil specs.



Custom and Other Products

CW can supply — at very reasonable costs — custom connectors, wire harnesses, and assemblies — based on modifications to current designs or as entirely new products. In addition, CW manufactures several lines and styles of rocker, slide, and other switches. Call for complete details.

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WATERPROOF CIRCULAR CONNECTORS

Vibration, Moisture, Corrosion resistance: MIL-C-STD-202E

Waterproof Circular Connector

RO4 Series connectors are miniature and waterproof up to 20 meters in depth. TC1108 Series connectors are waterproof up to 30 meters in depth. Both are suitable for SPLASHPROOF and High Humidity environment. Hermetically sealed receptacles (Glass to Metal Seal and Ceramic Seal). Its applications are for vacuum pumps, inert gas tanks and pressure pumps.

RO4 Series & R28 High Density Series (Hd)



RO4 Series **Material:** Brass Nickel-Plated. **Contacts:** Gold-Plated (Nickel based). **Wire:** AWG24 max. 2A (300VAC-150VAC) (Hd) AWG26 max. 2 Amp.

No. of Contacts	Plug Diameter	Plug & Jack Length	Back nut I.D.	Receptacle Diameter	Receptacle Length	Mounting Hole Dia.
2,3,5 Hd 8	12.0	38	4.8	10.5	17.8	9.2
6,8 Hd 12	15.5	40	6.3/6.8/7.3	14.0	17.8	12.2
12	20.0	43.3	6.3/6.5	18.0	17.8	16.2

TC1108 Series

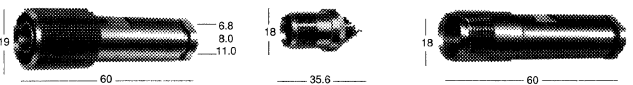


1108 Series **Material:** Brass Nickel-Plated. **Contacts:** Gold-Plated (Nickel based). **Wire:** 20 & AWG16 max. 2 Pins: 10A600VAC to 37 Pins: 3A400VAC.

Shell Size	No. of Contacts	Plug Diameter	Plug & Jack Length	Back nut I.D.	Mounting Hole Dia.	Receptacle Length
10	2,3,4,5,7	21.0	52	5/6.3/7/8/8.6/10	14.2	12.5
16	8,14	27.0	55.5	11.1/11.8/13.5	20.2	12.5
20	12,19	34.0	61.0	11/14.3/15.8	25.2	13.5
26	21,37	40.0	65.0	16.3	31.2	13.5

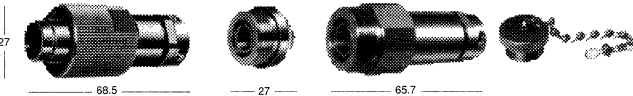
Coaxial Waterproof (PW Series)

Coaxial Waterproof (PW Series) connectors are waterproof up to 20 meters in depth. (A) dia. 19mm, (D) length 60mm. **Cable:** 8.5mm RG59/u. 8.0mm RG39/u. 11.0mm RG11/u. Mtg. Hole 12.2mm. **Material:** Nickel-Plated Brass. **Contact:** Gold-Plated. Hermetically sealed receptacle available. Helium leak rate 1 x 10⁻⁵ atm cc/sec.



Stainless Steel Connectors (R14 Series)

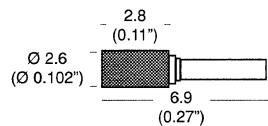
are waterproof up to 100 meters in depth and designed for marine usage. **Shell:** Stainless Shell. **Contact:** Cooper Alloy Gold Plated. @ Pins: 10A 600VAC AWG16, 3 Pins: 10A 350 VAC AWG16, 4 Pins: 5A 400VAC AWG20, 5 Pins: 5A350VAC AWG20.



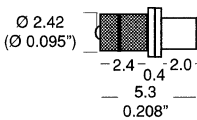
Coaxial Micro Connector (2.6 mm (0.102") diameter)*

Material Plug and Receptacle: Shell: Plug = Brass (Nickel/Gold Plated), Recept= Titanium Alloy Contact: Beryllium Copper (Nickel/Gold Plated), Insulation: TI Polymer
SPECIFICATIONS: Withstanding Voltage: AC200V one min.
Insulation Resistance: DC50V 1000M ohm min. **Contact Resistance:** 1A max. 5m ohm max.
 Connector is supplied with the cable. *Not waterproof.

TMG 101 - Plug



TMG 102 - Receptacle



MINIATURE CIRCULAR CONNECTORS

Vibration, Moisture, Corrosion resistance: MIL-C-STD-202E

Bayonet, RO5 Series & R29 High Density Series (Hd) Threaded, RO3 Series & R27 High Density Series (Hd)



Material: Shell Nickel-Plated. **Contacts:** Gold-Plated. Available RCPT w/PCB Mnt. Terminals. **Wire:** AWG24 max. 2 Amp. (Hd) AWG26 max. 2 Amp.

No. of Contacts	Plug Diameter	Plug & Jack Length	Cable O.D.	Receptacle Frame Size	Receptacle Length	Mounting Hole-Dia.	Thread
2,3,5 Hd 8	12.0	32.0	5.2	15	18.8	9.2	M10 5P-0.75
6,8 Hd 12	15.5	34.0	6.2	17.5	18.0	12.2	M14P-1
12	20.0	39.0	10.5	22.5	18.0	16.2	M18P-1

PRC Series Quick Connect - Disconnect

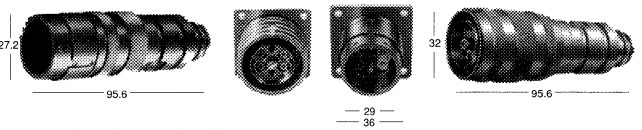


Simple Push-click-Pull operation save space and time. Connection remains secure against vibration and impact. **Material:** PRC05: Brass-Nickel, PRC03: Zinc-Alloy Nickel, PRC04: Aluminum A/O coating. **Wire:** AWG24, 20, 16 max. 2 Amp. to 10 Amp. also available RCPT w/PCB Mnt. Terminals PRC03 also available with threaded coupling

Series	No. of Contacts	Plug Diameter	Plug & Jack Length	Cable O.D.	Receptacle Frame Size	Receptacle Length	Mounting Hole Dia.
PRC05	2,3,5	13.5	32.0	5.2	11.5	18.0	9.2
	6,8	16.7	34.0	6.2	13.5	18.0	12.2
	12	21.0	39.0	10.5	17.0	18.0	16.2
PRC03	2,3,4,5,7	21.0	46.0	10.5	16.0	26.5	15.2
PRC04	8,14	28.0	55.5	12.5	21.5	25.5	21.2
	12,19	34.0	63.5	14.5	26.0	26.0	26.2
	21,37	41.0	71.0	18.0	31.0	32.0	32.2

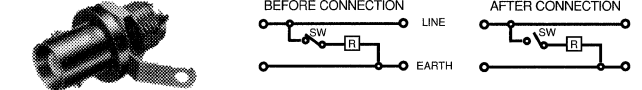
Fiber Optic and Power Contacts/Waterproof

Combination of 4 power contact (10A, 500 VAC) and 2 fiber optic contacts (Insertion Loss 0.7 db max). **Cable:** GI/50/ and **SM:** 10/125 push & pull quick connecting system.



BNC Self Terminating Receptacles

Self Terminating Receptacles (built in resistance 75ohm 1/8W) hold termination and switch internally. When plug is removed maintain the internal circuit electrical current automatically. When plus is inserted the internal circuit to be terminated by external circuit.



4 Contacts Micro Circular Connector for Sensor

- a) 3 Guide threaded coupling, diameter of plug is only 6.3mm (0.248") and light weight.
 - b) Receptacle: Bulkhead type and pressure installation type.
 - c) Plug is supplied with the cable (L=1000, 2000, 3000, 5000, 7000mm)
- SPECIFICATIONS:** **Vibration:** 10 - 2000 Hz 10g (JIS C5402 6.1). **Shock:** 500G (JIS C5402 6.2). **Rating:** Voltage AC50V (DC70V). **Current:** 0.5A. **Withstanding Voltage:** AC150V one min. **Insulation Resistance:** DC50V 1000M ohm min. **Contact Resistance:** DC 0.1A max. 30m ohm max **Temperature:** -25C - +85C max. **Material Plug:** Shell: Brass Nickel Plated, Insulation: PBS resin, Contact: Beryllium Copper (socket) Gold Plated. **Material Receptacle:** Shell: Stainless Steel (passivated), Insulation: PBS resin, Contact: Copper Alloy (PIN) Gold Plated.

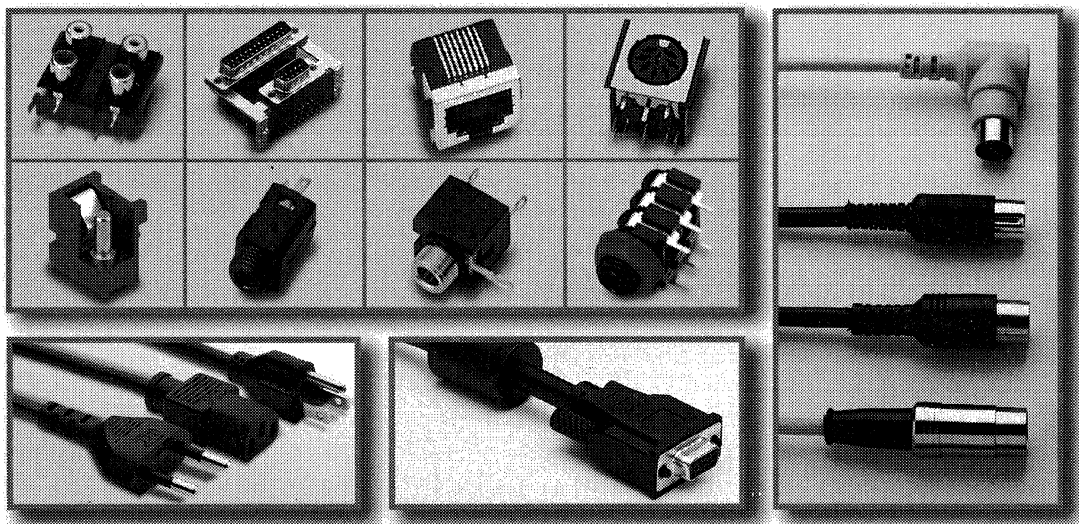


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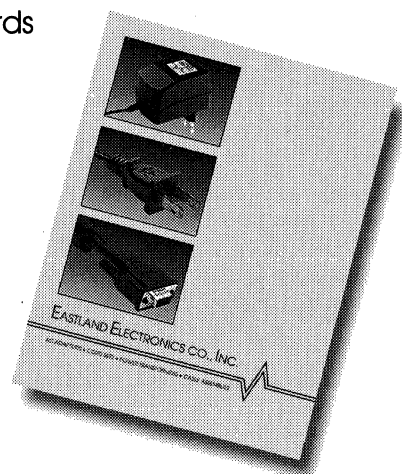
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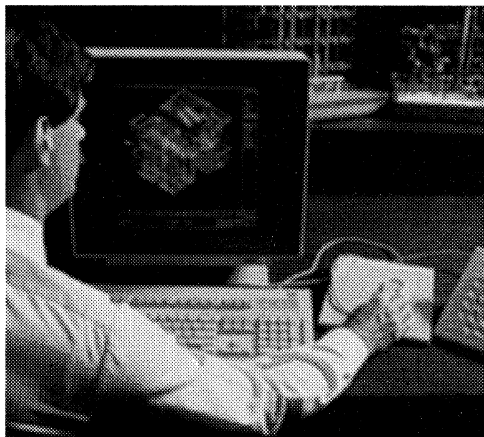
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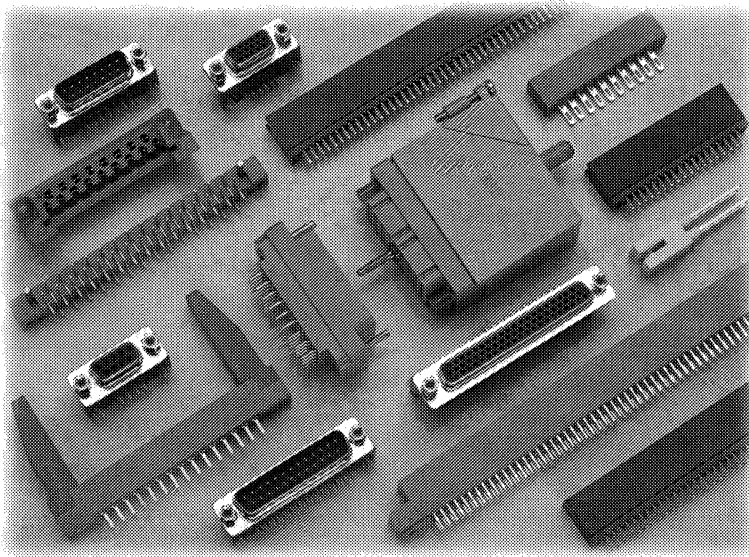
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ept is a world class manufacturer with vertically integrated capabilities and ISO-9001 Certified manufacturing facilities. Headquartered in Germany, with facilities in the USA, Checkia, and China, ept controls the design and manufacturing process to deliver only the best quality products to our customers with just-in-time delivery. ept provides a broad range of Standard and Custom DIN 41612, PC/104 and 2.0 mm interconnect products in Solder and Press-fit configurations. Applications include the Telcom, Computer, Instrumentation and Automotive Industries.

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DIN 41612 Type C:

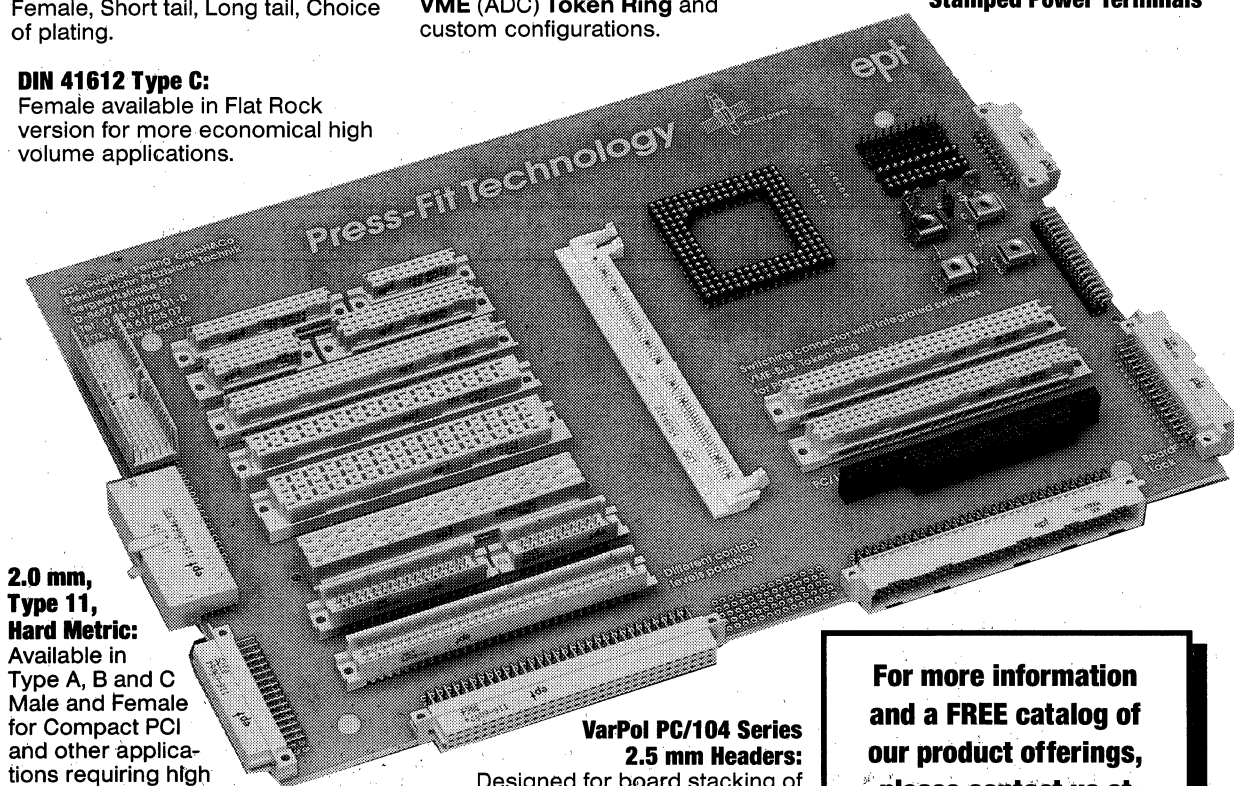
Female available in Flat Rock version for more economical high volume applications.

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Sockets: PGA, DIP, Strip and SIMM

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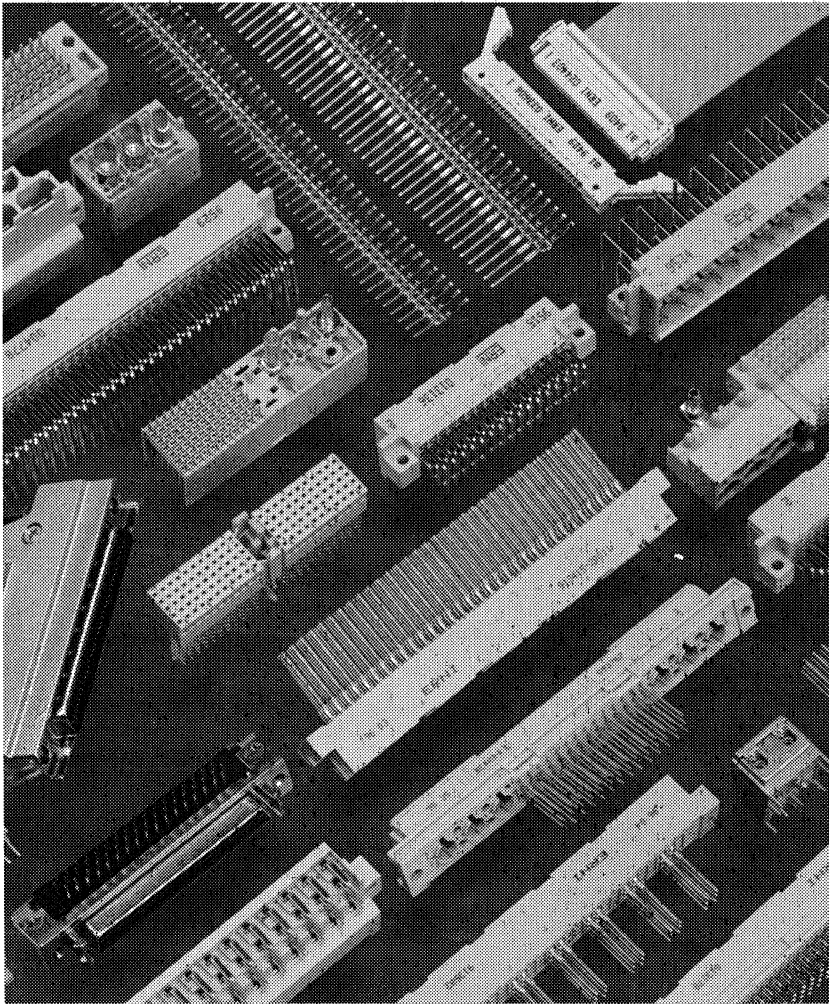
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- Right Angle Pressfit Connectors
- High Density Connectors, up to 160 positions
- Edgecard Connectors
- Type M Hybrid Connectors for Signal, Power & RF
- Eurocard Center Connectors
- DIN Female Connectors with Crimp Snap In Contacts
- LDG DIN Rail Miniature Enclosures
- MIL C-55302 Connectors
- ERNIPRESS™ D-Subminiature Pressfit & Filtered Connectors – TMC Series
- Power Tap Connectors for Pressfit Backplanes
- Insulation Displacement (IDC) Receptacle Connectors for 64 and 96 Ribbon Cable on .050" (1.27mm) & .033" (.838mm) Centers
- Full line of Application Tooling

The Americas

ERNI Components, Inc.
12701 N. Kingston Ave
Chester, VA 23836 • U.S.A.
Toll free 1-800-235-3765
Tel: (804) 530-5012
Fax: (804) 530-5232

Customer Service Fax: (804) 530-5358

International

ERNI Elektroapparate GmbH
Seestr. 9 • D-73099 Adelberg • Germany
Tel: (++49) 7166-50-0
Fax: (++49) 7166-50-119

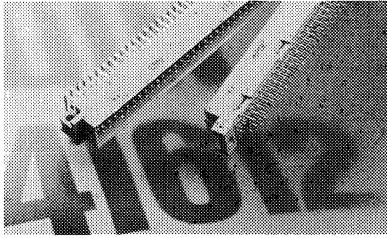
Asia

ERNI Asia Pte. Ltd.
50-A Bussorah St.
Singapore 199466
Tel: (++65) 295 2113
Fax: (++65) 297 7203

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1-800-235-3765

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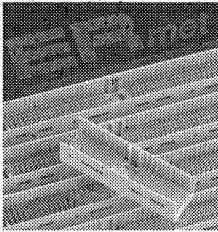



DIN 41612 CONNECTORS

- Full complement of all DIN types & sizes
- All termination styles including thru-hole, wire-wrap, press-fit & SMT
- Different coding options
- Early make/late break contacts possible on request
- Wide range of accessories including cable housings & guide frames
- Complete interface systems
- Custom & special designs
- ISO 9001 certified and meet all relevant international approvals including UL, CSA, MIL-C-55302 and Bellcore requirements

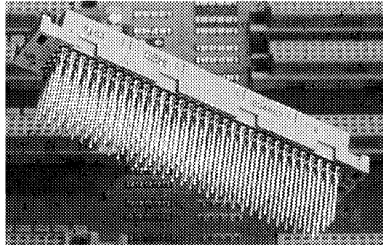
ERMET® 2MM H.M. MODULAR CONNECTOR SYSTEM

- 6 different module types in stackable 25mm & 50mm heights
- Sequential mating available, with up to 3 male contact lengths in 1.5 mm increments
- Signal, high frequency, high power, & fiber optic contacts in mixed or dedicated configurations, with virtually any possible loading arrangement
- Unmatched electrical performance with low nanoseconds rise times in 50 ohms transmission environments
- Economical solution to meet high pin count, high speed applications
- Conforms to the international IEC 1076-4-101 specification
- Complete range of color-coded keying accessories, rear shrouds & tooling, including new totally automated ERNI EPC Automated Pressfit Center



ENGINEERING EXPERTISE

Precision engineering is the driving force behind our multi-specialty design and manufacturing capabilities. Our teams combine creativity, experience and diverse backgrounds to produce optimal results. Every new product is designed and built to meet the highest levels of quality and performance. Ongoing challenges fuel our continuous mission to develop the world's finest interconnection products.

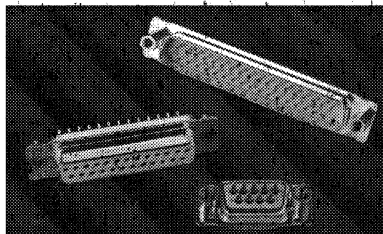


ERNIPRESS® PRESSFIT DIN 41612 CONNECTORS

- A highly reliable, gas-tight, corrosion proof, mechanically strong connection
- 3 wire-wrap post lengths
- Pressfit allows dual-sided PCB assembly
- Time-consuming cleaning of PCB unnecessary, plus eliminates the use of environmentally restrictive solutions
- Full range of DIN sizes, including 1/2 & 1/3 DIN; 128 & 160 pin
- Variety of accessories including coding, cable housings & guide frames
- ISO 9001 certified and comply with all international standards including UL, CSA & Bellcore requirements

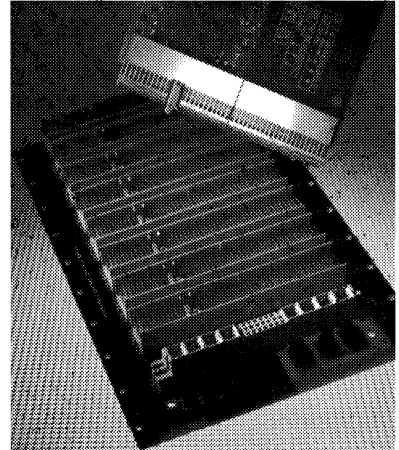
RESEARCH & PRODUCT DEVELOPMENT

On the vanguard of pioneering technology, ERNI shapes the future of interconnection. Our interactive and proactive approaches have proven to yield visionary results. In the field, our application engineers scout and identify trends in the electrical and electronic marketplace. Later, as subjects of the intense study of our research and development experts, these ideas become prototype products – tomorrow's innovations.



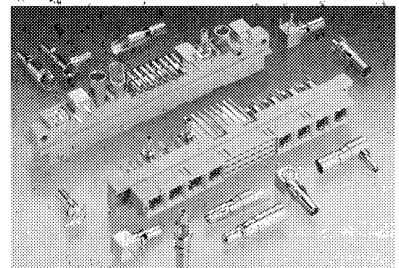
D-SUBMINIATURE PRESSFIT CONNECTORS - TMC SERIES

- Ideal for pressfit backplanes in serial communications & high-layer count boards.
- 9 to 50 positions
- Vertical and right angle plug & socket connectors available
- Rugged all metal shell with grounding springs for optimum shielding
- Factory installed hardware for reliable, secure PCB mounting and mating
- Meet virtually all international standards



2MM H.M. CONNECTOR FOR COMPACTPCI

- Modular connector for CompactPCI backplanes and daughter cards
- Meets global IEC 1076-4-101
- 5 rows plus 2 shield rows for optimum performance
- 3 level sequenced mating for front or rear hot swap applications
- Versatile low-cost keying system with 70 mating configurations
- For networking, telecom and other demanding applications



DIN 41612 TYPE M HYBRID CONNECTORS FOR SIGNAL, POWER & RF

- Mix signal connections with power, RF, and/or fiber optics for enhanced I/O and PCB efficiency.
- One of the most versatile plug and socket connector lines available for a wide variety of communications and data processing applications.
- Male and female connectors are offered with either 2, 4, 6, 8 or 10 special contacts, paired with signal contacts from 78 pins down to 6 pins. Special contact positions, which come empty, can be loaded with plug-in contacts for power (up to 40 amps per contact) or coaxial contacts (50 or 75 ohms) – all available in either solder, crimp or pressfit. An almost limitless selection of contacts is available.
- Universal approvals and certifications. Other versions for special applications are also available.

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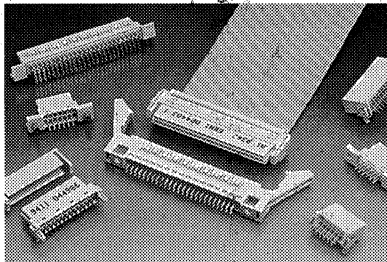
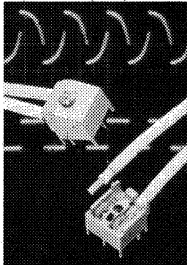
1-800-235-3765

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12701 North Kingston Avenue
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COAXIAL CABLE PRINTED CIRCUIT BOARD (PCB) CONNECTORS

- Significantly reduced assembly costs.
- Exceptional EMI shielding – cleaner signals & less reflections in controlled impedance & high frequency 50 & 75 ohms applications
- Rise times of 600 ps/min; reflectance factors less than 0.1, up to 500 MHz



SMC .050" (1.27MM) BOARD-TO-BOARD AND CABLE-TO-BOARD CONNECTORS

- Integral, anti-twist contact design & molded-in coding slots
- Variety of mounting options to ensure alignment
- Many accessories, such as an insertion cover, for manual or robotic assembly
- Application tooling for reliable cable & PCB assembly processing

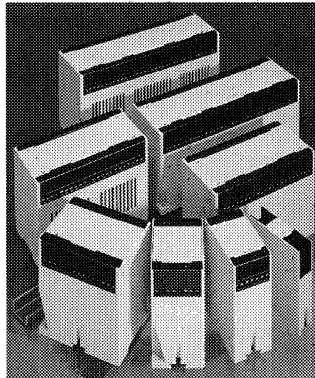
SERVICE SECOND TO NONE

When you want the world's best interconnection expertise, call on ERNI. Our people are the best in the business – dedicated to going beyond expectations and helping you outperform your competition. Our unwavering desire to become each customer's partner fuels our ability to deliver faster, better, more.

To accommodate customers' special requests, our Customer Service staff continually interacts with Manufacturing. Customer Service is also in touch with our worldwide network of distributors, manufacturers' representatives, agents and licensees to deliver the solutions ERNI customers expect. Over 100 distributors, representatives and direct salespeople support ERNI across North America. Flexible delivery fulfillment plans, including just-in-time and ship-to-stock programs, assure timely delivery of ERNI products.

TOOLING FOR ANY APPLICATION

To make sure we meet all our customers' needs, ERNI offers a full complement of first quality application tooling that meets the ever-stringent demands for precision, productivity and price considerations. With a choice of several hundred hand and press-in tools to our hydro-pneumatic press to a new state-of-the-art, fully automated ERNIPRESS Center, ERNI can provide the right tool for virtually any application or installation. From low to moderate production runs, to prototype work and field installation to high volume production, ERNI is your one source for all your interconnection needs.



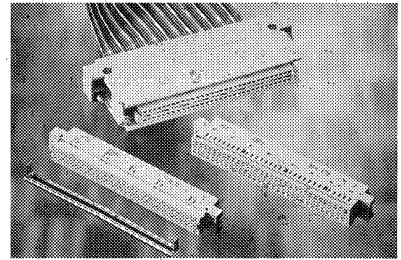
LDG-A DIN-RAIL MINIATURE ENCLOSURES

- Rugged modular design for DIN rail or screw mounting
- Variety of models and sizes – up to 70 ready-to-wire terminals
- Wave solderable connections for lower installation costs
- Customization and accessories available.
- UL & CSA Approved

COMMITMENT TO QUALITY

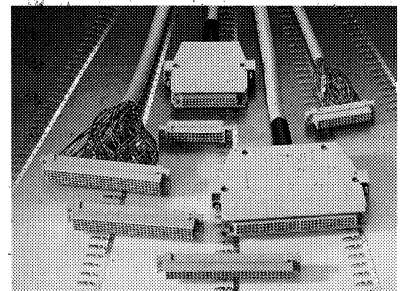
A company wide commitment to total quality is built into every ERNI product and process. With high performance specially fabricated equipment and state-of-the-art computer-aided design and manufacturing (CAD/CAM) systems, ERNI products are produced and delivered to meet global and local specifications – including technical requirements, quality systems and product safety.

From the products we manufacture to the caliber of our employees, the name ERNI stands for quality.



DIN 41612 IDC SOCKET CONNECTORS

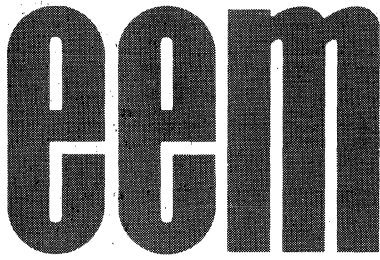
- The ERNI IDC Socket Connector is a Type C DIN 41612 connector for 64 and 96 conductor flat ribbon cable on .050" (1.27mm) and .033" (.838mm) centers respectively. It is designed to mate with a Type C or Type R male connector or in connector grid applications, such as back-plane shrouds, that require Class II performance, with up to 400 mating cycles.
- This connector provides a simple, fast method to IDC (insulation displacement) mass terminate flat ribbon cable (or round to flat cable) to the connector in a single step. It is capable of daisy chain or end termination. When using a standard arbor press with an upper tool platen for IDC termination, this connector's cover mechanism allows for easy cable alignment. This product line includes 64 and 96 conductor flat ribbon cable.



DIN 41612 FEMALE CONNECTORS WITH CRIMP SNAP-IN CONTACTS

- For terminating interconnection cables, the crimp snap-in termination method is very efficient. ERNI's range of crimp snap-in housings includes the type C for up to 96 positions and type C12 for up to 48 positions, along with the high density E160 for up to 160 positions
- Two contact options are available for wire sizes ranging from 28 AWG (.08mm²) up to 20 AWG (.56mm²)
- ERNI offers a range of application tooling for crimp termination which includes crimp hand tools, and an electric crimp press for high volume requirements. A simple contact removal tool is available for rework and maintenance

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MINIGLOSSARY CONNECTORS

Connector terminology is often quite confusing. This confusion starts with the very names of connectors. The name of a connector may derive from its shape, application, type of conductor or even method of termination.

Shape—Circular, cylindrical, and rectangular.

Electrical application—High voltage, RF, microwave, input/output, etc.

Mechanical application—Printed circuit, rack & panel, cable, etc.

Conductor type—Coaxial, flat cable, ribbon cable, flex circuit, etc.

Termination method—Wirewrap, soldercup, solderless, etc.

Hardware such as clamps, hoods, and adapters are frequently used to convert cable connectors to rack and panel types. This adds to the name confusion. A very common telephone connector, for example (the "C" type) got its name from the model number of the original maker.

Contact: The part(s) of the connector that actually provides circuit continuity between its two sections—the parts which are normally mated. The back end of the connector should properly be called the *termination*. This is the point where the wires or PC board is attached to the connector.

Contact alignments: Often called *contact float*. Describes the amount of allowable contact movement within the connector body. Permits self-alignment.

Male vs. female: In the U.S. this describes the contact construction. In Europe this term is more often used to describe the outer shell mating action which may be the reverse of the contacts.

Closed entry: A female contact which prevents entry of a male contact larger than a specific size.

Open entry: A female contact designed for a specific size of male contact but which will allow entry of larger male contacts by spring action.

Hermaphrodite: Contacts or connector bodies which are the same configuration. Male/female designations do not apply. Bodies usually have some mechanical means for maintaining polarity.

Hermetic seal: Glass-to-metal seals at terminations. Often used improperly to describe vacuum-tight seals.

Waterproof seal: May or may not be truly *waterproof*. May prevent easy entrance of casual water by means of a rubber or other boot.

Printed circuit connector: Connectors which are used in conjunction with printed circuit boards. There are two distinctly different styles.

Edgeboard. May be called *edge* or *card*. The printed circuit (PC) board edge enters the connector.

Two-piece: One part of the connecting pair is physically attached to the PC board itself. The other part is attached to something else such as a cable or a motherboard.

Readout: Describes the arrangement at the terminating edge of a PC board.

May be single or double. A double read-out PC board has termination strips on each side not usually interconnected.

Ribbon connectors: A type of connector which allows flat "ribbon" cable to be attached to a round or rectangular connector but also used interchangeably for flat connectors to flat cable.

Ribbon contact connector: Describes the contacts in a rectangular connector which have a self-wiping mating action. Not the same as ribbon connector.

Solderless terminal: Any style of termination which does not require solder for a permanent connection. See *crimp* and *insulation displacement*.

Crimp termination: A stripped wire is inserted into a barrel or trough which is then crimped to the conductor with a suitable tool.

Insulation displacement: Unstripped insulated wire is fitted into a channel containing metal teeth which are forced through the insulation to make contact with the conductor.

Service rating: The maximum rated voltage and/or current which may be applied continuously. May be called *working voltage*. Can be confused with the term used to describe how many times a connector may be mated and separated.

Withstanding voltage: Also called *test voltage*. The voltage a connector must withstand for one minute without breakdown. Applied between connectors and between connectors and shell and any grounding devices of the connector.



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The Precision Choice For Superior Connections.

Fischer cylindrical connectors are designed and manufactured per ISO 9001. Select from precision-machined shells of brass, stainless steel, or aluminum, and recently introduced high-performance plastic-shell versions.

Choose from more than 30 sealed and unsealed body styles for cable, and panel mounting. Contact configurations include multipole, mixed, high voltage, coaxial, triaxial, and thermocouple, in standard or custom designs.

You'll find the choices you need in high-performance electronic connectors from Fischer, along with the technical and sales support you deserve. When you're ready to connect, we're ready to connect, at www.fischerconnectors.com.

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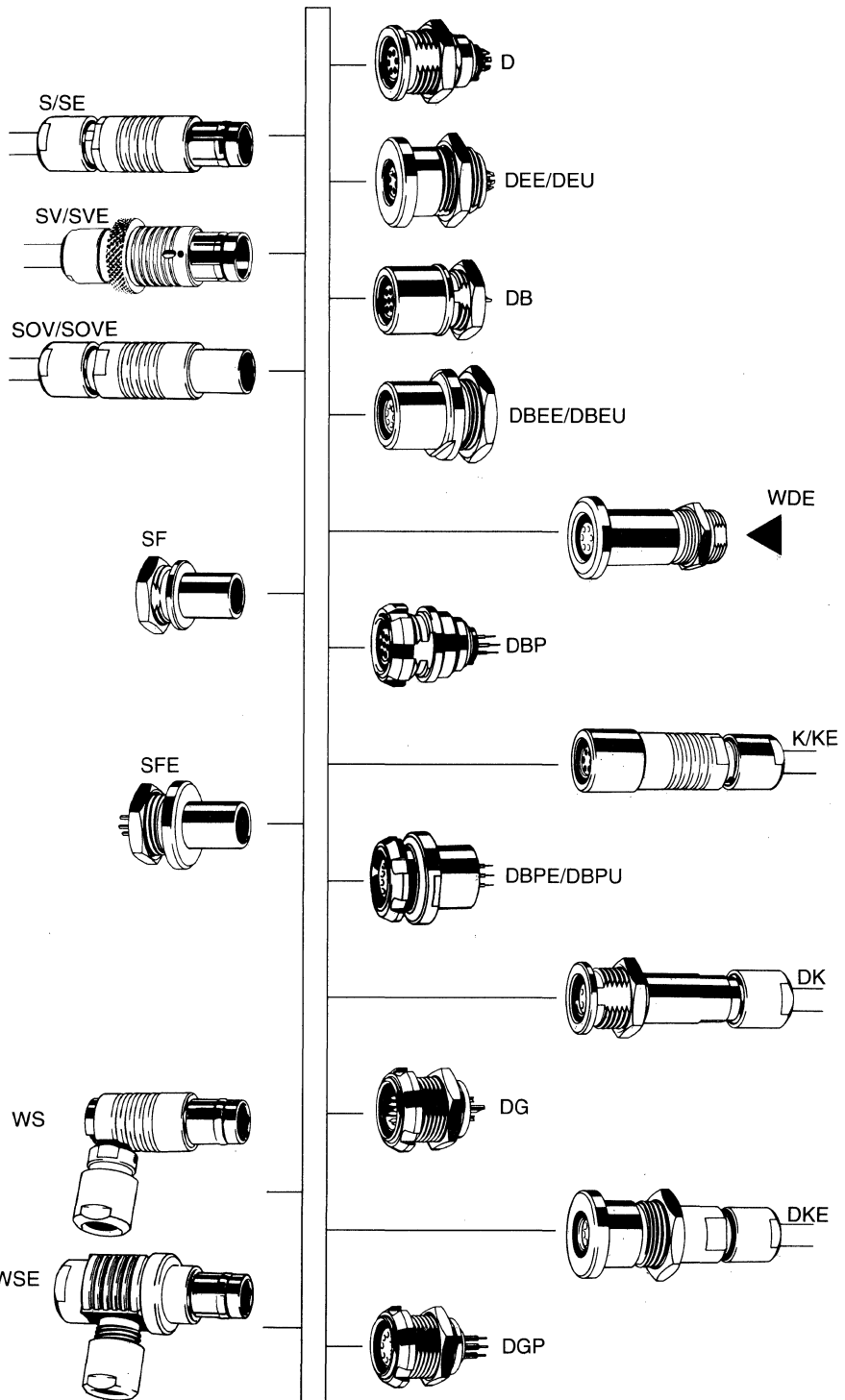
BODY STYLES

PLUGS

RECEPTACLES

Connector Style:

- S** Straight plug
- SE** Sealed plug
- SV** Tamper-proof plug
- SVE** Sealed, tamper-proof plug
- SOV** Non-latching plug
- SOVE** Sealed non-latching plug
- SF** Non-latching panel plug
- SFE** Sealed non-latching panel plug
- WS** Right-angle plug
- WSE** Sealed right-angle plug
- D** Panel receptacle
- DEE** Sealed panel receptacle
- DEU** IP67 sealed receptacle
- DB** Front projecting receptacle
- DBEE** Sealed front projecting receptacle
- DBEU** Sealed front projecting receptacle
- DBP** Rear-mounted panel receptacle
- DBPE** Sealed rear-mounted panel receptacle
- DBPU** Sealed rear-mounted panel receptacle
- DG** Adjustable threaded receptacle
- DGP** Adjustable threaded receptacle with p.c.b. contacts
- WDE** Sealed bulk-head feedthrough for connection of 2 plugs
- KB** Cable receptacle
- K** Cable receptacle
- KE** Sealed cable receptacle
- DK** Panel receptacle with cable clamp
- DKE** Sealed panel receptacle with cable clamp



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TECHNICAL DATA

SERIES 101

NIM-CAMAC Qualified

Part Number	Description	Test Voltage (kVDC)	Impedance (Ohms)	Ampacity	Cable Diameter (mm)	Typical Cable Type
D 101 A004-CINCH	Adapter, male RCA-CAMAC female	3.0	50	2A (DC)	—	The following cables may be used:
D 101 A004-IB11	Adapter, male, BNC-CAMAC female	—	—	—	—	
IB3C-D 101 A004	Adapter, female, BNC-CAMAC, female	—	—	—	—	
IB3C-S 101 A004	Adapter, female, BNC-CAMAC, male	—	—	—	—	
K-K 101 A004	Adapter, female-female	—	—	—	—	
S 101 A004-CINCH	Adapter, female RCA-CAMAC male	—	—	—	—	
SDL 101 A004	Adapter, right angle	—	—	—	—	
SDT 101 A004	Adapter, "T"	—	—	—	—	
WD 101 A004	Feed-through, female-female	—	—	—	—	
S 101 A004	Plug, solder	—	—	—	1.5-3.0	
S 101 A004-2	Plug, crimp	—	—	—	1.5-3.0	
S 101 A004-3	Plug, crimp	—	—	—	5.1	
S 101 A004-7	Plug, solder	—	—	—	5.1	
S 101 A004-8	Plug, gold body	—	—	—	1.5-3.0	
SF 101 A004	Plug, non-locking panel mount	—	—	—	—	
SM 101 A004	Plug, shorting	3.0	50	2A (DC)	—	
WS 101 A004	Plug, crimp, right angle	—	—	—	1.5-3.0	
D 101 A004	Receptacle, solder	—	—	—	—	
DEU 101 A004	Receptacle, solder, sealed IP 67	—	—	—	—	
DEE 101 A004	Receptacle, solder, sealed	—	—	—	—	
DK 101 A004	Receptacle, solder	—	—	—	1.5-3.0	
DK 101 A004-2	Receptacle, crimp	—	—	—	1.5-3.0	
DK 101 A004-3	Receptacle, crimp	—	—	—	5.1	
DLP 101 A004	Receptacle, PCB, angled, gold	—	—	—	—	
DLP 101 A004-10	Receptacle, PCB, angled, nickel	—	—	—	—	
DP 101 A004-10	Receptacle, PCB, straight, nickel	—	—	—	—	
K 101 A004	Receptacle, solder	—	—	—	1.5-3.0	
K 101 A004-2	Receptacle, crimp	—	—	—	1.5-3.0	
K 101 A004-3	Receptacle, crimp	—	—	—	5.1	
SAW 101 A004	Termination	3.0	50	2A (DC)	—	
S 101 A005	Plug, Triax	1.0	—	3.0	1.5-3.0	
D 101 A005	Receptacle, Triax	1.0	—	3.0	—	

SERIES 102

All Metal Body



102 A001



102 A021



102 A018



102 A005



102 A002



102 A009



102 A017



102 A025



102 A014



102 A051



102 A007



102 A052



102 A053



102 A009



102 A054



102 A016



102 A056

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
102 A001	Coax	1.8	14	14	Unshielded: 1.4 - 4.7
102 A018	Coax	8.0 (DC)	10	22	
102 A025	Coax	15 (kVDC)	10	22	
102 A002	Coax (50 Ohm)	3.0	10	22	
102 A017	Coax (75 Ohm)	1.7	7	26	
102 A014	Triax	1.1	10	22	
102 A021	Triax (50 Ohm)	1.2	10	22	
102 A005	Chromel-Alumel	—	—	22	
102 A009	Copper/Nickel	—	—	22	
102 A016	Iron-Constantan	—	—	22	
102 A051	Copper-Constantan	—	—	22	Sealed: 1.5 - 4.7
102 A051	2 pole	1.3	9.2	22	
102 A052	3 pole	1.3	8.2	22	
102 A053	4 pole	1.2	5.5	26	
102 A054	5 pole	0.8	5.2	26	
102 A056	7 pole	0.8	2.0	30	

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TECHNICAL DATA

SERIES 103

All Metal Body



103 A001



103 A002



103 A023



103 A026



103 A015



103 A042



103 A011



103 A025



103 A030



103 A051



103 A052



103 A053



103 A054



103 A056



103 A057



103 A062

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)	
103 A001	Coax	2.2	19	14	Unshielded: 2.2 - 6.7	
103 A002	Coax (75 Ohm)	3.8	12	20		
103 A023	Coax (50 Ohm)	10.0 (DC)	12	20		
103 A026	Coax (50 Ohm)	1.8	15	14		
103 A015	Triax	1.2	12	20		
103 A042	Triax (50 Ohm)	0.8	3.0	26		
103 A011	Iron-Constantan	—	—	—		Shielded: 1.7 - 6.7
103 A025	Chromel-Alumel	—	—	—		
103 A030	Copper-Constantan	—	—	—		
103 A051	2 pole	1.5	13	20		Sealed: 1.7 - 6.7
103 A052	3 pole	1.2	12	20		
103 A053	4 pole	1.2	7.0	22		
103 A054	5 pole	1.1	6.8	22		
103 A056	6 pole	1.0	5.2	26		
103 A057	7 pole	1.0	5.0	26		
103 A062	12 pole	0.9	2.0	30		

SERIES 1031

All Metal Body



1031 A010



1031 A012



1031 A019

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
1031 A010	10 pole	1.4	4.5	26	Unshielded: 2.2 - 6.7
1031 A012	12 pole	1.4	4.2	26	
1031 A019	19 pole	1.2	2.5	30	Shielded: 2.2 - 6.7 Sealed: 2.2 - 6.7

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TECHNICAL DATA

SERIES 104

All Metal Body



104 A001



104 A002



104 A010



104 A012



104 A060



104 A085



104 A057



104 A061



104 A067



104 A051



104 A040



104 A083



104 A035



104 A036



104 A037



104 A062



104 A087



104 A053



104 A065



104 A054



104 A066



104 A055



104 A056



104 A086



104 A092



104 A078



104 A093



104 A095

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
104 A001	Coax	3.2	45	10	
104 A002	Coax (75 Ohm)	4.8	15	14	
104 A010	Coax	10.0 (DC)	13	14	
104 A012	Coax	2.7	22	8	
104 A060	Coax (50 Ohm)	4.5	13	14	
104 A085	Coax	1.8	50	4	
104 A057	Iron-Constantan	—	—	14	
104 A061	Nickel/Chrome	—	—	14	
104 A067	2 pole with shield	0.7	9	22	
104 A051	2 pole	1.8	20	14	
104 A040	3 pole	1.6	18	14	Unshielded: 3.2 - 8.7
104 A083	3 pole	2.2/4.0	18/8.0	14/22	
104 A035	Iron-Constantan	—	—	20	
104 A036	Nickel/Chrome	—	—	20	Shielded: 2.9 - 8.7
104 A037	4 pole	1.8	12	20	
104 A062	4 pole	7.5 (DC)	8	22	
104 A087	4 pole	1.5/2.2	28/3.0	12/22	Sealed: 2.9 - 8.7
104 A053	5 pole	1.4	11	20	
104 A065	6 pole	1.7	6.5	22	
104 A054	7 pole	1.5	6.5	22	
104 A066	8 pole	1.5	6.2	22	
104 A055	9 pole	1.4	6.0	22	
104 A056	11 pole	1.4	5.8	22	
104 A086	16 pole	1.0	4.0	26	
104 A092	19 pole	0.8	3.5	26	
104 A078	Coax (50 Ohm) + 1	1.8/0.8	4.0/9.0	26/22	
104 A093	Coax (50 Ohm) + 4	1.8/0.8	4.0/4.0	26/26	
104 A095	3 Coax (50 Ohm)	1.5	0.7	30	

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TECHNICAL DATA

SERIES 105

All Metal Body



105 A001



105 A049



105 A002



105 A090



105 A004



105 A005



105 A057



105 A087



105 A057



105 A052



105 A053



105 A039



105 A054



105 A067



105 A101



105 A062



105 A112



105 A069



105 A104



105 A058



105 A110



105 A038



105 A093



105 A102



105 A074



105 A089



105 A095



105 A105



105 A020



105 A036



105 A060

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
105 A001	Coax	4.0	45	8	
105 A049	Coax	25.0 (DC)	35	14	
105 A002	Coax (50 Ohm)	4.8	30	10	
105 A090	Coax (75 Ohm)	6.4	13	20	
105 A004	Coax (40 Ohm)	13.0 (DC)	32	10	
105 A005	Coax (75 Ohm)	14.0 (DC)	20	14	
105 A051	2 pole	2.5	26	14	
105 A087	2 pole	1.2	30	10	
105 A057	3 pole	8.0 (DC)	14	20	
105 A052	3 pole	2.0	23	14	
105 A053	4 pole	1.8	20	14	
105 A039	5 pole	7.0 (DC)	11	20	
105 A112	4HV +Ground	7.0(kVDC)	12	20	
105 A054	7 pole	3.0/1.8	25/7.0	14/20	Sealed: 2.9 - 8.7
105 A067	8 pole	1.7	10	20	
105 A101	9 pole	3.0/1.8	25/5.0	14/20	
105 A062	10 pole	1.7	9.0	20	Shielded: 3.2 - 8.7
105 A069	12 pole	1.4	8.0	20	
105 A104	13 pole	2.5/1.3	14/1.0	20/26	
105 A058	15 pole	1.4	5.3	22	
105 A110	16 pole	1.0/1.3	1.0/18	26/14	
105 A038	18 pole	1.4	4.5	22	
105 A093	24 pole	1.2	3.5	26	
105 A102	27 pole	1.2	3.0	26	
105 A074	Coax + 1	4.5/1.6	12/12	20	
105 A089	Coax + 4	4.5/1.5	12/7.0	20/22	
105 A095	Coax + 9	1.8/1.9	4.0/6.0	26/22	
105 A105	4 Coax (50 Ohm)	1.5	0.7	30	
105 A020	H.V. + 2	6.0/1.8	20/12	20	
105 A036	H.V. + 4	6.0/1.8	18/12	14/20	
105 A060	H.V. + 7	6.0/1.8	16/10	14/20	

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TECHNICAL DATA

SERIES 106

All Metal Body



106 A003



106 A007



106 A019



106 A015



106 A018



106 A017



106 A013



106 A014

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
106 A003	3 pole	3.5	26	12	Shielded: 4.2 - 19.2
106 A013	6 pole	12 (DC)	12	20	
106 A007	7 pole	2.5	20	14	
106 A019	8 pole	2.2	19	14	
106 A015	12 pole	1.8	16	14	
106 A018	17 pole	1.8	8.0	20	
106 A017	24 pole	1.8	7.0	20	
106 A014	2 H.V. + 6	7.0/2.2	16/9.0	14/20		Sealed: 4.2 - 19.2

SERIES 107

All Metal Body



107 A003



107 A018



107 A004



107 A015



107 A017



107 A051



107 A034



107 A052



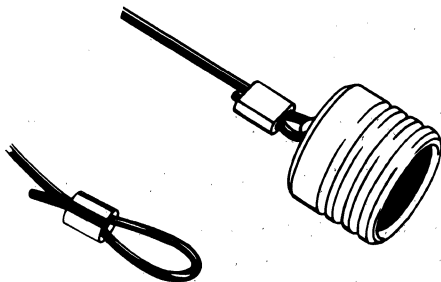
107 A013



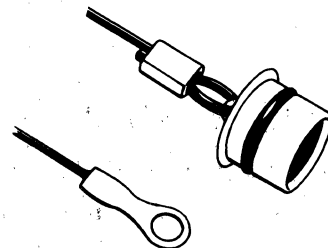
107 A023

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact, 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
107 A003	Coax	30 (DC)	45	10	Shielded: 5.2 - 22.7
107 A004	Coax	50 (DC)	45	10	
107 A017	Coax	50 (DC)	60	4	
107 A013	4 pole	6.5	26	12	
107 A018	6 pole	4.5	25	12	Sealed: 5.7 - 22.7
107 A034	7 pole	14 (DC)	20	14	
107 A015	19 pole	2.0	13	14	
107 A051	27 pole	2.0	7.5	20	
107 A052	40 pole	1.8	6.5	20	
107 A023	55 pole	2.0/1.7	7.0/3.0	20/22	

Sealing Caps Available for Most Sizes



Receptacles



Plugs

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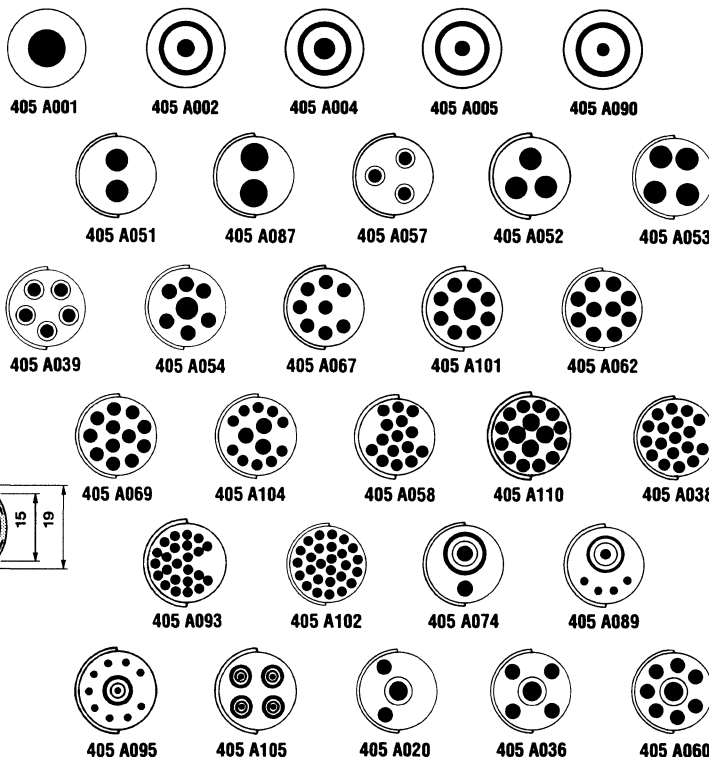
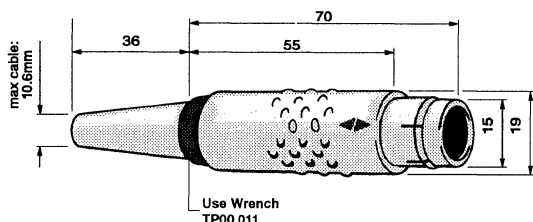
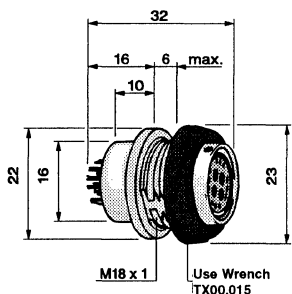


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SERIES 405

Plastic-Shell Body



TECHNICAL DATA
Plastic-Shell Body

SERIES 405

Part Number	Description	Test Voltage (kVAC)	Ampacity (each contact 40° C. rise)	Conductor Maximum (AWG)	Cable O.D. (mm)
405 A001	Coax	40	45	8	Shielded: 3.2 - 8.7 Sealed: 2.9 - 8.7
405 A002	Coax	48	30	10	
405 A004	Coax	13.0 (kVDC)	32	10	
405 A005	Coax	14.0 (kVDC)	20	14	
405 A090	Coax	6.4	13	20	
405 A051	2 pole	2.5	26	14	
405 A087	2 pole	1.2	30	10	
405 A057	3 pole	8.0 (DC)	14	20	
405 A052	3 pole	2.0	23	14	
405 A053	4 pole	1.8	20	14	
405 A039	5 pole	7.0 (DC)	11	20	
405 A054	7 pole	3.0/1.8	25/7.0	14/20	
405 A067	8 pole	1.7	10	20	
405 A101	9 pole	3.0/1.8	25/5.0	14/20	
405 A062	10 pole	1.7	9.0	20	
405 A069	12 pole	1.4	8.0	20	
405 A104	13 pole	2.5/1.3	14/1.0	20/26	
405 A058	15 pole	1.4	5.3	22	
405 A110	16 pole	1.0/1.3	1.0/18	26/14	
405 A038	18 pole	1.4	4.5	22	
405 A093	24 pole	1.2	3.5	26	
405 A102	27 pole	1.2	3.0	26	
405 A074	Coax +1	4.5/1.6	12/12	20	
405 A089	Coax +4	4.5/1.5	12/7.0	20/22	
405 A095	Coax +9	1/8/1.9	4.0/6.0	20/22	
405 A105	4 Coax (50 Ohm)	1.5	0.7	30	
405 A020	H.V. + 1	6.0/1.8	18/12	14/20	
405 A036	H.V. + 4	6.0/1.8	18/12	14/20	
405 A060	H.V. + 7	6.0/1.8	16/10	14/20	

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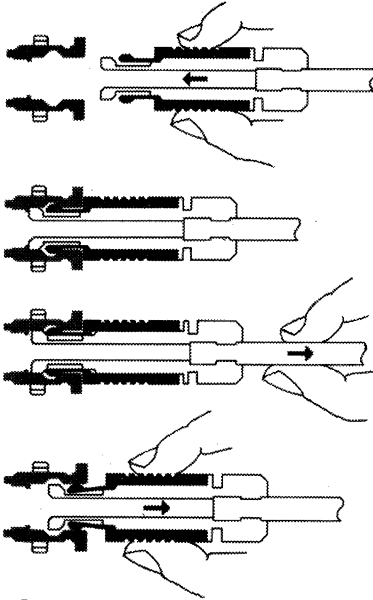
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Technical Information

Fischer Automatic Locking System



The plug contains an outer sleeve which slides forward and backward along the body. This sliding sleeve contains flexible "fingers" with bevelled edges.

When mated with a receptacle, these bevelled edges are firmly captured by a locking groove located inside the receptacle.

If the cable is pulled, the bevelled edges of the "fingers" are forced even more firmly into the receptacle locking groove.

Pulling on the plug's outer sleeve unlocks it by allowing the "fingers" to deflect away from the locking groove, and the plug to unmate from the receptacle.

Sealed Connectors

To provide greater design flexibility, sealed plug and receptacle connectors are designed to mate with both sealed or unsealed counterparts. The sealing materials used to provide the seal limit the operating temperature range of the sealed connectors to approximately -25° C to +135° C. Please contact us for applications involving temperatures which exceed this range.

The IEC 529, BS 5490 and DIN 40 050 standards classify the degree of "Ingress Protection" (IP) from water and dust. Based upon these standards, Fischer connectors meet IP67 or IP68. IP68 versions can be used under water to 80 meters, or even greater depths with protective boots. Fischer sealed connectors exceed US MIL and IEC standards for vacuum- and water-tightness. Prior to shipment, all hermetically sealed receptacles, panel plugs and feed-through connectors are subjected to a helium diffusion leak test under high vacuum.

Sealing Methods

Sealing areas for DEE, DBEE, DBPE, SFE and WDE		Implementation
a	Sealing of unmated panel connectors including the contacts	Potted with epoxy resin
	Between insulator and body	O-ring seal* around insulator
b	Sealing of panel connectors on bulkheads (also valid for DKE housing)	O-ring seal* in the mounting flange
Sealing areas for SE, SVE, SOVE, WSE and DKE		Implementation
c	Sealing of two connectors when mated	O-ring seal* in the interfacial area
d	Cable sealing	TPE sealing ring around cable

*O-ring seals made of VITON® are standard. Other elastomers are available.

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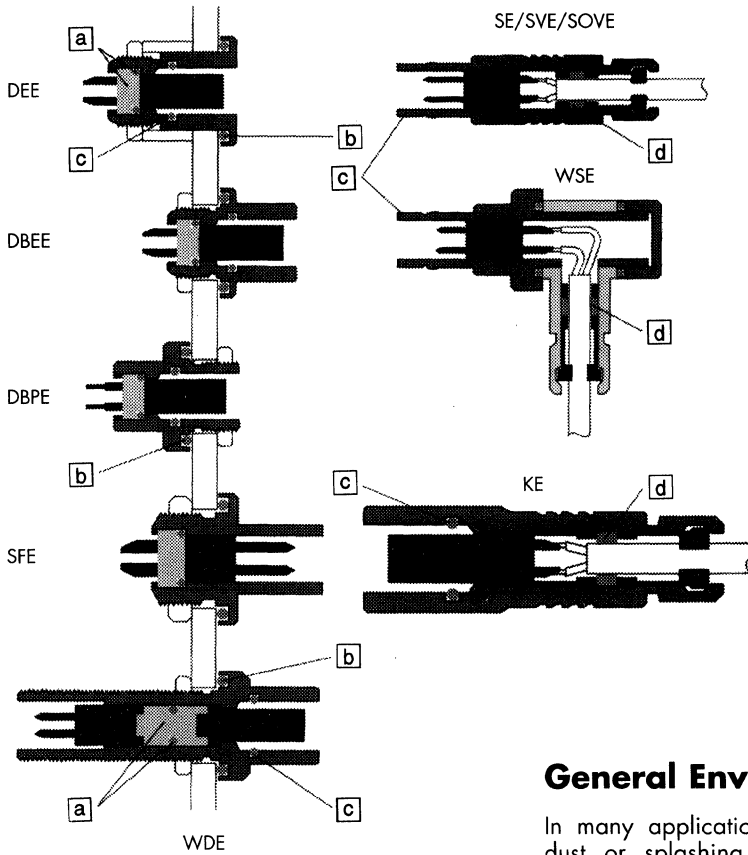
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Technical Information



Panel Connectors

Panel connectors DEE, DBEE, DBPE, SFE and WDE meet all requirements for sealing at points *a*, *b* and *c*. They are hermetically sealed even in the unmated condition. Proper mounting on a bulkhead with a smooth and flat surface is a prerequisite for proper sealing to an enclosure.

Cable Connectors

Cable plugs SE, SVE, SOVE, and WSE are sealed at points *c* and *d*, when mated to sealed receptacles like DEE, DBEE, WDE, DKE, and KE. These receptacles contain a recessed o-ring located in the mating area which seals to the plug when mated. Effective sealing of cable plugs requires proper matching of the cable clamp components to the cable diameter.

General Environmental Protection

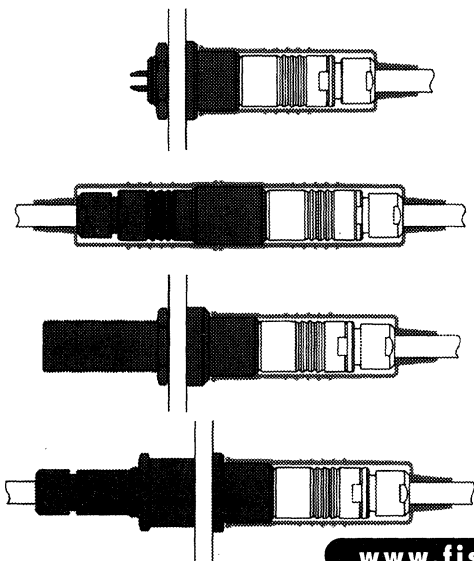
In many applications, where only protection against dust or splashing liquid is required, an unsealed connector fitted with an optional flexible protective boot will suffice. In addition, unmated connectors can be rendered sealed by using these boots and/or sealing caps, which effectively prevent dirt or other material from entering the contact area.

Front projecting receptacle DB, DBEU, or DBEE with protective boot for straight plug.

Straight plug and cable receptacle K or KE, both with flexible protective boots.

Bulkhead feedthrough WDE and straight plug with protective boot.

Panel mounted cable receptacle DKE and straight plug with protective boot.



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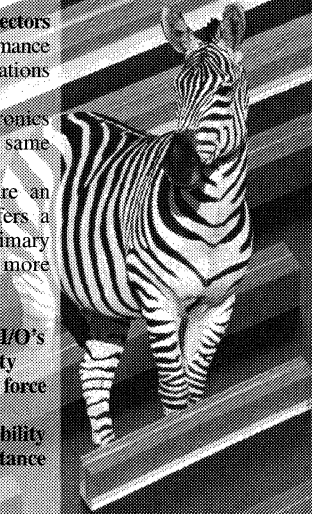
ZEBRA® ELASTOMERIC CONNECTORS

ZEBRA® Elastomeric Electronic Connectors are a comprehensive group of high performance interconnect devices with applications throughout the entire field of electronics.

With the expansion of micro-electronics and miniaturization of all products, the same high reliability must be maintained.

ZEBRA® Elastomeric Connectors are an obvious choice. And one which offers a variety of alternatives based on the primary design objectives. Some of the more important considerations are:

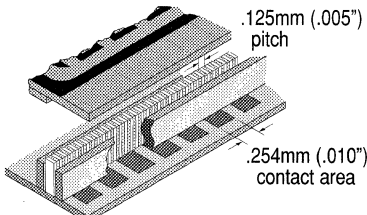
- High Density; increased number of I/O's
- Low resistance, high current capacity
- Low insertion force, low compression force
- Redundant contact engagement
- High electrical and mechanical reliability
- Chemical stability, degradation resistance
- Cost-effectiveness, ease of assembly



ZEBRA® Elastomeric Connectors have alternating conductive and non-conductive layers. See diagrams on opposite page. The conductive layers are oriented vertically in the thickness direction, making contact from top to bottom.

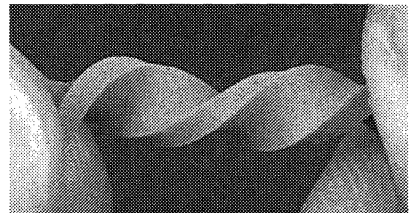
APPLICATIONS:

- LCD and EL displays
- Board-to-board
- Chip-to-board
- Memory cards
- Flex circuit-to-board
- Burn-in sockets
- Miniature and low profile interconnect- general electronics



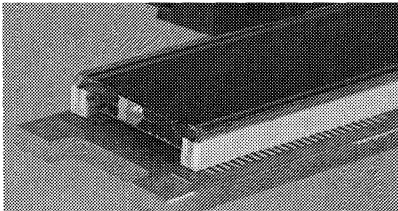
Typical ZEBRA® Connector interface between two contact areas.

All styles offer redundant contact depending on the pitch of the conductive layers, some as small as 0.05 mm centerline (see drawing above).

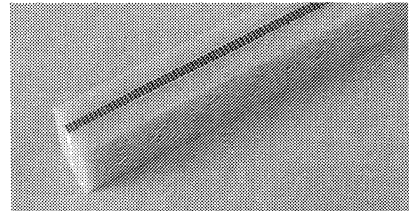


High strength bonding unitizes layers into one rugged body.

Each of the styles is also available with outer support sections along the entire length on one or both sides (except Series 8000). The support is available in sponge or solid silicone rubber, and creates a larger width area. This eliminates the need for a holder while still allowing a very low compression force during deflection. For optional ordering information, see instructions on page 5 under "Side Support or Insulation Barrier".



ZEBRA® Silver Connector in medical instrument display.



Typical ZEBRA® Connector with optional silicone rubber self-support sections on each side.



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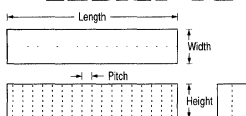
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ZEBRA® ELASTOMERIC CONNECTORS

The six Zebra Elastomeric Connector designs below are detailed in their dimensional and performance characteristics. Follow the general guidelines to determine the design characteristics most suitable for your application. See page 5 following for detailed characteristics.

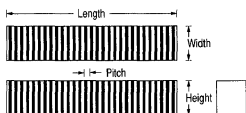
Series	Application Guidelines	Typical Products
FL (Fine Line)	Zero insertion force, tight pitch, very low compression force, low resistance, high current carrying capacity	Electroluminescent displays, component-to-board, burn-in sockets, PCB to PCB
Silver	Low resistance, tight pitch	Component-to-board, electroluminescent displays, PCB to PCB
High Performance Silver	700mA current carrying capacity, .125mm pitch, rugged long-life aging	Displays, PC board components
Carbon	Economical general use with contact pitches at 140, 240 or 500 per inch	LCD's
Low Temperature Carbon	Low temperature, outdoor applications, specifications as low as -60°C	LCD's for aerospace, aircraft, military, meters, instruments, cameras
Gold	Zero insertion force, tight pitch, low compression force, very low resistance, very high current carrying capacity	Electroluminescent displays, component-to-board, burn-in sockets, PCB to PCB

ZEBRA® FL CONNECTOR



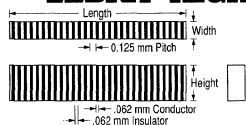
Very low compression force, zero insertion force connectors with vertically oriented wires on 0.10 mm centers. Low resistance, high current carrying capacity. Excellent for displays and component-to-board applications.

ZEBRA® SILVER CONNECTOR



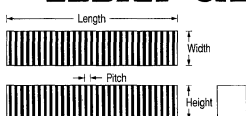
Low resistance connector with alternating parallel layers of conductive and non-conductive silicone elastomer. The conductive silver particle layer provides redundant contact at 0.127mm pitch (series 5002).

ZEBRA® HIGH PERFORMANCE SILVER CONNECTOR



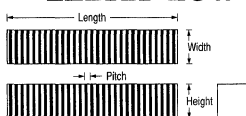
PC board contact points of 0.50 mm each permit 700mA of current carrying capacity. Excellent for all high performance interconnect devices under extreme conditions.

ZEBRA® CARBON CONNECTOR



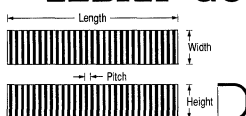
Higher resistance but very economical carbon-filled conductive layers. Designed for a wide range of general purpose applications with a choice of pitches at 140, 240 and 500 contacts per inch.

ZEBRA® LOW TEMPERATURE CARBON CONNECTOR



Moderate resistance connector with alternating parallel layers of conductive carbon-filled and non-conductive silicone rubber. Designed for displays where temperature requirements are as low as -60° C. 240 contacts per inch.

ZEBRA® GOLD 8000 CONNECTOR



Very low resistance connector with spaced parallel rows of gold-plated copper conductors bonded to a polyimide film vulcanized over a low durometer silicone rubber core.

All dimensions in millimeters

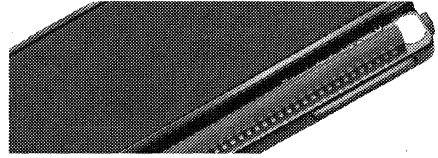


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ZEBRA® ELASTOMERIC CONNECTORS

ZEBRA® CONNECTOR TECHNICAL DATA

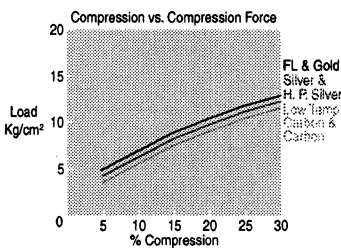
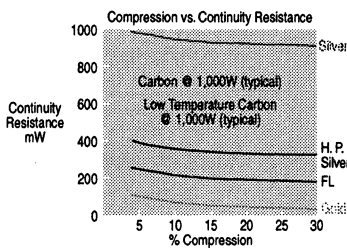


DIMENSIONS and CHARACTERISTICS:

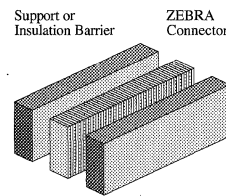
Measurement	FL-Fine Line/LS	Silver	High Performance Silver
Pitch	0.10 ±0.04	Series5002 = 0.127	0.125
Length	2.00 ±0.2 to 130.00 ±0.7	6.35 ±0.2 to 101.60 ±0.64	6.36 ±0.12 to 127.00 ±0.64
Width	1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.5 ±0.2	0.50 ±0.076 to 2.54 ±0.127	0.762 ±0.076 to 2.54 ±0.127
Height (thickness)	1.00 ±0.15 to 5.00 ±0.2	1.00 ±0.08 to 13.00 ±0.18	1.00 ±0.08 to 13.00 ±0.18
Conductive Element	45 microns diameter, nickel	Silver-filled silicone elastomer	Silver-filled silicone elastomer
Insulating Layer	Silicone rubber	Silicone rubber	Silicone rubber
Continuity Resistance	Under 0.5Ω	Under 1.0Ω	< 0.5Ω (typical)
Current Carrying Capacity	600mA	500mA	700mA
Insulation Resistance	More than 200MΩ	10 ⁹ Ω	10 ⁹ Ω
Deflection Range	5-15%	5-25%	5-20%
Operating Temperature	-20°C to +100°C	-40°C to +120°C	-40°C to +120°C
Storage Temperature	-40°C to +100°C	-60°C to +125°C	-60°C to +125°C
Durometer, Shore A	55 (standard), 30 (low stress)	70	70

Measurement	Carbon	Low Temperature Carbon	Gold 8000
Pitch	Series2004 = 0.18; Series1002 = 0.1; Series2005 = 0.05	.100mm min.	A .254(.127 wire); B .19(.102 wire); C .152(.076 wire)
Length	4.00 ±0.2 to 225.00 ±1.0	2.00 ±0.2 to 127.00 ±0.7	5.08 ±0.12 to 140.00 ±0.76
Width	0.38 ±0.05 to 3.00 ±0.127	0.50 ±0.05 to 3.00 ±0.127	1.52 ±0.12 to 3.18 ±0.25
Height (thickness)	1.27 ±0.05 to 19.00 ±0.127	1.27 ±0.076 to 12.70 ±0.127	2.54 ±0.12 to 12.70 ±0.38
Conductive Element	Carbon-filled elastomer	Carbon-filled elastomer	Gold-plated copper wire
Insulating Layer	Silicone rubber	Silicone rubber	Silicone rubber
Continuity Resistance	1000Ω (typical)	1000Ω (typical)	Under 0.025Ω
Current Carrying Capacity	0.050A	5mA	A&B 500mA/wire; C 250mA/wire
Insulation Resistance	10 ⁹ Ω	10 ⁹ Ω min.	10 ⁹ Ω min.
Deflection Range	5-25%	5-25%	5-25%
Operating Temperature	-50°C to +125°C	-60°C to +125°C	-20°C to +125°C
Storage Temperature	-60°C to +125°C	-85°C to +135°C	-60°C to +125°C
Durometers, Shore A	70	65	40

PERFORMANCE CHARACTERISTICS:



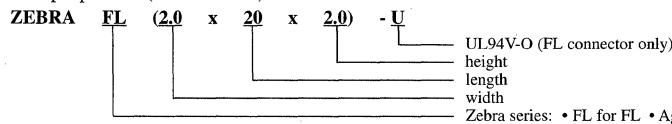
SIDE SUPPORT OR INSULATION BARRIER:



Drawing at left shows side support or insulation on one or both sides, or one of each. Various materials are available including 0.025mm or 0.050mm silicone insulation barrier, solid silicone and standard or soft sponge. Recommended height is twice the width for minimum force deflection. Maximum skewness at 2% of height. Consult customer service for ordering specifications.

PART NUMBER NOMENCLATURE:

To specify a connector to your exact requirements, substitute the metric measurements for width, length and height according to instructions below; example part# FL(2.0 x 20 x 2.0)-U



All dimensions in millimeters



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ZEBRA® DUMMY ELASTOMERIC CONNECTORS

Nonconductive silicone strips made in the same exacting tolerances as the conductive ZEBRA® connectors.

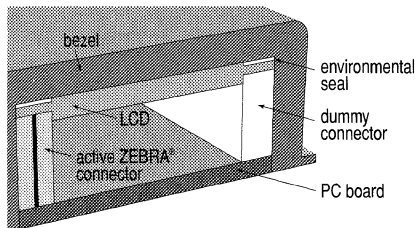
Used in locations adjacent to the active connector to balance the overall leveling and positioning of the display; also to control shock and vibration, and for use as an environmental seal between bezels and LC displays.

Can be installed in the same plane as the connector, and also between the bezel and the display in a variety of easy installation methods.

Consistent dimensional tolerance control assures accurate packaging.

APPLICATIONS:

- LCD and EL display balancing
- Bezel gasket, environmental seal
- Shock, vibration damping



Typical Dummy ZEBRA® installation as an environmental seal and as dummy connector.

Two types are available which match the mechanical functions of the active ZEBRA® connectors: extruded and closed cell sponge. A range of compression characteristics are available based on the material durometer selections shown below.

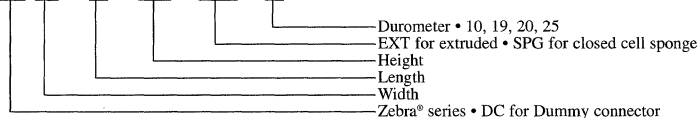
Type	Application Guidelines	Dimensions (mm)
Extruded	19 Durometer - translucent	<i>maximum:</i>
		Length 457.0
	25 Durometer - pink, blue	Width 152.0
Sponge	20 Durometer - pink	Thickness 0.38
		- in increments of 0.127 up to 1.78
		<i>maximum:</i>
		Thickness 0.38
		- in increments of 0.127 up to 1.78

Custom configurations are also available. For further information, contact Customer Service.

PART NUMBER NOMENCLATURE:

To specify a Dummy connector to your exact requirements, substitute the metric measurements for width, length and height according to the instructions below.

ZEBRA DC 2.0 x 20 x 1.78 - EXT - 19



All dimensions in millimeters



America Corporation

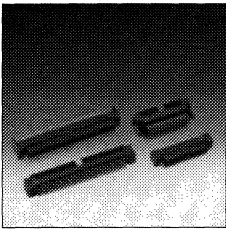
365 Carnegie Avenue • P.O. Box 679 • Kenilworth, NJ 07033-0679

tel: 908-298-3850 • fax: 908-298-1232 • e-mail: fujipoly@aol.com • web site: www.fujipoly.com



CONNECTORS

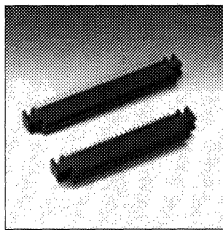
FCN-210



FEATURES

- 1.27 mm (0.050 in.) pitch contact arrangement in two rows enables high-density mounting.
- Connectors are available with 30 to 120 contacts.
- Terminals are spaced in a four-row staggered arrangement (2.54 mm x 1.905 mm.) (0.100 in. x 0.075 in.) for easy PC board design.
- Sockets are available for board mounting and for 0.635 mm (0.025 in.) pitch flat cable.
- Insulation is UL-approved (94V-0).

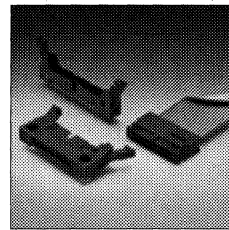
FCN-220 CARD EDGE TYPE



FEATURES

- 1.27 mm (0.050 in.) pitch contact arrangement in two rows enables high-density mounting.
- Standard types with 30 to 120 contacts, S types with 112, 132, and 182 contacts, SMT types with 26, 40, 50, 60, and 100 contacts are available for various purposes.
- Double side separated connection for 1.6 mm (0.063 in.) PC board
- Tails are spaced in a four-row staggered arrangement (2.54 mm x 1.905 mm) (0.100 in. x 0.075 in.) for easy PC board design.
- Insulation is UL-approved (94V-0) and is washable.

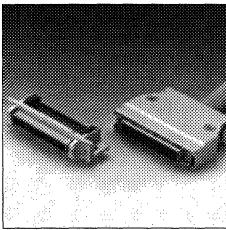
FCN-230B FLAT CABLE CONNECTION



FEATURES

- Two 1.27 mm (0.050 in.) pitch flat cables can be used.
- 1.27 mm (0.05 in.) pitch contact arrangement in two rows and terminal arrangement in a four-row staggered array (2.54 mm x 1.905 mm) (0.100 x 0.075 in.) enable high-density mounting.
- The socket kit is comprised of two IDC sockets (body 1, body 2). After IDC termination, the bodies are "snapped" together to form one complete socket assembly.
- Connectors with 20 to 100 contacts are available.
- Latch mechanism provides easy disconnection.
- A clip-on key prevents incorrect insertion of a connector when two or more connectors with the same number of contacts are mounted on a PC board.

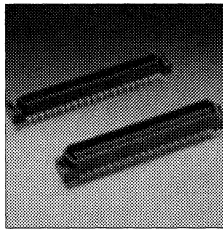
FCN-230 D SCSI/MI



FEATURES

- 1.27 mm x 2.54 mm (0.050 in. x 0.100 in.) pitch contact arrangement enables high-density mounting.
- Cables and connectors are assembled by means of discrete wire IDC.
- Terminals are spaced in a four-row staggered arrangement (2.54 mm x 1.905 mm) (0.100 in. x 0.075 in.).
- Knife-fork two-point contacts are highly reliable.
- One-touch lock types and screw lock types are available for fixing the board-side connector and the cable-side connector.
- The following connectors conform to the SCSI standards recommended by ANSI:
 - (1) Single-operation lock types
 - 50-contact type: Conforms to the A-cable connectors prescribed in SCSI-II and SCSI-III
 - 68-contact type: Conforms to the B-cable connectors prescribed in SCSI-II
 - (2) Screw lock types
 - 68-contact type: Conforms to the P/Q-cable connectors prescribed in SCSI-III
- * SCSI: Small Computer System Interface

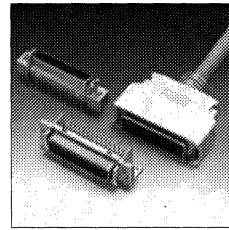
FCN-244M/F BOARD STACKING



FEATURES

- The connectors can connect boards in parallel (stacking) at intervals of 8 mm (0.31 in.) to 14 mm (0.55 in.) for various applications.
- Connectors with ten different numbers of contacts are available for various purposes: 20 to 100 in steps of ten and 120.
- Connectors are surface mount compatible.
- 1.27 mm (0.050 in.) pitch contact arrangement in two rows enables high-density mounting. Tails are spaced in a four-row staggered arrangement (2.54 mm x 1.905 mm) (0.100 in. x 0.075 in.) for easy patterning on PC boards.
- Bellows contacts ensure stable contact preventing pins from bending. The bellows contacts also have excellent stability with repeated insertion and extraction.
- SMT compatible.

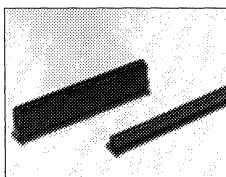
FCN-245D/247R I/O CONNECTOR



FEATURES

- 1.27 mm (0.050 in.) pitch contact arrangement enables high-density mounting.
- Bellows contacts ensure stable contact preventing pins from bending. The bellows contacts also have excellent stability with repeated insertion and extraction.
- Cables and connectors are assembled by discrete wire IDC.
- Connectors on the cable side provide superb EMI shielding/ESD protection with an inner-metal and outer-plastic dual cover.
- Conforms to IEEE 1284.C Interface
- Tails are spaced in a four-row staggered arrangement (2.54 mm x 1.905 mm) (0.100 in. x 0.075 in.) for easy PC board design.

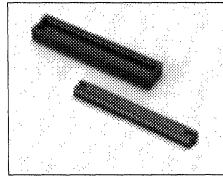
FCN-260 SUPPORTS HIGH SPEED SIGNALS



FEATURES

- Ground contacts are between rows of signal terminals and the connector is covered with a metal ground shell, for impedance matching and low cross talk (strip line structure (100 contacts).
- Inter-fitting part has a 1.27 mm (0.050 in.) pitch and two rows, which makes high density packaging possible.
- When PC boards are connected in parallel (stacking), the PC board space is 18.7 mm (0.736 in.).
- 100 contacts and 120 contacts are available.

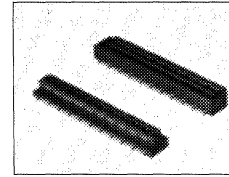
FCN-290 0.5 mm PITCH STACKING CONNECTORS



FEATURES

- Terminal pitch of 0.5 mm (0.020 in.), SMT terminals (for both plug and socket).
- This connector can connect boards in parallel with 2.5mm (0.098 in.) stacking height.
- Bellows contacts provide reliable interconnection.
- Product is packaged in embossed carrier tape and reel. Two package sizes are available.
 - 3000 pcs per reel
 - 500 pcs per reel

FCN-290H 0.5 mm PITCH MATCHED IMPEDANCE STACKING CONNECTORS

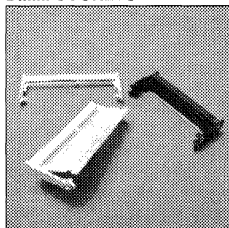


FEATURES

- Terminal pitch of 0.5mm, SMT terminals (for both plug and socket).
- This connector can connect boards in parallel with 5.5 mm stacking height.
- Bellows contacts provide reliable interconnection.
- Characteristic impedance matching is 50Ω and low cross talk.

CONNECTORS

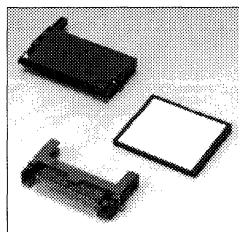
FCN-078 DIMM SOCKETS



FEATURES

- A socket connector for 72 pin small outline (SO) DIMM as recommended by JEDEC in a "stacked" or dual slot configuration.
- DIMM — Dual Inline Memory Module
JEDEC — Joint Electronic Device Engineering Council
- A stacked socket (2 x 72) that will accept two 72 -pin SO DIMMs by using both the upper and lower slot, effectively using minimal PCB space.
- The "stacked" socket (2 x 72) has an independent structure of molded plastic, providing stability of design.
- Metal fittings are available to prevent the pad peeling off by torsional force.
- SMT construction (2 row).
- A socket connector for 144-pin DIMM module (3.3v or 5v) in a right angle surface mount allows mounting of components up to 1.5mm in height.
- Both designs offer a positive locking mechanism built into the latching of the DIMM module in the connector.

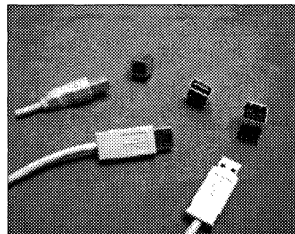
FCN-560 COMPACT FLASH



FEATURES

- The connectors conform to the Compact Flash Association (CFA) specifications.
- The terminal of the plug is a 0.635 mm pitch, one-row, SMT type.
- Raised mounting type connectors (standoff), which allow mounting components under a connector, are also available.
- The ejector mechanism makes insertion and ejection of a card easier is available.
- There are two types of sockets for CFA cards: a straddle mount type and single-sided mounting type.

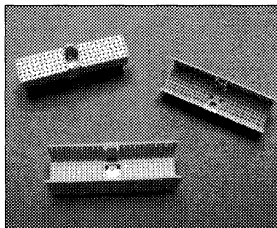
USB FCN-860



FEATURES

- For USB (Universal Serial Bus) connector.
 - Available in series A and B styles.
- Cable mount plug connector is solder type.
- 2 steps sequential structure.
 - Signal ground.
 - Frame ground.
- Positive latching system prevents plug from disengaging from socket due to vibration.
- The shape of the engagement face prevents mis-insertion.

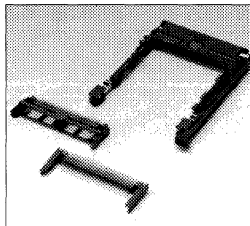
FCN-086 F-PACK



FEATURES

- Product meets IEC 1076-4-101 Compact PCI (CPCI).
- Product is available for VME64 extensions.
- 2mm pitch, 5 rows for high pin count and high density mounting.
- Controlled impedance 52Ω, low cross talk.
- 55, 95, 110, 125 pin products are available in combination of right angle socket and straight plug.
- Press-fit pins for solderless connection.
- 3 steps sequential contact for low insertion force.
- Complies with Belcore specifications.

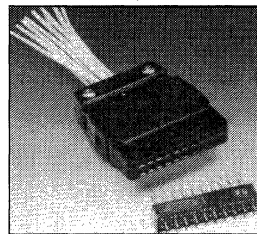
FCN-560 PC CARD



FEATURES

- The connectors conform to the Japan Electronic Industry Development Association (JEIDA) and Personal Computer Memory Card International Association (PCMCIA) standards Ver. 4.
- Contact pitch of 1.27 mm (0.050 in.) x 1.27 mm (0.050 in.). Incorrect insertion is prevented. Hot system plugging is possible (contact detection).
- Plugs have an easy-to-use ejection mechanism.
- Raised mounting type connectors (under which components can be mounted) and low-profile connectors are available.
- In addition to connectors for type I and type II cards, a connector for type III cards has been provided.
- NEW - carbus available

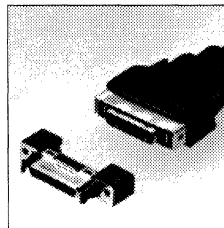
SOCKET HOUSINGS, CRIMP CONTACTS & HEADERS MODEL FCN-720, FCN-720M*



FEATURES:

- The crimp connector has been designed for wide use, and comes in many shapes and contact arrangements (one and two rows). The Model 720 block headers are matable with the Model 700 and 740 sockets, and Model 720 sockets are lockable with Model 700 headers when a special cover is used. Female contacts are secured in the housing by a unique internal spring structure. High-pressure contacts are also available which prevent accidental disconnection in applications using only a few contacts. For the W and S type headers, insulation mode can be broken into the necessary size. 0.100 in. pitch. (2.54 mm).
- * New. Now available in 2 mm pitch 0.079

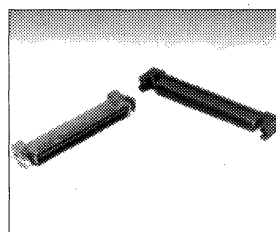
FCN-280 IMM I/O CONNECTOR



FEATURES

- Contact pitch of 1 mm (0.039 in.), 26 position interface connector suitable for Floppy Disk Drive.
- Bellows contacts have excellent stability with repeated insertion and withdrawal.
- Right angle shape SMT board mounted socket has 0.5mm terminal pitch.
- Cable terminated plug and inner-metal / outer molding cover provides superb EMI shielding and ESD protection.
- One touch latch-lock mechanism provides easy connection.

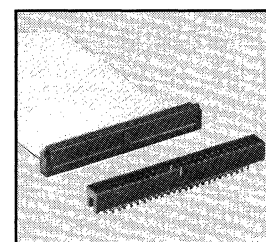
FCN-244B SCA.1/SCA.2



FEATURES

- Half pitch connector conformed to SCA system (80 pins).
- Add mating guide and ESD protection to do plug-in safety and reliability (They are newly added on SCA. 2CN).
- Hot-plugging. Ground contacts mate first before other contacts mate when engagement is done (conforms to SCA.2 specification).
- To prevent pin-bending, bellows contacts are used.
- Plug: 2 types are available.
 - 1) The center of a SMT plug mates the center of a PCB.
 - 2) 0.9 mm (0.035 in.) off-set from center
















2mm BOX PLUG: FCN-724Q/728Q***-G*/M IDC SOCKET: FCN-727B/727J***-G*/M



FEATURES:

- Contact, terminal are arranged in 2.0mm (0.079in.) grid
- 1.0mm (0.039in.) pitch flat cable is required
- Suitable for 2.5 in. HDD connection
- Bump type available
- SMT box plug available

IEC 320 POWER INLETS, CONNECTORS AND POLYSNAP MODULES

PART #	FEATURES	SET #
 PX0575	Hot Condition 2.8, 4.8, 6.3, tabs. Screw terminals	I
 PX0595	2.8, 4.8, 6.3 tabs and screw terminal versions	V
 PX0695	2.8, 6.3 tabs Shuttered version: PX0783	X
 PF0011	Single Fuse, (Provision for one spare fuse in draw). PCB Spills.	I
 PX0579	2.8, 4.8, 6.3 tabs	III
 PX0580	2.8, 4.8, 6.3 tabs and screw terminal versions	IV
 PX0675	2.8, 6.3, tabs. Shuttered version: PX0793	IX
 PF0001	Single Fuse, (provision for one spare fuse in draw). 2.8, 4.8, 6.3 tabs.	II
 PX0597	Rewireable hot condition	NA
 PX0587	Rewireable cold condition	NA
 PX0587 /SE	Rewireable cold condition Side entry	NA
 PX0588	Rewireable cold condition	NA
 PX0685	Rewireable with choice of 4 cable entry positions. Mates with PX0675 PX0695 PX0783 PX0793	NA
 PX0686	Rewireable. Mates with PX0675 PX0695 PX0783 and PX0793	NA
 PF0030	Twin Fused 2.8, 4.8, 6.3 tabs	II

SET NUMBERS						
SET I	SET II	SET IV	SET VI	SET VII	SET VIII	SET X
/10/28	/28	/28	/28	/10/28	/28	/10/28
/10/48	/48	/48	/63	/10/48	/63	/10/63
/10/63	/63	/63	/PC	/10/63		/15/28
/15/28	/PC	/PC	/PC7	/15/28		/15/63
/15/48		/PC/7		/15/48		/20/28
/15/63				/15/63		/20/63
/20/28				/20/28		/30/28
/20/48				/20/48		/30/63
/20/63				/20/63		/PC
/30/28				/30/28		
/30/48				/30/48		
/30/63				/30/63		
/PC				/TERM		
/TERM						



'Polysnap' Range of Power Inlet Modules are available with a wide choice of bezels and components including inlets, switches, filters, fuseholders, fused inlets, voltage selectors and neon indicators.


- * Eliminates complex metalwork.
- * Offers intergrated soltuion to panel problems.





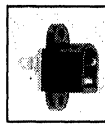

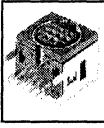
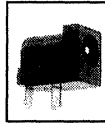


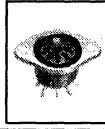
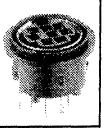

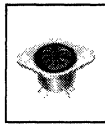
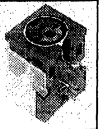

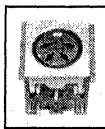


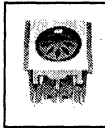


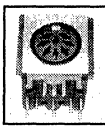

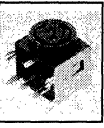
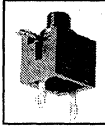


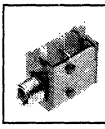
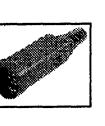


Bezel Panel Hole Details to suit panel thickness 1.0, 1.5, 2.0, 3.0mm

/PANEL THICKNESS (mm) = 10=1.0mm 20=2.0m 30=3.0mm /TERMINALS = 2.8mm SOLDER 4.8mm SOLDER/QD 6.3mm QD

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DC CONNECTORS, JACKS, SOCKETS & PLUGS

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
	MDJ-106-8PS MINIATURE CIRCULAR CONNECTORS (WITH SHIELD)		MDP-007-9P MINIATURE CIRCULAR CONNECTOR		DJ-001 DC POWER JACK
	MDJ-516-8PS MINIATURE CIRCULAR CONNECTORS (WITH SHIELD)		MDP-117-9PS MINIATURE CIRCULAR CONNECTORS (WITH SHIELD)		DJ-005 DC POWER JACK
	MDJ-1206-8P MINIATURE CIRCULAR CONNECTORS (CRIMPING TYPE)		MDP-107-9PS MINIATURE CIRCULAR CONNECTOR		DJ-002(A) DIN 5P SOCKET
	MDJ-306-8P MINIATURE CIRCULAR CONNECTORS (VERTICAL TYPE)		MDP-507-9PS MINIATURE CIRCULAR CONNECTORS (WITH SHIELD)		DJ-002-7P DIN 5P, 7P, 8P, 10P SOCKET
	MDJ-006-8101L MINIATURE CIRCULAR CONNECTORS (WITH QUICK LOCK & SWITCH)		MDP-005-9P MINI DIN PLUG (MALE) MOLDING TYPE		DJ-037-4PS(A) (4P 220°) DIN 4P, 5P SOCKET
	MDP-005-8P MINI DIN PLUG (MALE) MOLDING TYPE		MDP-402-4P MINIATURE CIRCULAR CONNECTOR WITH QUICK LOCK		DJ-007-7PS(A) (7P 270°) DIN 7P SOCKET
	MDP-006-8P MINI DIN PLUG (MALE) MOLDING TYPE		MDJ-401-3P 3P MINIATURE CIRCULAR CONNECTORS (WITH QUICK LOCK)		DJ-010-8PS(B) (8P 270°) DIN 8P SOCKET
	MDJ-806-8PS MINIATURE CIRCULAR CONNECTORS (WITH QUICK LOCK & SHIELD)		MDJ-401-3PS 3P MINIATURE CIRCULAR CONNECTORS (WITH QUICK LOCK)		SJ-250 (W/ SCREW) SJ-250-N (W/O SCREW) 2.5ø PHONE JACK
	MDP-4406-8P MINI DIN PLUG (MALE) WITH QUICK LOCK		MDP-401-3P 3P MINIATURE CIRCULAR CONNECTORS (WITH QUICK LOCK)		SJ-360 (W/ SCREW) SJ-360-N (W/O SCREW) 3.5ø PHONE JACK
	MDP-010-8PF MINI DIN PLUG (FEMALE) WITH QUICK LOCK		MDP-1401-3P 3P MINIATURE CIRCULAR CONNECTORS (WITH QUICK LOCK)		SJ-500 (W/ SCREW) SJ-500-N (W/O SCREW) 3.5ø PHONE JACK

Numerous Pin Contacts Available.



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HARTING, Inc. of North America

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HARTING Products Application Orientated Technology

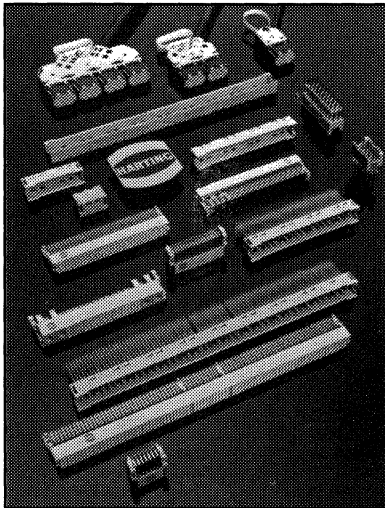
Reliable Quality and Service from HARTING.

Founded in 1945 HARTING has become one of the World's leading manufacturers and suppliers of Industrial Power and PCB Connectors which are produced in ISO 9001 Certified manufacturing facilities.

With manufacturing facilities in Germany, Switzerland, Great Britain, France, U.S. and Hong Kong and subsidiary companies throughout the world, HARTING's dedicated staff of connection technology experts forms the foundation of a company prepared to meet the challenge of today's ever changing and demanding market-customer requirements.

Internationally recognized as a major supplier of advanced technology and reliable quality connectors, HARTING'S market leader dedication in the research and development of connection technology and interconnection systems assures that only top-quality products complying with international standards are offered.

har-pak® 2.5 MM HIGH DENSITY CONNECTOR SYSTEM

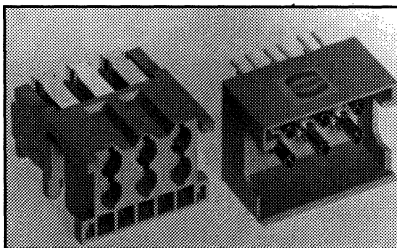


The HARTING har-pak® 2.5 mm Connector System offers users a reliable, field proven system that provides high density (up to 185 contacts in a 100 mm length) and cost effectiveness.

The connector, compatible with the IEEE P1301 hard metric practice, is based on a 2.5 mm 3-dimensional grid. Male and female connectors have 5 rows of contacts. This modular connector is an inverse 2 piece connector system. Male connectors are press-fitted to the backplane and right angled female connectors are press-fitted to the daughter boards. A complete I/O system is also available.

The new system is ideal for SONNET based multiplexers, high speed remote switching units, PBX's and image processing equipment.

NEW HIGH DENSITY MICRO-COAXIAL CONTACTS



NEW HIGH DENSITY MICRO-COAXIAL CONTACTS

A 50Ω micro-coaxial contact designed for high speed data transfer rates. This new twin contact is designed to be used with Popular Metric Connector Systems, such as 2.5 mm and 2.0 mm.

The permanently increasing density and transfer rates of electronic components in telecommunication and computer equipment has demanded more space efficiency, high frequency capability, easy handling, low applied cost and application with current equipment practice and emerging metric equipment practices.

Mechanical characteristics of the HARTING micro-coaxial Module:

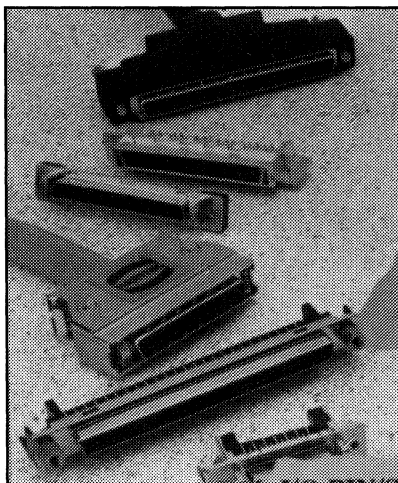
- 2, 4 or 6 contacts in just 25 mm of board edge
- 8 or 10 contact versions
- Both backplane and daughter card connectors are press-fit
- Compatible with 19" rack equipment practice & IEC/IEEE Metric Equipment Practice
- High density allows up to 60 coax-connections on a Double High Eurocard
- Low Insertion Force, about 1-3N/contact (0.25-0.7 lbs /contact)

Electrical characteristics of the HARTING micro-coaxial Module:

- Frequency rated to 2 GHz
- 50Ω controlled Impedance
- VSWR 1.25:1 (at 50Ω, up to 2 GHz)
- Insertion Loss 0.25 dB
- Crosstalk Attenuation 33.41 dB (up to 2 GHz) Dependent on PCB Material

The new micro-coaxial contact was designed for PCB termination on both daughtercard to backplane connection, allowing users to bring signal directly into the backplane without a cable transition.

har-mik® HIGH DENSITY IEEE-1284C COMPATIBLE CONNECTORS

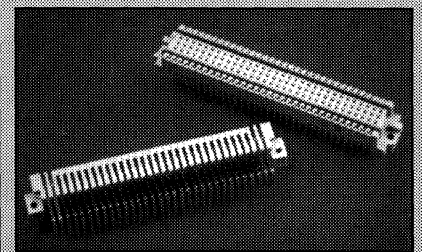


A comprehensive range of miniature connectors designed to meet the requirements of internal and external connections of the future. Range contains seven series. One of these new types is:

The "Pin and Socket" I/O connectors. Series 60.01/02/03/04.

- Reduced size: contact pitch of 1.27 mm
- High contact density: double standard D-sub
- E.M.I./R.F.I. protected: metal shells and hoods for optimum screening
- Polarized by "D" shape
- Coding: without contact loss
- Locking device:
 - quick latch for S.C.S./RS 232 E applications
 - jackscrew for I.P.I./H.I.P.P.I applications
- Male and female IDC versions for discrete wire 28 to 30 AWG
- Male and female connectors with straight and angled solder pins
- Many connector sizes: from 20 to 100 ways
- Female straight press-in connectors

HARTING har-bus®64 NEW 160 Pin Connector For VME64X



HARTING har-bus64®, New 160 pin Eurocard Style Connector for use in VME64 and VME64 Extensions development.

HARTING's har-bus64® is a new 160 pin connector with 64 contacts installed in two new rows designated row z (adjacent to row a) and row d (adjacent to row c). Connector design guarantees 100% backward compatibility to existing 96 pin Eurocard connectors.

The new connectors can be used to add more I/O to the P2/J2 connector and additional grounds for enhanced high speed performance in P1/J1. The har-bus64® connectors have been chosen to be used with the new standards being developed by VITA.

Ideal for VXI, Multibus and USB applications.



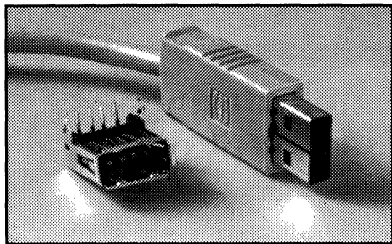


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HARTING Products Application Orientated Technology

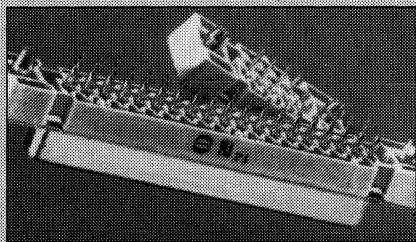
HARTING UNIVERSAL SERIAL BUS (USB) CONNECTORS FOR COMPUTER PERIPHERALS



HARTING, Inc. of North America's line of Universal Serial Bus (USB) connectors is adding a new dimension of flexibility to personal computing. HARTING offers a full range of USB connectors including USB Type A receptacle, Type A stackable receptacle, Type B receptacle, Type A & B plugs and a variety of single and double-ended assemblies.

USB offers the following features: allows for daisy chaining up to 127 peripheral devices, Plug & Play technology, port consolidation, hot swapping capability and computer telephony intergration.

HARTING D-SUB FOR PRESS IN AND SMC APPLICATIONS

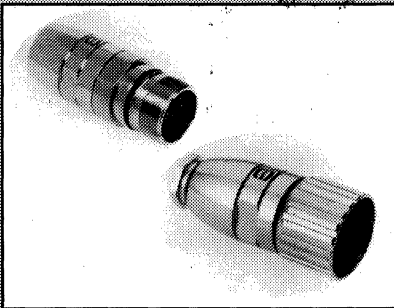


The new press in contact is of the standard "V" form and the devices can be used with printed circuit boards between 1.6 and 3.2 mm in thickness, with plated through holes of 0.94 to 1.09 mm. The connectors are designed to be assembled using the 'flat rock' technique, allowing the user to press in different combinations of connectors with a single flat upper press die.

The corresponding solder version is surface mount compatible thanks to a high temperature resistant LCP insulator.

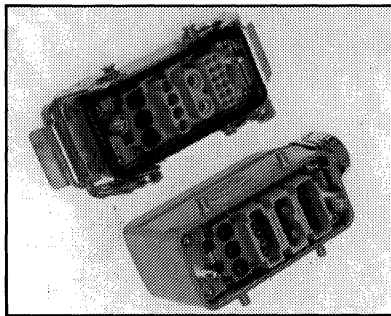
Both versions are available with 9 to 37 contacts and feature tin plated metal shells. M3 or 4/40 UNC retained threaded inserts for use with different locking systems and clips specially adapted to combine board lock and ground continuity may all be specified.

HAN R23 CIRCULAR CONNECTOR



The Han R23, one of HARTING's new generation of circular connectors, is used in applications for motor encoders, analytical instrumentation, and a wide variety of fieldbus systems. Designed for low voltage applications only, these connectors can carry up to 16 amps. An IP 67 protection rating, in addition to the vibration proof locking system, makes the Han R23 very suitable for industrial environments. These connectors are available in three different termination styles, solder, screw and PCB mount. Inserts consist of a thermoplastic resin with gold plated pins. The housings, offered in straight and angled designs, are nickel-plated brass to ensure the highest quality. Housings designed specifically for EMC applications are available.

MODULAR FLEXIBILITY WITH HAN MODULAR SYSTEM



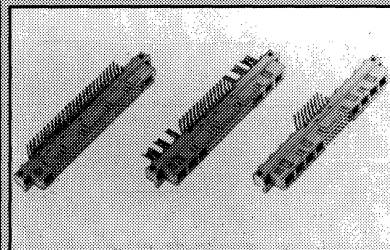
The new HARTING Han-Modular® System enable assembly of a connector according to your required configuration. Different modules permit transmitting electric signal, power, RF, coax, optical, pneumatic and liquid combinations in the same connector. Han-Modular's high flexibility allows you to use combinations of different modules for different applications. This makes the system particularly suited for use in assembly machines, factory automation, logistics, machine tools, railway and robotic applications.

Using proven standard contacts, it is possible to integrate 2-12 modules into

standard Han® housings. Mounting the modules requires no tools, they simply snap into a mounting frame and can be exchanged separately at any time. Polarizing keys preformed at the corners of each module ensure a perfect alignment. The modules, made out of polycarbonate can be easily removed or changed by a simple tool.

Male and female contacts can be mixed in one side of a housing. Every male insert is equipped with an additional protection collar which protects the male contacts against mechanical damage. Every module is additionally polarized by the shape of the protection collar. The new Han-Modular® system has a Protective Earth-grounding system according to VDE. It is suitable for use with many types of industrially hardened housings.

COMPLIANT PIN DIN 41612-TYPE M INVERSE CONNECTORS



Allow continued development of backplane technology using solderless termination and double-side surface mounting.

Among the applications for which the Inverse Type M connectors are especially suited are telecom, medical and high speed computers. Cavities in the connector accommodate the DIN 41626 high voltage, power, coaxial or fiber optic contacts. Connector arrangements can accommodate 2 to 10 special purpose contacts and 78 to 6 standard contacts respectively.

The compliant pin connector is compatible with HARTING male press-in tooling without modification and can be delivered with special press-in inserts to allow use of 'Flat Rock' or simple flat press-in dies. The HARTING compliant zone protects your valuable multi-layer backplanes by allowing only 50µm of hole deformation and providing stable symmetric points of continuous electrical and mechanical contact in the plated-through hole. Right angle mating female connectors are also available for wave solder termination to daughter-cards.



YOUR CONNECTION TO THE 21ST CENTURY



Our manufacturing capabilities include:

- Overmolding
- Crimp, Solder, IDC Termination
- Sonic Welding
- Pad Printing
- Fiber Optics
- Wire Harnessing
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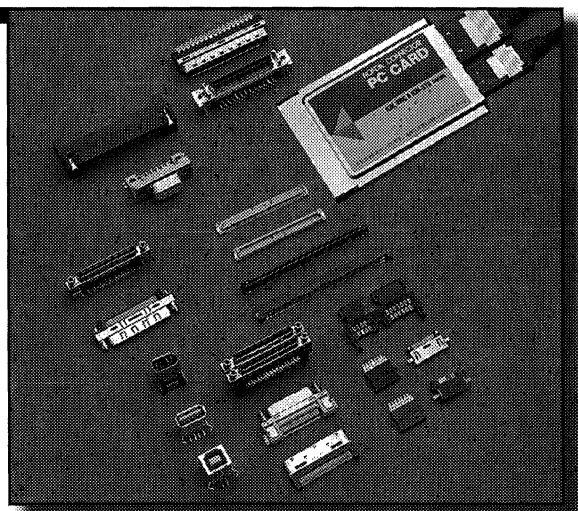
Our cable assemblies are found in the products made by the leading manufacturers of:

- PCMCIA
- SCSI
- VHDCI
- Cellular Phones
- Industrial automation
- Medical Electronics

Our Broad Product Line includes:

- SCSI 1, 2 & 3 I/O connectors
- PCMCIA connectors & card frame kits
- VHDCI 0.8mm I/O interface
- SPCI
- USB
- Firewire
- SMT D'Subs
- PCB stacking connectors

ISO 9002 CERTIFIED

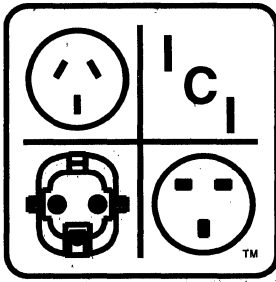


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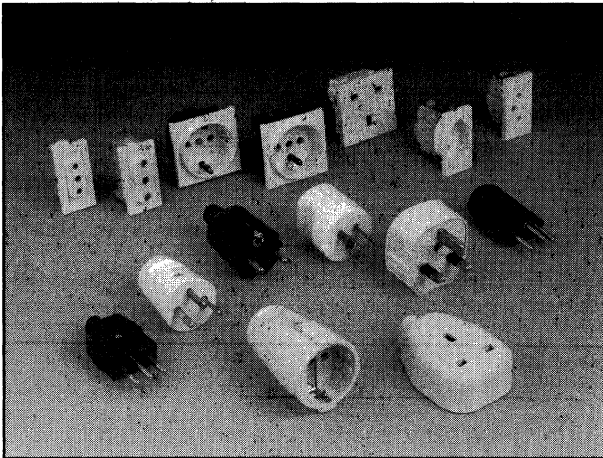
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TELEPHONE: (860) 749-6380 • FAX: (860) 749-2985

- 168 page catalog provides comprehensive information on international outlets, plugs, connectors, cord sets, outlet strips and adapters.
- 1700 product line items available. Most items in stock!
- Product approvals include **VDE, ASTA, CEBEC, SEMKO, UL, CSA, CE**
- Call for new catalog or product application assistance.

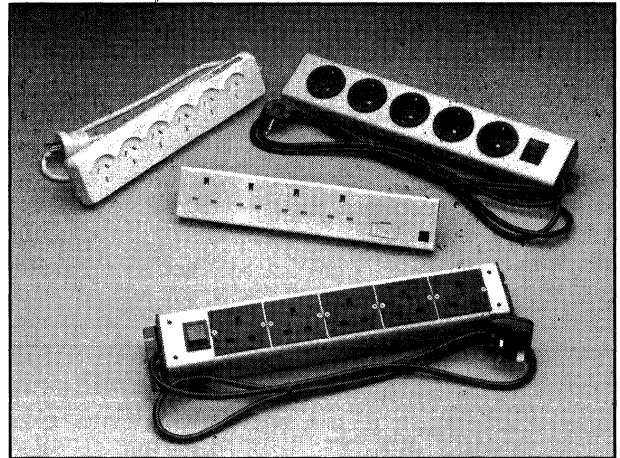
International Wiring Device Products

European plugs, outlets, connectors



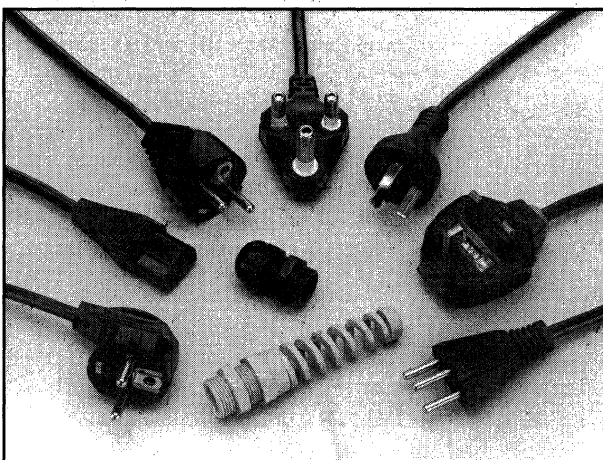
- Outlets designed to mount to American 2x4 wall boxes
- Weatherproof outlets
- GFCI (RCD) outlets
- Modular snap-in outlets
- Surface mount outlets

European outlet strips



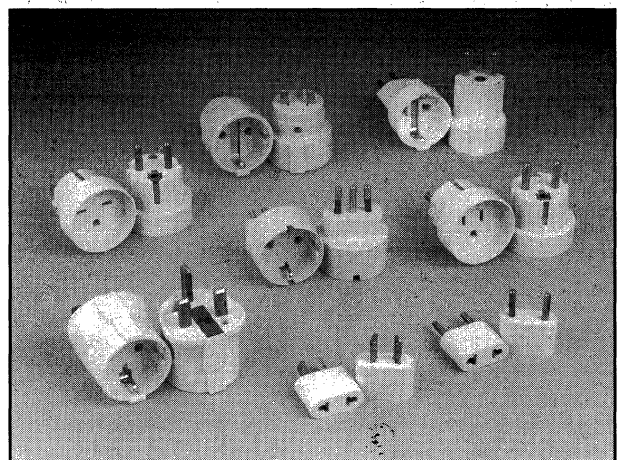
- Outlet strips with 4 to 12 outlets, switched or standard
- 19" rack mount designs
- IEC 320 outlet strips
- Surge suppression models
- Custom designs available

European power supply cords

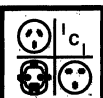


- Rubber, Neoprene and shielded types
- Power supply cord sets
- IEC 320 jumper cords
- Detachable power cords
- Custom cords available

International plug adapters



- American to European
- European to American
- European to European
- IEC to European
- Telephone jack adapters



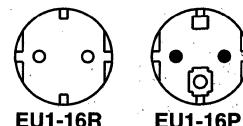
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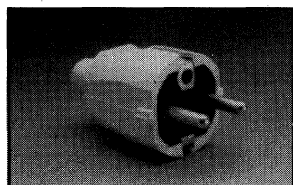
EUROPEAN "SCHUKO" WIRING DEVICES

2 Pole 3 Wire Grounding

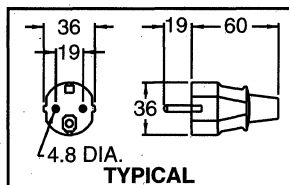
16 Ampere 250 Volt (CEE-7, CEE 7-7 DIN 49440/41)



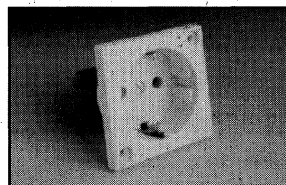
European plugs, connectors and outlets are used in Germany, Austria, Netherlands, Sweden, Norway, Finland and several other countries. Call for complete details.



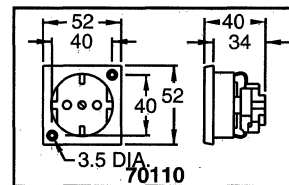
Cat. No. Description
 70140 White plug
 70141 Black plug
 70142 Gray plug
 70130 White, angled



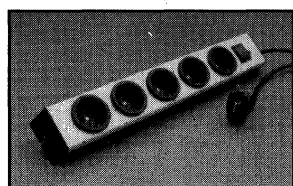
Approvals
 VDE, CEPEC, KEMA,
 NEMKO, OVE, SEMKO,
 UTE, FI



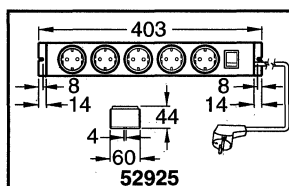
Cat. No. Description
 70110 Ivory outlet
 Duplex and weatherproof
 types available.



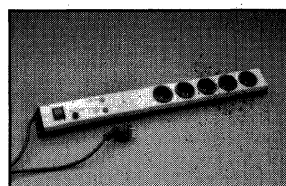
Approvals
 VDE, SEMKO, KEMA



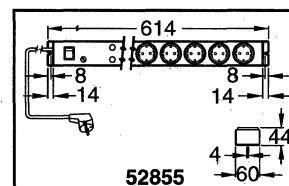
Cat. No. Description
 52906 6 Outlet
 52908 8 Outlet
 52925 5 Outlet, switched



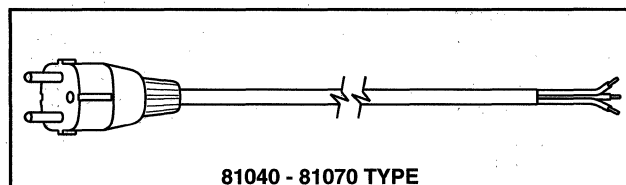
Approvals
 VDE, OVE, KEMA,
 SEMKO, NEMKO, CE



Cat. No. Description
 52855 5 Outlet, filtered,
 surge suppression,
 6A 230V fused.



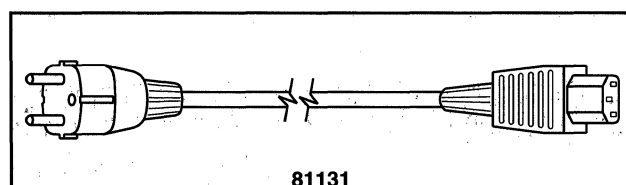
Approvals
 VDE, CE



Power Supply Cords

Cat. No.	Rating	Description
81040	10 Amp 250 Volt	2.5 meters, black
81070	16 Amp 250 Volt	2.5 meters, black

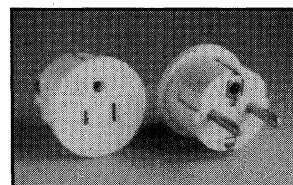
Available with angle plug, custom lengths and terminations
 Approvals: VDE, OVE, CEPEC, SEMKO, NEMKO, KEMA



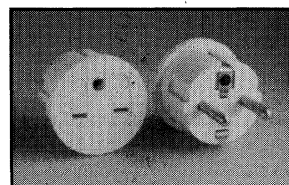
Detachable Cord Sets With IEC 320 Connector

Cat. No.	Rating	Description
81131	10 Amp 250 Volt	2.5 meters, black
81641	10 Amp 250 Volt	2.5 meters, black, angle plug

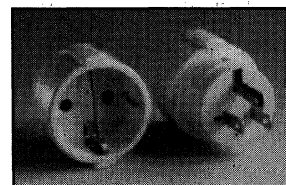
Longer and shorter lengths, right angle, left angle IEC 320 connectors also available.
 Approvals: VDE, OVE, CEPEC, SEMKO, NEMKO, KEMA



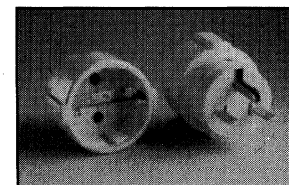
Cat. No. Description
 30110 Adapts NEMA 5-15P, NEMA 1-15P plugs to European "Schuko" outlets



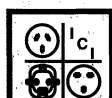
Cat. No. Description
 30100 Adapts NEMA 6-15P plugs to European "Schuko" outlets



Cat. No. Description
 30130 Adapts European "Schuko" plugs to NEMA 5-15R outlets



Cat. No. Description
 30120 Adapts European "Schuko" plugs to NEMA 6-15R outlets



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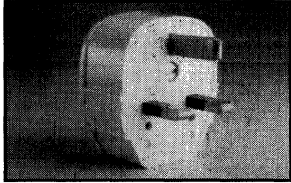
UNITED KINGDOM WIRING DEVICES

2 Pole 3 Wire Grounding

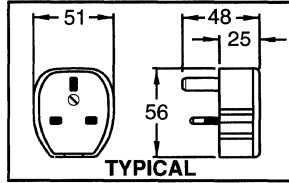
13 Ampere 250 Volt (British Standard BS 1363A)



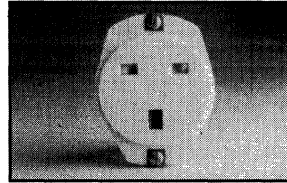
United Kingdom (BS 1363A) plugs, connectors and outlets are used in England, Ireland, Hong Kong, Kuwait, Saudi Arabia and other countries. Call for complete details.



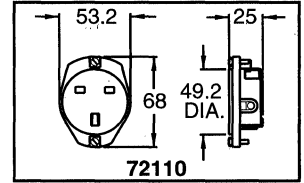
Cat. No. **Description**
 72140 White, angled
 72141 Black, angled
 72150 Black, rubber, straight



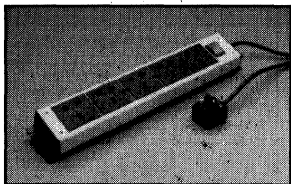
Approvals
 ASTA



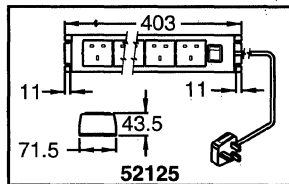
Cat. No. **Description**
 72110 White outlet
 Duplex and weatherproof types available.



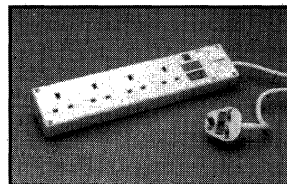
Approvals
 BSI



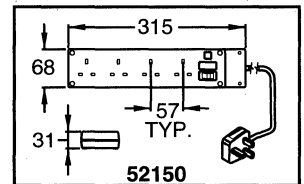
Cat. No. **Description**
 52125 5 Outlet, switched
 52106 6 Outlet
 52145 4 Outlet*



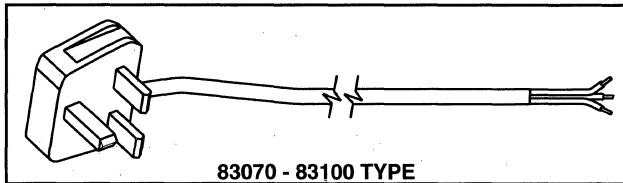
Approvals
 * ASTA



Cat. No. **Description**
 52150 4 Outlet, filtered, surge suppression, fused, pilot light



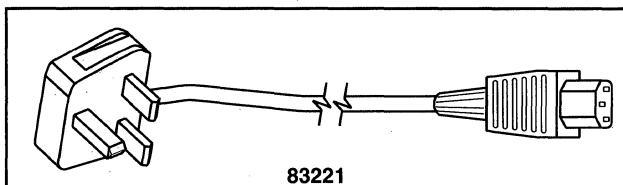
Approvals
 ASTA, CE



Power Supply Cords

Cat. No.	Rating	Description
83070	10 Amp 250 Volt	2.5 meters, black
83100	13 Amp 250 Volt	2.5 meters, black

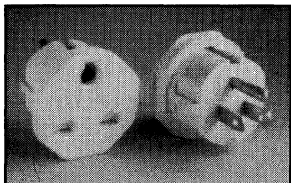
Available in custom lengths and with custom terminals.
 Approvals: BSI



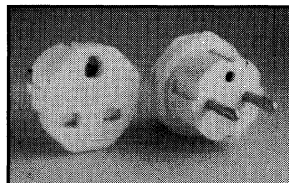
Detachable Cord Sets With IEC 320 Connector

Cat. No.	Rating	Description
83221	10 Amp 250 Volt	2.5 meters, black

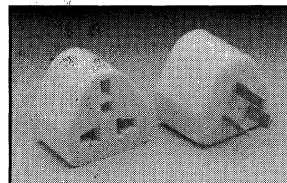
Longer and shorter lengths, right angle, left angle IEC 320 connectors also available.
 Approvals: BSI



Cat. No. **Description**
 30180 Adapts U.K. BS 1363A plugs to NEMA 5-15R outlets

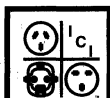


Cat. No. **Description**
 30181 Adapts U.K. BS 1363A plugs to European "Schuko" (CEE-7) outlets



Cat. No. **Description**
 30200 Adapts U.K. BS 1363A, NEMA 5-15P, NEMA 6-15P plugs to Australian outlets

NOTE: Other variations and adapter combinations available that allow U.K. plugs to mate with Italian or Swiss outlets. Call for details.



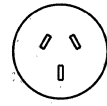
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AUSTRALIAN WIRING DEVICES

2 Pole 3 Wire Grounding

10 Ampere 250 Volt (AS 3112-1981)

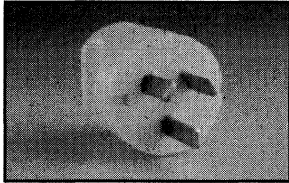


AU1-10R

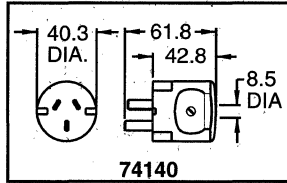


AU1-10P

Australian plugs, connectors and outlets are used in Australia, New Zealand, China and several other countries. Call for complete details.

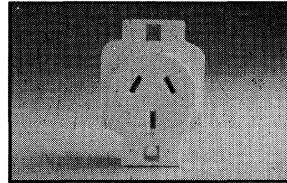


- Cat. No. Description**
 74140 White plug
 74130 White, angled
 74141 Clear plug
 74131 Clear, angled

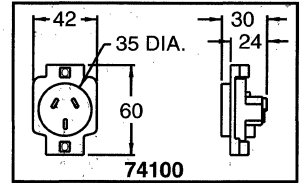


74140

Approvals
 EANSW

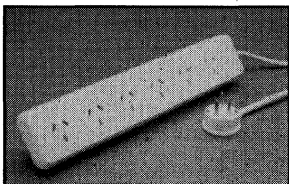


- Cat. No. Description**
 74100 White outlet
 Duplex and weatherproof types available.

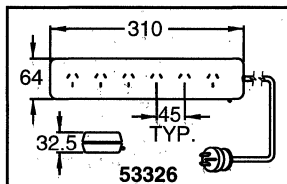


74100

Approvals
 EANSW

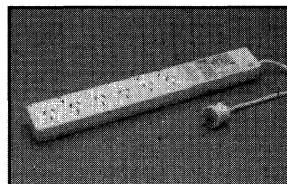


- Cat. No. Description**
 53326 6 Outlet, c.b.
 53328 8 Outlet, c.b.

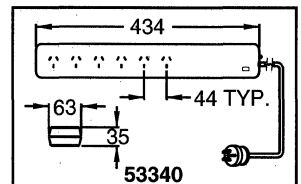


53326

Approvals
 EANSW



- Cat. No. Description**
 53340 6 Outlet, filtered, surge suppression, c.b. and pilot light

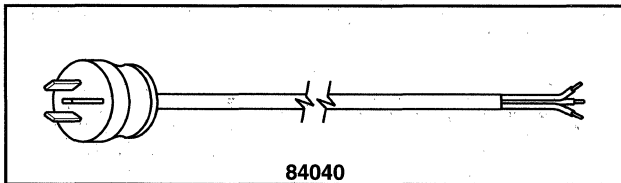


53340

Approvals
 EANSW

Power Supply Cords

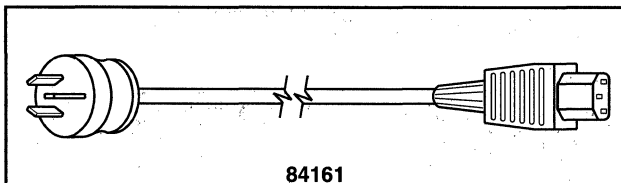
- | Cat. No. | Rating | Description |
|----------|-----------------|---|
| 84040 | 10 Amp 250 Volt | 2.5 meters, black
Available in custom lengths and with custom terminals.
Approvals: EANSW |



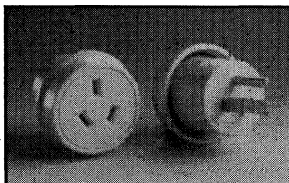
84040

Detachable Cord Sets With IEC 320 Connector

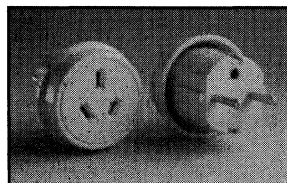
- | Cat. No. | Rating | Description |
|----------|-----------------|---|
| 84161 | 10 Amp 250 Volt | 2.5 meters, black
Longer and shorter lengths, right angle, left angle IEC 320 connectors also available.
Approvals: EANSW |



84161



- Cat. No. Description**
 30210 Adapts Australian 10A-250V plug to NEMA 5-15R (15A 125V) outlets

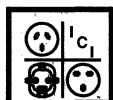


- Cat. No. Description**
 30240 Adapts Australian 10A-250V plug to European "Schuko" (CEE-7) outlets



- Cat. No. Description**
 30200 Adapts U.K. BS 1363A, NEMA 5-15P, NEMA 6-15P plugs to Australian outlets

NOTE: The 10A-250V type plugs are used for most applications in Australia. 15A-250V plugs and outlets are also available. Call for details.



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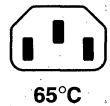
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IEC 320 C-13, C-14 CONNECTORS

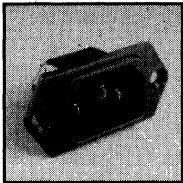
IEC 320 C-13, C-14

2 Pole 3 Wire Grounding

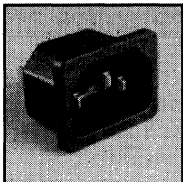
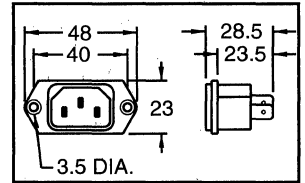
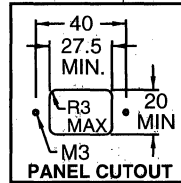
15 Ampere 250 Volt (UL/CSA), 10 Ampere 250 Volt (International)



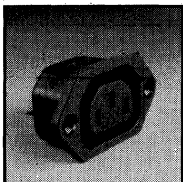
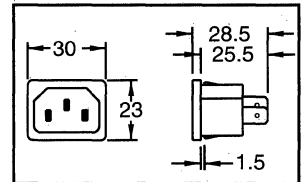
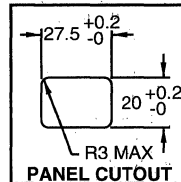
IEC 320 inlets, outlets, plugs and connectors are used on electrical/electronic equipment requiring UL, CSA and international approvals. These products have UL/CSA, VDE, OVE, CEBEC, BSI, CE and numerous other approvals required for products exported around the world. Other variations available. Call for product assistance and master catalog.



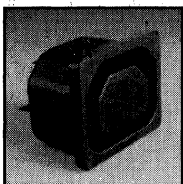
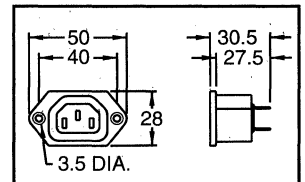
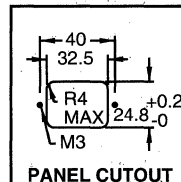
Cat. No. 57011
IEC 320 C-14 power inlet. Panel mount, front or rear. Quick disconnect terminals, 6.3 x 0.8 mm (.250" x .032")
15 amp 250 volt, 10 amp 250 volt.



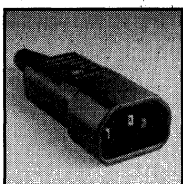
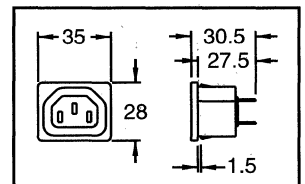
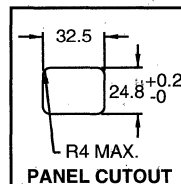
Cat. No. 57311
IEC 320 C-14 power inlet. Snap-in mount to 1.5 mm thick panels. Quick disconnect terminals, 6.3 x 0.8 mm (.250" x .032")
15 amp 250 volt, 10 amp 250 volt.



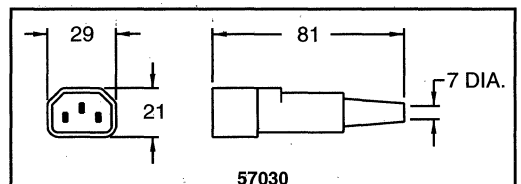
Cat. No. 57120
IEC 320 C-13 power outlet. Panel mount, front or rear. Quick disconnect terminals, 6.3 x 0.8 mm (.250" x .032")
15 amp 250 volt, 10 amp 250 volt.



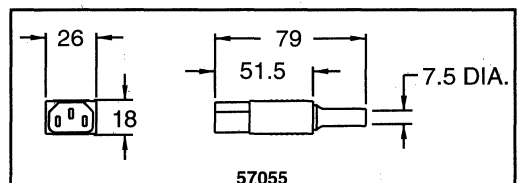
Cat. No. 57320
IEC 320 C-13 power outlet. Snap-in mount to 1.5 mm thick panels. Quick disconnect terminals, 6.3 x 0.8 mm (.250" x .032")
15 amp 250 volt, 10 amp 250 volt.



Cat. No. 57030
IEC 320 C-14 attachment plug. Screw terminals. Mates with C-13 outlets and connectors.
10 amp 250 volt.



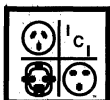
Cat. No. 57055*
IEC 320 C-13 connector body. Screw terminals. Mates with C-14 inlets and plugs.
10 amp 250 volt.



Cat. No. 57065*
IEC 320 C-13 right angle connector body.
10 amp 250 volt.

*NOTE: Cat. No's. 57055 and 57065 available in 15 amp 250 volt, 10 amp 250 volt rating. See IEC-320 C-15 type in master catalog. Contact sales office for details.

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IEC 320 C-19, C-20 CONNECTORS

IEC 320 C-19, C-20

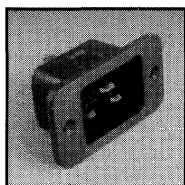
2 Pole 3 Wire Grounding

20 Ampere 250 Volt (UL/CSA), 16 Ampere 250 Volt (International)

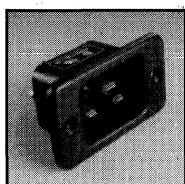
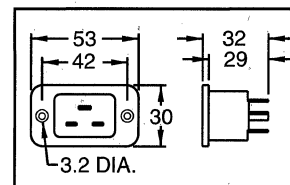
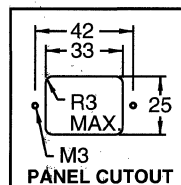


65°C

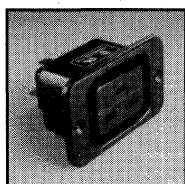
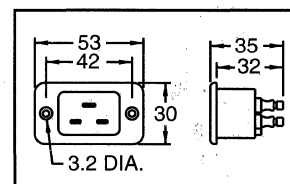
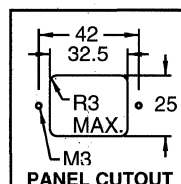
IEC 320 C-19, C-20 heavy duty inlets, outlets, plugs and connectors are used on electrical/electronic equipment requiring UL, CSA and international approvals. These products have UL/CSA, VDE, OVE, CE, CEBEC and numerous other approvals required for products exported around the world. Other variations available. Call for product assistance and master catalog.



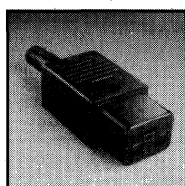
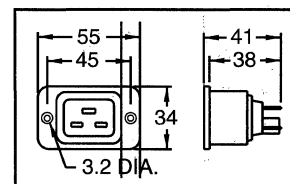
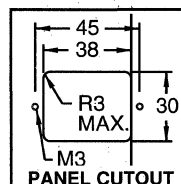
Cat. No. 57081
IEC 320 C-20 power inlet. Panel mount. Quick disconnect terminals, 6.3 x 0.8 mm (.250" x .032")
UL/CSA rated 20 amp 125 volt, 16 amp 250 volt.
International rating 16 amp 250 volt.



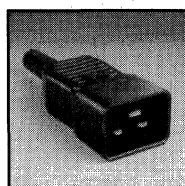
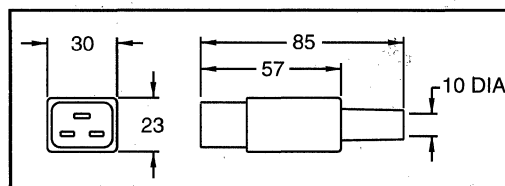
Cat. No. 57080
IEC 320 C-20 power inlet. Panel mount. Screw terminals.
UL/CSA rated 20 amp 250 volt.
VDE rated 16 amp 250 volt.



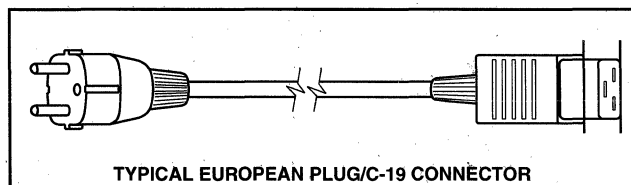
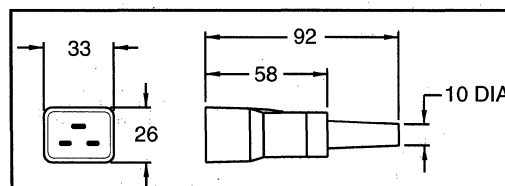
Cat. No. 57100
IEC 320 C-19 power outlet. Panel mount. Screw terminals.
UL/CSA rated 20 amp 250 volt.
VDE rated 16 amp 250 volt.



Cat. No. 57090
IEC 320 C-19 connector body. Screw terminals.
UL/CSA rated 20 amp 250 volt.
VDE rated 16 amp 250 volt.

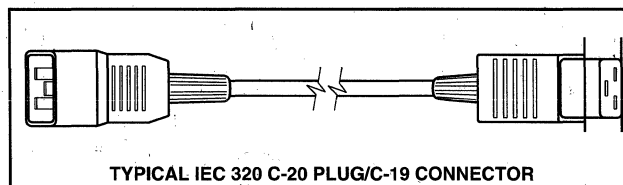


Cat. No. 57110
IEC 320 C-20 attachment plug. Screw terminals.
UL/CSA rated 20 amp 250 volt.
VDE rated 16 amp 250 volt.



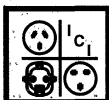
TYPICAL EUROPEAN PLUG/C-19 CONNECTOR

Versions with NEMA, U.K., European, Australian plugs available.



TYPICAL IEC 320 C-20 PLUG/C-19 CONNECTOR

Versions with stripped ends with C-20 or C-19 connectors available.



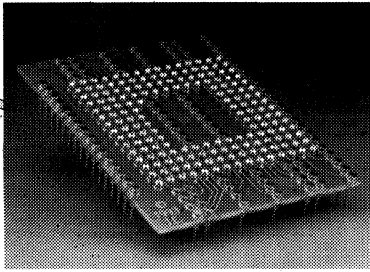
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Ironwood Electronics Inc.

Interconnection Specialists

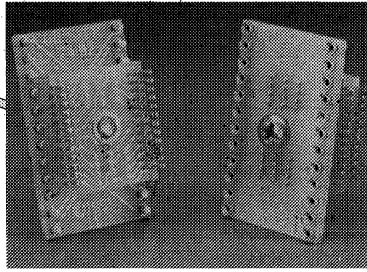
PROTOTYPING ADAPTORS



BY THE HUNDREDS

- Quad Flat Pack, PGA, PLCC
- DIP, ZIP, LCC, and more
- Solder tail or wire wrap pins
- Support all popular wire wrap panel types
- Gold pins & machined sockets for highest quality
- Quick turnaround customs

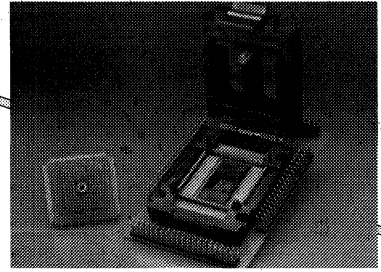
SOIC TO DIP



WITH DIP/SOIC PACKAGE CONVERTER

- Convert surface mounted SOIC pattern to DIP
- Solder to SOIC Land Pattern
- Then plug DIP IC into DIP socket
- DIP pins are gold plated machined pins
- Multiple sizes available

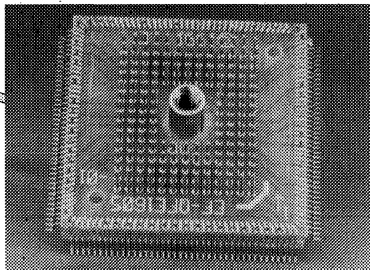
TEST SMT QFP



IN ZIF SOCKET

The Ironwood line of **CARRIER ADAPTORS** allow probing of SMT QFP devices by simply mounting a **QFP EMULATOR FOOT** to the land pattern. The **SOCKET/PROBE** assembly is then plugged onto the FOOT with matching connector. Target IC is then inserted into ZIF socket for easy test/removal. EMULATOR FOOT is constructed for easy installation and reliability. Available in sizes from 44 to 208 pins.

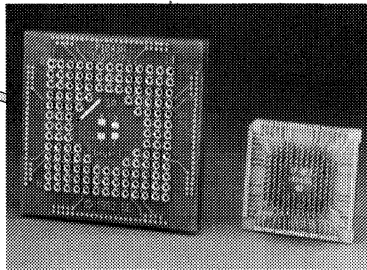
PROBE QUAD FLATPACKS



QFP EMULATOR FOOT

Our QFP emulator feet give the **truest physical emulation of your IC** available. Our two different styles of QFP feet give you the ability to perform **test and debug functions on your Surface Mount PCB**. The .050" center gold pins mate with our upper assemblies to give you a ZIF socket interface for test or a different package interface for emulation (i.e. PGA). Feet are available in sizes from 44 to 352 pins.

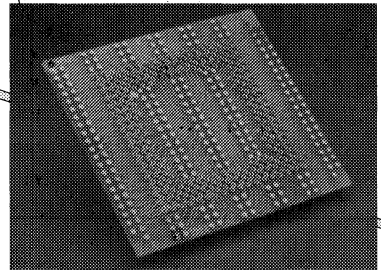
PGA TO QFP CONVERTER



FOR MOT MC683XX uP

Connect MC68340, 68302, and MC68360 emulators and ICs in **PGA packages to MC680XX SMT land pattern** with the **PC-QFP-683XX-L-01** devices. Consists of two pieces - PGA socket with mini grid interconnect and QFP surface mountable foot with matching interconnect. **Simply solder foot to lands and insert the PGA socket into 683XX**. Top and bottom pieces available separately. Gold plated machined pins for high quality connection.

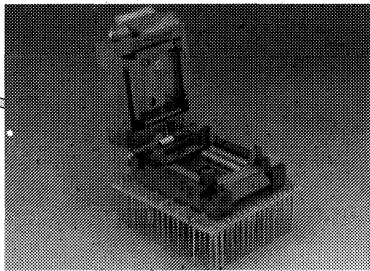
PROTOTYPE



INTERSTITIAL PGAs

Along with **hundreds of other prototyping adaptors** for all package types, Ironwood is offering **interstitial PGA prototyping**. The device pictured is an **IPGA325-01** with a **35X35** matrix of pins placed on 0.1" centers and interstitially between. Simply plug your IC in and place device on prototyping panel. Constructed with **high quality gold plated machined pins**. Available with **ZIF socket and wire-wrap options**. **Custom configurations available**.

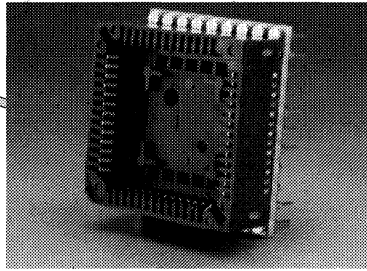
PROTOTYPE QFPs



IN ZIF SOCKETS

Prototyping adaptors for QFP in ZIF sockets include a **complete selection of QFP sizes (44-208 pins)**, lead spacing (0.65 mm, 0.8 mm, 0.5 mm, and .025"), and prototyping panel types. Adaptors are **constructed with high quality QFP test and burn in sockets** along with gold plated machined pins for **reliable operation**. Optionally available with 3 wire-wrap pins. **Hundreds of other adaptors available** as well for prototyping, test, and interconnect.

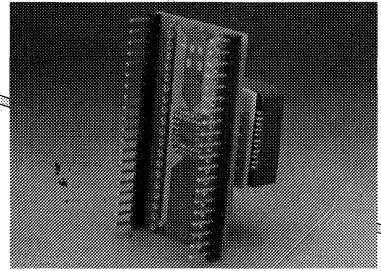
PROTOTYPE PLCC ICs



ALL SIZES

Our line of **prototyping adaptors including PLCC adaptors** cover a complete list of device sizes on all **popular types of prototyping panels**. Adaptors are constructed with gold plated pins and high quality sockets for **reliable operation**. Simply install the adaptor, interconnect wiring, and device and start testing. Devices also available with 3 level wire-wrap. **Hundreds of prototype adaptors available** for other packages. **Quick turn customers**.

CONVERT DIP TO PLCC



FOR 80C88

PC-DIP/PLCC-80C88 allows connection of an Intel **8088 DIP device or emulator to a PLCC device, socket or land pattern**. Adaptor consists of 2 subassemblies: upper accepts 40 pin DIP or emulator pod and connects all signals on PLCC foot. Available as a clip which clips onto SMT PLCC, plug inserted into PLCC socket, or surface mountable. **MANY OTHER PACKAGE CONVERTERS AVAILABLE**.

We specialize in customs...Call us with your requirements

Thousands of HIGH QUALITY Surface-Mount and VLSI Adaptors for your Interconnect Needs
<http://www.ironwoodelectronics.com>

OUR EXTENSIVE CATALOG HAS THESE PROBLEM SOLVERS FOR YOUR VLSI INTERCONNECT APPLICATION:

■ Debugging Adaptors ■ PC Accessories ■ Package Adaptors ■ Prototype Adaptors ■ Socket Probing ■ QFP Probing

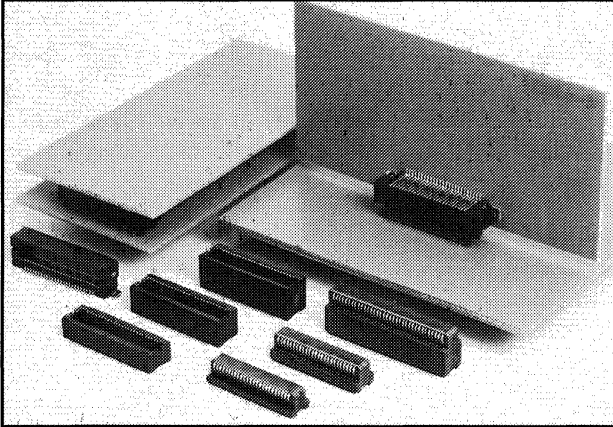
IRONWOOD ELECTRONICS, INC. ■ P.O. BOX 21151, ST. PAUL, MN 55121 ■ TEL: 612-452-8100 ■ FAX: 612-452-8400



142 TECHNOLOGY DRIVE, BUILDING 100, IRVINE, CA 92618-2401
 TEL: 800/JAE-PART (800/523-7278) ■ IN CA. 949/753-2600 ■ FAX: 949/753-2699
 FAX BACK: 800/523-7278, EXT. 623 OR 625 ■ WEBSITE: www.jae.com

SURFACE MOUNT CONNECTORS

WR SERIES



High density, surface mount connectors designed for parallel board-to-board stacking.

Stacking height: Nine varieties .157 to .354"
 (4.0 to 9.0 mm)

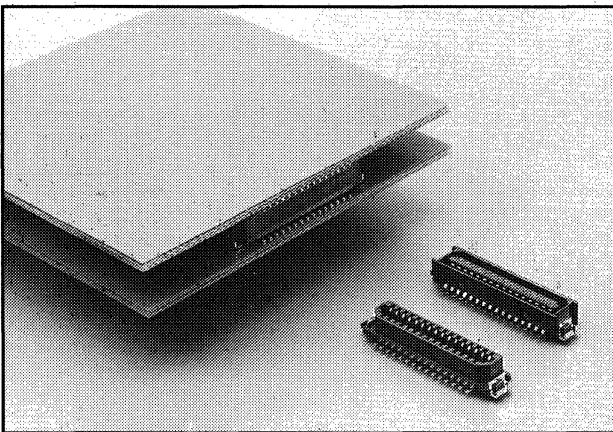
Sizes available: 30, 40, 50, 60, 70, 80, 100, 120 contacts
 (double row); 200, 240 position Mezzanine

- 0.020" (0.50mm) contact spacing
- Ribbon/leaf spring contacts
- Vertical/parallel board to board connections
- Three straight-type insulator heights
- Available on embossed tape for automatic mounting

Floating Type

Sizes available: 30, 60 and 70 straight, 70 right angle contacts
 ▪ 0.010" (0.25mm) deviation from X or Y direction can be tolerated

IL-310 SERIES



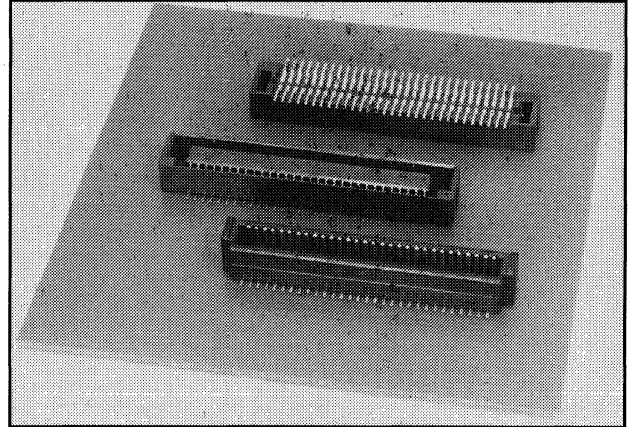
High density, surface mount connectors designed for PCB-to-PCB applications. Ideal for notebook PC LCD, VGA and SVGA-type interfaces.

Stacking height: .167" (4.25 mm)

Sizes available: 31, 41 contacts

- Conforms to VESA FPD1-1 specifications
- .039" (1 mm) contact spacing
- Gull-wing, staggered-type SMT contacts
- Available in embossed tape with or without kapton for automatic mounting

KX14/15 SERIES



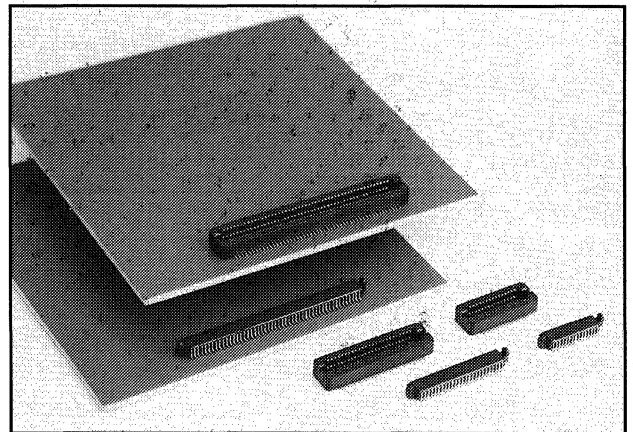
High density, low profile, SMT connectors for board-to-board applications.

Stacking height: .157 to .709" (4 to 18 mm) in
 .039" (1 mm) increments

Sizes available: 20, 30, 40, 50, 60, 70, 80, 100, 120, 140,
 160, 200 contacts

- .031" (0.8 mm) contact spacing
- Straight receptacle (KX14) and right angle/straight plug (KX15) for parallel and vertical PCB connections
- Polarization key prevents mismatching
- Available in embossed tape for automatic mounting

IL-312 SERIES



High density, surface mount connectors designed for parallel PCB-to-PCB applications.

Stacking height: .098" (2.5 mm) to .138" (3.5 mm)

Sizes available: 20 to 80, 100 contacts

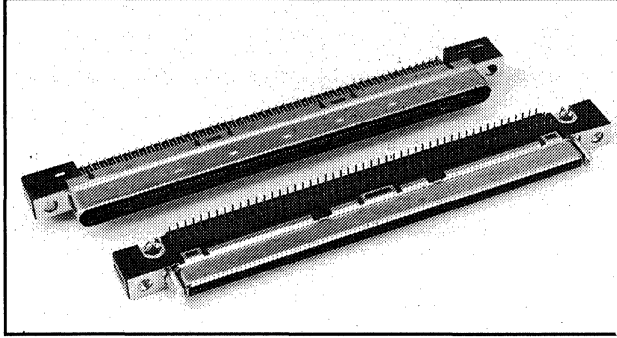
- .020" (0.50 mm) contact spacing
- Gull-wing type SMT contacts
- Available on embossed tape for automatic mounting



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 TEL: 800/JAE-PART (800/523-7278) ■ IN CA. 949/753-2600 ■ FAX: 949/753-2699
 FAX BACK: 800/523-7278, EXT. 623 OR 625 ■ WEBSITE: www.jae.com

PCB-TO-PCB CONNECTORS

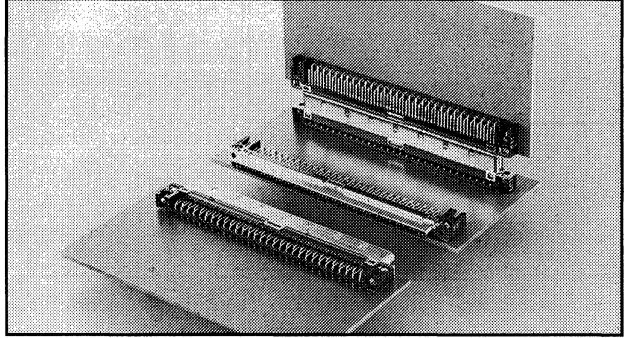
KX20 SERIES



Low profile, shielded I/O two-piece connector.
 Mounting height: .21" (5.4 mm)
 Sizes available: Double rows: 50, 80 and 120
 4 rows: 100, 200 contacts

- .031" (0.80 mm) contact spacing
- Ribbon/leaf spring contacts
- EMI/RFI shielded and grounded to meet FCC Docket B
- Mating guides on receptacle
- First mate/last break contacts for receptacle
- 0.5 Amp operating current

TX20 SERIES

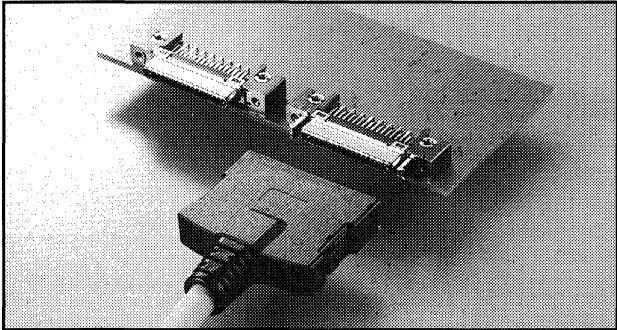


Low profile, two-piece connector designed to meet high density board-to-board interconnection requirements.
 Mounting height: .212" (5.4 mm)
 Sizes available: 10, 26, 40, 120, 200 contacts

- Contact spacing:
 - Mated Side:
 - .050" (1.27 mm) double row (10 to 120 contacts)
 - .050" (1.27 mm) 4 rows (200 contacts)
 - Tail Side: .050" (1.27 mm) between contacts
 - .075" (1.905 mm) between staggered rows
- EMI/RFI shielded and grounded to meet FCC Docket B
- Ribbon/leaf spring contacts
- Horizontal or vertical connection between boards
- Through hole board termination
- 0.5 Amp operating current

PCB-TO-CABLE CONNECTORS

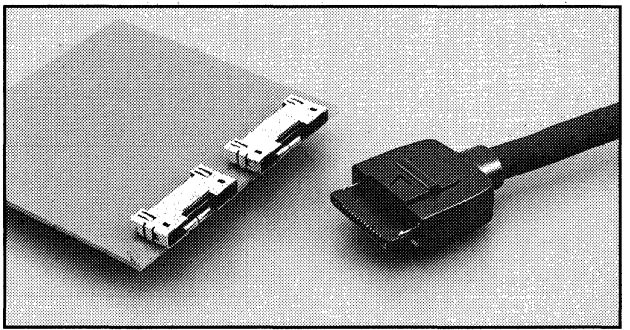
TX20-A SERIES



Low profile, high density connectors (IDC type) for PCB-to-cable interconnections.

- Sizes available: 10, 14, 26, 36, 50, 68 contacts
- Mating side contacts arranged on .050" (1.27 mm) centers, double row
 - .050" (1.27 mm) contact spacing
 - Extremely low profile
 - Right-angle through hole and SMT (right-angle and straddle) receptacle versions available
 - Standard PCB front and reverse right-angle SMT versions available
 - Reliable ribbon-type contacts
 - Rapid, sure-locking mechanism
 - IDC termination for plugs
 - 0.5 Amp operating current

RL01 SERIES



Low profile, miniature connectors designed for PCB-to-PCB applications. Ideal for VGA, SVGA-type interfaces.

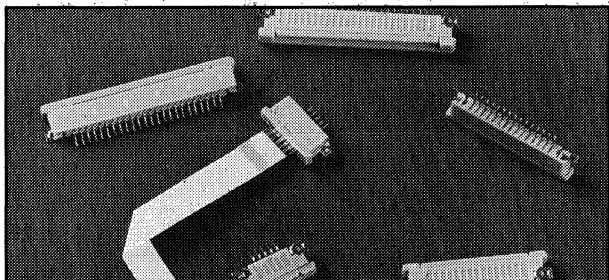
- Stacking height: .118" (3.0 mm)
 Sizes available: 12, 14 contacts
- .031" (0.8 mm) contact spacing
 - Metallic shell provides EMI protection and 10,000 cycles durability
 - Plug side features an upper-sidelock for easy mating and unmating
 - Receptacles available in embossed tapping
 - Bosses are integral parts of metallic shells and heighten PCB soldering strength
 - Shell flange protects against twisting forces
 - SMT-type for automatic mounting



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PCB-TO-FPC/FFC CONNECTORS

IL-402/IL-402R SERIES



Low profile connectors for FPC/FFC. Developed to meet the demand of increased component density in the surface mount environment. Zero Insertion Force cable termination allows for simplified operation.

Applicable FPC: .039" (1.0 mm)

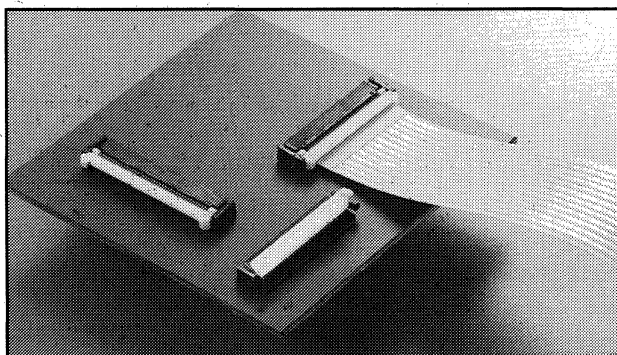
FFC: .098" (2.5 mm)

Sizes available: IL-402: 4 to 30 contacts

IL-402R: 4 to 23 contacts

- Low profile
- .039" (1.0 mm) contact spacing, single row
- SMT configuration
- Easy termination of cable utilizing a slide actuator
- Hold down tabs provide mechanical strain relief for solder terminals
- Optional embossed tape packing for automatic SMT mounting
- 0.5 Amp operating current

IL-FHR SERIES



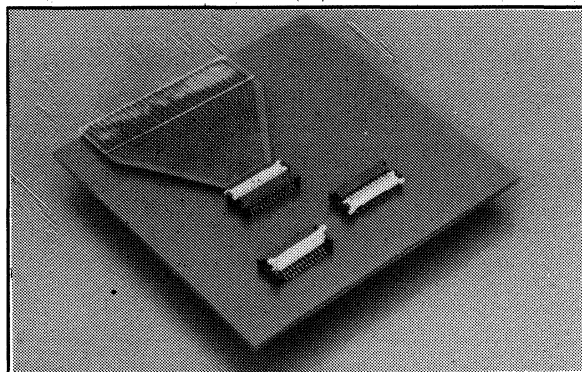
Extremely high density, low profile FPC connectors for PCB-to-FPC interfaces.

Applicable FPC: .020" (0.5 mm) center, .012" (0.3 mm) thick with reinforcement

Sizes available: 8, 10, 14, 18, 22, 30, 32, 36, 40, 50 contacts

- Swinging slider construction permits slider operation with one hand
- SMT configuration
- .020" (0.5 mm) contact spacing
- Adaptable for automated conductivity inspection
- Supplied on embossed tape for automatic SMT mounting
- 0.5 Amp operating current

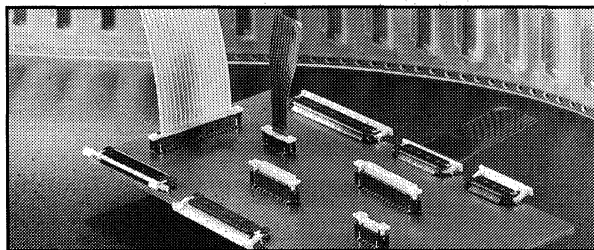
IL-FHJ



The IL-FHJ is designed for board-to-FPC applications. Zero insertion Force (ZIF) design utilizes a slider for easy, yet reliable, engagement of the flex cable to the contacts. They are ideally used in Audio-visual, Camcorders, Personal Computers, Mobile Computers, Wireless and Mobile Phones.

- Sizes available: 21, 27, 33, 39, 45, 51 contacts
- 0.024" (0.6mm) contact spacing
- Applicable FPC 0.012" (0.3mm) center, .008" (0.2mm) thick with reinforcement
- Available in embossed tape for automatic mounting
- 0.35 Amp operating current

IL-FPR SERIES



These FPC connectors have extremely high contact density and low profiles. Straight and right-angle types available. Zero Insertion Force (ZIF) configuration permits easy insertion and extraction of the FPC, even in a minimum amount of space. A wide variety of mounting styles available.

Applicable FPC: .020" (0.5 mm) center, .012" (0.3 mm) thick with reinforcement

Mounting height: .079" (2.0 mm)—Right-angle type

Sizes available: Right-angle: 5 to 50

Straight type: 8 to 33 and 40

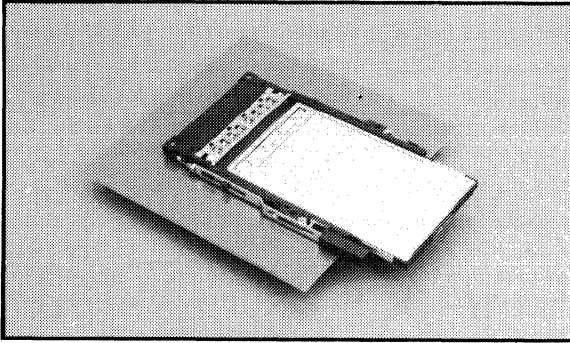
- .020" (0.5 mm) contact spacing
- SMT configuration
- Right-angle and straight versions
- Slider enables insertion/extraction of FPC without applying force
- One-side contact configuration prevents mismatching of FPC
- Lower-side or upper-side FPC contact surfaces on right-angle version
- Hold down mechanism prevents connector from floating up during soldering and retains the connector on the board
- Supplied in embossed tape for automatic SMT mounting
- 0.5 Amp operating current



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MEMORY CARD CONNECTORS

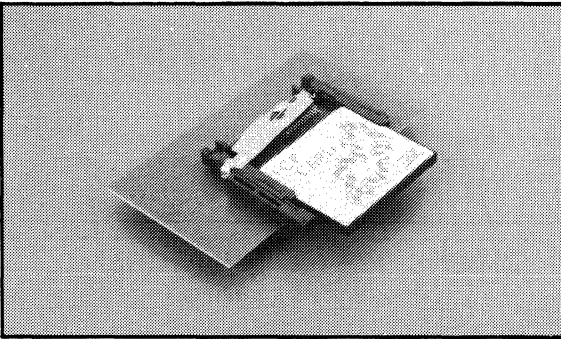
JC21 SERIES CARDBUS



The JC21 series is designed for Cardbus PC Cards. These connectors are for 33 MHz clock frequency, for 32 bit data width and 132 Mbps data transmission speeds.

- Applicable PC Cards Type I and III
- Polarizing key for 3.3V
- Standoff available for mounting components under the connector
- Push eject or horizontal turn-down ejector mechanisms available
- Two-piece SMT connector enables easy PCB design and reduces mounting cost
- Socket connector, frames and covers also available

JC26 SERIES COMPACT FLASH*



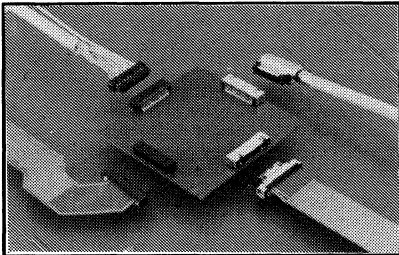
The JC26 series is a compact flash memory card standard, in accordance with Compact Flash Association. Applications include digital still cameras and other portable devices.

- Standoff available for mounting components under the connector
- Push eject or horizontal turn-down ejector mechanisms available
- Two-piece low cost host connector available
- Socket connector available in SMT, or straddle mount
- Frames and covers also available

* Compact Flash is a trademark of San Disk Corp.

LOW PROFILE, HIGH DENSITY CONNECTORS

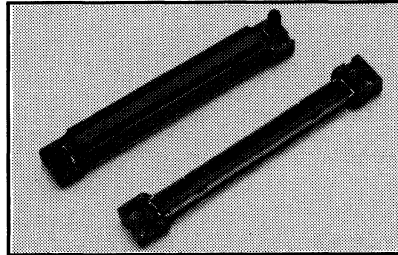
FI SERIES



The FI series was designed for board to cable applications. They are ideal for use in VCR, notebook PC's, mobile phones and other consumer applications, where reduced space is a requirement

- Sizes available: 21 double row
- 0.049" (1.25mm) contact spacing
- SMT contact configuration
- Socket housing - Discrete wire or FPC cable available
- Socket housing available with or without shell
- Pin header available with or without shell
- Pin header available on embossed tape for automatic mounting
- 0.1 Amp operating current

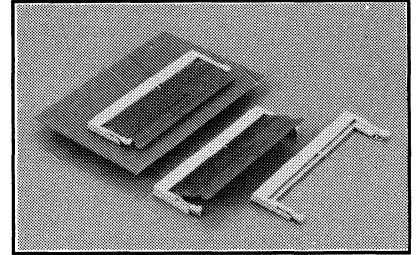
PD1



The PD1 connector series is a .024" (0.6mm) surface mount board to board connector. This series can be used in (PC) Personal Computers and PDA's (Personal Digital Assistant) as a docking connector.

- Sizes available: 200 single row
240 double row
- .024" (0.6mm) contact spacing
- 2 stepped first-mate-last-break signal contacts
- 200 position - 8 power contacts (4 each side), 192 signal contacts
- 240 position - 16 power contact (8 each side), 224 signal contacts
- Guide posts for easy blind mating and unmating
- 0.5 Amps operating current

MM30



The MM30 connector is designed for use with small outline DIMM memory modules. These connectors are used in portable devices such as notebook personal computers.

- Size available: 144 contacts
- 0.031" (0.8mm) contact spacing
- Designed to meet JEDEC specifications
- Accepts 8 Bit Memory Module SOD (small outline DIMM)
- Surface mount contacts
- Heights available - 0.154" (3.9mm)
0.201" (5.1mm)
- Rugged latch to prevent breakage
- 0.031" (0.8mm) operating current



The Alternative Connection

SINCE 1944



JAEGER CONNECTORS CATALOG

Jaeger Catalog Pages

"STANDARD" Series from 3 to 52 contacts - I.P. 50 5 to 14
 • (2, 3 and 4 mm dia.) .078 - .118 and .157 dia. soldering-type contact - Hermetic 10⁹ Thermocouples
 • coupling by threaded ring

THE BEST QUALITY/COST RATIO

"RAPID" Series from 3 to 17 contacts - I.P. 50 15 to 19
 • (2, 3 and 4 mm dia.) .078 - .118 and .157 dia. soldering-type contacts
 • coupling by quick-connecting system (1/6 turn) - High temperature 175C/347F

FOR FREQUENT UNCOUPLING OPERATIONS

"WEATHERPROOF" Series from 3 to 52 contacts - I.P. 65 20 to 22
 • Nickel plated finish
 • (2, 3 and 4 mm dia.) .078 - .118 and .157 dia. soldering-type contacts
 • coupling by threaded ring

"WEATHERPROOF" Series - High Performance from 3 to 52 contacts 23 to 28
 • Green plated finish and gold plated contacts - I.P. 65
 • (2, 3 and 4 mm dia.) .078 - .118 and .157 dia. soldering-type contacts
 • coupling by threaded ring

FOR EQUIPMENT WITHSTANDING STREAMING WATER

Accessories for "STANDARD" "RAPID" "WEATHERPROOF" Series 29 to 34
 • Cable clamps; Bushings; Solder type ferrule adaptor; Ferrule adaptors with Pg Thread; Protection caps; Backshells for receptacles, fixing accessories; Potting compound; Seals

NEW! "HIGH DENSITY" Series 00 to 00
 • (0.76mm dia) USA size 22 crimping-type removable contacts (7-27 contacts) - IP65
 • Push Pull Coupling System
 • High Temperature (100C) 212F (200°C) 392°F - consult staff
 • Small High Density Contact Arrangement for Advanced Technology

"MINIATURE" and "WEATHERPROOF MINIATURE" Series from 3 to 55 contacts I.P. 50 to I.P. 65 35 to 45
 • (1 mm dia.) USA Size 20 crimping-type removable contacts
 • Quick-disconnect coupling (1/6 turn) - Push Pull High Temp. 200C/392F Hermetic

FOR ADVANCED TECHNOLOGIES

Accessories for "MINIATURE" Series 46 and 47
 • Cable clamps; Backshells for receptacles; Protection caps; Gaskets; Contacts for thermocouples; Spare contacts; Tools

"INDUSTRIAL" and "WEATHERPROOF INDUSTRIAL" Series 49 to 59
 • (1.6 mm dia.) USA Size 16 crimping-type removable contacts (3 to 27 contacts)
 • (2.4 mm dia.) USA Size 12 crimping-type removable contacts (3 to 12 contacts)
 • Coupling by quick-connecting system (1/6 turn) - High Temp. 200C/392F

WITH A EARTH/GROUND CONTACT - I.P. 50 to I.P. 65

Accessories for "INDUSTRIAL" Series and Dimensions 43 - 60 - 61

• Contact for thermocouples; Spare contacts; Fixing accessories
"MARINE" Series I.P. 68 62 to 65
 • (1 mm dia.) USA Size 20 crimping-type removable contacts (12 to 37 contacts)
 • (1.6 mm dia.) USA Size 16* crimping-type removable contacts (3 to 12 contacts)
 • (2.4 mm dia.) USA Size 12* crimping-type removable contacts (3 to 7 contacts)

WITH A EARTH CONTACT - MATERIAL: NON-FERROUS ALLOY (ARCAP)

"MINEX" Series I.P. 65 66
 • (1 mm dia.) USA Size 20 crimping-type removable contacts (3 and 7 contacts)
 • Coupling by threaded ring

MOULDED PLASTIC CONNECTORS

ENVIRONMENTALLY SEALED-IP65
HIGH DENSITY-UP TO 55 CONTACTS
HIGH TEMPERATURE-UP TO 392F
HIGH VACUUM-10-9/ATM./CU.CM./SEC.
HIGH POWER-125 AMPS
THERMOCOUPLE-TYPE J,K,T, AND S
MIXED CONTACT PATTERNS
THRU-BULKHEAD RECEPTACLES



DIMENSIONS for "MINIATURE" and "INDUSTRIAL" Series

I.P. 50 and I.P. 65 High Temperature (100C) 212F High Performance (200C) 392F Description and contact arrangement Jaeger Catalog (page 36) for Miniature series; and Jaeger Catalog (page 50) for Industrial series.

The rectangular backshell has ports for cable entry on three sides; top, bottom, and end.

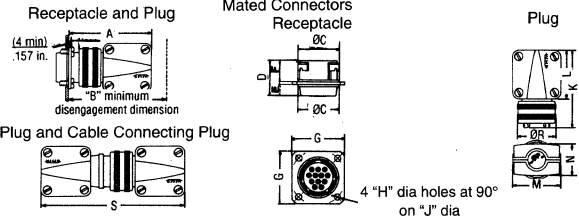
Mounting of connectors

Plug: quick coupling of plug to receptacle or cable connecting plug by a bayonet type device, after 1/6 turn.

Receptacles shell size 1 and 2: four (3 mm) .118 dia. screws and nuts Jaeger Catalog (page 60).

Receptacle shell size 3: four (4 mm) .157 dia. screws and nuts Jaeger Catalog (page 60).

DIMENSIONS



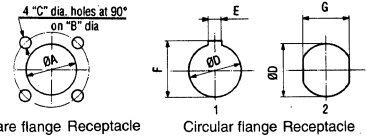
Shell Size	Dimensions: (mm) in.									
	Mated Assembly					Receptacle				
	A	B	C	D	E	F	G	H	J	
1	(54) 2.13	(63) 2.48	(21) .827	(20.5) .807	(1.5) .059	(11.5) .453	(27) 1.06	(3.2) .126	(28) 1.10	
2	(58) 2.28	(67) 2.64	(27) 1.06	(20.5) .807	(1.5) .059	(11.5) .453	(32) 1.26	(3.2) .126	(34) 1.34	
3	(66) 2.60	(75) 2.95	(39) 1.54	(23) .905	(2) .079	(11.5) .453	(43) 1.69	(4.2) .165	(48) 1.89	

Shell Size	Dimensions: (mm) in.				
	Plug			Cable Plug	
	K	L	M	N	S
1	(50) 1.97	(31) 1.22	(31) 1.22	(20) .787	(25) .984
2	(54) 2.13	(35) 1.38	(35) 1.38	(23) .905	(32) 1.28
3	(61) 2.40	(42) 1.65	(46) 1.81	(30) 1.18	(44) 1.73

DIMENSIONS for "MINIATURE" (Push Pull) Series

Wall cut-out for receptacle installation (see figure hereunder).

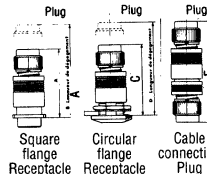
1. Polarization by means of the tab of the lockwasher.
2. Polarization by means of the flats on the receptacle cup.



Dimension (mm) in.

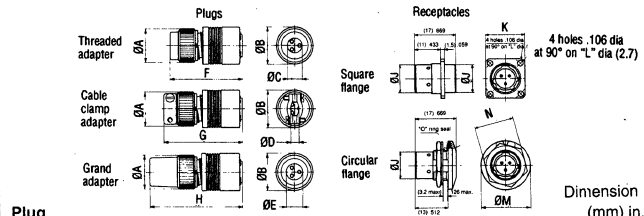
No. of contacts	A	B	C	D	E	F	G
3 and 4	(12.2) .484	(18) .709	(2.7) .106	(12.7) .500	(3) .118	(13.6) .535	(11.6) .457
7	(15.3) .602	(21) .827	(2.7) .106	(16.2) .638	(3) .118	(17.1) .673	(15.1) .594

Mated Connectors



Dimension (mm) in.

Adaptor Type	Contact Number	A	B	C	D	E
Threaded	3 and 4	(32.5) 1.28	(41.5) 1.63	(33) 1.30	(42) 1.65	(47) 1.85
	7	(33.5) 1.32	(42.5) 1.67	(34) 1.34	(43) 1.69	(49) 1.93
Cable Camp	3 and 4	(36.5) 1.44	(45.5) 1.79	(37) 1.46	(46) 1.81	(55) 2.17
	7	(38) 1.50	(47) 1.85	(38.5) 1.52	(47.5) 1.87	(58) 2.28
Gland	3 and 4	(39.5) 1.55	(48.5) 1.91	(40) 1.57	(49) 1.93	(61) 2.40
	7	(45) 1.77	(54) 2.13	(45.5) 1.79	(54.5) 2.15	(72) 2.83



Plug

No. of contacts	A	B	C	mini D	maxi D	E maxi	F	G	H
3 and 4	(14) .551	(15) .590	(6) .236	(3.5) .138	(6) .236	(6.7) .264	(26.5) 1.12	(32.5) 1.28	(35.5) 1.40
7	(17.5) .689	(19) .748	(7.8) .307	(5) .197	(8.5) .335	(9) .354	(29.5) 1.16	(34) 1.34	(41) 1.61

Receptacle

No. of contacts	J	K	L	M	N
3 and 4	(11.5) .452	(18) .708	(18) .708	(20) .787	(16) .630
7	(15) .590	(20) .787	(21) .827	(23) .905	(19) .748



THE DAVID EMERY CORPORATION

P.O. Box 470, Clinton, WA 98236
 Tel: 360-341-5030 • Fax: 360-341-4533



The Alternative Connection

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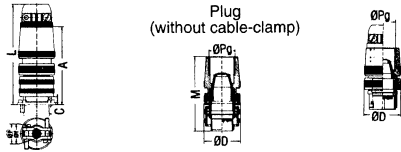


DIMENSIONS for "MINIATURE" and "INDUSTRIAL" WEATHERPROOF Series

I.P. 65 High Temperature (100C) 212F

Mated assembly (Plug + Receptacle + Cable-clamp)

Cable connecting plug (+ cable-clamp)



Shell size	Number of contact		
	Weatherproof "Miniature" (ø1) .0394	Weatherproof "Industrial" (ø1.6) .063	Weatherproof "Industrial" (ø2.4) .094
1	12-19	3-4-7	3-4
2	27-37	12-19	7
3	55	27	12

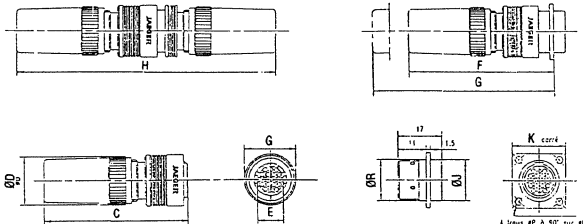
Shell size	Dimensions: (mm) in.								Weight in gram without cable-clamp
	Mated assembly			Plug and cable connecting plug					
	A	L	C	D	M	Pg	F (Maxi)	f (Mini)	
1	(53.5)2.11	(70)2.76	(4) .157	(26)1.02	(42)1.65	(11) .433	(12) .473	(7) .276	44
2	(63.5)2.50	(82.5)3.25	(4) .157	(34)1.34	(59.5)2.34	(16) .630	(17) .670	(9) .354	72
3	(72.5)2.86	(100)3.94	(4) .157	(44)1.73	(68.5)2.70	(21) .827	(23) .906	(12.5) .492	140

DIMENSIONS for "HD" Series (Push-Pull High Density) IP 65

(0.76mm dia) USA size 22 crimping-type removable contacts (7-27 contacts)

High Temperature (100C) - (For Higher Temperatures consult our sales staff)

Small High Density Contact Arrangement For Advanced Technology



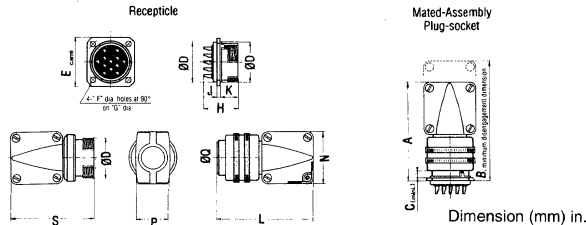
Dimension in mm

No. of Shells	No. of contacts	Plug			Receptacle								Weight: grams	
		D	B	C	mini	maxi	R	J	K	L	P	Plug	Receptacle	
00	7	14	15	42	3.6	6.8	12	11.5	18	18	2.7	10	6	6
0	19	17.5	18.6	51.1	4.6	8.5	15	15	20	21	2.7	13	8	8
1	27	—	—	—	—	—	21	21	27	28	3.2	—	—	—

For Round Jamnut Receptacles for shell size 00 and 0 consult technical staff.

DIMENSIONS for "RAPID" Series

I.P. 50 (54 with Potting) High Temperature (175C) 347F



Dimension (mm) in.

Shell size	No. of contact	Mated assembly			Pin insert receptacle										Socket insert plug, Cable connecting plug, pin insert				
		A	B	C	D	E	F	G	H	J	K	L	N	P	S				
1	3-4-6	(62)2.44	(73)2.87	(4) .157	(21) .83	(27)1.06	(3)2.126	(28)1.10	(25)3.99	(2) .079	(12) .51	(49)1.72	(4)31.22	(20) .79	(51)2.01				
2	4	(67)2.64	(79)3.11	(4) .157	(27)1.06	(32)1.26	(3)2.126	(34)1.34	(30)1.18	(2) .079	(12) .51	(49)1.72	(4)35.138	(23) .90	(55)2.16				
2	8-12	(67)2.64	(79)3.11	(4) .157	(27)1.06	(32)1.26	(3)2.126	(34)1.34	(23) .52	(2) .079	(12) .51	(49)1.72	(4)35.138	(23) .90	(55)2.16				
3	17	(67)2.64	(78)3.07	(4) .157	(39)1.54	(39)1.54	(43)1.69	(48)1.89	(22) .58	(2) .079	(12) .51	(49)1.72	(4)46.181	(30)1.18	(61)2.40				

Shell size	No. of contact	Socket insert receptacle										Plug insert plug, Cable connecting plug, socket insert				
		A	B	C	D	E	F	G	H	J	K	L	N	P	S	
1	3-4-6	(65)2.56	(76)2.99	(4) .157	(21) .83	(27)1.06	(3)2.126	(28)1.10	(2) .079	(16) .63	(57)2.24	(31)1.22	(20) .79	(51)2.01		
2	4	(72)2.83	(82)3.23	(4) .157	(27)1.06	(32)1.26	(3)2.126	(34)1.34	(2) .079	(16) .63	(63)2.48	(35)1.38	(23) .90	(55)2.16		
2	8-12	(72)2.83	(82)3.23	(4) .157	(27)1.06	(32)1.26	(3)2.126	(34)1.34	(2) .079	(16) .63	(63)2.48	(35)1.38	(23) .90	(55)2.16		
3	17	(67)2.65	(78)3.07	(4) .157	(39)1.54	(43)1.69	(4)2.165	(48)1.89	(2) .079	(12) .47	(63)2.48	(46)1.81	(30)1.18	(62)2.44		

Electrical Data

ELECTRICAL DATA

Special contacts for printed circuits - Consult our sales Engineering office.

MINIATURE SERIES

Contacts may be either crimped or soldered on to the wire ends.

FURTHER DATA MINIATURE SERIES: Meets certain requirements of MIL C 26482 A (Tests: NF-C 20-700) (International Specification: CEI 68.1).

Contact resistance between pin and socket less than 0.0020 ohm.

Flashover voltage at (20C) 68F (mated connectors) at sea level: 4, 19, 37 contacts higher than 2000 V (r.m.s.) 3,7,12,27, or 55 contacts higher than 2,500 V (r.m.s.).

Insulation resistance Greater than 5000 megohms. Tested at 500 Volts D.C.

MINIATURE HD SERIES

Contacts may be crimped to the wire ends.

Electrical Characteristics-MIL 23482A (NFC 20-700)

Contact resistance between pin and socket: less than 0.003 ohm.

Flashover voltage at sea level; (20C) 68F (mated connectors): 1500volts or more.

Insulation Resistance (continuous 500 volts DC) greater than 5000 megohms.

INDUSTRIAL SERIES

Contacts may be either crimped or soldered on to the wire ends.

Contact resistance between pin and socket:

(1.6 mm dia. contacts) U.S.A. size 16: less than 0.0015 ohm.

(2.4 mm dia. contacts) U.S.A. size 12: less than 0.0010 ohm.

Flashover voltage at (20°C) 68°F (mated connectors)

- at sea level higher than 2,500 V (r.m.s.)

- at (56 mm) 2.20 in. of Hg (66,000 ft) higher than 500 V (r.m.s.)

Insulation resistance (Tested at 500 Volts D.C.) greater than 5,000 megohms

RAPID & STANDARD SERIES

Contact resistance between pin and socket:

(2 mm dia.) .079 dia. contacts: less than 0.0015 ohm.

(3 mm dia.) .118 dia. contacts: less than 0.0010 ohm.

(4 mm dia.) .157 dia. contacts: less than 0.0007 ohm.

Voltage Rating (NF.L 54-125)

The permissible voltage will be determined in accordance with the following flashover voltage values: -Flashover voltage between adjacent contacts is always more than 2,500 volts A.C. (rms) at a pressure of 1,013 millibars and at (20°C) 68°F [600volts A.C. (rms) at 20,000 metres] 21,880 yards.

In some applications and by an appropriate choice of contacts, higher voltage differences might be applied between contacts.

-Flashover voltage between contacts closest to shell and shell is always more than 1,500* volts A.C. (rms) in the same pressure and temperature conditions [400 volts A.C. (rms) at 20,000 metres] 21,880 yards.

* More than 2,000 volts A.C. (rms) for connectors equipped with (4 mm dia.) .157 dia. contacts.

Insulation Resistance (Tested at 500 volts D.C.)

Not less than 5,000 megohms between one pin and all others connected to earth.

Note: The foregoing data can be guaranteed only if the necessary precautions have been taken on the assembling and soldering operations.

These values are given for standard atmospheric conditions (NF C20-700) International Specification: CEI 68-1. Pressure: 760 mmHg (1,013 mbar); Temperature: (20°C) 68°F; Relative humidity: 65%.

MAXIMUM CURRENT RATING

Maximum Current Rating: Maximum current is determined by multiplying the increase in temperature by the number of contacts (N) carrying the specified current (I); as shown in the charts below.

Rapid Series

Current rating in amperes	Temperature Increase q		
	(2mm) .179 dia. contact	(3 mm) .118 dia. contact	(4 mm) .157 dia. contact
1	(<0.1°C)	<0.18°F	<0.18°F
4	(<1°C)	<1.8°F	<0.5°C)
7	(2°C)	3.6°F	<0.9°F
15	(10°C)	18°F	<1.8°F
35	—	—	(3°C)
—	—	—	(15°C)
—	—	—	(5.4°F)
—	—	—	(27°F)
—	—	—	(1.5°C)
—	—	—	(7.5°C)
—	—	—	(13.5°F)

Miniature Series

(1°C) 1.8°F x N where I = 4 amperes
(3°C) 5.4°F x N where I = 7 amperes

Industrial Series

(1.6 mm dia. contacts) U.S.A. size 16	(2.4 mm dia. contacts) U.S.A. size 12
(<1°C) <1.8°F x N where I = 4 amperes	(<1°C) <1.8°F x N where I = 7 amperes
(2°C) 3.6°F x N where I = 7 amperes	(2°C) 3.6°F x N where I = 12 amperes
(10°C) 18°F x N where I = 15 amperes	(10°C) 18°F x N where I = 32 amperes

High Density Series

(0.5°C) 5.4°F x N where I = 7 amperes
(2.5°C) 4.5°F x N where I = 5 amperes

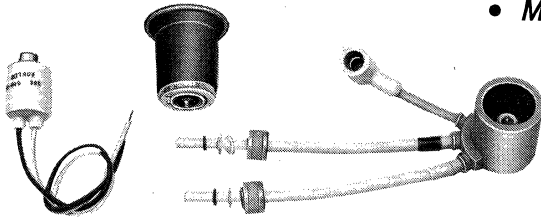


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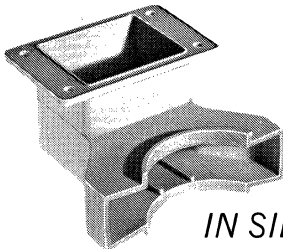
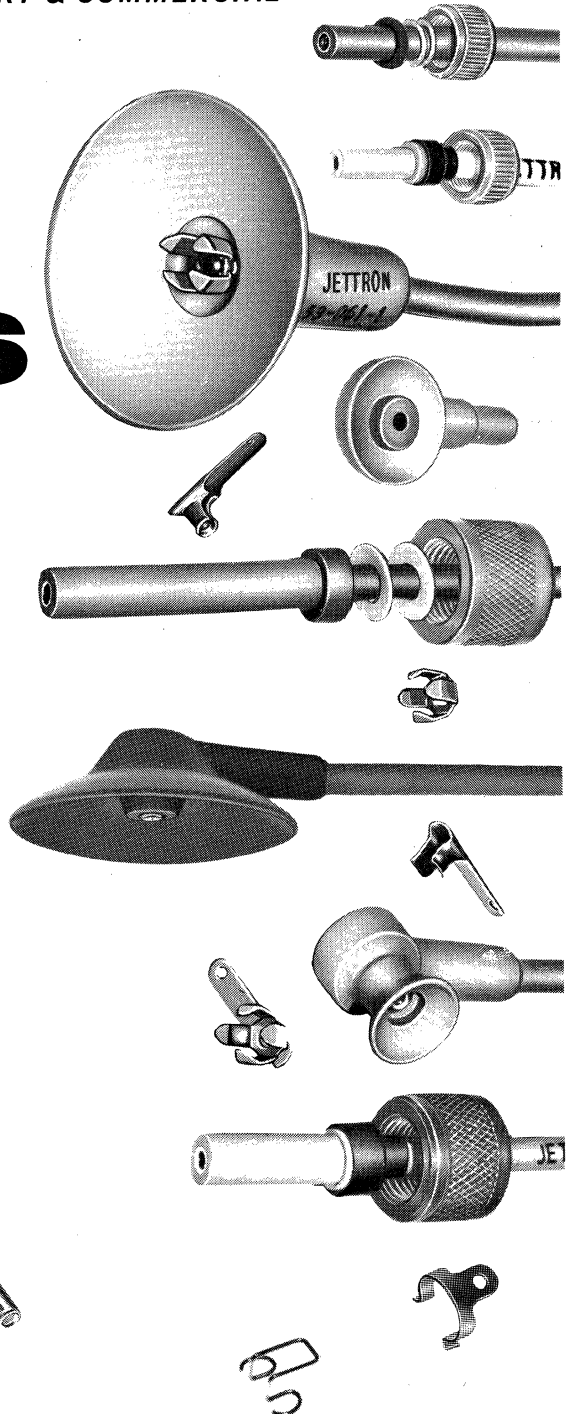
• MILITARY & COMMERCIAL



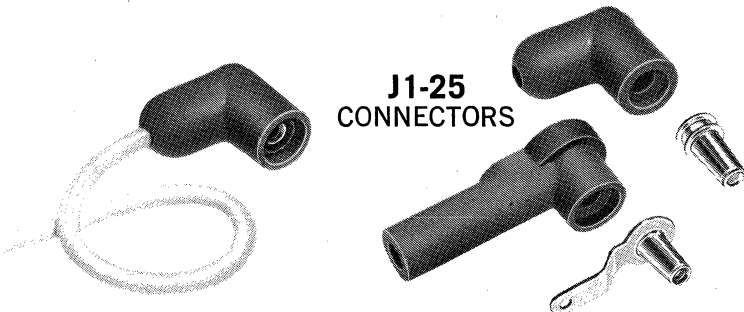
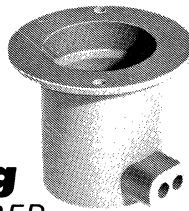
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JETTRON'S

Extensive line of high voltage connections to 50KVDC including molded silicone CRT anode leads (leakproof & corona free), in-line connectors, splices, and CRT anode connector kits for customer assembly. Potting contacts of BeCu for the JEDEC J1-21, J1-22, J1-25, J1-30, and J1-32 anode terminals.



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J1-25
CONNECTORS

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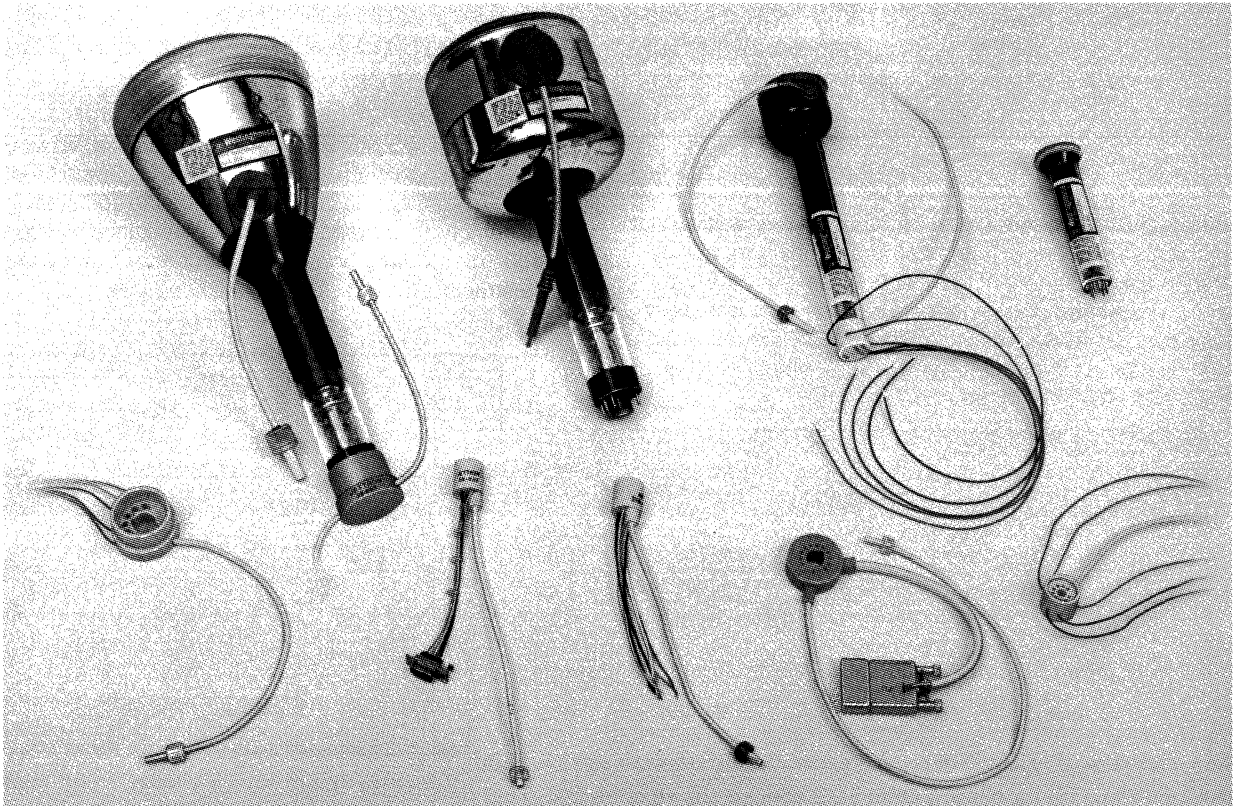
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SILICONE CRT ANODE CONNECTORS

BONDED TO WIRE INSULATION OR KITS FOR EASY ASSEMBLY



SILICONE CRT BASE CONNECTORS

Page 2 of 2

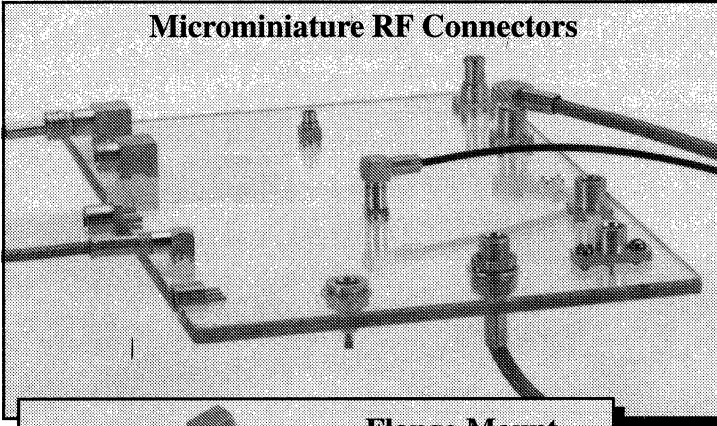


JETTRON PRODUCTS, INC.

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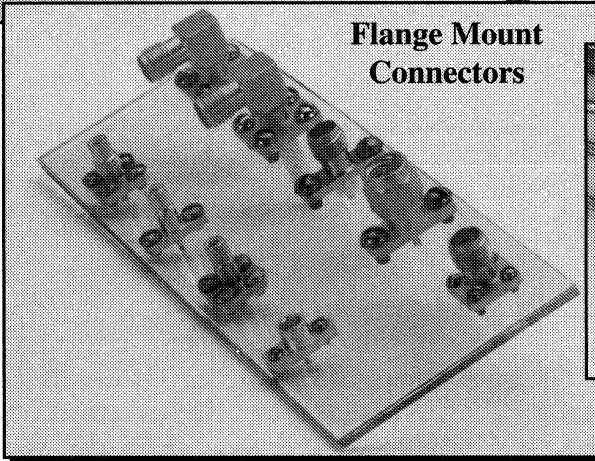
Subminiature and Microminiature RF Connectors **JOHNSON** Components

Microminiature RF Connectors



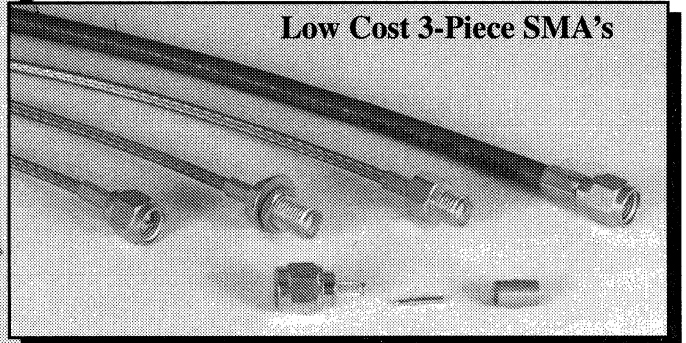
Johnson Components new microminiature connector families may be small in size but they're big in quality and performance. The MCX and MMCX connector mating interfaces are designed and manufactured to guarantee signal continuity during shock and vibration applications. Both connector families employ "snap-in" mating engagement. Contacts and crimp sleeves are crimpable for fast cable terminations. Mated height off board is .372" for the MCX and .350" for the MMCX. MMCX connectors accept cables as small as .047" diameter flexible. Flange and Bulkhead mount receptacles use solder pocket contacts for quick and easy wire attachment.

Flange Mount Connectors



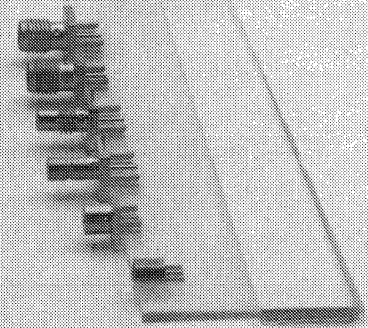
Johnson Components Flange Mount connectors are offered in a wide variety of mounting styles and configurations. Extended dielectric, field replaceable, and right angle connectors are available with an SMA interface; and flush mounting connectors are available with SMA, SMB, SMC, and MCX interfaces.

Low Cost 3-Piece SMA's



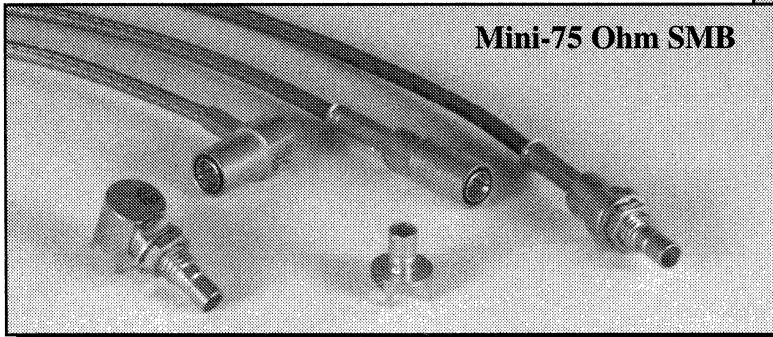
With fewer parts and less cable time, Johnson Components 3-piece SMA brass connectors offer crimpable contacts and faster assembly than standard six-piece designs. Featuring snap-in captivation for better contact retention, our line includes straight plugs, jacks and bulkhead jacks.

End Launch Connectors



Conserve board space with our end launch connectors, available with subminiature and microminiature interfaces. Our end launch connectors are attached to the edge of the PC board, resulting in better electrical performance.

Mini-75 Ohm SMB



Johnson Components mini-75 Ohm SMB connectors were the first in the industry developed on a commercial basis. Our line includes mini-75 Ohm flexible plugs and jacks, PC mount plugs and jacks, terminations, in-series matched adapters, between-series adapters, our original end launch design and a calibration kit.

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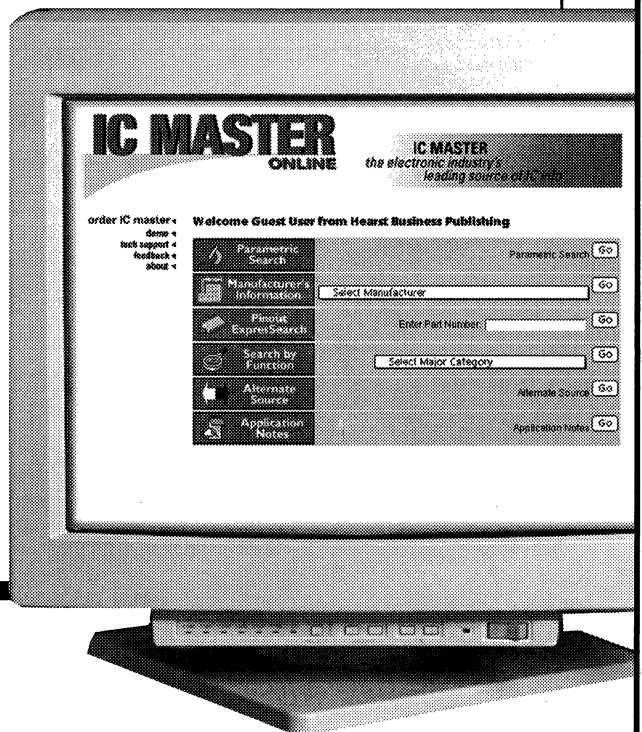
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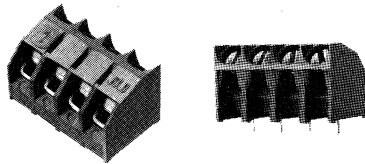
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TERMINAL BLOCKS

.200" (5.08mm) pitch, 45° angled entry, end stackable, standoffs for easy flux removal

BB-125 Series Low profile, high voltage



MATERIALS

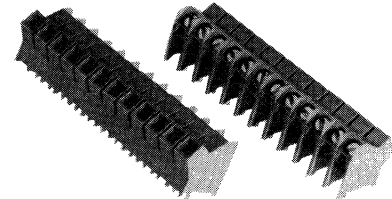
Available in: 2, 3, 4, 5, 6, 8, 9, 10, and 12 positions

Terminal: Brass, tin-lead plated
Spring: Stainless steel
Insulator: Polyester, blue (UL 94 V-O)
Screw: Stainless steel

SPECIFICATIONS

Current rating: 15 amps
Voltage rating: 500 Volts RMS
Wire size: #16 AWG maximum
Resistivity: Min. 10¹⁰ ohms @ 40°C and 95% rel. humidity

BB-122 Series High voltage, funnel entry



MATERIALS

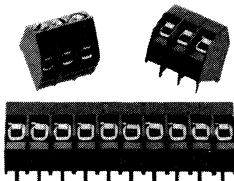
Available in: 3, 4, 6, 8, 10, and 12 positions

Terminal: Brass, tin-lead plated
Spring: Stainless steel
Insulator: Polyester, blue (UL 94 V-O)
Screw: Stainless steel

SPECIFICATIONS

Current rating: 15 amps
Voltage rating: 500 Volts RMS
Wire size: #16 AWG maximum
Resistivity: Min. 10¹⁰ ohms @ 40°C and 95% rel. humidity

BB-118 Series Standard



MATERIALS

Available in: 2, 3, 4, and 10 positions

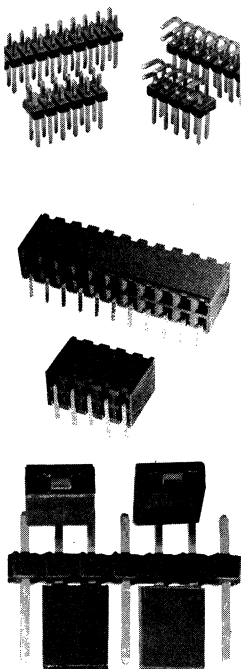
Terminal: Brass, tin-lead plated
Spring: Stainless steel
Insulator: Polyester, blue (UL 94 V-O)
Screw: Steel, zinc plated

SPECIFICATIONS

Current rating: 15 amps
Voltage rating: 250 Volts RMS
Wire size: #16 AWG maximum
Resistivity: Min. 10¹⁰ ohms @ 40°C and 95% rel. humidity

PIN HEADERS, SOCKETS & JUMPER SOCKETS

.079" (2mm) or .100" (2.54mm) pitch, through-hole or surface mount



Product Group	Pitch	Mtg. Style	Style	No. of Rows	Pin Count Avail.	Insulator Material	Contact Finish Codes	Current Rating (amps)	JOLO Series Number
Pin header	.100"	PC	Straight	1	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-PHS-977
Pin header	.100"	PC	Straight	2	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-PHD-976
Pin header	.100"	PC	Rt. Angle	1	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-PHS-975
Pin header	.100"	PC	Rt. Angle	2	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-PHD-974
Pin header	2mm	PC	Straight	1	2 - 50	G-F Nylon, UL94 V-0	1, 2	1	4-PHS-201
Pin header	2mm	PC	Straight	2	2 - 50	G-F Nylon, UL94 V-0	1, 2	1	4-PHD-202
Pin header	2mm	PC	Rt. Angle	1	2 - 50	G-F Nylon, UL94 V-0	1, 2	1	4-PHS-203
Pin header	2mm	PC	Rt. Angle	2	2 - 50	G-F Nylon, UL94 V-0	1, 2	1	4-PHD-204
Pin header	2mm	SMT	Straight	2	2 - 50	G-F Nylon, UL94 V-0	1, 2	1	4-PHD-532

Socket	.100"	PC	Vertical	1	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-TSS-982
Socket	.100"	PC	Vertical	2	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-TSD-983
Socket	.100"	PC	Horizontal	1	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-HSS-989
Socket	.100"	PC	Horizontal	2	2 - 72	G-F Polyester, UL94 V-0	2, 3	3	1-HSD-988
Socket	2mm	PC	Vertical	1	2 - 50	G-F Nylon, UL94 V-0	2, 3	1	4-TSS-611
Socket	2mm	PC	Vertical	2	2 - 50	G-F Nylon, UL94 V-0	2, 3	1	4-TSD-612
Socket	2mm	PC	Horizontal	1	2 - 50	G-F Nylon, UL94 V-0	2, 3	1	4-HSS-621
Socket	2mm	PC	Horizontal	2	2 - 50	G-F Nylon, UL94 V-0	2, 3	1	4-HSD-622
Socket	2mm	SMT	Vertical	2	2 - 50	G-F Nylon, UL94 V-0	3	1	4-TSD-634

Jumper socket	.100"	n/a	Open	n/a	n/a	G-F Polyester, UL94 V-0	2, 3	3	1-JSO-75
Jumper socket	.100"	n/a	Closed	n/a	n/a	G-F Polyester, UL94 V-0	2, 3	3	1-JSC-77
Jumper socket	.100"	n/a	w/Handle	n/a	n/a	G-F Polyester, UL94 V-0	2, 3	3	1-JSH-79
Jumper socket	2mm	n/a	Open	n/a	n/a	G-F Polyester, UL94 V-0	2, 3	1	4-JSO-19

Contact Finish Codes:	1 = Gold 2 = Tin-lead 3 = Selective gold	Contact Material: Phosphor Bronze for all items except Jumper sockets, 2mm pitch, which utilize Beryllium Copper contacts Jumper sockets: available in 4 colors: red, black, blue, or light gray
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TEST JACKS / TEST POINTS

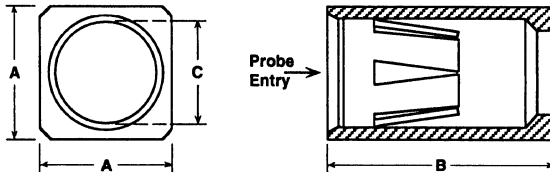
SURFACE MOUNT: Vertical or Horizontal Test Jacks

FEATURES

- For use with .020", .040", or .080" (.5mm, 1mm, or 2mm) diameter probes
- Can be used either vertically or horizontally
- High reliability 4-leaf contact (6-leaf in 5-PCJ-129)

MATERIALS

Shell: Brass
 Contact: Beryllium Copper
 Plating: Contact: Gold or Tin-lead
 Plating: Shell: Tin-lead

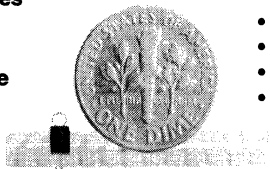


JOLO Series	Probe dia.	Probe length	Dim A	Dim B	Dim C	Pad size Vertical	Pad size Horizontal
5-PCJ-127	.020	.112 / .118	.063	.126	.043	.079 x .079	.079 x .142
5-PCJ-128	.040	.165 / .185	.079	.197	.064	.094 x .094	.094 x .213
5-PCJ-129	.080	.165 / .225	.138	.236	.107	.154 x .154	.154 x .252

THROUGH-HOLE: Vertical Test Points (Snap-in)

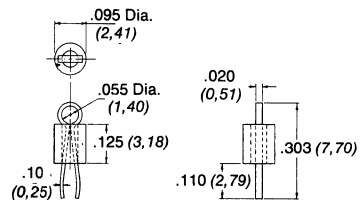
Snaps into .044" - .050" diameter holes

Subminiature size for high density packaging



FEATURES

- For use with hook or clip probes
- Stands less than .200" off P.C. board
- Self-supporting during wave soldering
- Mounts on .100" grid pattern
- Eight colors available (-01 thru -08 in Insulator Color Code Table below)



Contact Material	Contact Finish	Tail length	JOLO Series
Phosphor Bronze	.0002" Electro-tin	.110"	SPCJ-123-XX

XX = Insulator color code

THROUGH-HOLE: Horizontal Test Jacks

FEATURES

- For use with .080" (2mm) diameter probes
- Single or double entry style
- Pedestal design enables flux removal
- Closed entry prevents entry of probes greater than .085" (2.16mm) diameter
- Ten colors available

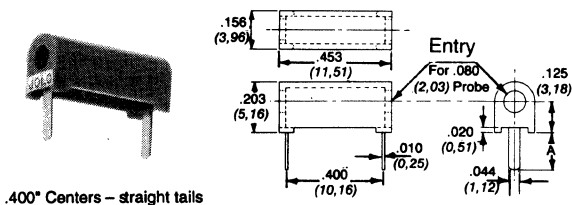
MATERIALS

Insulator: Nylon
 Contact: Beryllium Copper or Phosphor Bronze

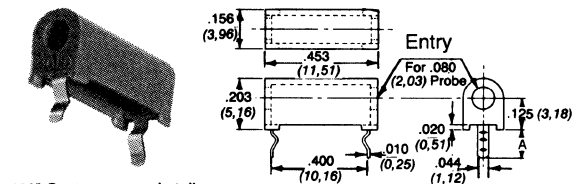
SPECIFICATIONS

Current rating: 5 Amps
 Operating voltage: 1500 Volts RMS
 Contact resistance: 5 Milliohms, max., at 5 Amps
 Insertion force: 8 oz. min., 5 lbs. max.

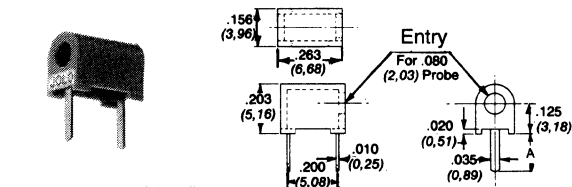
Insulator Color Codes			
-01 White	-06 Orange		
-02 Red	-07 Blue		
-03 Black	-08 Yellow		
-04 Brown	-09 Gray		
-05 Green	-10 Purple		



.400° Centers - straight tails



.400° Centers - snap-in tails



.200° Centers - straight tails

Contact Material	Mtg. Centers	Tail Style	Entry	Tail Length	Contact Finish	JOLO Series
Beryllium Copper	.400	Straight	Double	.150"	.00003" Gold	PCJ-100-XX
Beryllium Copper	.400	Straight	Double	.150"	.0002" Electro-tin	SPCJ-100-XX
Phosphor Bronze	.400	Straight	Double	.150"	.0002" Electro-tin	SPCJ-200-XX
Phosphor Bronze	.400	Straight	Double	.110"	.00003" Gold	PCJ-219-XX
Phosphor Bronze	.400	Straight	Double	.110"	.0003" Tin-lead	LPCJ-219-XX
Beryllium Copper	.400	Straight	Single	.150"	.00003" Gold	PCJ-300-XX
Beryllium Copper	.400	Straight	Single	.150"	.0002" Electro-tin	SPCJ-300-XX
Phosphor Bronze	.400	Straight	Single	.150"	.0002" Electro-tin	SPCJ-400-XX
Phosphor Bronze	.400	Straight	Single	.110"	.00003" Gold	PCJ-419-XX
Phosphor Bronze	.400	Straight	Single	.110"	.0003" Tin-lead	LPCJ-419-XX

Beryllium Copper	.400	Snap-in	Double	.110"	.00001" Gold	PPCJ-124-XX
Beryllium Copper	.400	Snap-in	Single	.110"	.00001" Gold	PPCJ-324-XX

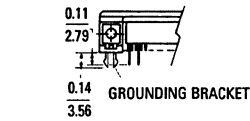
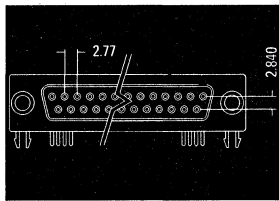
Beryllium Copper	.200	Straight	Double	.150"	.00003" Gold	PCJ-312-XX
Beryllium Copper	.200	Straight	Double	.150"	.0001" Tin-lead	EPCJ-312-XX
Beryllium Copper	.200	Straight	Single	.150"	.00003" Gold	PCJ-112-XX
Beryllium Copper	.200	Straight	Single	.150"	.0001" Tin-lead	EPCJ-112-XX

XX = Insulator color code



LEADERSHIP in Connector Design
Right Angle D-Subs

<http://www.kycon.com>



(4-40) THREADED INSERT K22



(4-40) THREADED INSERT K44



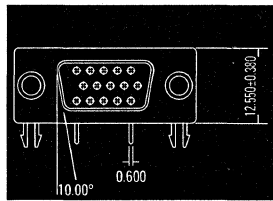
- Features**
- K22 Series: .318 Footprint
 - K31 Series: .071 Footprint
 - K44 Series: .590 Footprint
 - Shell: Steel Material, Tin Finish
 - Insert: PBT Thermoplastic 94V-0 Rated
 - Pin: Brass
 - Socket: Phosphor Bronze
 - Contact Finish: Gold Flash
 - -15 Option: 15 U Gold
 - -30 Option: 30 U Gold
 - Temperature Rating: -55 to +125°C

- Options**
- 4-40 Riveted Threaded Inserts
 - 4-40 Female Jack Screws Available
 - Grounding Board Locks (Other Mounting Options Available)
 - High Temp. and Surface Mount Available

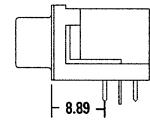
Part Number	Gender	No. of Contacts	Footprint
K22-E9S-N	Female	9	.318
K22-E9P-N	Male	9	.318
K22-A15S-N	Female	15	.318
K22-A15P-N	Male	15	.318
K22-B25S-N	Female	25	.318
K22-B25P-N	Male	25	.318
K22-C37S-N	Female	37	.318
K22-C37P-N	Male	37	.318
K44-E9S-S	Female	9	.590
K44-E9P-S	Male	9	.590
K44-A15S-S	Female	15	.590
K44-A15P-S	Male	15	.590
K44-B25S-S	Female	25	.590
K44-B25P-S	Male	25	.590
K44-C37S-S	Female	37	.590
K44-C37P-S	Male	37	.590

High Temp. Version for Reflow Soldering now Available

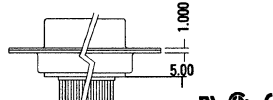
High Density D-Subs



Dimensions in mm

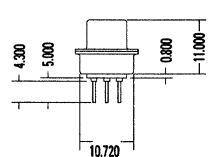


K66



Features

- K31 Series: Right Angle Compact Footprint
- K66 Series: Right Angle
- K86 Series: Vertical
- Shell: Steel Material, Tin Finish
- Insert: PBT Thermoplastic 94V-0 Rated
- Pin: Brass
- Socket: Phosphor Bronze
- Contact Finish: Gold Flash
- -15 Option: 15 U Gold
- -30 Option: 30 U Gold
- Temperature Rating: -15 to +125°C
- 15 pin "Vesa Standard" Available with #9 pin recessed .05" and blue plastic body P/N K66-E15S-N-VESA

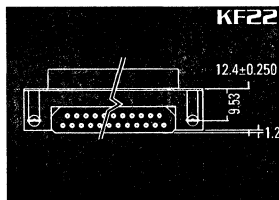


K86

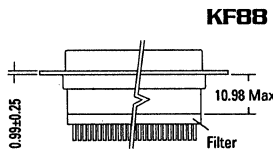
Part Number	Description	Gender	No. of Contacts
K66-E15S-N	Right Angle	Female	15
K66-E15P-N	Right Angle	Male	15
K66-A26S-N	Right Angle	Female	26
K66-A26P-N	Right Angle	Male	26
K66-B44S-N	Right Angle	Female	44
K66-B44P-N	Right Angle	Male	44
K66-C62S-N	Right Angle	Female	62
K66-C62P-N	Right Angle	Male	62
K86-ED-15P	Vertical	Female	15
K86-ED-15S	Vertical	Male	15
K86-AD-26S	Vertical	Female	26
K86-AD-26P	Vertical	Male	26
K86-BD-44S	Vertical	Female	44
K86-BD-44P	Vertical	Male	44
K86-CD-62S	Vertical	Female	62
K86-CD-62P	Vertical	Male	62

High Temp. Version for Reflow Soldering now Available

Ferrite D-Subs



Dimensions in mm



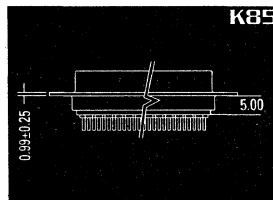
KF88

- Features**
- For High Frequency EMI/RFI Attenuation
 - Right Angle Type .318 ft print .350 ft print (high density) .590 ft print (call for part numbers)
 - Vertical Type low and high profiles
 - Soldercup Type (call for part numbers)
 - Stacked D-Sub Type (call for part numbers)

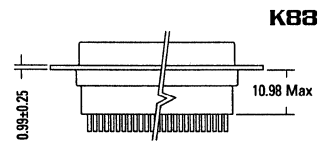
- FERRITE SPECIFICATIONS**
- | Type | Item | Measured Value | Test Frequency |
|------|--------|----------------|----------------|
| KF22 | Z(ohm) | 20 Min | 30MHz |
| | Z(ohm) | 30 Min | 50MHz |
| | Z(ohm) | 50 Min | 100MHz |
| KF66 | Z(ohm) | 17 Min | 30MHz |
| | Z(ohm) | 25 Min | 50MHz |
| | Z(ohm) | 40 Min | 100MHz |
| KF86 | Z(ohm) | 10 Min | 30MHz |
| | Z(ohm) | 17 Min | 50MHz |
| | Z(ohm) | 35 Min | 100MHz |

Part Number	Description
KF22-E9S-N	D9 Female
KF22-E9P-N	D9 Male
KF22-A15S-N	D15 Female
KF22-A15P-N	D15 Male
KF22-B25S-N	D25 Female
KF22-B25P-N	D25 Male
KF22-C37S-N	D37 Female
KF22-C37P-N	D37 Male
KF66-E15S-N	High Density 15 Female
KF66-E15P-N	High Density 15 Male
KF66-A26S-N	High Density 26 Female
KF66-A26P-N	High Density 26 Male
KF66-B44S-N	High Density 44 Female
KF66-B44P-N	High Density 44 Male
KF85-AD-15P	Vertical 15 Male
KF85-AD-15S	Vertical 15 Female
KF85-BD-25P	Vertical 25 Male
KF85-BD-25S	Vertical 25 Female
KF85-CD-37P	Vertical 37 Male
KF85-CD-37S	Vertical 37 Female
KF85-ED-9P	Vertical 9 Male
KF85-ED-9S	Vertical 9 Female
KF86-ED-15P	High Density Vertical 15 Male
KF86-ED-15S	High Density Vertical 15 Female
KF88-AC-15P	Vertical High Profile 15 Male
KF88-AC-15S	Vertical High Profile 15 Female
KF88-BC-25P	Vertical High Profile 25 Male
KF88-BC-25S	Vertical High Profile 25 Female
KF88-CC-37P	Vertical High Profile 37 Male
KF88-CC-37S	Vertical High Profile 37 Female

Vertical D-Subs

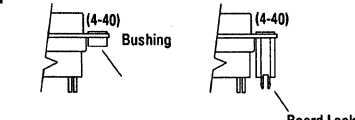


Dimensions in mm



K88

- Features**
- K85 Series: Low Profile
 - K88 Series: High Profile
 - Shell: Steel Material, Tin Finish
 - Insert: PBT Thermoplastic 94V-0 Rated
 - Pin: Brass
 - Socket: Phosphor Bronze
 - Contact Finish: Gold Flash
 - -15 Option: 15 U Gold
 - -30 Option: 30 U Gold
 - Temperature Rating: -55 to +125°C
- Options**
- 4-40 Riveted Threaded Bushing Available
 - 4-40 Female Jack Screws Available
 - 4-40 Riveted Threaded Board Locks Available



Part Number	Gender	No. of Contacts	Profile
K85-ED-9S	Female	9	Low
K85-ED-9P	Male	9	Low
K85-AD-15S	Female	15	Low
K85-AD-15P	Male	15	Low
K85-BD-25S	Female	25	Low
K85-BD-25P	Male	25	Low
K85-CD-37S	Female	37	Low
K85-CD-37P	Male	37	Low
K88-ED-9S	Female	9	High
K88-ED-9P	Male	9	High
K88-AD-15S	Female	15	High
K88-AD-15P	Male	15	High
K88-BD-25S	Female	25	High
K88-BD-25P	Male	25	High
K88-CD-37S	Female	37	High
K88-CD-37P	Male	37	High



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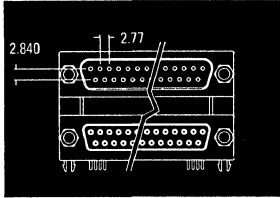
Specs by Fax 1-800-22-KYCON

1810 Little Orchard Street San Jose, CA 95125 Tel: 408-494-0330 Fax: 408-494-0325

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Stacked D-Subs



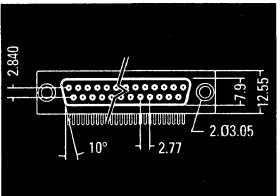
Dimensions in mm

- Features**
- Shell: Steel Material, Tin Finish
 - Insert: PBT Thermoplastic 94V-0 Rated
 - Pin: Brass
 - Socket: Phosphor Bronze
 - Contact Finish: Gold Flash
 - -15 Option: 15 U Gold
 - -30 Option: 30 U Gold
 - Temperature Rating: -55 to +125°C
 - 4-40 Riveted Threaded Inserts
 - 4-40 Female Jack Screws Available
 - Grounding Board Locks (Other Mounting Options Available)

- Combination**
- Mixed Shell Sizes
 - With Ferrite
 - D-Sub Over Stereo Jacks
 - Elevated D-Sub

Part Number	Ctr. to Ctr. Distance in in.	Mounting Options	X/X- Gender Combin.
K42-E9X/X-A	.750	Through Holes	P/P-Male Over
K42-E9X/X-A4N	.750	Board Locks	Male
K42-E9X/X-B	.900	Through Holes	
K42-E9X/X-B4N	.900	Board Locks	
K42-E9X/X-C	.625	Through Holes	P/S-Male Over
K42-E9X/X-C4N	.625	Board Locks	Female
K42-A15X/X-A	.750	Through Holes	
K42-A15X/X-A4N	.750	Board Locks	
K42-A15X/X-B	.900	Through Holes	
K42-A15X/X-B4N	.900	Board Locks	S/S-Female Over
K42-A15X/X-C	.625	Through Holes	Female
K42-A15X/X-C4N	.625	Board Locks	
K42-B25X/X-A	.750	Through Holes	
K42-B25X/X-A4N	.750	Board Locks	S/P-Female Over
K42-B25X/X-B	.900	Through Holes	Male
K42-B25X/X-B4N	.900	Board Locks	
K42-B25X/X-C	.625	Through Holes	
K42-B25X/X-C4N	.625	Board Locks	
K42-C37X/X-A	.750	Through Holes	
K42-C37X/X-A4N	.750	Board Locks	

Open Body D-Subs



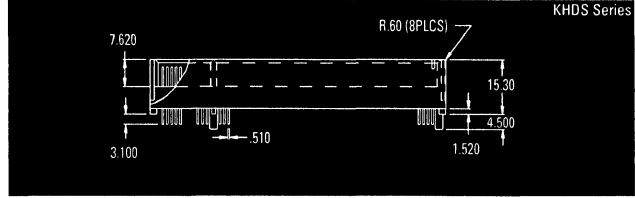
Dimensions in mm

- Features**
- K85R1 Series: .283" (7.2mm) Footprint
 - K85R2 Series: .370" (9.4 mm) European Footprint
 - Shell: Steel Material, Tin Finish
 - Insert: PBT Thermoplastic 94V-0 Rated
 - Pin: Brass
 - Socket: Phosphor Bronze
 - Contact Finish: Gold Flash
 - -15 Option: 15 U Gold
 - -30 Option: 30 U Gold
 - Temperature Rating: -55 to +125°C

- Options**
- Standard Has No Mounting Brackets (Other Mounting Options Available)

Part Number	Gender	Con.	Footprint
K85R1-ED-9P	Male	9	.283
K85R1-ED-9S	Female	9	.283
K85R1-AD-15P	Male	15	.283
K85R1-AD-15S	Female	15	.283
K85R1-BD-25P	Male	25	.283
K85R1-BD-25S	Female	25	.283
K85R1-CD-37P	Male	37	.283
K85R1-CD-37S	Female	37	.283
K85R2-ED-9P	Male	9	.370
K85R2-ED-9S	Female	9	.370
K85R2-AD-15P	Male	15	.370
K85R2-AD-15S	Female	15	.370
K85R2-BD-25P	Male	25	.370
K85R2-BD-25S	Female	25	.370
K85R2-CD-37P	Male	37	.370
K85R2-CD-37S	Female	37	.370

Card Edge Connectors



Dimensions in mm



Features

- KSL Series**
- Mates with 8 and 16 BIT, PC, XT, and AT Expansion Cards
 - .100" Contact Spacing

- KEISA Series**
- Mates with 8 and 16 BIT, PC, XT, and AT Expansion Cards or 32 BIT EISA Cards
 - .050" Contact Spacing

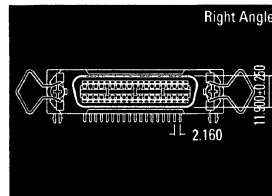
- KHDS Series**
- Mates with 16 and 32 BIT PS2 and PCI Expansion Cards
 - .050" Contact Spacing

- KCH Series**
- For Cache and Coast Memory
 - .050" Contact Spacing

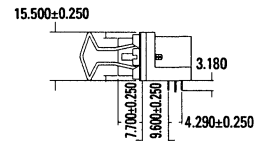
- KSE*C Series**
- Accommodates .62 ±.008" PC Board
 - 5 through 60 Contact Pairs
 - .100" Contact Spacing

- KSE*M Series**
- Accommodates .62 ±.008" PC Board
 - 6 through 100 Contact Pairs
 - .156" Contact Spacing

Miniature Ribbon Connectors



Dimensions in mm



Features

- Body: PBT, 30% Glass Filled 94V-0 Rated
- Shell: Steel Material, Nickel Finish
- Contact: Phosphor Bronze
- Plating: Gold Flash
- Contact Current Rating: 5 Amps
- Options**
- Right Angle Type
- Board Locks (Threaded Mounting Holes Available)
- Vertical Type
- Threaded Bushings Available

Part Number	Con.	Gender	Description
37-92240-24	24	Female	Right Angle, Spring Latch
37-92360-24	36	Female	Right Angle, Spring Latch
37-92500-24	50	Female	Right Angle, Spring Latch
37-92240-24-XJM	24	Female	Right Angle, Metric Jack Screws
37-92360-24-XJ	36	Female	Right Angle, 4-40 Jack Screws
37-92500-24-XJ	50	Female	Right Angle, 4-40 Jack Screws
37-40140-13	14	Female	Vertical, Spring Latch
37-40240-14	24	Female	Vertical, Spring Latch
37-40360-24	36	Female	Vertical, Spring Latch
37-40500-24	50	Female	Vertical, Spring Latch
37-20140-11	14	Female	Vertical
37-20240-23	24	Female	Vertical
37-20360-19	36	Female	Vertical
37-20500-85	50	Female	Vertical
37-10140-10	14	Male	Vertical
37-10240-12	24	Male	Vertical
37-10360-25	36	Male	Vertical
37-10500-73	50	Male	Vertical

Note: IDC Ribbon Connectors Available in Plastic or Metal

http://www.kycon.com

Specs by Fax 1-800-22-KYCON

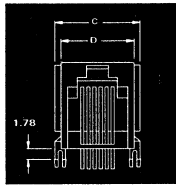
1810 Little Orchard Street San Jose, CA 95125 Tel: 408-494-0330 Fax: 408-494-0325



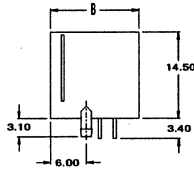
LEADERSHIP in
Connector Design

<http://www.kycon.com>

**Low Profile Mod Jacks
GL Series**



Dimensions in mm

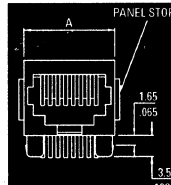


Features

- 50 Plating Option Will Comply With FCC Requirements Under #47 C.F.R., Part 68 Subpart F. (50 U Gold)
- Plating: -15 U Gold Standard
- Housing: PBT UL 94V-0 Rated
- Contact: Phosphor Bronze
- Insulation Resistance: 500 Megohms Min
- Current Rating: 1.5 Amps

Part Number	No. Pos.	No. Con.	Panel Stops	B in mm	C in mm	D in mm
GL-A-44	4	4	Yes	15.0	14.2	12.2
GL-N-44	4	4	No	15.0		12.2
GL-N-44M	4	4	No	13.0		10.0
GL-A-64	6	4	Yes	15.0	14.2	12.2
GL-N-64	6	4	No	15.0		12.2
GL-N-64M	6	4	No	13.0		12.2
GL-A-66	6	6	Yes	15.0	14.2	12.2
GL-N-66	6	6	No	15.0		12.2
GL-N-66M	6	6	No	13.0		12.2
GL-N-88M	8	8	No	13.0		15.0
GL-N-1010M	10	10	No	13.0		15.0

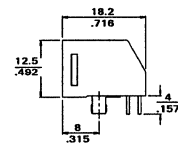
**Low Profile Mod Jacks
GDL Series**



Dimensions in mm



HIGH TEMP FOR REFLOW AVAILABLE

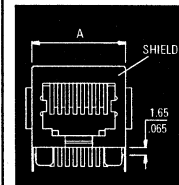


Features

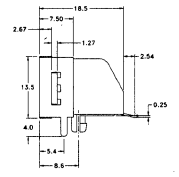
- 50 Plating Option Will Comply With FCC Requirements Under #47 C.F.R., Part 68 Subpart F. (50 U Gold)
- Plating: -15 U Gold Standard
- Housing: PBT UL 94V-0 Rated
- Contact: Phosphor Bronze
- Insulation Resistance: 500 Megohms Min
- Contact Resistance: 20 Milliohms Max
- Current Rating: 1.5 Amps

Part Number	No. Pos.	No. Con.	Panel Stops
GDL-A-64	6	4	Yes
GDL-N-64	6	4	No
GDL-A-66	6	6	Yes
GDL-N-66	6	6	No
GDL-A-88	8	8	Yes
GDL-N-88	8	8	No
GDL-A-88K	8	8	Yes
GDL-N-88K	8	8	No
GDL-SMT-A-64	6 SMT Type	4	No
GDL-SMT-N-64	6 SMT Type	4	No
GDL-SMT-A-66	6 SMT Type	6	Yes
GDL-SMT-N-66	6 SMT Type	6	No
GDL-SMT-A-88	8 SMT Type	8	Yes
GDL-SMT-N-88	8 SMT Type	8	No

**Low Profile Mod Jacks
GDL Series (Shielded)**



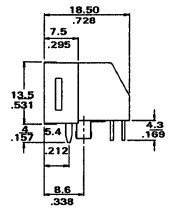
Dimensions in mm



SMT

Features

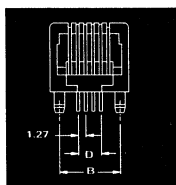
- 50 Plating Option Will Comply With FCC Requirements Under #47 C.F.R., Part 68 Subpart F. (50 U Gold)
- Plating: -15 U Gold Standard
- Housing: PBT UL 94V-0 Rated
- Shield: Tin Plated Phosphor Bronze
- Contact: Phosphor Bronze
- Insulation Resistance: 500 Megohms Min
- Contact Resistance: 20 Milliohms Max
- Current Rating: 1.5 Amps



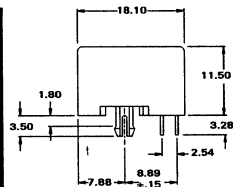
Through Hole

Part No.	No. Pos.	No. Con.	Panel Stops
GDL-S-64	6	4	Yes
GDL-S-66	6	6	Yes
GDL-S-88	8	8	Yes
GDL-S-88K	8	8 Keyed	Yes
GDL-SMT-S-88	8	8	Yes

**Low Profile Mod Jacks
GM Series**



Dimensions in mm

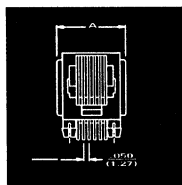


Features

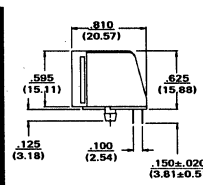
- 50 Plating Option Will Comply With FCC Requirements Under #47 C.F.R., Part 68 Subpart F. (50 U Gold)
- Housing: PBT UL 94V-0 Rated
- Contact: Phosphor Bronze
- Plating: -15 U Gold Standard
- Insulation Resistance: 500 Megohms Min
- Contact Resistance: 20 Milliohms Max
- Current Rating: 1.5 Amps
- SMT and High Temp options available in both shielded and non-shielded versions.

Part Number	Pos.	Con.	B in mm	D in mm	Shielded
GM-N-44	4	4	7.62	3.81	No
GM-N-64	6	4	10.16	3.81	No
GM-N-66	6	6	10.16	6.35	No
GM-N-88	8	8	11.43	8.89	No
GM-N-1010	10	10	11.43	11.43	No
GM-S-64	6	4	10.16	3.81	Yes
GM-S-66	6	6	10.16	6.35	Yes
GM-S-88	8	8	11.43	8.89	Yes
GM-S-1010	10	10	11.43	11.43	Yes

**Mod Jacks
GDA Series**



Dimensions in mm

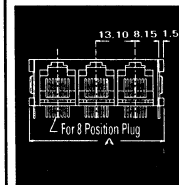


Features

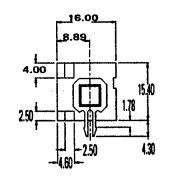
- 50 Plating Option Will Comply With FCC Requirements Under #47 C.F.R., Part 68 Subpart F. (50 U Gold)
- Housing: PBT UL 94V-0 Rated
- Contact: Phosphor Bronze
- Plating: -15 U Gold Standard
- Insulation Resistance: 500 Megohms Min
- Contact Resistance: 20 Milliohms Max
- Current Rating: 1.5 Amps

Part Number	No. of Positions	No. of Contacts	A in mm
GDA-A-44	4	4	10.72
GDA-A-64	6	4	15.75
GDA-A-66	6	6	15.75
GDA-A-88	8	8	17.78
GDA-A-88K	8 Keyed	8	17.78

**Gang Jacks
GA/GP Series**



Dimensions in mm



Features

- Available in Right Angle or Top Entry
- Metal Locking Brackets
- Plating: -15 U Gold Standard
- Insulation Resistance: 500 Megohms Min
- Contact Resistance: 20 Milliohms Max
- Current Rating: 1.5 Amps

Part Number	A in mm	Description
GP-2-8X	32.30	Perpendicular
GP-3-8X	45.30	Perpendicular
GP-4-8X	58.50	Perpendicular
GA-2-8X	32.30	Right Angle
GA-3-8X	45.30	Right Angle
GA-4-8X	58.50	Right Angle
GA-2-6X	28.20	Right Angle
GA-3-6X	39.20	Right Angle
GA-4-6X	50.20	Right Angle
GA-5-6X	61.20	Right Angle
GA-6-6X	72.20	Right Angle
GA-7-6X	83.20	Right Angle
GA-8-6X	94.20	Right Angle
GP-2-6X	28.20	Perpendicular
GP-3-6X	39.20	Perpendicular
GP-4-6X	50.20	Perpendicular
GP-5-6X	61.20	Perpendicular
GP-6-6X	72.20	Perpendicular
GP-7-6X	83.20	Perpendicular
GP-8-6X	94.20	Perpendicular



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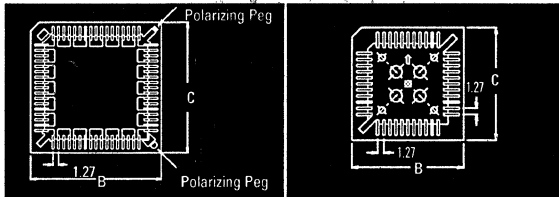
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LEADERSHIP in
Connector Design

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KYCON PLCC Sockets 



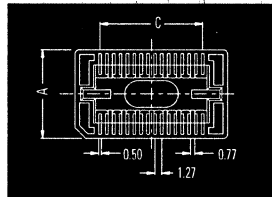
Surface Mount Through Hole Dimensions in mm



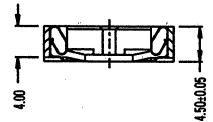
Part Number	No. of Con.	Material	B in mm	C in mm	Contact Type	Temp. Rating
P-20LCC	20	PBT	15.56	15.60	Through Hole	-55°C -105°C
P-28LCC	28	PBT	18.10	18.00	Through Hole	-55°C -105°C
P-32LCC	32	PBT	18.10	20.64	Through Hole	-55°C -105°C
P-44LCC	44	PBT	23.58	23.50	Through Hole	-55°C -105°C
P-52LCC	52	PBT	25.72	25.72	Through Hole	-55°C -105°C
P-68LCC	68	PBT	31.80	32.20	Through Hole	-55°C -105°C
P-84LCC	84	PBT	36.70	36.10	Through Hole	-55°C -105°C
P-68LCC-1	68	PPS	31.10	30.65	Through Hole	-55°C -125°C
P-84LCC-1	84	PPS	36.00	35.65	Through Hole	-55°C -125°C
SMP-20LCC-P*	20	PPS	15.66	15.66	Surface Mount	-55°C -125°C
SMP-28LCC-P*	28	PPS	18.20	18.20	Surface Mount	-55°C -125°C
SMP-32LCC-P*	32	PPS	20.74	18.20	Surface Mount	-55°C -125°C
SMP-44LCC-P*	44	PPS	23.28	23.28	Surface Mount	-55°C -125°C
SMP-52LCC-P*	52	PPS	25.82	25.82	Surface Mount	-55°C -125°C
SMP-68LCC-P*	68	PPS	30.90	30.90	Surface Mount	-55°C -125°C
SMP-84LCC-P*	84	PPS	35.98	35.98	Surface Mount	-55°C -125°C
SMPLP-32LCC	32	PPS	20.38	17.84	Surface Mount	-50°C -125°C

*Also Available Without Polarizing Peg.
SMT Type Now Available in Low Profile and Slim Designs.

50J Sockets



Dimensions in mm



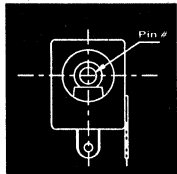
Features 

- KSOJ Series:**
- Small Outline J-Lead Socket
 - Same Mounting Pattern as DRAM, SRAM, and VRAM Chips
 - Also Available with Polarizing Pegs
 - Body: PPS, 40% Glass Filled, 94V-0 Rated
 - Contact: Phosphor Bronze
 - Operating Temperature: -55°C to +125°C


Part Number	Spacing Between Rows	No. Con.	A in mm.	C in mm.
KSOJ-324-N	.3 In.	24	13.87	13.97
KSOJ-326-N	.3 In.	26	13.87	15.24
KSOJ-328-N	.3 In.	28	13.87	16.51
KSOJ-332-N	.3 In.	32	13.87	19.05
KSOJ-428-N	.4 In.	28	16.41	16.51
KSOJ-432-N	.4 In.	32	16.41	19.05
KSOJ-440-N	.4 In.	40	16.41	24.13
KSOJ-442-N	.4 In.	42	16.81	25.40
KSOJ-444-N	.4 In.	44	16.81	26.67

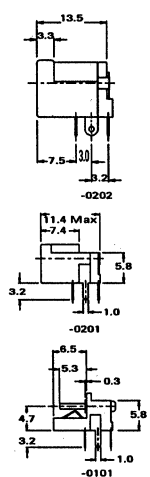
DC Power Jacks

HIGH TEMP FOR REFLOW AVAILABLE



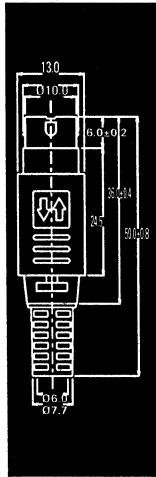
Dimensions in mm

- Features** 
- Body: PBT, UL 94V-0 Rated
 - Center Pin: Brass, Silver Plated
 - Between Terminal Resistance: 60 Milliohms Max.
 - Plug to Sleeve Resistance: 100 Milliohms
 - Operating Temperature: -25°C to +70°C
 - Available with Crimped Contacts
 - Panel Mount Available

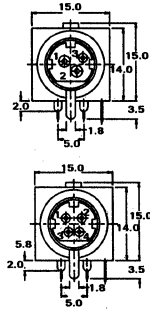



Part Number	Inner Pin Diameter	Body Style	Current Rating
KLD-0202-A	2.0mm±0.05	Closed	3.5 Amps
KLD-0202-B	2.5mm±0.05	Closed	3.5 Amps
KLD-0201-A	1.0mm±0.05	Closed	2.5 Amps
KLD-0202-B	1.3mm±0.05	Closed	2.5 Amps
KLD-0101-A	1.0mm±0.05	Open	2.5 Amps
KLD-0101-B	1.3mm±0.05	Open	2.5 Amps
KLDSMT-0202-B	2.5mm±0.05	Closed	3.5 Amps

Snap and Lock DC Power Jacks and Plugs



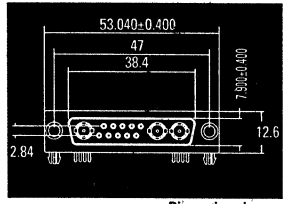
Dimensions in mm




- Features** 
- Body: PBT, UL 94V-0 Rated
 - 3 Position Current Rating: Pin 1 and 2: 20V DC at 7.5A Max Pin 3: 20V DC 1.0A Max
 - 4 Position Current Rating: 20V DC 7.5A Max for All Pins

Part Number	Description	No. of Positions	Shield
KPP-3P	Assembly Type Plug	3	No
KPJ-3S	Right Angle Socket	3	No
KPJ-3S-S	Right Angle Socket	3	Yes
KPP-4P	Assembly Type Plug	4	No
KPJ-4S	Right Angle Socket	4	No
KPJ-4S-S	Right Angle Socket	4	Yes

13W3 Connector



Dimensions in mm

- Features** 
- 13W3 Coax/D-Sub Combination Connector
 - Body: 94V-0 Rated 30% Glass Filled Polyester
 - 10 Signal Contacts: 15 U Gold Plated
 - 3 Inner Coaxial Contacts: 50 U Gold 75 Ohm Impedance



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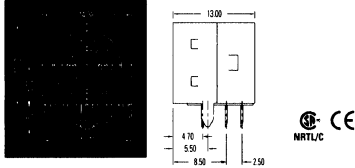
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Right Angle Mini-DIN Sockets KMDG Series



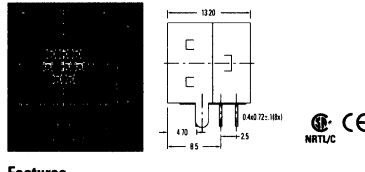
- Features**
- Body and Base: PBT, UL94V-0 Rated
 - Contacts: Gold Plated
 - Shield: Phosphor Bronze, Tin Plated
 - Insertion Force: 0.5kg - 4.5kg
 - Extraction Force: 0.4kg - 3.5kg

- Available Options**
- Stacked
 - Stacked with mixed Contact Counts
 - With Ferrite
 - Non-Shielded
 - Four Side Shield
 - Fully Shielded
 - Fully Shielded with Grounding Spring Shield
 - Fully Shielded with Low Profile Grounding Tabs

HIGH TEMP FOR REFLOW AVAILABLE

Part Number	No. of Con.	Shield
KMDG-3S-BS	3	Full Shield
KMDG-4S-BS	4	Full Shield
KMDG-5S-BS	5	Full Shield
KMDG-6S-BS	6	Full Shield
KMDG-7S-BS	7	Full Shield
KMDG-8S-BS	8	Full Shield
KMDG-9S-BS	9	Full Shield

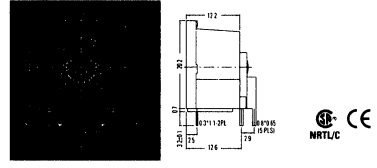
Snap and Lock Mini-DIN KMDL, KMDVL, KMDPL



- Features**
- KMDL Series: Right Angle
 - KMDVL Series: Vertical
 - KMDPL: Panel Mount
 - Body and Base: PBT, UL94V-0 Rated
 - Shield: Phosphor Bronze, Tin Plated
 - Insertion Force: 0.5kg - 4.5kg
 - Extraction Force: 0.4kg - 3.5kg
 - Different Shield Options Available on KMDL

Part Number	No. of Contacts	Type
KMDL-3S-BS	3	Right Angle
KMDL-4S-BS	4	Right Angle
KMDL-5S-BS	5	Right Angle
KMDL-6S-BS	6	Right Angle
KMDL-7S-BS	7	Right Angle
KMDL-8S-BS	8	Right Angle
KMDVL-3S-N	3	Vertical
KMDVL-4S-N	4	Vertical
KMDVL-5S-N	5	Vertical
KMDVL-6S-N	6	Vertical
KMDVL-7S-N	7	Vertical
KMDVL-8S-N	8	Vertical
KMDPL-3S-100	3	Panel Mount
KMDPL-4S-100	4	Panel Mount
KMDPL-5S-100	5	Panel Mount
KMDPL-6S-100	6	Panel Mount
KMDPL-8S-100	8	Panel Mount

Circular DIN Connectors



- Features**
- Shielded Circular Dins
 - Body: PBT, UL94V-0 Rated
 - Contacts: Brass, Tin Plated
 - Shield: Iron, Nickel Plated
 - Insertion Force: 0.5kg - 7.9kg
 - Extraction Force: 0.4kg - 7.0kg
 - Temperature Rating: -27° to +100°C

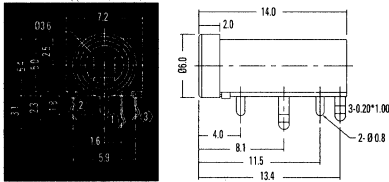
- Other Options Available**
- Non-Shielded
 - Spring Front Shield for Superior Shielding
 - High Temp. DINs for Reflow Soldering

Part Number	Pitch
KCD-3S-S	10 mm
KCD-4S-S	10 mm
KCD-5S-S	10 mm
KCD-6S-S	10 mm
KCD-7S-S	10 mm
KCD-8S-S	10 mm
KCD-3S-S2	5 mm
KCD-4S-S2	5 mm
KCD-5S-S2	5 mm
KCD-6S-S2	5 mm
KCD-7S-S2	5 mm
KCD-8S-S2	5 mm

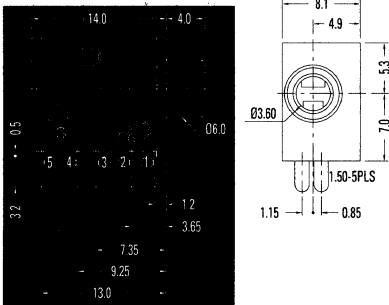
HIGH TEMP FOR REFLOW AVAILABLE

Audio Jacks

ST-3000 NRTL/C CE

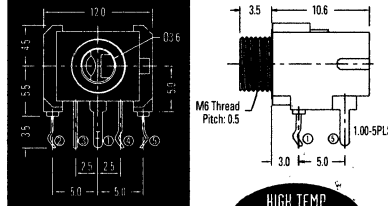


ST-314/315 Series NRTL/C CE



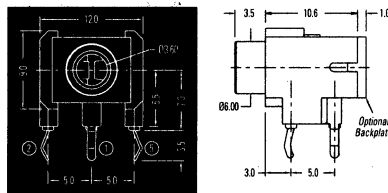
Audio Jacks

ST-3100 Series NRTL/C CE



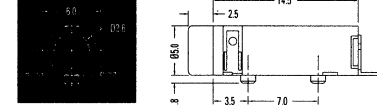
HIGH TEMP FOR REFLOW AVAILABLE

ST-3200 Series NRTL/C CE

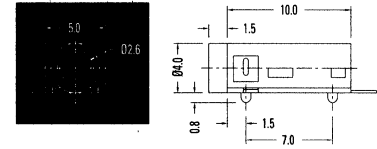


Surface Mount Audio Jacks

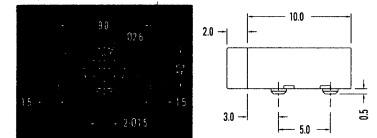
ST-3500 Series NRTL/C CE



ST-2500 Series NRTL/C CE



ST-2550 Series NRTL/C CE



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Introducing LEMO Circular Connectors

Why LEMO Connectors?

If your application requires high reliability, high quality and performance in the most critical applications then you should be using LEMO connectors. A subsidiary of LEMO, the Redel line of plastic connectors feature the same "Quick-Lok™" advantages of the LEMO connector line.

LEMO has proven connector solutions for the following industries:

- Medical systems and equipment
- Research and development
- Nuclear Instrumentation
- Industrial process controls
- Test and measurement equipment
- Government and military applications
- Data and Telecommunications systems
- Automotive and race car equipment
- Audio/Video equipment
- Secured communications
- Robotics
- Environmentally sealed

The Quick-Lok™ Feature Advantages

Speed

- Connectors engage simply and quickly by pushing them axially into the mated receptacle; connectors disengage by pulling on the outer shell to remove the plug easily.

Space Savings

- No need to twist or turn a locking ring means space savings since finger clearance is needed on only two sides to engage and disengage connectors.

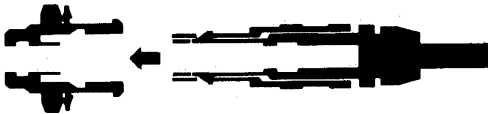
Reliability

- Connections and disconnections are quick and foolproof since connection is assured when locking mechanism is engaged.

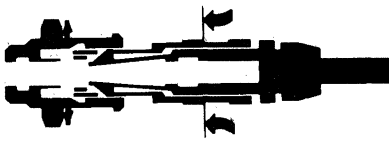
Ruggedness

- Locking mechanism is protected by rugged outer shell. This virtually eliminates accidental disconnections, damage to locking mechanism cable and contacts.

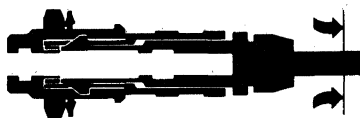
LEMO's QUICK-LOK™ FEATURE



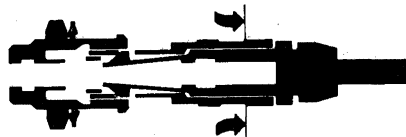
This self-latching system assures the connector to be mated by simply pushing the plug axially into the receptacle.



Connection is made simply by pushing plug directly into receptacle. An audible click is heard assuring lock is engaged.



Connection remains intact resisting stresses of pulling on the cable and any other component part except the outer shell.



When required, the connection is disengaged by a single straight axial pull on the outer shell.

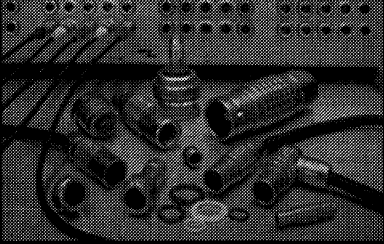
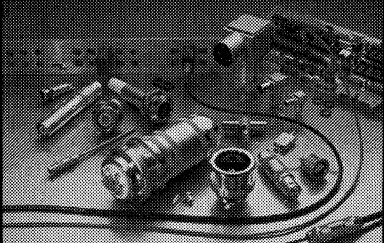
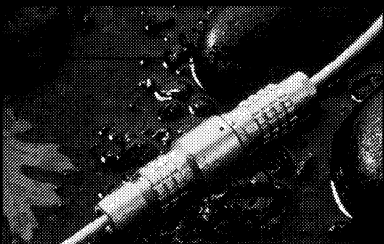
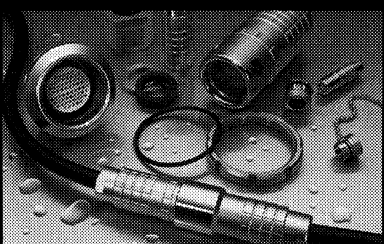
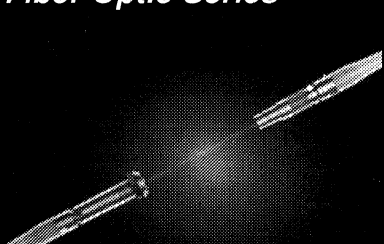
Construction Design

- Aesthetic functional design to complement the most advanced instruments, components and systems.
- Constructed of precision machined brass, molded plastic or aluminum for maximum safety and uniform mating.
- Gold plated contacts for best conduction possible.
- Crafted collet type strain relief securely grips any round cable around its circumference preventing accidental damage to the connection if cable is stressed.
- Available bend relief adds additional cable protection and possible color coding.



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 e-mail lemous@lemo.ch
 website <http://www.lemo.ch>

The LEMO Connector Choices - continued

Connector Families	Contact Configurations and Types	Shell Styles	Shell Materials and Latching Mechanism	Keying Options and color coding	Ratings
B Series 	<ul style="list-style-type: none"> •Multicontact •Hybrids with coax, triax, high voltage •2-64 contacts •Crimp •Solder •Printed Circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Right angle •Vacuum-tight 	<ul style="list-style-type: none"> •Metal •Plastic •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	<ul style="list-style-type: none"> •UL recognized •Exceeds IP66 for sealed models
S Series 	<ul style="list-style-type: none"> •Unipole •Multicontact •Hybrids with coax, triax, high voltage •1-106 contacts •Solder •Printed Circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Right angle •Vacuum-tight 	<ul style="list-style-type: none"> •Metal •Plastic •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Stepped insert for multipin only •Color coding 	<ul style="list-style-type: none"> •Exceeds IP66 for sealed models
K Series - Environmental 	<ul style="list-style-type: none"> •Multicontact •Hybrids with coax, triax, high voltage •2-64 contacts •Crimp •Solder •Printed Circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Vacuum-tight 	<ul style="list-style-type: none"> •Environmentally sealed •Metal •Plastic •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	<ul style="list-style-type: none"> •Sealing exceeds IP66
E Series - Environmental 	<ul style="list-style-type: none"> •Unipole •Multicontact •Hybrids with coax, triax, high voltage •1-106 contacts •Solder •Printed Circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Vacuum-tight 	<ul style="list-style-type: none"> •Environmentally sealed •Metal •Plastic •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Stepped insert for multipin only •Color coding 	<ul style="list-style-type: none"> •Sealing exceeds IP66
Fiber Optic Series 	<ul style="list-style-type: none"> •Single fiber •Multi fiber •Hybrids •Single mode •Multimode 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Vacuum-tight 	<ul style="list-style-type: none"> •Metal •Plastic •Environmentally sealed •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	Sealed models can exceed: <ul style="list-style-type: none"> •IP61 •IP66 •IP68



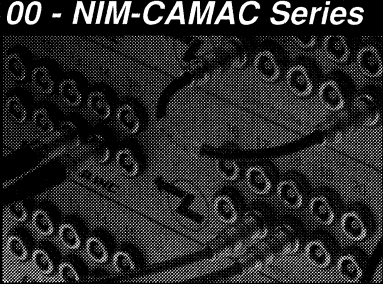




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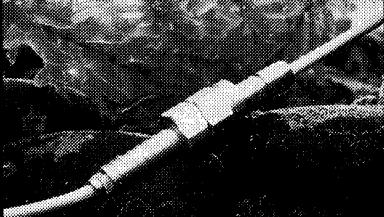

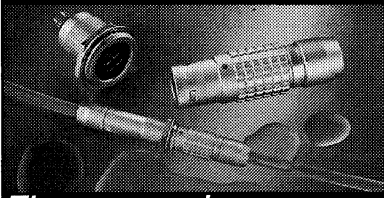
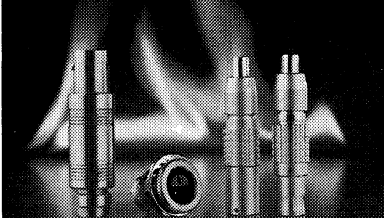
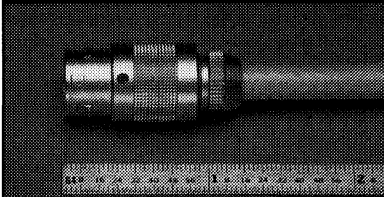
The LEMO Connector Choices - continued

Connector Families	Contact Configurations and Types	Shell Styles	Shell Materials and Latching Mechanism	Keying Options and color coding	Ratings/Cables
00 - NIM-CAMAC Series 	<ul style="list-style-type: none"> •50 ohm coax •Crimp •Solder •Printed Circuit •Patch panels •Adapters 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel Mount •Right angle •Vacuum-tight 	<ul style="list-style-type: none"> •Metal •Plastic <ul style="list-style-type: none"> •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Color coding 	<ul style="list-style-type: none"> •NBS ND-549 Cables: <ul style="list-style-type: none"> •RG.58 C/U •RG.174 A/U •RG.178 B/U •RG.179 B/U •RG.180 B/U •RG.187 A/U •RG.188 A/U •RG.196 A/U •RG.316 /U
01 Minax - LEMO's smallest coaxial connectors 	<ul style="list-style-type: none"> •50 ohm coax •Crimp •Solder with crimp ferrule •Printed Circuit •Adapters 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel Mount •Right angle 	<ul style="list-style-type: none"> •Metal <ul style="list-style-type: none"> •Push-pull •Self-latching •Quick-Lok™ 	<p>n/a</p>	Cables: <ul style="list-style-type: none"> •RG.174 A/U •RG.178 /U •RG.188 A/U •RG.196 A/U •RG.316 /U
0A Series - 50 & 75 ohm coaxial connectors 	<ul style="list-style-type: none"> •50 ohm coax •75 ohm coax •Solder •Printed Circuit •Patch panels •Adapters 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel Mount •Right angle 	<ul style="list-style-type: none"> •Metal <ul style="list-style-type: none"> •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Color coding 	Cables: <ul style="list-style-type: none"> •RG.58 C/U •RG.59 B/U •RG.174 A/U •RG.179 B/U •RG.316 /U
R Series - up to 12 Ghz coaxial connectors 	<ul style="list-style-type: none"> •50 ohm •Operation up to 12 GHz •Solder with crimp ferrule •Adapters 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel Mount •Right angle 	<ul style="list-style-type: none"> •Metal <ul style="list-style-type: none"> •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Color coding 	Cables: <ul style="list-style-type: none"> •RG.58 C/U •RG.142 B/U •RG.188 A/U •RG.316 /U
Audio/Video Connectors 	<ul style="list-style-type: none"> •Coax •Triax •Quadrax •Multicoax •Multicontact •Fiber optics •Hybrids •Patch panels for HDTV, audio, video & fiber optics 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel Mount •Right angle •Sealed 	<ul style="list-style-type: none"> •Metal •Plastic <ul style="list-style-type: none"> •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Color coding 	<ul style="list-style-type: none"> •Video triax connector sealing can exceed IP61 •Fiber Optic connector sealing can exceed IP67



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 website http://www.lemo.ch

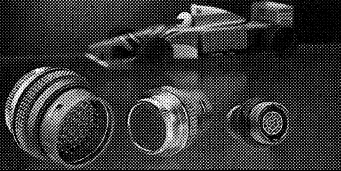
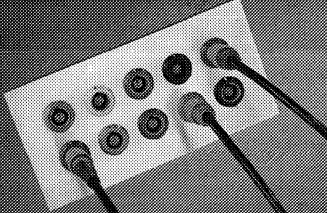
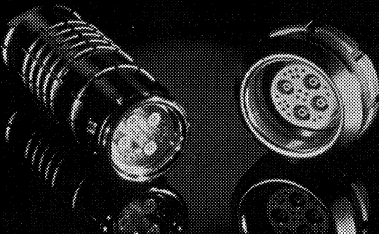
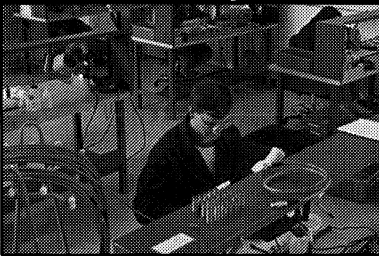
The LEMO Connector Choices - continued

Connector Families	Contact Configurations and Types	Shell Styles	Shell Materials and Latching Mechanism	Keying Options and color coding	Ratings
Underwater Series 03, U and V Series 	<ul style="list-style-type: none"> •Unipole •Hybrids with coax and fiber optic •2-48 contacts •Solder 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Sealed 	<ul style="list-style-type: none"> •Metal •Screw type 	n/a	<ul style="list-style-type: none"> •Sealing exceeds IP68
High Voltage Series 	<ul style="list-style-type: none"> •High voltage •Multi high voltage •Hybrids •Solder 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Right angle 	<ul style="list-style-type: none"> •Metal •Push-pull •Self-latching •Quick-Lok™ 	n/a	<ul style="list-style-type: none"> •5-50 kV DC
Fluidic /Pneumatic Connectors B , S and K Series 	<ul style="list-style-type: none"> •Single •Multi •Hybrids with signal, coax, triax, high voltage •Crimp •Solder 	PLUGS <ul style="list-style-type: none"> •Fixed •Free •Right angle RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Vacuum-tight 	<ul style="list-style-type: none"> •Metal •Plastic •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	<ul style="list-style-type: none"> •Sealing exceeds IP66 •Up to 100 PSI
Thermocouple Connectors 	<ul style="list-style-type: none"> •Thermocouple contacts and hybrids •Standard Types <ul style="list-style-type: none"> •E •J •K •T •L •R •S •B •Crimp •Solder 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Vacuum-tight 	<ul style="list-style-type: none"> •Environmentally sealed •Metal •Plastic •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	<ul style="list-style-type: none"> •Sealing exceeds IP66
Compact Connectors C and G Series 	<ul style="list-style-type: none"> •Multicontact •Coaxial •1-19 contacts •Solder •Printed circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Sealed 	<ul style="list-style-type: none"> •Metal •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Color coding 	n/a



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e-mail lemous@lemo.ch
website <http://www.lemo.ch>

The LEMO Connector Choices

Connector Families	Contact Configurations and Types	Shell Styles	Shell Materials and Latching Mechanism	Keying Options and color coding	Ratings
F Series Aerospace, Industrial and Motorsports Connectors 	<ul style="list-style-type: none"> •Multicontact •3-64 contacts •Crimp •Solder •Printed Circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount •Sealed 	<ul style="list-style-type: none"> •Aluminum •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	<ul style="list-style-type: none"> •Sealed IP67
Plastic Connectors Redel and 3P Series 	<ul style="list-style-type: none"> •Multicontact •2-18 contacts •Hybrids with high voltage •Crimp •Solder •Printed Circuit •Right angle printed circuit 	PLUGS <ul style="list-style-type: none"> •Fixed •Free RECEPTACLES <ul style="list-style-type: none"> •Fixed •Free •Panel mount 	Plastic <ul style="list-style-type: none"> •Polysulfone (PSU) •PEI •Push-pull •Self-latching •Quick-Lok™ 	<ul style="list-style-type: none"> •Keying options •Color coding 	<ul style="list-style-type: none"> •Sealed IP61 •Sealed IP66 Sterilization •Gas •Steam
Custom Designs 	<p>LEMO can custom design the right connector for your application.</p>				
Cable Assembly 	<p>Match your high quality LEMO connectors with high quality LEMO cable assemblies and overmolds.</p> <p>LEMO offers:</p> <ul style="list-style-type: none"> •guaranteed assemblies to meet your specifications •100% testing •highly skilled cable assembly technicians •on-time deliveries •full stock of connectors and cable 				

LEMO has a world-wide sales and distribution network. Please see the EEM Manufacturers and Distributors Directory (yellow pages) for the U.S. office nearest you or call LEMO USA for the name of your local distributor.

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 Factory LR68898



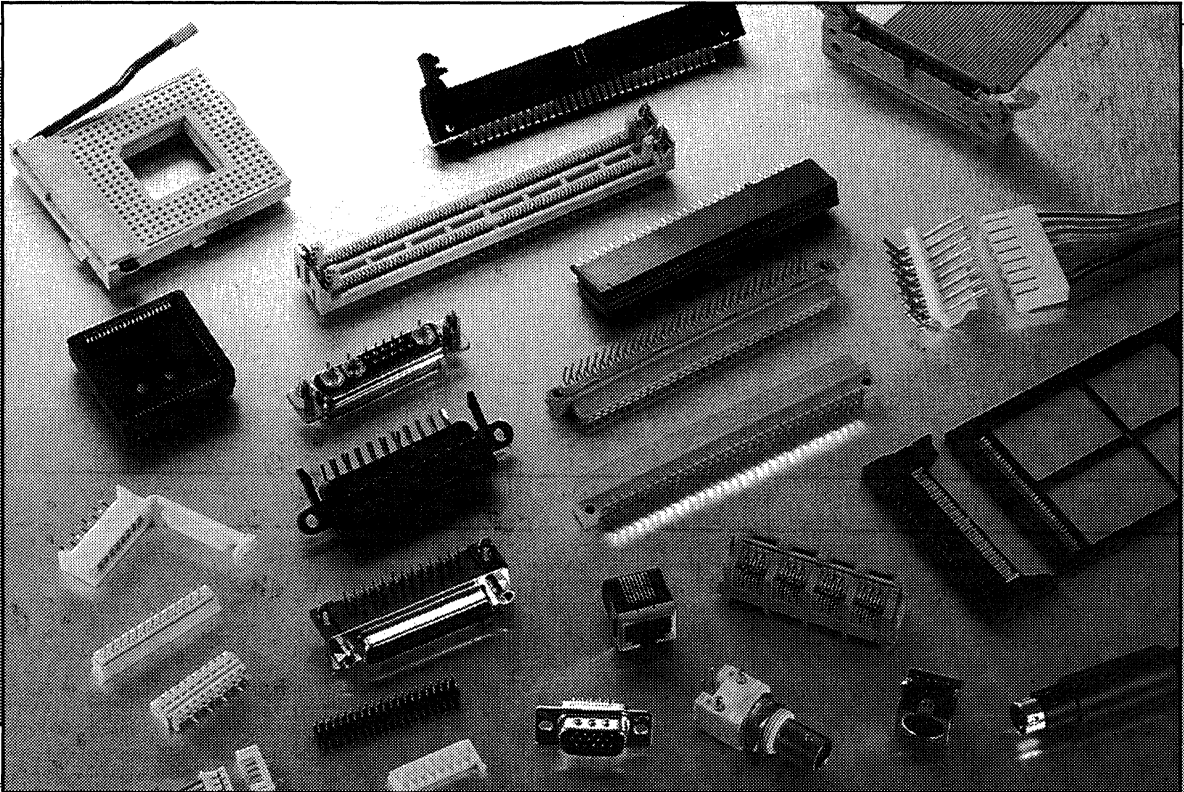
ISO 9002 (IECQ) Certified



TUV Licensed
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Standard Connector Products Available From Our California Warehouse Include:

- PCB Inconnection System (Wire to Board, Board to Board & Board in connector)
- Wire to Wire
- Faston Terminal
- Headers
- Mini Jumpers
- Edge Card
- IC Sockets
- Flat Ribbon IDC
- ZIF FPC
- Wire Trap
- Modular Plugs
- Telephone Jacks
- PLCC's
- PGA Socket
- SIMM Socket
- Ram Module Socket
- D-Subminiature
- High Density D-Subs
- Centronic
- Circular Din
- Mini Din



Over 20 years experience, **LEOCO Corporation** has become a major global connector supplier of high quality interconnect products, cable assemblies and wire harness. Our 12 different ISO 9002 and IECQ certified factories in U.S., China, Taiwan, Malaysia and Indonesia, together with our subsidiary companies around the world, are dedicated to support your connector and cable requirements. **We have the quality products & competitive price** in this market. Please give us a call today to discuss about your connector and cable requirements.

Leoco Corporation (USA)

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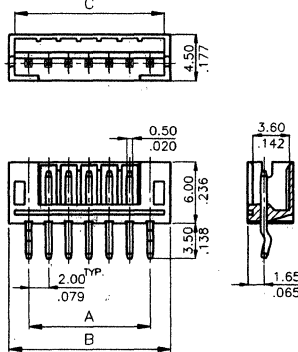
Manufacturer of Quality Connectors
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2011 Series
2.00mm (0.79") Header

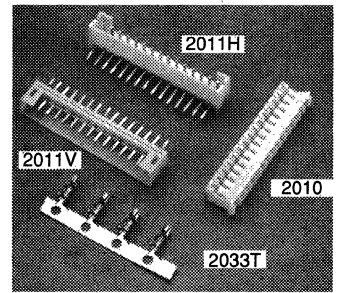
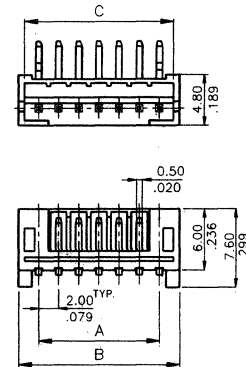
Features:

- Available in 2 through 15 circuits
- Low profile
- Fully Shrouded
- With Polarized slot
- Nylon 6/6 UL94V-0
- 0.50mm (.020") square pin
- Mates with Leoco 2010 socket

Straight (V version)



Right angle (H version)

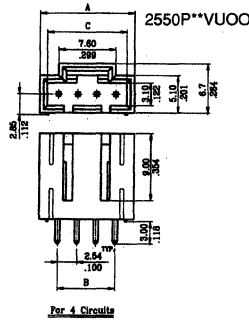


Consult factory for dimensions

2550 Series
2.54mm (1") Pocket
Straight Header

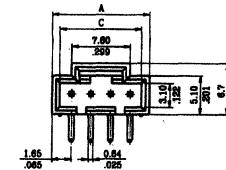
Features:

- Available in 2 through 4 circuits
- With standoffs
- Insulator: UL94V-0 P.B.T.
- Accepts 0.64mm (0.25") square pin
- Contact: Brass
- Mates with Leoco 7066 series socket
- For CD-ROM Application

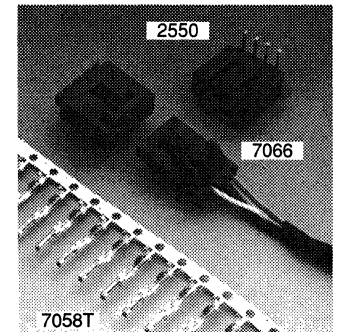


For 4 Circuits

2550P**HUOO



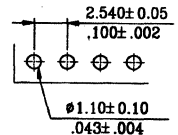
For 4 Circuits



Dimensional & Ordering Information

Circuits	Dim. A	Dim. B	Dim. C
2	7.6(.299)	2.54(.100)	5.60(.220)
3	10.1(.398)	5.08(.200)	8.10(.319)
4	12.6(.496)	7.62(.300)	10.60(.417)

Consult factory for dimensions

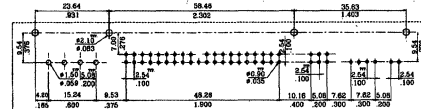
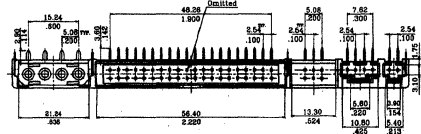
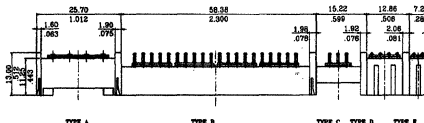


RECOMMENDED HOLE PATTERN

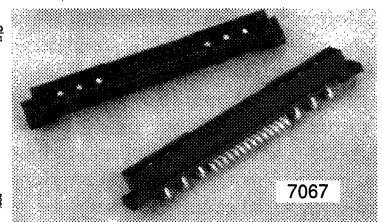
7067 Series
Combination Header
for CD-ROM

Features:

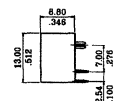
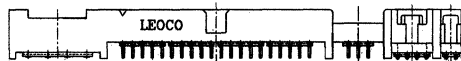
- Available in different combinations
- Insulator: UL94V-0 P.B.T.
- Contact: Brass
- Type:
 - 5 = Type A + Type B + Type C + Type D + Type E
 - 4 = Type A + Type B + Type C + Type D
 - 3 = Type A + Type B + Type C
 - 2 = Type A + Type B



RECOMMENDED HOLE PATTERN



Consult factory for dimensions



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1272 Series

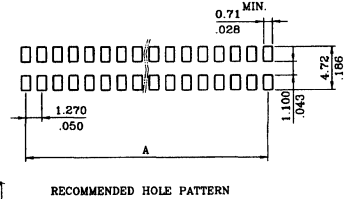
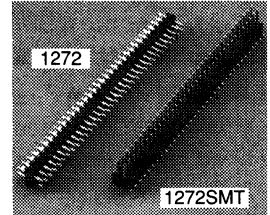
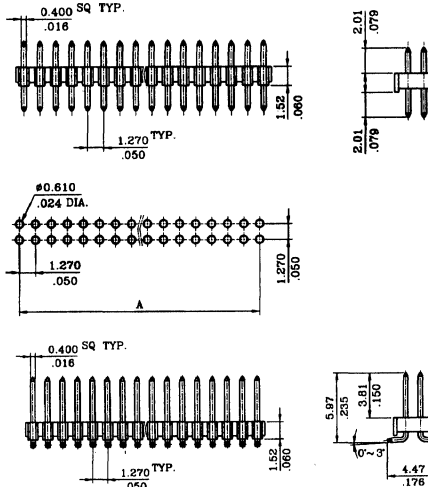
1.27mm (.050") Dual Row Breakaway Straight Header

Features:

- Available in 6 through 68 circuits
- High temperature Nylon UL94V-0
- Color: Black
- With standoff
- Easy breakaway to desired circuits
- Stackable end to end
- Mates with Leoco 1278 and 1375 socket
- 0.40mm(.016") square pin
- Pin length and plating options are available
- Pin omit options are available in any circuits

Consult factory for dimensions

1272P**V*00



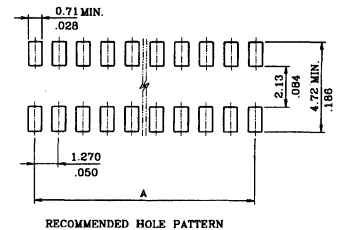
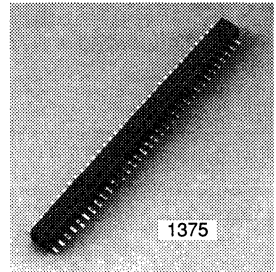
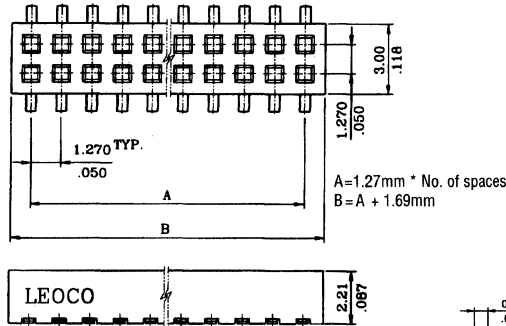
1375 Series

1.27mm (.050") Dual Row SMT Socket

Features:

- Available in 6 through 68 circuits
- High temperature Nylon UL94V-0
- Color: Black
- With standoff
- Easy breakaway to desired circuits
- Stackable end to end
- Mates with Leoco 1272 heater
- 0.40mm(.016") square pin
- Pin length and plating options are available
- Pin omit options are available in any circuits

Consult factory for dimensions



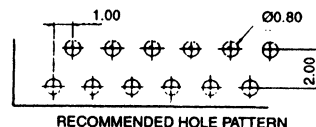
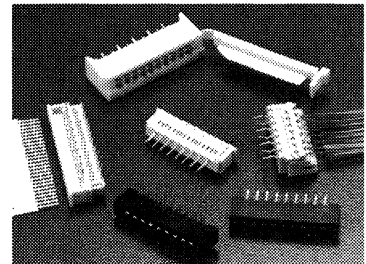
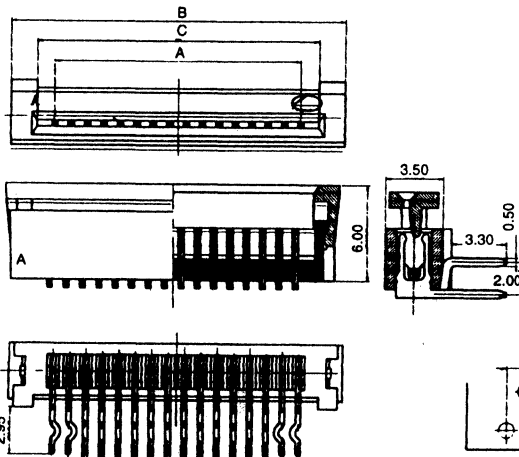
1055 Series

1.00mm (0.39") Z.I.F. Connector

Features:

- Available in 4 through 40 circuits
- Can provide top entry, side entry & SMT type
- Nylon 6/6 UL94V-0
- Contactor: Phosphor Bronze
- Plating: Tin over Nickel

Consult factory for dimensions



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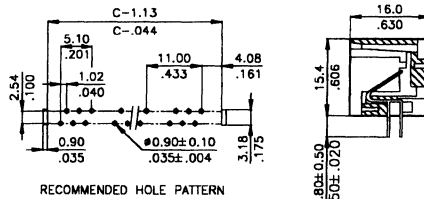
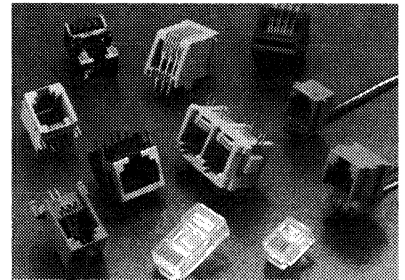
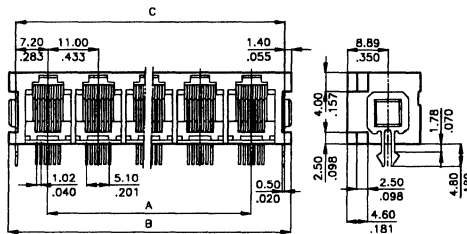
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7606 Series
PCB Gang Jack,
Side Entry Type

Features:

- Housing: Glass filled Nylon 6/6 UL94V-0
- Contact: 0.46mm (.018") Dia. Phosphor bronze
- Metal foot: 0.50mm (.020") thickness brass tin plated



Circuits	Dim.A	Dim.B	Dim.C
2	11.00(.433)	28.20(1.110)	25.40(1.000)
3	22.00(.866)	39.20(1.543)	36.40(1.433)
4	33.00(1.299)	50.20(1.976)	47.40(1.866)
5	44.00(1.732)	61.20(2.410)	58.40(2.299)
6	55.00(2.165)	72.20(2.842)	69.40(2.732)
7	66.00(2.598)	83.20(3.275)	80.40(3.165)
8	77.00(3.030)	94.20(3.710)	91.40(3.598)



Contact factory for dimensions

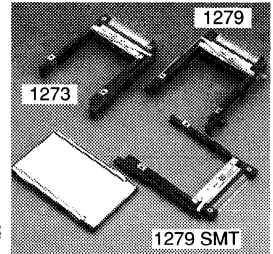
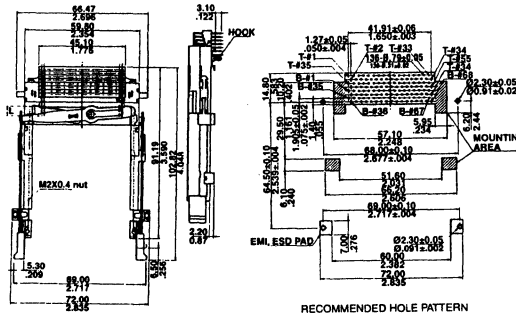
ICM 1279 Series
IC Memory Card 68P
Connector

Features:

- Meet PCMCIA release 2.1 requirement
- Single or double deck is available
- Accept type I, II, III PCMCIA cards
- Double deck accept type II and III cards simultaneously
- Grounding provision against ESD in eject style
- High reliability, low insertion force contacts
- High temperature materials for all versions

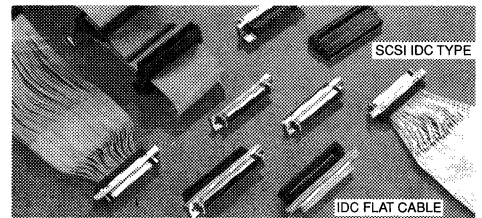
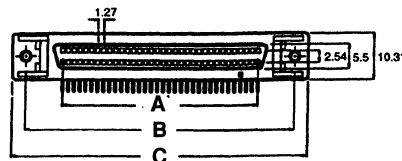
Material:

- Insulator: UL94V-0 LCP
- Contact: 1278: Beryllium copper
 1279: Phosphor bronze



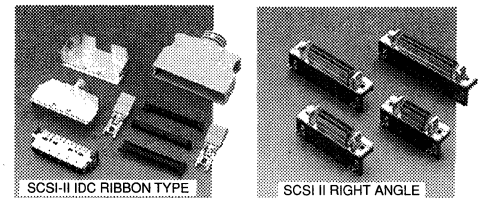
Contact factory for dimensions

SCSI Series
1.27mm (0.5") Height
Density R/A PCB
D-Subminiature



Raw Data for Comparing PVC, TPE and FEP for SCSI Cable Assembly

	PVC (Stranded)	TPE (Solid)	TPE (Stranded)	FEP (Solid)	FEP (Stranded)
Conductor	30 AWG (7/38)	30 AWG (7/38)	30 AWG (7/38)	30 AWG (Solid)	30 AWG (Solid)
Pitch	0.025	0.025	0.025	0.025	0.025
Coating	Tinned	Silver Plated	Silver Plated	Silver Plated	Silver Plated
Impedance SE G-S-G	76 Ohms	84 Ohms	90 Ohms	90-94 Ohms	102 Ohms
Impedance Diff G-S-G	80 Ohms	89 Ohms	93 Ohms	97 Ohms	103 Ohms
Crosstalk %	Near 1.15%	Near 1.212%	Near 1.678%	Near 1.212%	Near 1.678%
Voltage Rating	30 Volts	30 Volts	150 VRMS	30 Volts	150 VRMS
Propagation Delay	1.62 ns/ft	1.44 ns/ft	1.35 ns/ft	1.43 ns/ft	1.37 ns/ft
UL Style	2962	20848	20726	20848	20726
Temp.	105 C	105 C	150 C	105 C	105 C



• All types of SCSI cables are available

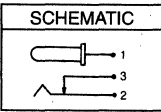
Consult factory for dimensions

Interconnect Solutions For Today & Tomorrow

DC POWER JACKS

Pin Diameter: 2.0mm or 2.5mm
 Specify "A" Suffix for 2.0mm E.G. RL36A
 Specify "B" Suffix for 2.5mm E.G. RL36B

SPECIFICATIONS: Contact Resistance: 30 MΩMax
 Insulation Resistance: 50MΩ min at 100 VDC
 Insulation Withstand Voltage: AC 250V
 R.M.S. for 1 minute



RL16 PCB Mount

RDI RDI, Incorporated
 is now the supplier of these components,
 formerly supplied by **LZR** electronics, inc.
 Please see the RDI ad in this section for more components

RL31 PCB Mount

RL35 PCB Mount, Snap-In with Grooves

RL36 PCB Mount, Snap-In *

RL9 PCB Vertical Mount

RL37 PCB Vertical Mount *

RL201 Panel Mount

RL34 PCB with Panel Holes

Front View Back View

RL38 Panel Mount

RL32 Panel Mount

RL17 Panel Mount

RL39 Panel Mount

WK01A: 2.0mm Pin dia.
WK01B: 2.35mm Pin dia.
WK01BT: 2.45mm Pin dia.

RL204 Panel Mount

RL15 Panel Mount

RL40 PCB Mount *
 Center Pin Diameter
 Ø1.0mm/1.3mm

RL24 PCB Mount
 Pin Dia: 1.3mm

RL13 1.3mm Dia.
 4.00

RL25 Panel Mount, 2 Circuit
 (M8xPO.8)

RL26 Panel Mount, 3 Circuit with Shunt
 (M8xPO.8)

RL27 Vertical PCB Mount
 3 Circuit with Shunt

* Manufactured with PET material; can withstand up to 260° C

2.5mm MINIATURE JACKS

RD1 RDI, Incorporated
 is now the supplier of these components,
 formerly supplied by LZR electronics, inc.
 Please see the RD1 ad in this section for more components

Fig. 1 Matching Plug (Mono)

Fig. 2 Matching Plug (Stereo)

Contact Resistance: 30mΩ MAX.
 Insulation Resistance: 50mΩ Min. at 100V DC
 Insulation Withstand Voltage: AC250V r.m.s. for one minute

<p>SJ251</p>	<p>RL257</p>
<p>RL255 Switch (Mono)</p>	<p>RL256 Switch (Stereo)</p>
<p>RL261 (Mono)</p>	<p>RL264 (Mono Close Type)</p>
<p>RL262 (Mono)</p>	<p>RL258-259 Stereo 2.5mm</p>
<p>RL263 (Stereo)</p>	

3.5mm PHONE/STEREO JACKS

Fig. 1 Matching Plug (Mono)

Fig. 2 Matching Plug (Stereo)

Contact Resistance: 30mΩ MAX.
 Insulation Resistance: 50MΩ Min at 100 VDC
 Insulation Withstand Voltage: AC250V r.m.s. for one minute


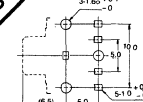


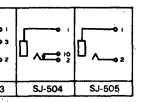
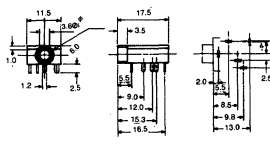

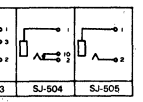
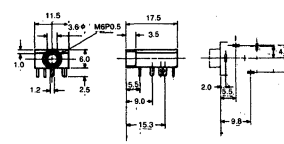

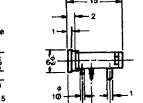
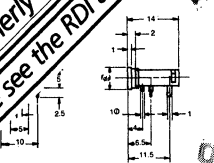

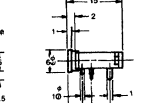
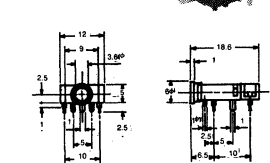

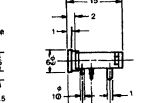
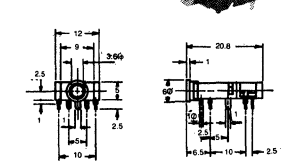


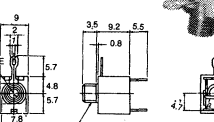
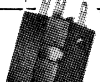

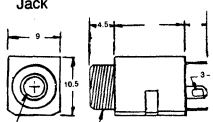

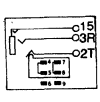
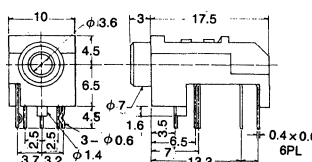
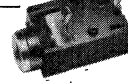

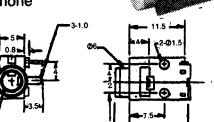


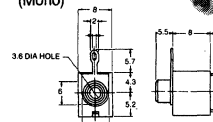

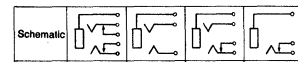
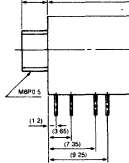


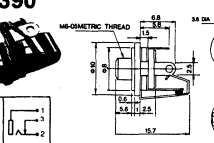


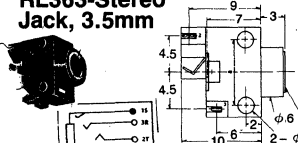
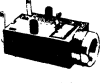

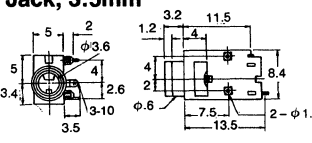


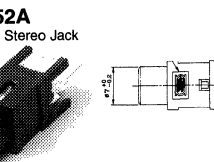


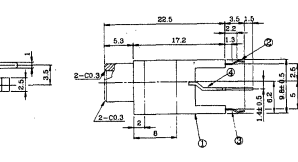


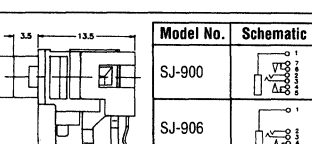
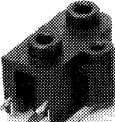

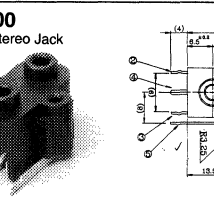


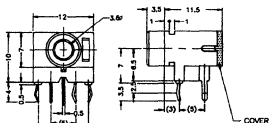


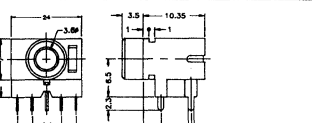
<p>SJ350 3.5φ Miniature Phone Jack</p>	<p>SJ352 3.5φ Miniature Phone Jack</p>	<p>SJ360 3.5φ Miniature Phone Jack</p>	<p>SJ370 3.5φ Miniature Phone Jack</p>
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NOTE: For mating plugs & inline jacks see page C-1299 Section 2100

3.5mm Phone Jacks Continue on next page

3.5mm JACKS, continue

RDI RD1, Incorporated
 is now
 the supplier of these components,
 formerly supplied by **LZR electronics, inc.**
 Please see the RDI ad in this section for more components

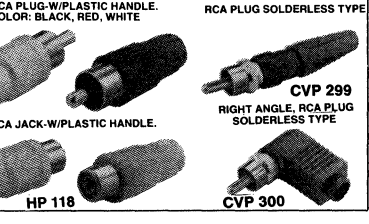
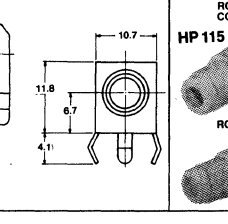
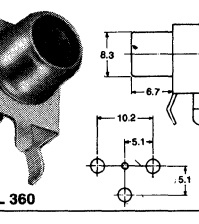
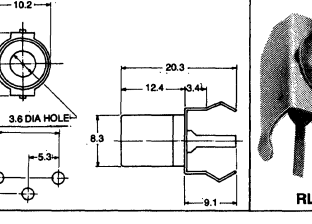
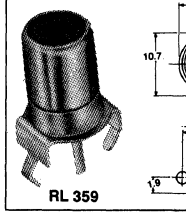
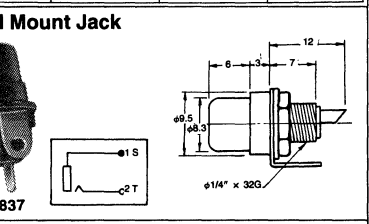
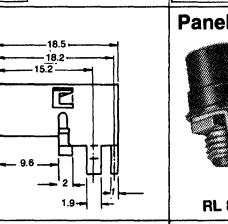
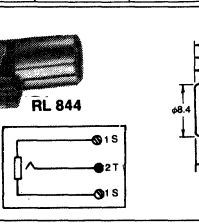
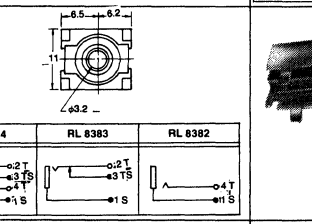
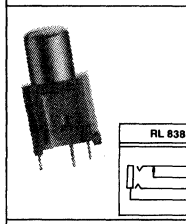
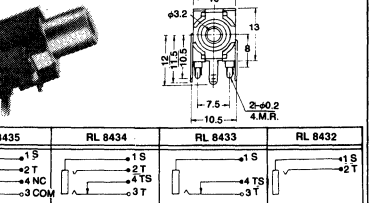
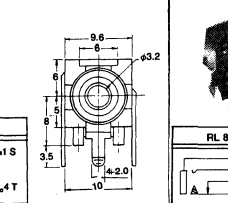
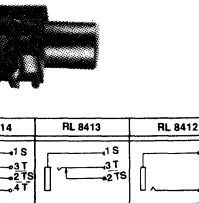
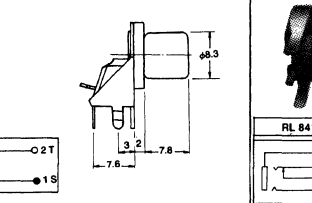
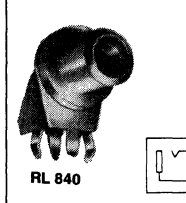
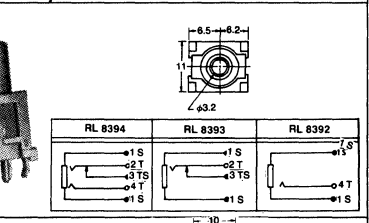
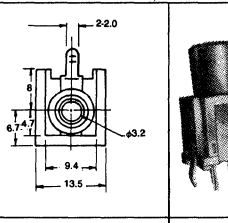
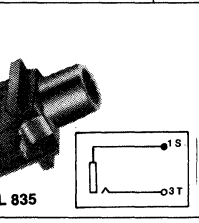
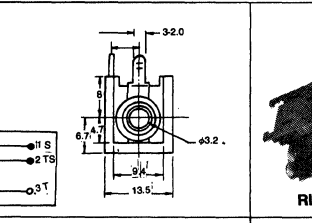
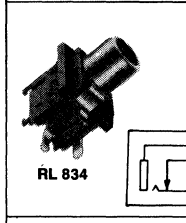
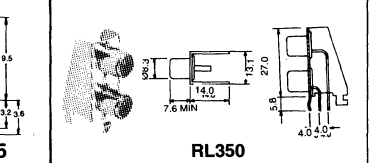
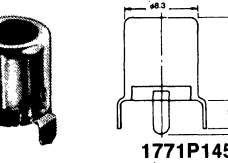
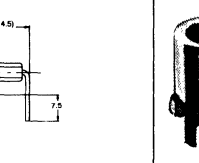
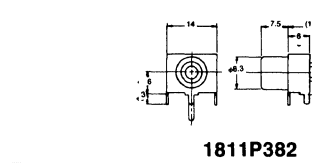
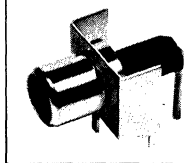
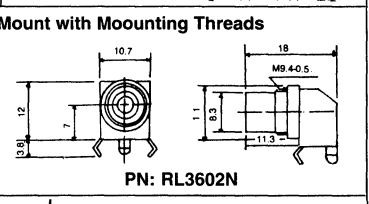
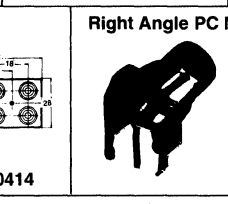
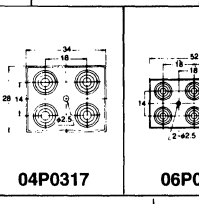
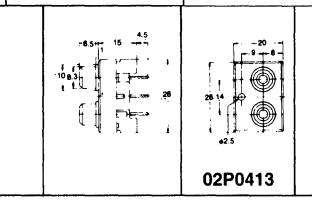
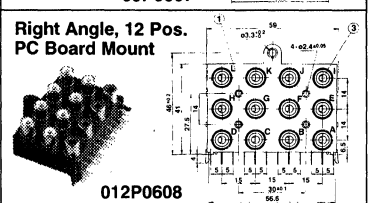
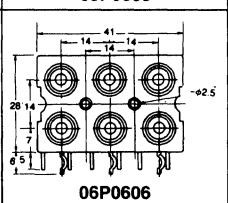
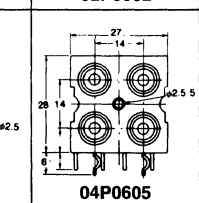
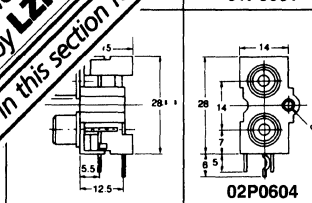
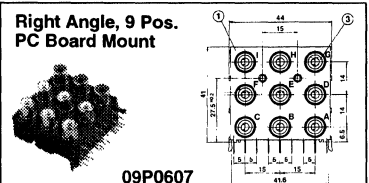
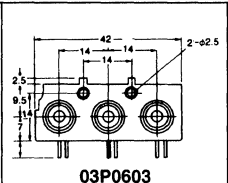
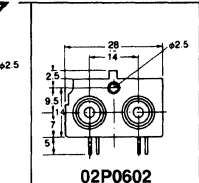
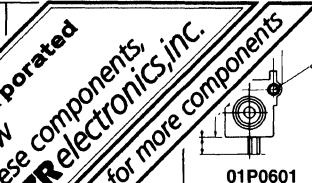
<p>SJ500 3.5φ Stereo Jack</p>   	<p>SJ362 3.5φ Stereo Jack</p>   	<p>SJ363 3.5φ Stereo Jack</p>   																		
<p>SJ200 3.5φ Stereo Jack</p>   	<p>SJ300 3.5φ Stereo Jack with 1P2T Switch</p>   	<p>SJ400 3.5φ Stereo Jack with 2P2T Switch</p>   																		
<p>LJ0350A Stereo</p>   	<p>LJ0352 3.5φ Insulation Jack</p>   	<p>RL362, 3.5mm with Switch</p>   																		
<p>LJ0357 3.5φ PCB Type Earphone</p>   	<p>RL351S 3.5φ Phone Jack (Mono)</p>   	<p>SJ372-375 3.5mm Stereo Jack</p>    <p>Dims: mm</p>																		
<p>RL390</p>   	<p>RL363-Stereo Jack, 3.5mm</p>   	<p>RL358-Stereo Jack, 3.5mm</p>   																		
<p>SJ352A 3.5mm Stereo Jack</p>   	<p>SJ380A 3.5mm Stereo Jack</p>   	<p>SJ900 3.5mm Phone Jack</p>   																		
<p>SJ600 3.5φ Stereo Jack</p>   	<p>SJ510C 3.5mm Stereo Jack</p>   	<p>SJ520 3.5mm Phone Jack</p>   																		
<p>SJ510 Schematic</p> <table border="1"> <tr> <th>Model No.*</th> <td>SJ-510</td> <td>SJ-511</td> <td>SJ-512</td> <td>SJ-513</td> <td>SJ-514</td> <td>SJ-515</td> </tr> </table>	Model No.*	SJ-510	SJ-511	SJ-512	SJ-513	SJ-514	SJ-515	<p>SJ520 Schematic</p> <table border="1"> <tr> <th>Model No.</th> <td>SJ-520</td> <td>SJ-521</td> <td>SJ-522</td> <td>SJ-523</td> <td>SJ-524</td> <td>SJ-525</td> </tr> </table>	Model No.	SJ-520	SJ-521	SJ-522	SJ-523	SJ-524	SJ-525	<p>SJ900 Schematic</p> <table border="1"> <tr> <th>Model No.</th> <td>SJ-900</td> <td>SJ-906</td> <td>SJ-902</td> </tr> </table>	Model No.	SJ-900	SJ-906	SJ-902
Model No.*	SJ-510	SJ-511	SJ-512	SJ-513	SJ-514	SJ-515														
Model No.	SJ-520	SJ-521	SJ-522	SJ-523	SJ-524	SJ-525														
Model No.	SJ-900	SJ-906	SJ-902																	

* "C" following the model number means with cover. No "C" at end of model number means without cover

PCB MOUNT RCA CONNECTORS

Right Angle PC Board Mount

RDI RDI, Incorporated is now the supplier of these components, formerly supplied by **LZR electronics, inc.** Please see the RDI ad in this section for more components



AC POWER ENTRY CONNECTORS PANEL MOUNTED RECEPTACLES

General Specifications

- Insulation Resistance
- Contact Resistance

- Dielectric Strength: 2000 VAC for 1 minute
- VDC, 1A
- Housing Material: Black thermoplastic
- Terminals: Copper alloy

ACC00

RDI is now the supplier of these components, formerly supplied by **LZR electronics, inc.**

Please see the RDI ad in this section for more components

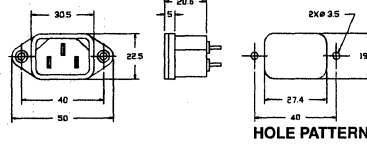
HOLE PATTERN **PCB LAYOUT**

- Power Rating: 2.5A 250VAC
- Approval: UL, CSA, VDE, SEV, SEMKO, NEMKO

SCREW MOUNTING TYPE



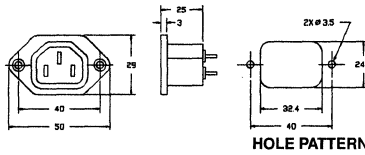
ACC008



- Power Rating: 10A 250VAC
- Approval: VDE, SEV, SEMKO, SETI, DEMKO, NEMKO
- Power Rating: 15A 250VAC
- Approval: UL, CSA



ACC010

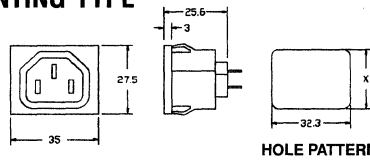


- Power Rating: 10A 250VAC
- Approval: UL, CSA, VDE, SEV, SEMKO

SNAP-IN MOUNTING TYPE



ACC014



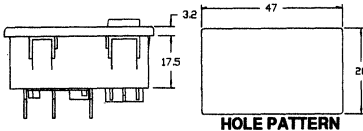
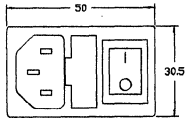
- Power Rating: 10A 250VAC
- Approval: UL, CSA, VDE, SEV, SEMKO

HOLE PATTERN	
PANEL THICKNESS	X
0.8mm - 1.2mm	25.2
1.3mm - 2.0mm	25.4

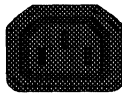
ACC018

NEW

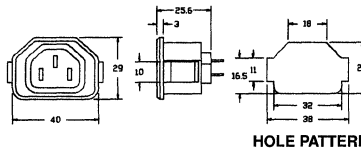
PANEL MOUNT IEC320 CONNECTOR WITH FUSE AND SWITCH



- Power Rating: 10A 250VAC
- Approval: UL, CSA, VDE, SEV, SEMKO, DEMKO, NEMKO, FIMKO



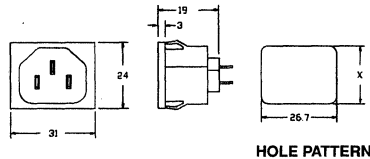
ACC014AR



- Power Rating: 10A 250VAC
- Approval: UL, CSA, VDE, SEV, SEMKO



ACC016



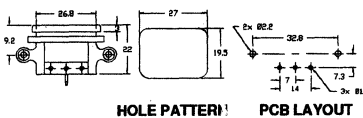
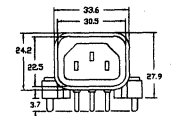
- Power Rating: 10A 250VAC
- Approval: VDE, SEV, SEMKO, SETI, DEMKO, NEMKO
- Power Rating: 15A 125VAC
- Approval: UL, CSA

HOLE PATTERN	
PANEL THICKNESS	X
0.8mm - 1.2mm	25.2
1.3mm - 2.0mm	25.4

ACC019

NEW

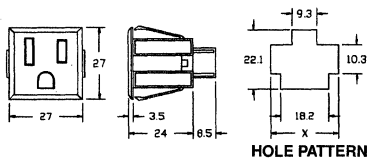
LOW PROFILE IEC320 CONNECTOR



- Power Rating: 10A 250VAC
- Approval: UL, CSA, VDE, SEV, SEMKO, DEMKO, NEMKO, FIMKO



ACC011

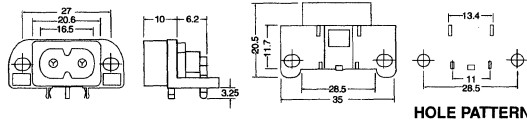


- Power Rating: 15 A 125 VAC
- Approval: UL, CSA

HOLE PATTERN	
PANEL THICKNESS	X
0.8mm	24.0
1.0mm	24.6
1.2mm	25.2
1.6mm	26.2



ACC015A



- Power Rating: 2.5A 250VAC
- Approval: UL, CUL



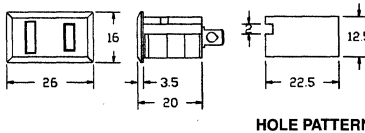
ACC015B



ACC004
POLARIZED



ACC005
NON-POLARIZED



- Power Rating: 15 A 125 VAC
- Approval: UL, CSA

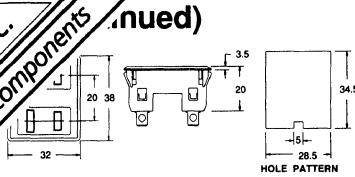
PANEL THICKNESS
0.8mm - 1.5mm MAX.

Notes: 1. All dimensions are in mm. 2. For termination options, see next page.

AC POWER ENTRY CONNECTORS PANEL MOUNTED RECEPTACLES

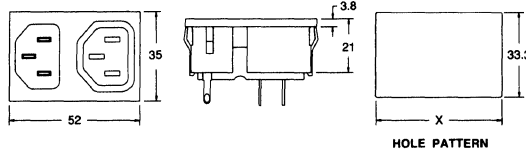
SNAP-IN MOUNT
ACC0042P

RDI RDI, Incorporated is now the supplier of these components, formerly supplied by LZR electronics, inc. Please see the RDI ad in this section for more components.



- Power Rating: 15 A 125 VAC
- Approval: UL, CSA

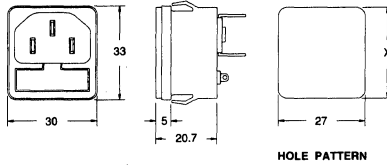
PANEL THICKNESS
0.8mm - 1.5mm MAX.



- Power Rating: 10 A 250 VAC
- Approval: UL, CSA, VDE, SEV, SEMKO

HOLE PATTERN	
PANEL THICKNESS	X
0.8mm - 1.2mm	50.3
1.3mm - 2.0mm	50.5

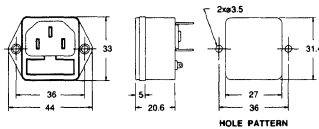
SNAP-IN MOUNT RECEPTACLES WITH FUSE HOLDER



- Power Rating: 10 A 250 VAC
- Approval: UL, CSA, VDE, SEV, SEMKO, SETI, DEMKO, NEMKO

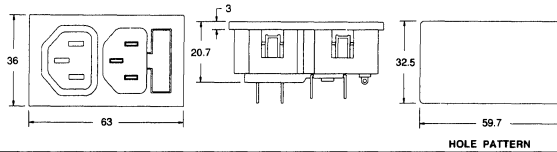
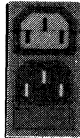
HOLE PATTERN	
PANEL THICKNESS	X
0.8mm - 1.2mm	31.4
1.3mm - 2.0mm	31.6

ACC012



- Power Rating: 10 A 250 VAC
- Approval: UL, CSA, VDE, SEV, SEMKO, SETI, DEMKO, NEMKO

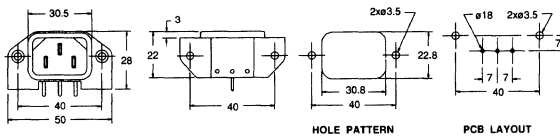
ACC020F



- Power Rating: 10 A 250 VAC
- Approval: UL, CSA, VDE, SEV, SEMKO

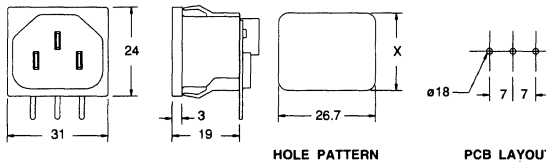
PRINTED CIRCUIT BOARD MOUNTING RECEPTACLES

ACC009



- Power Rating: 10 A 250 VAC
- Approval: UL, CSA, VDE, SEV, SEMKO, SETI, DEMKO, NEMKO

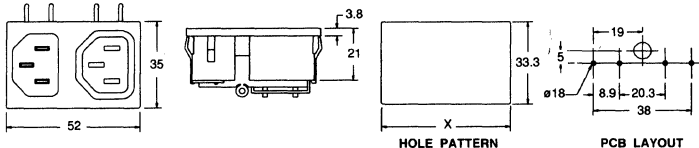
ACC016PC



- Power Rating: 10 A 250 VAC
- Approval: VDE, SEV, SEMKO, SETI, DEMKO, NEMKO
- Power Rating: 15 A 250 VAC
- Approval: UL, CSA

HOLE PATTERN	
PANEL THICKNESS	X
0.8mm - 1.2mm	20.3
1.3mm - 2.0mm	20.5

ACC020PC



- Power Rating: 10 A 250 VAC
- Approval: UL, CSA, VDE, SEV, SEMKO

HOLE PATTERN	
PANEL THICKNESS	X
0.8mm - 1.2mm	50.3
1.3mm - 2.0mm	50.5

Notes: 1. All dimensions are in mm.
2. For termination options, see Termination Options.

TERMINATION OPTIONS		
TERMINAL TYPE 6.3mm/.250" FAST-ON TAB CODE-1		TERMINAL TYPE ø2.8x3.3L SOLDER/FAST-ON TAB CODE-2
		TERMINAL TYPE 2.8mm SOLDER TAB CODE-3

Modular Telephone Jacks, PC Board Mount

General Specifications Electrical

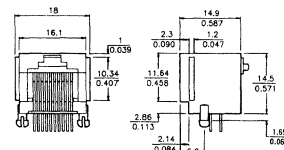
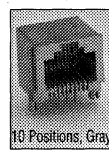
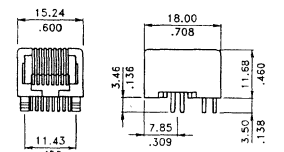
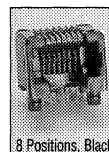
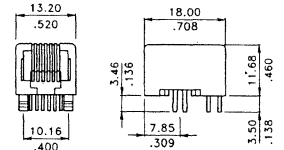
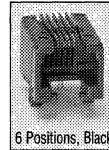
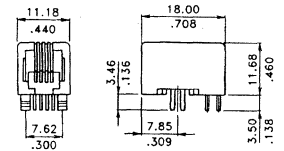
- Insulation Resistance: 10 M-ohms min.
- Withstanding Voltage: 1000 VAC for 1 minute
- Contact Resistance: 20 m-ohms max.
- Current Ratings: 1.5A min.

Materials

- Housing Material: Glass Filled Polyester, UL94V-0
- Contact Spring Wire: 0.35 - 0.46 mm dia Phosphor Bronze Alloy, gold plated over nickel.
- PC Board Terminal: 0.4 mm dia 3/4 Hard Brass, Tin Plated.

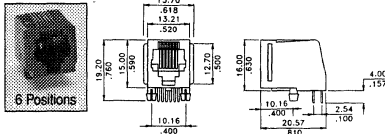


Very Low Profile, Right Angle, PCB Mount

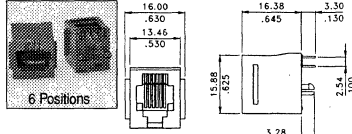


Single Jacks: 4, 6, 8 and 10 positions

Right Angle, PCB Mount, Black



Vertical, PCB Mount, Black

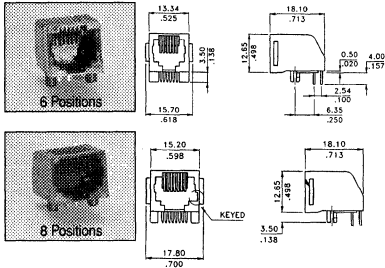


Part No.	No of Positions	No of Contacts	Gold Plating
LZ249-4	4	4	15µ
LZ249-45	4	4	50µ
LZ250-4	6	4	15µ
LZ250-45	6	4	50µ
LZ250-6	6	6	15µ
LZ250-65	6	6	50µ
LZ251-8	8	8	15µ
LZ251-85	8	8	50µ

Part No.	No of Positions	No of Contacts	Gold Plating
LZ257-4	4	4	15µ
LZ257-45	4	4	50µ
LZ258-4	6	4	15µ
LZ258-45	6	4	50µ
LZ258-6	6	6	15µ
LZ258-65	6	6	50µ
LZ259-8	8	8	15µ
LZ259-85	8	8	50µ

Modular Telephone Jacks, PC Board Mount

Low Profile, Right Angle, PCB Mount, Black



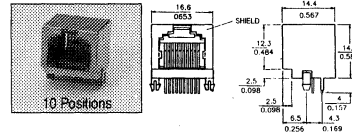
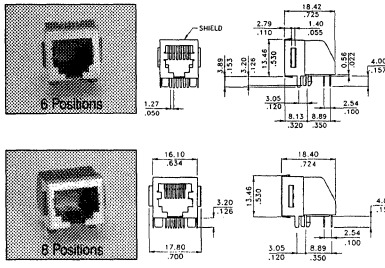
Part No.	No. of Positions	No. of Contacts	Gold Plating
LZLP6415	6	4	15µ
LZLP6450	6	4	50µ
LZLP6615	6	6	15µ
LZLP6650	6	6	50µ
LZLP8815	8	8	15µ



Part No.	No of Positions	No of Contacts	Gold Plating
LP4415	4	4	15µ
LP4450	4	4	50µ
LP6415	6	4	15µ
LP6450	6	4	50µ
LP6615	6	6	15µ
LP6650	6	6	50µ
LP8815	8	8	15µ
LP8850	8	8	50µ
LP101015	10	10	15µ
LP101050	10	10	50µ

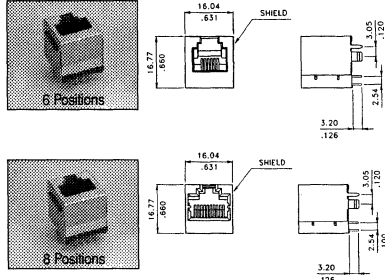
Single Jacks, Shielded, Low Profile 6, 8, 10 Positions

Low Profile, Right Angle, PCB Mount, Shielded



Part No.	No. of Positions	No. of Contacts	Gold Plating
LZLP6415S	6	4	15µ
LZLP6450S	6	4	50µ
LZLP6615S	6	6	15µ
LZLP6650S	6	6	50µ
LZLP8815S	8	8	15µ
LZLP8850S	8	8	50µ
LZLP101015S	10	10	15µ
LZLP101050S	10	10	50µ

Vertical PCB Mount, Shielded, 6 and 8 Positions



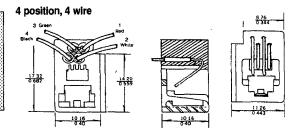
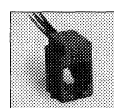
Part No.	No. of Positions	No. of Contacts	Gold Plating
LZVM6415	6	4	15µ
LZVM6450	6	4	50µ
LZVM6615	6	6	15µ
LZVM6650	6	6	50µ
LZVM8815	8	8	15µ
LZVM8850	8	8	50µ

Modular Telephone Jacks

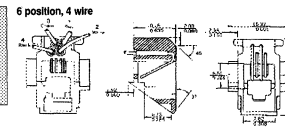
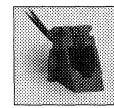
Handset Jacks With Wire Leads

Housing: ABS 94V-0
Color: Medium gray
Contacts: Phosphor bronze alloy, 15µ/30µ gold (optional)

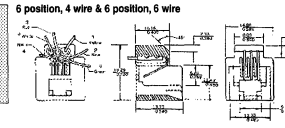
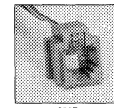
Wire: 26 AWG, 7 strand
Wire Length: 7"



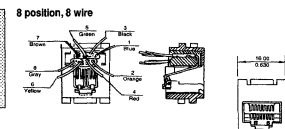
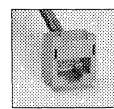
Part No.	Gold Plating
616E-415	15µ
616E-450	50µ



Part No.	Gold Plating
616W-415	15µ
616W-450	50µ



Part No.	Gold Plating
622D-415	15µ
622D-450	50µ
622D-615	15µ
622D-650	50µ



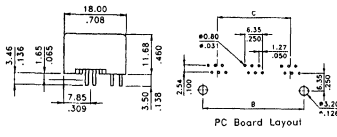
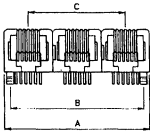
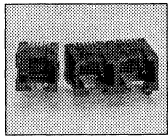
Part No.	Gold Plating
641-615	15µ
641-650	50µ

Multi-Port Modular Gang-Jacks, PC Board Mount

Add-On Type, 2 Ports & Up, Right Angle, PC Board Mount

Make your own Gang Jack Assembly by adding as many single jacks as you wish to a basic dual jack. The basic dual jack consists of a left and a right end piece. Additional single jacks snap in between the left and right end pieces.

I. Ultra Low: 6 positions (RJ11, RJ12), Color: Black

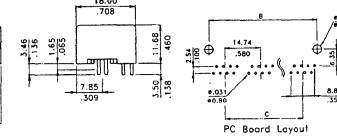
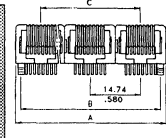
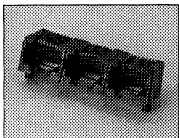


Part No.	Description	No. of Positions	No. of Contacts	Gold Plating
UDPJ6415	Basic Dual Port Jack	6	4	15µ
UDPJ6450	Basic Dual Port Jack	6	4	50µ
UDPJ6615	Basic Dual Port Jack	6	6	15µ
UDPJ6650	Basic Dual Port Jack	6	6	50µ
USPJ6415	Single Add-On Jack	6	4	15µ
USPJ6450	Single Add-On Jack	6	4	50µ
USPJ6615	Single Add-On Jack	6	6	15µ
USPJ6650	Single Add-On Jack	6	6	50µ

P=No. of Ports
 A=13.2mm x P - 0.5 (P - 1)
 B= A - 3.04mm
 C=12.7mm x (P - 1)

Example: To make a 5 port gang jack you order one Basic Dual Port Jack and 3 single add-on jacks. You snap them together prior to assembly onto the PC Board.

II. Ultra Low: 8 positions (RJ45), Color: Black



Part No.	Description	No. of Positions	No. of Contacts	Gold Plating
UDPJ8815	Basic Dual Port Jack	8	8	15µ
UDPJ8850	Basic Dual Port Jack	8	8	50µ
USPJ8815	Single Add-On Jack	8	8	15µ
USPJ8850	Single Add-On Jack	8	8	50µ

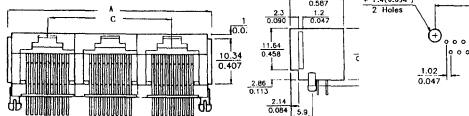
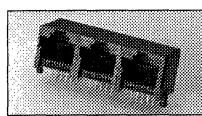
P=No. of Ports
 A=15.32 mm x P - 0.5 (P - 1)
 B=A - 3.81mm
 C=14.71 mm x (P - 1)

Example: Same as for 6 position above.

Add-On Type, 2 Ports & Up, Right Angle, PC Board Mount

Make your own Gang Jack Assembly by adding as many single jacks as you wish to a basic dual jack. The basic dual jack consists of a left and a right end piece. Additional single jacks snap in between the left and right end pieces.

V. Low Profile, 10 Positions, Color: Black



P=No. of Ports
 B=15.1mm x (P - 1) + 15.4mm
 A=B + 3.0mm
 C=15.1mm x (P - 1)
 Example: Same as for 6 position jacks.

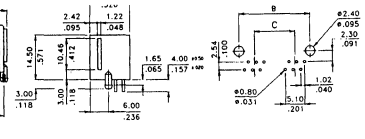
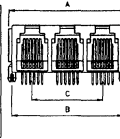
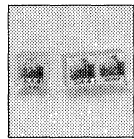
Part No.	Description	No. of Positions	No. of Contacts	Gold Plating
LDPJ101015	Basic Dual Port Jack	10	10	15µ
LDPJ101050	Basic Dual Port Jack	10	10	50µ
LSPJ101015	Single Add-On Jack	10	10	15µ
LSPJ101050	Single Add-On Jack	10	10	50µ

Multi-Port Modular Gang-Jacks, PC Board Mount

Add-On Type, 2 Ports & Up, Right Angle, PC Board Mount

Make your own Gang Jack Assembly by adding as many single jacks as you wish to a basic dual jack. The basic dual jack consists of a left and a right end piece. Additional single jacks snap in between the left and right end pieces.

III. Low Profile: 6 Positions (RJ11, RJ12), Color: Medium Gray

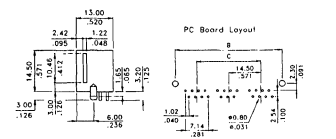
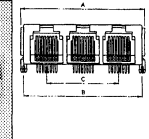
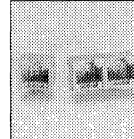


Part No.	Description	No. of Positions	No. of Contacts	Gold Plating
LDPJ6415	Basic Dual Port Jack	6	4	15µ
LDPJ6450	Basic Dual Port Jack	6	4	50µ
LDPJ6615	Basic Dual Port Jack	6	6	15µ
LDPJ6650	Basic Dual Port Jack	6	6	50µ
LSPJ6415	Single Add-On Jack	6	4	15µ
LSPJ6450	Single Add-On Jack	6	4	50µ
LSPJ6615	Single Add-On Jack	6	6	15µ
LSPJ6650	Single Add-On Jack	6	6	50µ

P=No. of Ports
 A=11.65mm x P + 2.5mm
 B=11.65mm x P + 0.5mm
 C=11.65mm x (P - 1)

Example: To make a 6 Port Gang Jack you order one Basic Dual Port Jack and 4 single add-on jacks. You snap them together prior to assembly onto the PC Board.

IV. Low Profile: 8 Positions (RJ-45), Color: Medium Gray



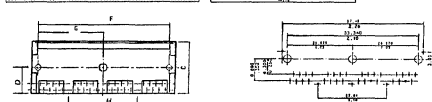
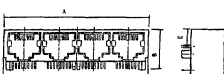
Part No.	Description	No. of Positions	No. of Contacts	Gold Plating
LDPJ8815	Basic Dual Port Jack	8	8	15µ
LDPJ8850	Basic Dual Port Jack	8	8	50µ
LSPJ8815	Single Add-On Jack	8	8	15µ
LSPJ8850	Single Add-On Jack	8	8	50µ

P=No. of Ports
 A=14.5mm x p + 3.0mm
 B=14.5mm x p + 1.0mm
 C=14.5mm x (P - 1)

Example: Same as for 6 positions above.

Multi-Port Modular Gang Jacks, PC Board Mount

Shielded, 2 - 12 Ports, 8P8C, RJ45

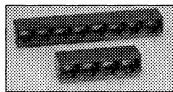


DIM	2-Port	4-Port	8-Port	12-Port
A	30.98	58.92	114.80	170.68
B	13.66	2.92	4.52	6.72
C	11.93	1.193	1.193	1.193
E	6.35	6.35	6.35	6.35
F	2.50	2.50	2.50	2.50
G	12.70	26.57	54.61	82.56
H	5.00	1.050	2.150	3.250
Part No.	SGJ8P-2XX	SGJ8P-4XX	SGJ8P-8XX	SGJ8P-12XX

NEW MODULAR TYPE SPLITTERS COMPLY WITH FCC-PART 68 SUBPART F

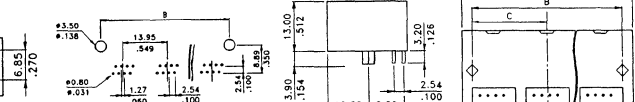
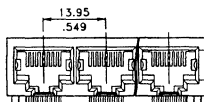


Part No.	Description
50µ Gold, Ivory	TA10244-50
	4 cond. male to two-6P4C female jacks
	TA10266-50
	6 cond. male to two-6P6C female jacks
	TA10288-50
	8 cond. male to two-8P8C female jacks



Fixed Gang Jacks, 2-12 Ports, 8 Positions (RJ45), Color: Black

Gold Plating Option
 15 Micro Inch Gold - Add 15 after the Part No.
 50 Micro Inch Gold - Add 50 after the Part No.

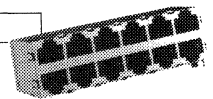


Part No.	GJ8P2	GJ8P3	GJ8P4	GJ8P5	GJ8P6	GJ8P7	GJ8P8	GJ8P9	GJ8P10	GJ8P11	GJ8P12
No. of Ports	2	3	4	5	6	7	8	9	10	11	12
Dimension A mm/Inch	30.48	44.45	58.42	72.39	86.39	100.33	114.30	128.37	142.24	156.21	170.18
Dimension B mm/Inch	1.200	1.750	2.300	2.850	3.400	3.950	4.500	5.050	5.600	6.150	6.700
Dimension C mm/Inch	25.40	39.37	53.34	67.31	81.28	95.25	109.22	123.19	137.16	151.13	165.10
Dimension D mm/Inch	1.000	1.550	2.100	2.650	3.200	3.750	4.300	4.850	5.400	5.950	6.500
Dimension E mm/Inch	12.70	19.69	26.67	33.66	40.64	47.63	54.61	61.60	68.58	75.57	82.56
Dimension F mm/Inch	.500	.775	1.050	1.325	1.600	1.875	2.150	2.425	2.700	2.975	3.250

NEW DOUBLE DECK PCB Multi-Port Jacks (8&12 Ports)

Shielded and Unshielded
 50µ Gold, 8 Conductors, RJ45, Black

Part No.	Description
DDGJ8	8 Ports, Unshielded, Black
DDGJ8S	8 Ports, Shielded
DDGJ12	12 Ports, Unshielded, Black
DDGJ12S	12 Ports, Shielded



BNC Printed Circuit Board Receptacles

BNC Female - Right Angle - Plastic - Metal



Plastic

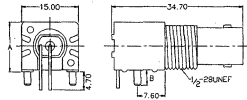
Ohms	A	B	White	Black
50	15.88	4.0	3111-AW	3111-AB
	13.10	3.2	3112-AW	3112-AB
75	15.88	4.0	3111-BW	3111-BB
	13.10	3.2	3112-BW	3112-BB

Metal

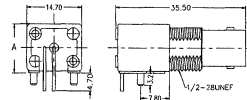
Ohms	A	Part No.
50	15.88	3105-15
	13.10	3105-13
75	15.88	3106-15
	13.10	3106-13

- Specify gold or silver plated contact
- Tin plated posts (2)

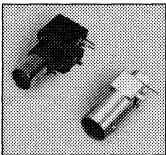
Plastic Housing



Metal Housing - nickel plated



BNC Female — Right Angle — Filter



Filter — Right Angle — Plastic

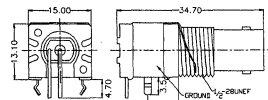
Ohms	White	Black
50	3107-FW	3107-FB
75	3108-FW	3108-FB

Low Profile Right Angle — Metal

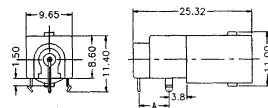
Ohms	A	Part No.
50	6.35	3109-LP
	7.62	3110-LP
75	6.35	3114-LP
	7.62	3115-LP

- Specify gold or silver contacts
- Tin plated posts (2)

BNC, filter, plastic

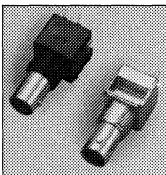


BNC low profile, metal



BNC Female Vertical Mount — Plastic — Metal

- Specify gold or silver contacts
- Tin plated posts (2)



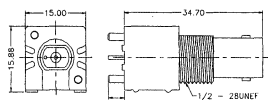
Plastic

Ohms	White	Black
50	3116-VW	3116-VB
75	3117-VW	3117-VB

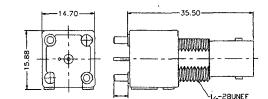
Metal

Ohms	Part No.
50	3118-15M
75	3119-15M

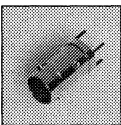
Plastic — Vertical



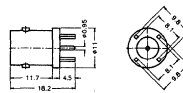
Metal — Vertical



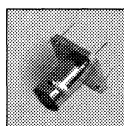
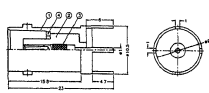
BNC Female Short Body — Vertical — PCB — Metal



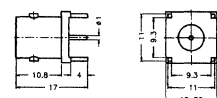
Part No. 0501420 Short Body



Part No. 0501424 Standard Body



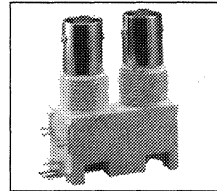
Part No. 0501430 Short Body



BNC Connectors

New

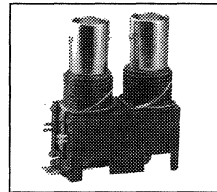
3203 Dual Port BNC R/A PCB Mount Receptacle



Part No. 3203

New

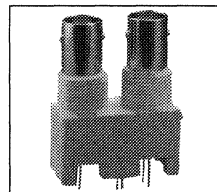
3204 Dual Port Filter BNC R/A PCB Mount Receptacle 1500 VDC



Part No. 3204

New

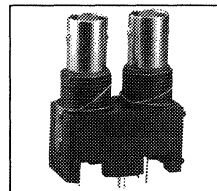
3205 Dual Port Vertical PCB Mount Receptacle



Part No. 3205

New

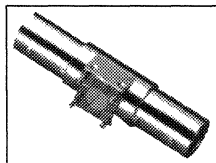
3206 Dual Port Filter BNC Vertical PCB Mount Receptacle 1500 VDC



Part No. 3206

BNC Connectors

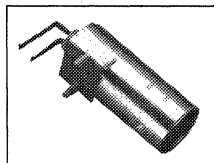
AUTO TERMINATION BNC PCB MOUNT CONNECTORS



Part No. 3201

New

3201 Auto termination BNC R/A Mount Double Female

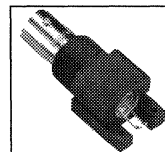


Part No. 3202

New

3202 Auto termination All Metal PCB Mount BNC Connector

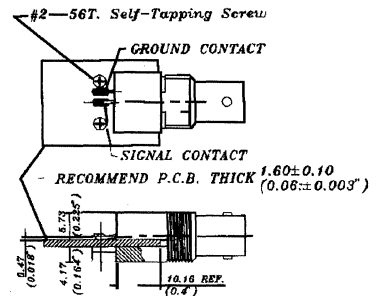
SMT-COMPATIBLE BNC PCB STRADDLE MOUNT CONNECTORS



Part No. 4001-50
Part No. 4001-75

New

Low Profile Straddle Type Jack (Side By Side Style)

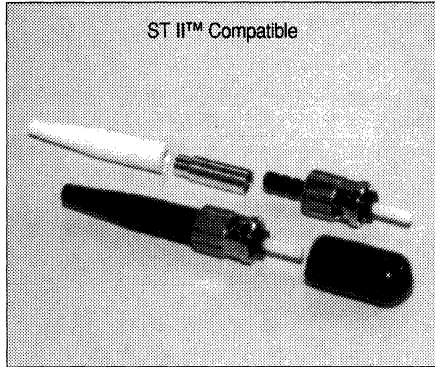


Fiber Optic Connectors

The **LZPS-1700 Precision Series ST II™** compatible connector with a **Glass in Ceramic Ferrule**.

Designed for *High Performance, Repeatability, and Repairability*. This connector is also *Installer Friendly* while producing *Low Insertion Loss* and *High Back Reflection* test results. The Thermally friendly Borosilicate Glass Insert in a Zirconia ferrule will reduce failure due to thermal stressing. (No Other Ferrule Material Can Make That Claim) With this connector ferrule design, and our simple polishing process, *Fiber Undercut* is totally eliminated, *Consistent Fiber Geometry* will be achieved for *Physical Contact* with a *Highly Polished Finish*. Use *Anaerobic or Epoxy Adhesives*.

Part No.	Description
LZPS-1700-1	ST II M/M Glass in Ceramic Ferrule with .9mm Boot.
LZPS-1700-2	ST II M/M Glass in Ceramic Ferrule with 3mm Boot and Crimp Sleeve.
LZPS-1700-3	ST II M/M Glass in Ceramic Ferrule with 3mm, .9mm Boot and Crimp Sleeve.

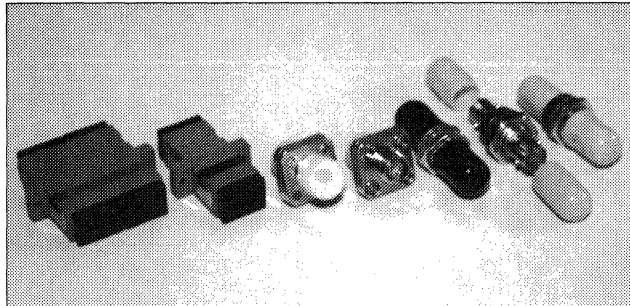


Features and Benefits

- Singlemode and multimode with preradiused Zirconia Ceramic Ferrule for easier polishing and low insertion loss
- Large crimp area to capture more kevlar • Flame retardant boot
- Machined Metal bayonet with nickel plating. • Machined crimp sleeve
- Terminate with Anaerobic or Epoxy Adhesives

Part No.	Description
LZST-1502-1	M/M Connector with .9mm boot
LZST-1501-2	M/M Connector with 3mm boot and crimp sleeve
LZST-1501-3	M/M Connector with .9mm and 3mm boot and crimp sleeve
LZST-1502-1	S/M Connector with .9mm boot
LZST-1502-2	S/M Connector with 3mm boot
LZST-1502-3	S/M Connector with .9mm and 3mm boot and crimp sleeve

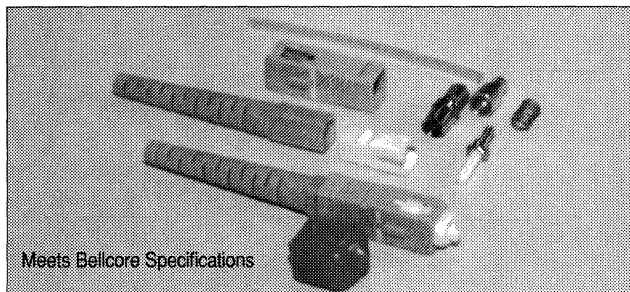
ST, SC, FC COMPATIBLE ADAPTERS WITH PRECISION ALIGNMENT SLEEVES



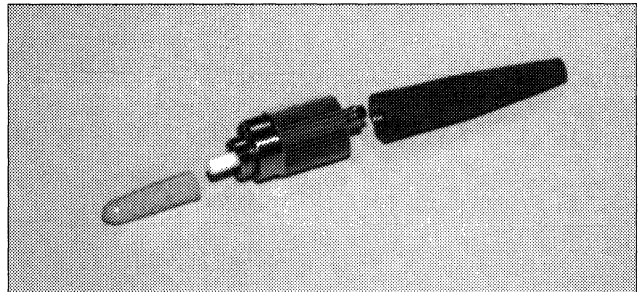
Part No.	Description
LZST-1601	ST Multimode with Polymer Sleeve
LZST-1602	ST Multimode and Singlemode with Metal Sleeve
LZST-1603	ST Singlemode with Zirconia Sleeve
LZSC-1101	SC Multimode with Phosphorous Bronze Sleeve
LZSC-1102	SC Singlemode with Zirconia Sleeve
LZSC-D103	SC Duplex Multimode with Phosphorous Bronze Sleeve
LZSC-D104	SC Duplex Singlemode with Zirconia Sleeve
LZFC-3201	FC Multimode with Phosphorous Bronze Sleeve
LZFC-3202	FC Singlemode with Zirconia Sleeve

*Hybrid Adapters Available Upon Request SC-ST, SC-ST, FC-ST

Field Installable SC & FC Connectors for Anaerobic or Epoxy Adhesives, With Preradiused Zirconia Ceramic Ferrules



Meets Bellcore Specifications



Part No.	Description	Part No.	Description
LZSC-1101	SC Multimode Connector	LZFC-3101	FC Multimode Connector
LZSC-1102	SC Singlemode Connector	LZFC-3102	FC Singlemode Connector

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EEM ONLINE... A powerful search engine featuring the efficient and deep indexing found in the printed EEM.

The screenshot shows the EEM ONLINE search engine interface. At the top left is the logo "EEM ONLINE". To its right is the text "ELECTRONIC ENGINEERS MASTER ONLINE" and "the engineer's search engine for electronic products". Below the logo is a navigation menu with links: "feedback", "help", "for first time users", "order eem", "also visit:", "eem local sources", "eem update", "electronic products", and "ic master". The main search area features a search bar with a magnifying glass icon and the word "search". Below the search bar are radio buttons for "Product Search" (selected) and "Manufacturer Search". A text input field is labeled "Type in a search word" and a "search now" button is below it. On the right side of the interface, there is a welcome message: "welcome to eem online" and "the engineer's search engine for electronic products".

■ Search by product

over 64 categories and thousands of subcategories. Keywords help you target the exact part and spec you need, when you need it—now!

■ Search by Manufacturer

Search by all or part of a company's name from a database of over 5,000 companies.

Follow "the arrows" to see EEM Online



For example, you're
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"Batteries"

And, you're
interested in
**Lithium
Batteries...**

You get a list of
companies from
which to choose.

You can
click on
 to
go...

Click to View Catalog Pages	Click to View Manufacturer Info	City	State	Country
<input checked="" type="checkbox"/>	Battery Engineering, Inc.	Canton	MA	USA
<input checked="" type="checkbox"/>	Battery Specialties	Costa Mesa	CA	USA
<input checked="" type="checkbox"/>	Cell-Con, Inc.	Coatesville	PA	USA
<input checked="" type="checkbox"/>	Dantona Industries	Freeport	NY	USA
<input checked="" type="checkbox"/>	Electrochem Lithium Batteries	Clarence	NY	USA
<input checked="" type="checkbox"/>	Energizer Power System	Alachua	FL	USA
<input checked="" type="checkbox"/>	PCI	Elmwood Park	NJ	USA
<input checked="" type="checkbox"/>	Plainview Batteries, Inc.	Plainview	NY	USA
<input checked="" type="checkbox"/>	SANYO Energy (U.S.A.) Corp.	San Diego	CA	USA
<input checked="" type="checkbox"/>	Tauber Electronics, Inc.	San Diego	CA	USA

= Product meets MIL Specs



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Battery Engineering, Inc.
Batteries, Lithium, D1369

Email Address: info@batteryeng.com
 Web Address: www.batteryeng.com

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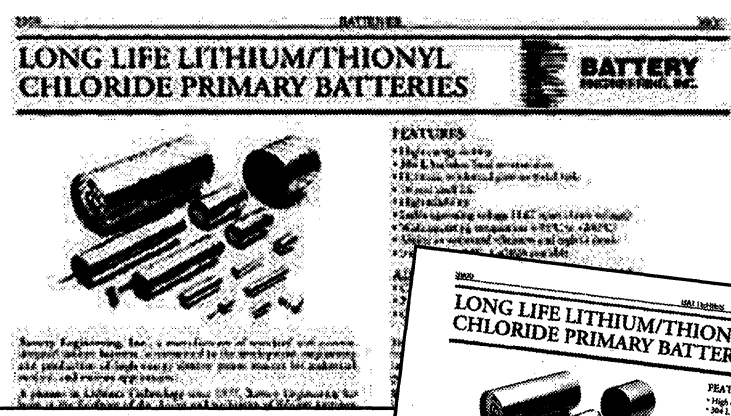
go to company's profile page

go to the listing of a company's products & EEM pages

contact the company directly or see its website

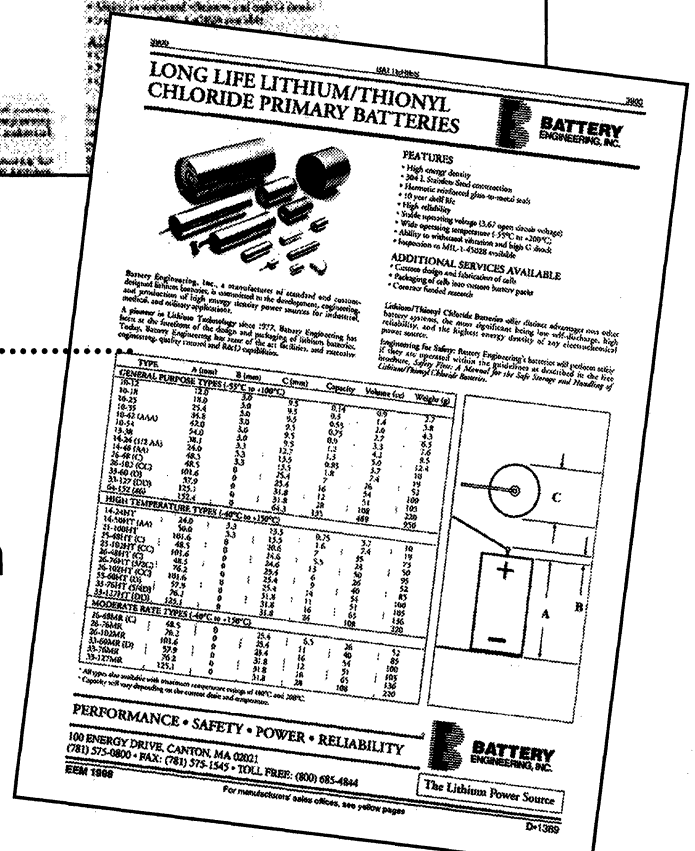
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Chokes, Filter	A1208, A1201, A1205, A1212
Coils, Chip	A1208, A1202, A1203, A1204, A1210, A1211
Coils, High Q, High Frequency	
Coils, IF	A1202, A1203, A1204, A1205, A1206, A1207, A1208, A1210, A1211
Coils, Molded	A1202, A1203, A1204, A1205, A1206, A1207, A1208, A1210, A1211
Coils, RF	A1202, A1203, A1204, A1205, A1206, A1207, A1208, A1210, A1211
Coils, Shielded	A1208, A1202, A1204, A1205, A1206, A1207, A1208, A1210, A1211
Coils, Switching, Power	
Coils, Toroidal	A1208, A1201
Coils, Transformer	
Coils, Variable	A1208, A1205, A1207, A1208
Cores, Magnetic, Ferrite, L, E, etc.	
Cores, Magnets & Ferrites	
Current Sensors, Also See Transducers, Volt, etc.	A1208, A1201, A1213
Filters, Band Elimination	
Filters, Bandpass	



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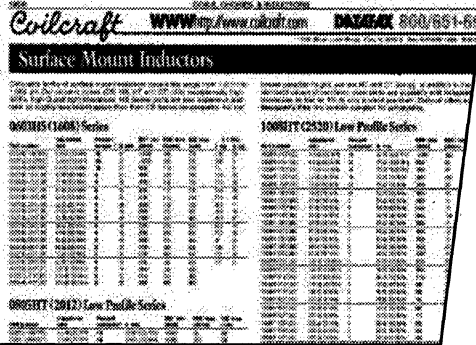
new search **Coilcraft**
Coils, IF, A1202

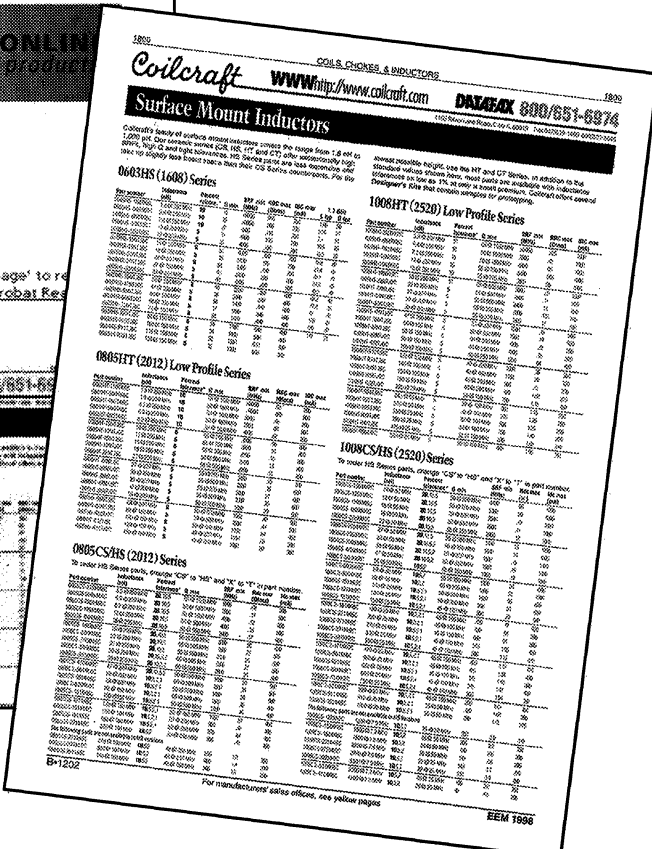
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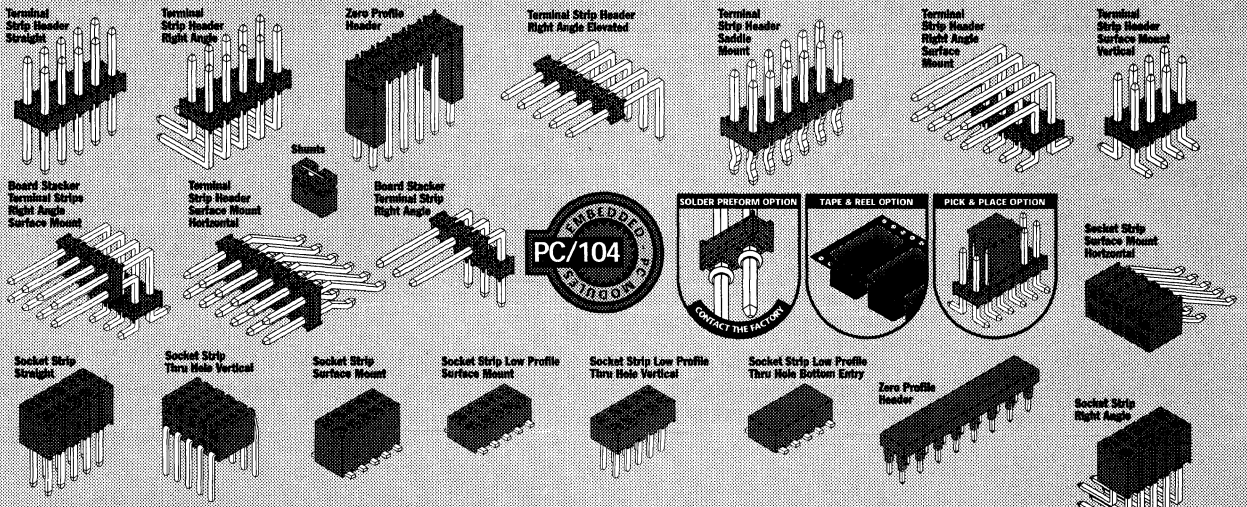


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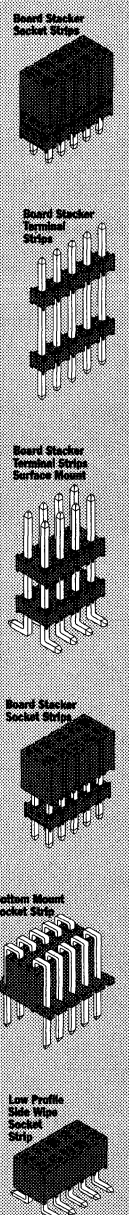
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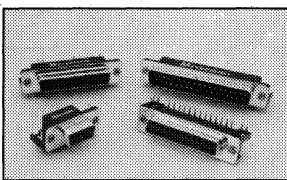
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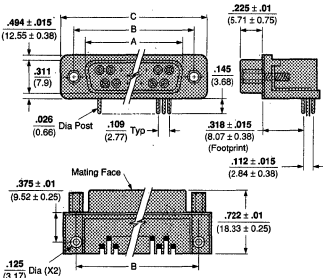


MRS SERIES- Right Angle Termination .318 Footprint



Features

- UL, CSA recognized
- Meets EIA, RS232C and RS449 standards for data communication input/output connectors
- Bright shells for exceptional conductivity and grounding
- Indentations for exceptional grounding and mating retention
- D-shape connector for polarization
- Four shell sizes
- Ferrite option for added EMI/RFI noise suppression
- Additional mounting options are available



UL, UL-DUXR, and CSA Recognized
 Patents issued: 4.878.856, 4.818.239
 4.857.017, 5.288.244

No. of Contact Positions	P/N-FEMALE					
	.010	.005	.015	.005	.005	.005
9 (E)	0.643	0.984	1.213	0.984	0.436	0.274
15 (A)	0.971	1.312	1.541	1.312	0.763	0.274
25 (B)	1.511	1.852	2.088	1.852	1.308	0.272
37 (C)	2.159	2.500	2.729	2.500	1.963	0.269

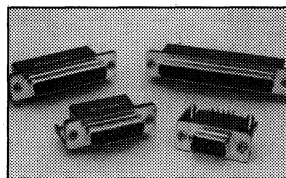
P/N-FEMALE

- MRS-EF-9S-N
- MRS-AF-15S-N
- MRS-BF-25S-N
- MRS-CF-37S-N

P/N-MALE

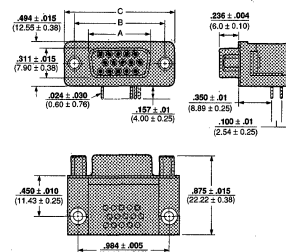
- MRS-EF-9P-N
- MRS-AF-15P-N
- MRS-BF-25P-N
- MRS-CF-37P-N

MRH SERIES- High-Density, Right Angle Termination .350 Footprint



Features

- UL, CSA recognized
- Meets EIA, RS232C and RS449 standards for data communication input/output connectors
- Bright shells for exceptional conductivity and grounding
- Indentations for exceptional grounding and mating retention
- D-shape connector for polarization
- Four shell sizes
- Ferrite option for added EMI/RFI noise suppression
- Additional mounting options are available



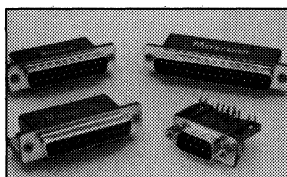
UL, UL-DUXR, and CSA Recognized
 Patents issued: 4.878.856, 4.818.239
 4.857.017, 5.288.244

No. of Contact Positions	P/N-FEMALE						
	.010	.005	.015	.005	.005	.005	.005
15 (E)	0.656	0.984	1.213	0.984	0.492	0.215	0.090
26 (A)	0.994	1.312	1.541	1.312	0.656	0.385	0.090
44 (B)	1.543	1.850	2.088	1.852	0.926	0.655	0.090
62 (C)	2.182	2.500	2.729	2.500	1.250	0.974	0.095

P/N-FEMALE

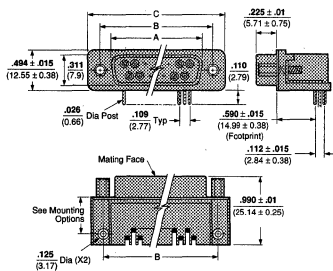
- MRH-EF-15S-N
- MRH-AF-26S-N
- MRH-BF-44S-N
- MRH-CF-62S-N

MRL SERIES- Right Angle Termination .590 Footprint



Features

- UL, CSA recognized
- Meets EIA, RS232C and RS449 standards for data communication input/output connectors
- Bright shells for exceptional conductivity and grounding
- Indentations for exceptional grounding and mating retention
- D-shape connector for polarization
- Four shell sizes
- Ferrite option for added EMI/RFI noise suppression
- Additional mounting options are available



UL, UL-DUXR, and CSA Recognized
 Patents issued: 4.878.856, 4.818.239
 4.857.017, 5.288.244

No. of Contact Positions	P/N-FEMALE					
	.010	.005	.015	.005	.005	.005
9 (E)	0.643	0.984	1.213	0.984	0.436	0.274
15 (A)	0.971	1.312	1.541	1.312	0.763	0.274
25 (B)	1.511	1.852	2.088	1.852	1.308	0.272
37 (C)	2.159	2.500	2.729	2.500	1.963	0.269

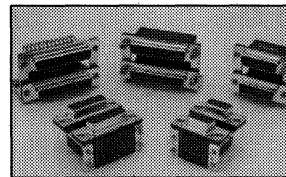
P/N-FEMALE

- MRL-EF-9S-P
- MRL-AF-15S-P
- MRL-BF-25S-P
- MRL-CF-37S-P

P/N-MALE

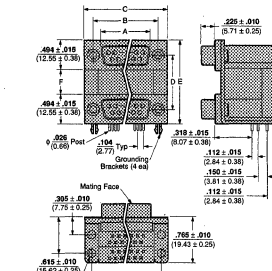
- MRL-EF-9P-P
- MRL-AF-15P-P
- MRL-BF-25P-P
- MRL-CF-37P-P

MST SERIES- Dual-Port connectors 9/9, 15/15, 25/25, 37/37



Features

- UL, CSA recognized
- Vertical dual port construction allows for space savings on the panel and printed circuit board
- Meets EIA, RS232C and RS449 standards for data communication input/output connection
- Three types of mounting options are available for exceptional grounding to the printed circuit board.
- Available in .625, 0.750, and 0.900 heights
- Bright tin shell for exceptional conductivity and grounding
- Ferrite option for added EMI/RFI noise suppression



UL, UL-DUXR, and CSA Recognized
 Patents issued: 4.878.856, 4.818.239
 4.857.017, 5.288.244

No. of Contact Positions (Shell Size)	P/N-FEMALE			Connector Designator (Vertical Direction)		
	.010	.005	.015	D	E	F
9 (E)	0.643	0.984	1.23	0.625	1.119	0.131
15 (A)	0.971	1.312	1.541	1.588	28.42	33.31
25 (B)	1.511	1.852	2.088	0.750	1.244	0.256
37 (C)	2.159	2.500	2.729	0.900	1.394	0.406

D Custom

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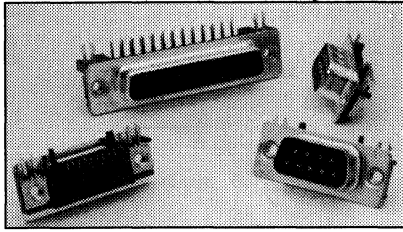
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D-SUBMINIATURE CONNECTORS



MSD SERIES

Slimline Right-Angle .079 (2mm)
.197 (5mm) Footprints



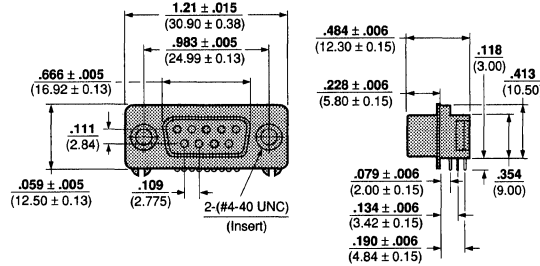
FEATURES

- Provides two optimum space saving footprints
- UL, CSA, recognized
- Meets EIA, RS232C and RS449 standards for data communications input/output connectors
- Bright tin shells for exceptional conductivity and grounding
- Indentations for exceptional grounding and mating retention
- D-shape connector for polarization

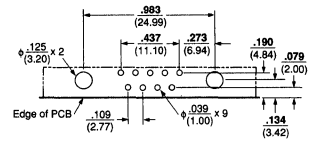
UL, UL-DUXR, and CSA Recognized
Patents issued: 4.878.856, 4.818.239
4.857.017, 5.288.244

DIMENSIONS

9 Position Male
Part Number MSD2-9P-N

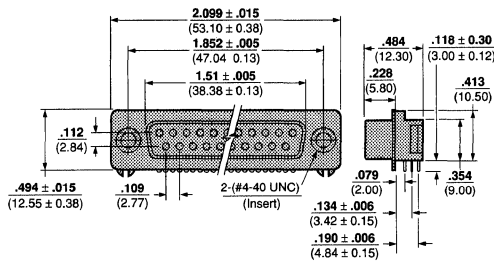


PCB Layout

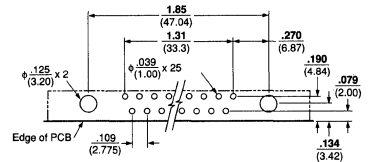


DIMENSIONS

25 Position Female
Part Number MSD2-25S-N

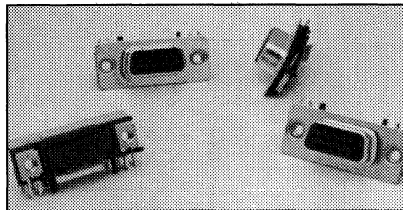


PCB Layout



MSDH SERIES

Slimline High Density Right-Angle,
.079 (2mm), .135 (3.43mm)
Footprints



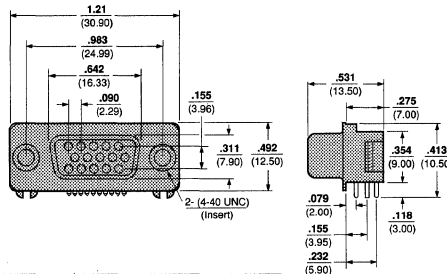
FEATURES

- Provides two optimum space saving footprints
- Meets EIA, RS232C and RS449 standards for data communications input/output connectors
- Bright tin shells for exceptional conductivity and grounding
- Indentations for exceptional grounding and mating retention
- D-shape connector for polarization

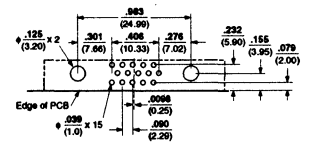
UL, UL-DUXR, and CSA Recognized
Patents issued: 4.878.856, 4.818.239
4.857.017, 5.288.244

DIMENSIONS - .079 (2mm)

15 Position Female
Part Number MSDH2-EF-15S-N

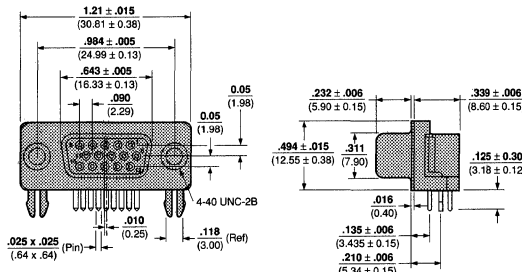


PCB Layout

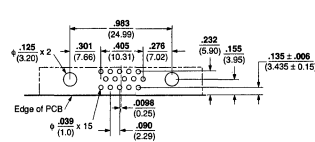


DIMENSIONS - .197 (5mm)

15 Position Female
Part Number MSDH5-EF-15S-N



PCB Layout



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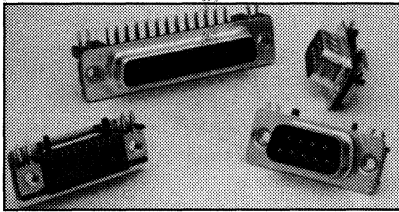
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D-SUBMINIATURE CONNECTORS



MSMD SERIES

Surface Mount, Right Angle



FEATURES

- Meets EIA, RS232C and RS449 standards for data communications
- Bright tin shell for exceptional conductivity and grounding
- D-shape connector for polarization

P/N-MALE

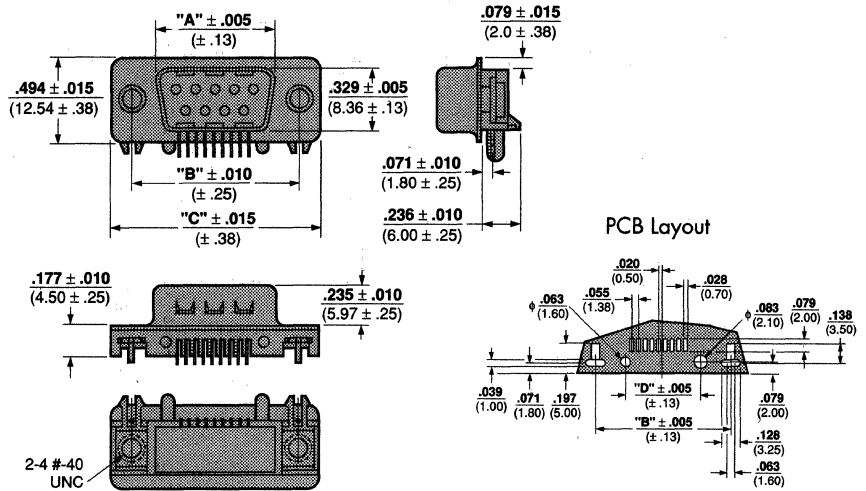
- MSMD-EF-9P-N
- MSMD-AF-15P-N
- MSMD-BF-25P-N

P/N-FEMALE

- MSMD-EF-9S-N
- MSMD-AF-15S-N
- MSMD-BF-25S-N

UL, UL-DUXR, and CSA Recognized
 Patents issued: 4,878,856, 4,818,239
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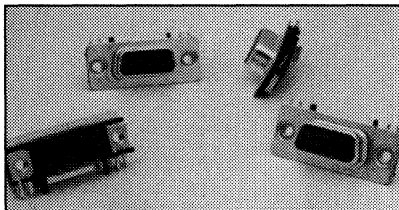
DIMENSIONS



Number of Contact Positions	A	B	C	D
9	0.660 16.92	0.984 24.99	0.213 5.41	0.551 14.00
15	0.994 25.25	1.312 33.32	1.541 39.14	1.011 25.69
25	1.534 38.96	1.852 47.04	2.008 50.99	1.557 39.54

MSMDH SERIES

Surface Mount, High Density, Right Angle



FEATURES

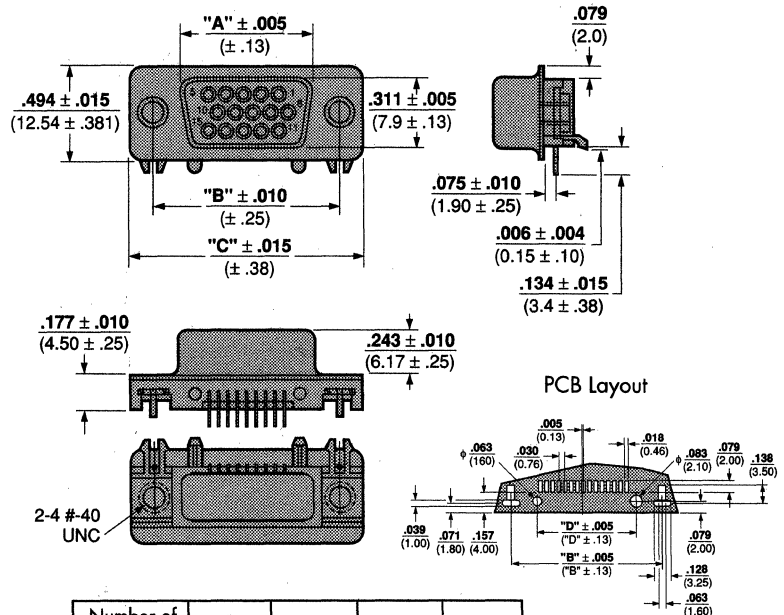
- Meets EIA, RS232C and RS449 standards for data communications
- Bright tin shell for exceptional conductivity and grounding
- D-shape connector for polarization

P/N-FEMALE

- MSMDH-EF-15S-N

UL, UL-DUXR, and CSA Recognized
 Patents issued: 4,878,856, 4,818,239
 4,857,017, 5,288,244

DIMENSIONS



Number of Contact Positions	A	B	C	D
15	0.643 16.33	0.984 24.99	1.213 30.81	0.630 16.00

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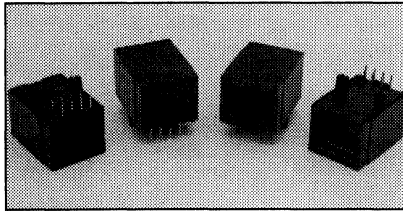
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MODULAR JACKS



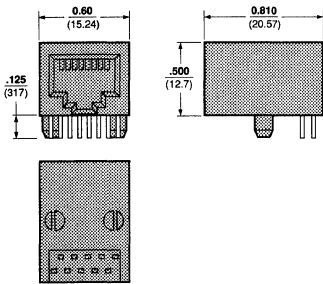
MJH-R SERIES

Single Cavity, Standard Height,
Non-Shielded, Shielded



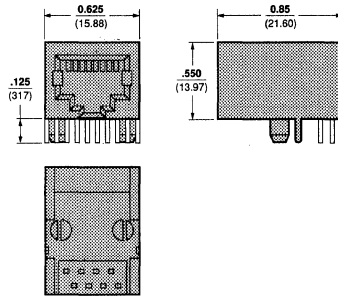
DIMENSIONS

MJH-R Non-Shielded
8 Positions, 8 Contacts
8 Positions, 10 Contacts (Shown)

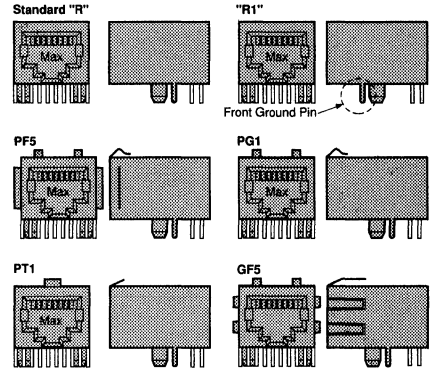


DIMENSIONS

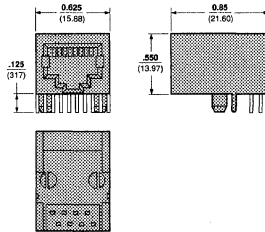
MJHS-R Shielded
8 Positions, 8 Contacts (Shown)
8 Positions, 10 Contacts



Panel Grounding Options

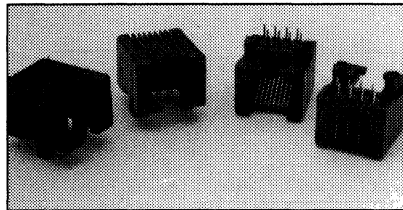


MJHS-R1 Shielded, with front ground pin
8 Positions, 8 Contacts
8 Positions, 10 Contacts (Shown)



MLJ SERIES

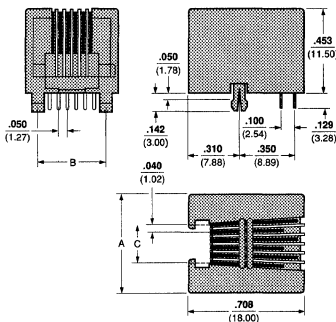
Optional Three LED, Low Profile
Single Port or Ganged Jack 2-12
Shielded, Non-Shielded



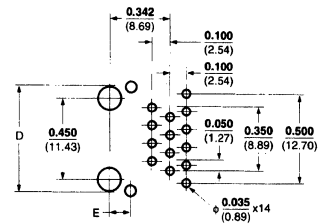
FEATURES

- Optional 3 LED with color selection
- UL and CSA approved
- Single port or optional 2 through 12 port gang
- Meets FCC requirements

DIMENSIONS



PCB Layout



Type	A	B	C	D	E
Shielded	0.560 14.24	0.650 16.51	0.836 21.23	0.590 14.99	0.120 3.05
Non-Shielded	0.555 14.10	0.600 15.24	0.813 20.65	N/A	N/A

HOW TO ORDER

MLJ -G - 88 - 10 - GF5 - G1Y2R3 - XX

Series
Blank-Non-Shielded
S-Shielded

Blank-Single cavity
G-Ganged

Position/Contact
66-6P6C
88-8P8C

Special

Combination Color/Position

G - Green
Y - Yellow
R - Red

Flanges

Blank-No flange
GF5-Ground flange

Contact Plating

10-10 microinch gold
30-30 microinch gold
50-50 microinch gold

UL, UL-DUXR, and CSA Recognized
Patents issued: 4,878,856, 4,818,239
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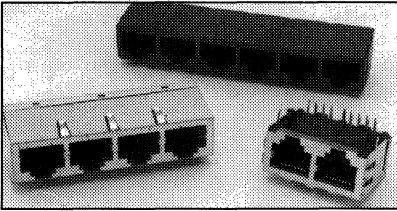
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MJH-G SERIES

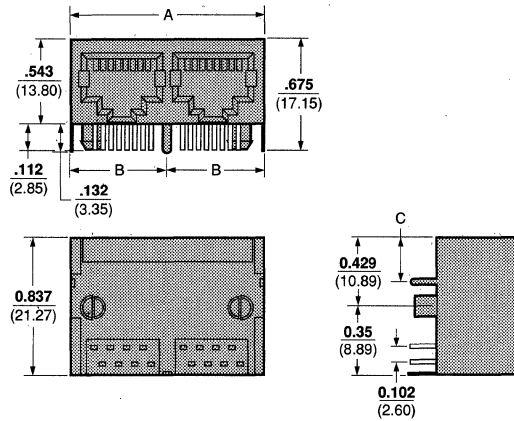
Shielded, Non-Shielded
2 to 12 ports



FEATURES

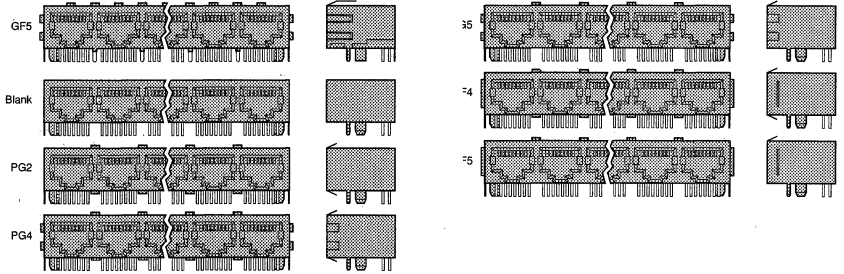
- Low Profile (.543 high)
- 2 through 12 ports
- Shielded and non-shielded
- Meets FCC and UL specifications
- 1000 mating cycles

DIMENSIONS



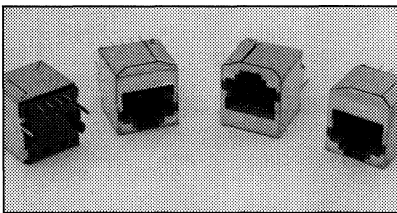
No. of Ports and Style	A		B	C	
	Non-Shielded	Shielded		Style A	Style B
2A, 2B	1.200 30.48	1.225 31.12	0.60 15.24	0.180 4.57	0.145 3.68
4A, 4B	2.300 58.42	2.325 59.06	1.150 29.21	0.180 4.57	0.145 3.68
5A, 5B	2.850 72.39	2.880 73.03	1.425 36.195	0.180 4.57	0.145 3.68
6A, 6B	3.400 86.36	3.425 87.00	1.700 43.18	0.180 4.57	0.145 3.68
8A, 8B	4.500 114.30	4.525 114.94	2.250 57.15	0.180 4.57	0.145 3.68
10A, 10B	5.600 142.24	5.625 142.88	2.800 71.12	0.180 4.57	0.145 3.68
12A, 12B	6.700 170.18	6.725 170.82	3.350 85.09	0.180 4.57	0.145 3.68

Panel Grounding Options



MJH-V SERIES

Vertical, Shielded, Non-Shielded

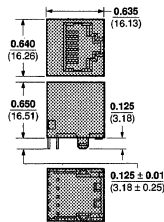


FEATURES

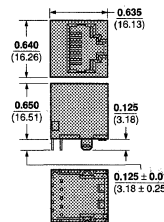
- UL and CSA approved
- Meets FCC requirements
- Shielded, non-shielded

DIMENSIONS

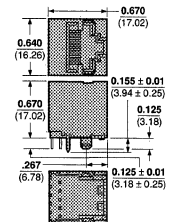
MJH-V Series Non-Shielded
8 Positions 8 Contacts



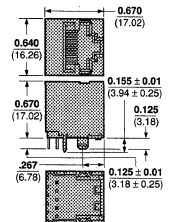
MJHS-V Series Shielded
8 Positions 8 Contacts



MJH-V Series Non-Shielded
8 Positions 8 Contacts



MJHS-V Series Shielded
8 Positions 10 Contacts



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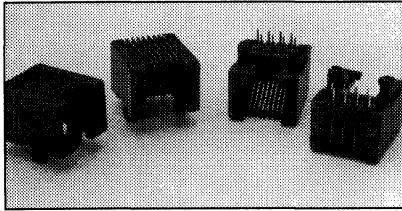
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MODULAR JACKS

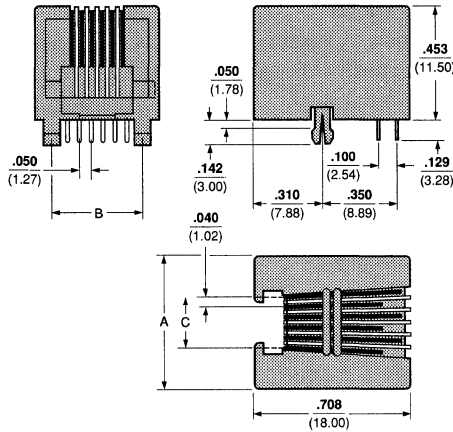


MJL SERIES

Ultra-Low Profile, (.453 Height)
Non-Shielded



DIMENSIONS



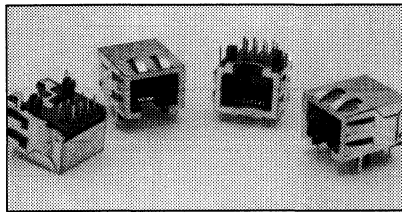
No. of Positions	No. of Contacts	Dimensions		
		A	B	C
6	6	0.520	0.400	0.250
		13.20	10.16	6.35
6	4	0.520	0.400	0.250
		13.20	10.16	6.35
6	2	0.520	0.400	0.250
		13.20	10.16	6.35
4	4	0.440	0.300	0.150
		11.18	7.62	3.81
8	8	0.600	0.450	0.350
		15.24	11.43	8.89
8	6	0.600	0.450	0.250
		15.24	11.43	6.35

FEATURES

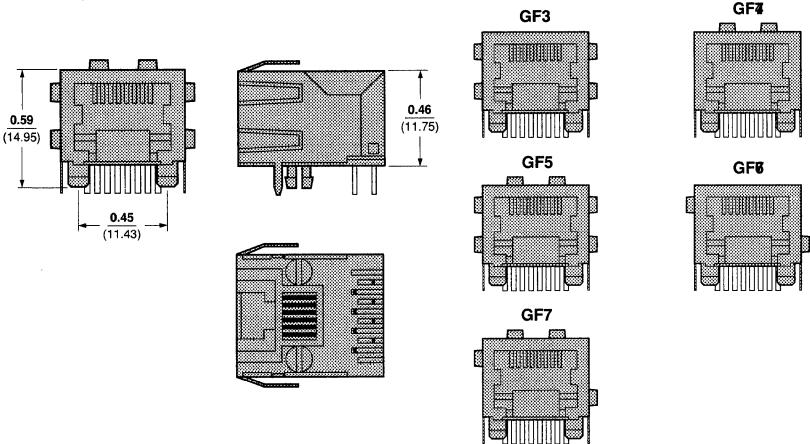
- UL and CSA approved
- Meets FCC requirements
- Ultra-low profile
- Non-shielded

MJLS SERIES

Ultra Low Profile, (.460 Height)
Shielded



DIMENSIONS

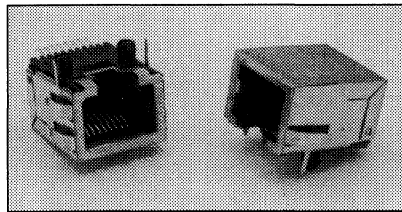


FEATURES

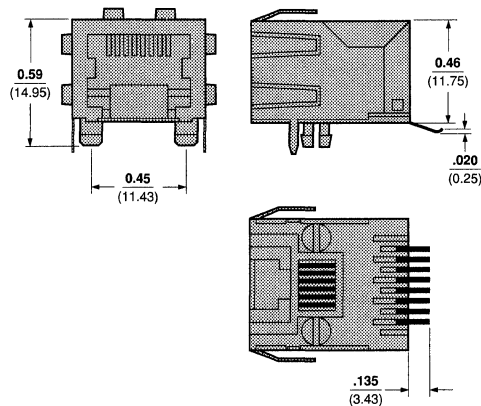
- UL and CSA approved
- Fully Shielded
- Enhanced grounding flange
- Available in 8 or 10 contacts

MJLSS SERIES

Ultra-Low Profile, (.460 Height)
Surface Mount, Shielded



DIMENSIONS



FEATURES

- UL and CSA approved
- Fully Shielded
- Enhanced grounding flange
- Available in 8 or 10 contacts
- Surface mount

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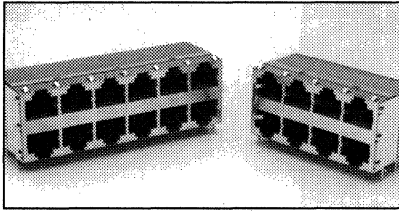


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MODULAR JACKS

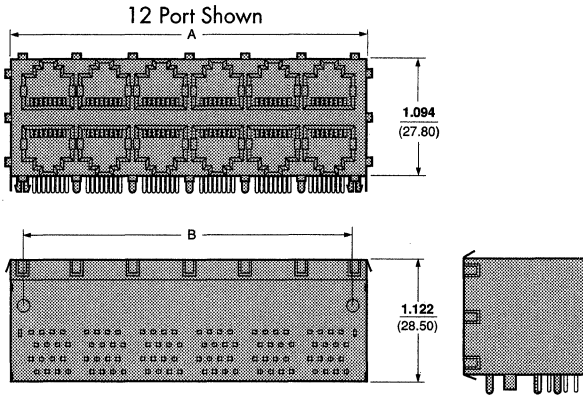
MJDS SERIES- Stacked Modular Jacks
2 to 16 Ports, shielded



FEATURES

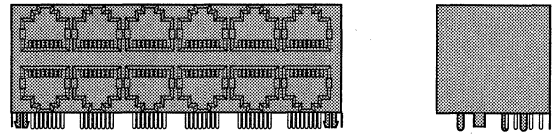
- Meets FCC and UL specifications
- Non-shielded, shielded
- Diamond or snap mounting

DIMENSIONS

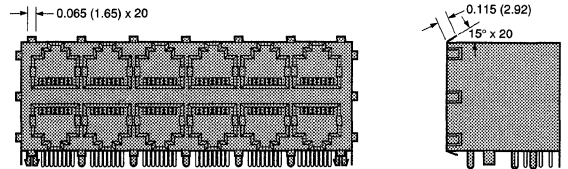


DIMENSIONS

Grounding Tab Combinations (12 ports shown)



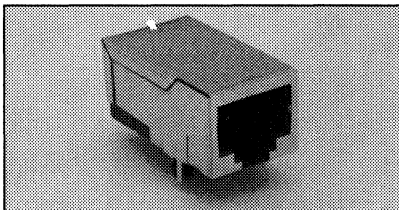
Shown with Panel Ground Option (PG4 Option)



No. of Ports and Style	A	B	No. of Ports and Style	A	B
2	0.68 17.27	0.45 11.43	8	2.33 59.12	2.10 53.34
4	1.24 31.24	1.00 25.40	12	3.43 87.12	3.20 81.28
6	1.79 45.47	1.55 39.37	16	4.53 115.06	4.30 109.22

MJFS SERIES

Filtered Transformer, Shielded,
Standard PCB Footprint



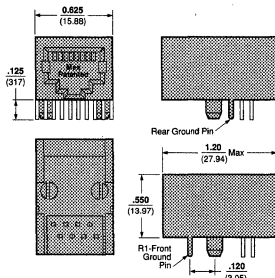
FEATURES

- UL and CSA approved
- Meets FCC requirements
- Meets IEEE 802.3 requirements 10/100Base T, and 100BaseT
- Space Saving
- Optimized performance
- Standard PCB layout
- Drop in replacement for existing connector

SPECIFICATIONS

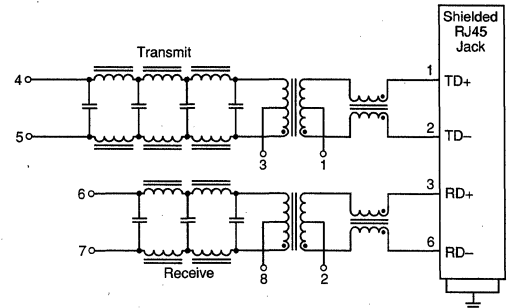
Electrical Specifications
Isolation Voltage: 1000 Vrms
Turns Ratio: 1:2CT±2% (Pri:Sec)
OCL: TX:22mH minimum @ 10kHz, 0.1V
CD: 180pF maximum (Pri)
Cw/w: 100 pF maximum (Pri/Sec) @ 100kHz 0.1V
LL: (sec): 11µH maximum @ 100kHz 0.1V (Pri Shorted)
DCR: 2.4±25% ohms (Pri)
DCR: 4.4±25% ohms (Sec)
Idc: 1mA maximum
Choke: OCL: 40µH typical

DIMENSIONS



10 BASE-T FILTERED TRANSFORMER SPECIFICATIONS

Electrical Specifications
Isolation Voltage: 1500 Vrms
Insertion Loss: (1-10MHz): -1dB maximum
Attenuation at 30 MHz:
 Transmit: 30dB minimum
 Receive: 18dB minimum
Return Loss: (1-10MHz): 15dB minimum
Cutoff Frequency: 17MHz typical
Cross Talk: (1-10MHz): -30dB minimum
I/O Impedance: 100 ohms



Notes: * Consult factory for panel cutout, and further specifications. Custom designs welcomed.
 ** Request from factory a detailed filter diagram for each specific application. Also provide factory with the specific semiconductor needing the filtering and Maxconn can provide a specification which will match the recommendation given by the semiconductor manufacturer.

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MODULAR JACKS



MJFS SERIES

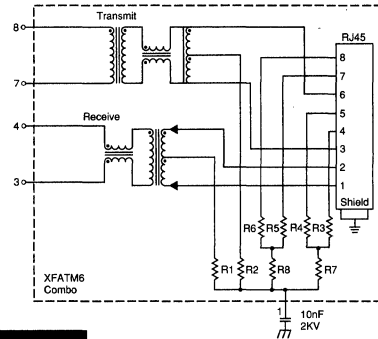
Filtered Transformer, Shielded,
Standard PCB Footprint

10/100 BASE TX FILTERED TRANSFORMER SPECIFICATIONS

Electrical Specifications

- Isolation Voltage:** 2000 Vrms
- Turn Ratio:** 1:1CT
- Pri/Sec DCR:** 0.90 ohms maximum
- Rise Time/Fall Time:** 4ns maximum
- Cw/w (Pri/Sec):** 15pF maximum
- Insertion Loss:** (0.1-125MHz) -1.1dB maximum
- Leakage Inductance (pri):** 0.4µH maximum
- Return Loss:** (0.1-60MHz) -18dB minimum
(60-125MHz) -12dB minimum
- Cross Talk:** (0.1-125MHz) -38dB minimum

SCHEMATIC

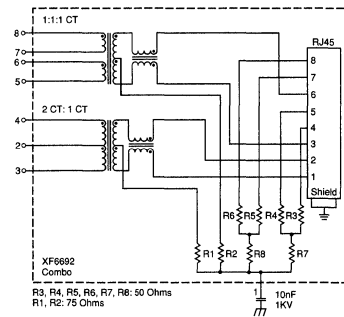


100 BASE COMBO FILTERED TRANSFORMER SPECIFICATIONS

Electrical Specifications

- Isolation Voltage:** 1500 Vrms (Input to Output)
- Turns Ratio:** TX: 2:1 (±2%), RX: 1:1:1 (±2%)
- OCL:** TX: 140µH minimum, RX: 350µH minimum @ 100kHz, 100mV
- Rise Time:** (10-90%): 3.0ns typical
- Insertion Loss:** (1M - 125 MHz): -1.0dB maximum
- Return Loss:**
 - 100kHz-60 MHz -15dB minimum (Tx)/ -17 dB minimum Rx
 - 60 MHz - 100MHz -11 dB minimum (Tx)/ -15dB minimum (Rx)
- Common Mode to Differential Mode Attenuation:**
 - 100 kHz - 60 MHz -45dB minimum (Tx)/ -40 dB minimum Rx
 - 60 MHz - 100 MHz -40dB minimum (Tx)/ -35dB minimum Rx

SCHEMATIC

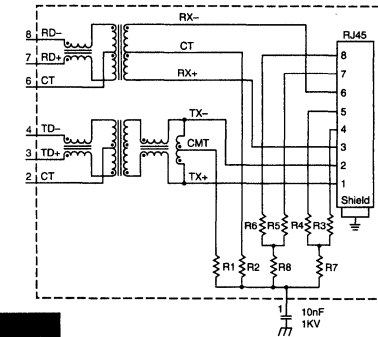


ATM 100 BASE FILTERED TRANSFORMER SPECIFICATIONS

Electrical Specifications

- Isolation Voltage:** 1500 Vrms
- Rise Time:** 2ns typical @ 10 - 90%
- Insertion Loss:** (0.1 - 125 MHz): -1.1dB maximum
- Return Loss:**
 - 0.1 - 60 MHz -15dB (Tx)/ -17 dB Rx typical
 - 60 - 125MHz -11 dB (Tx)/ -15dB (Rx) typical
- Common Mode to Differential Mode Attenuation:**
 - 100 MHz - 60 MHz -45dB minimum (Tx)/ -40 dB minimum Rx
 - 60 kHz - 100 MHz -40dB minimum (Tx)/ -35dB minimum Rx

SCHEMATIC

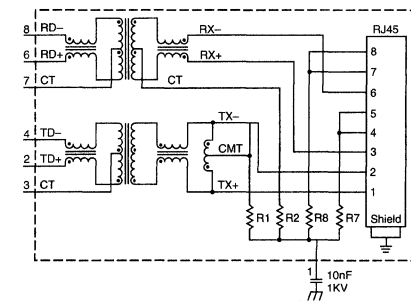


ATM 100 BASE TX FILTERED TRANSFORMER SPECIFICATIONS

Electrical Specifications

- Isolation Voltage:** 1500 Vrms
- Rise Time/Fall Time:** 2.5ns typical @ 10-90%
- Cw/w (Pri/Sec):** 15pF maximum
- Insertion Loss:** (0.1-125MHz) -1.1dB maximum
- Return Loss:** (0.1-60MHz) -15dB Tx/-17dB Rx typical
(60-125MHz) -11dB Tx/-15dB Rx typical
- Cross Talk:** (0.1-60MHz) -40dB minimum
(60-125MHz) -38dB minimum
- Common Mode to Differential Mode Rejection:**
 - (0.1-60MHz) -45dB Tx/-40dB Rx typical
 - (60-125MHz) -40dB Tx/-35dB Rx typical

SCHEMATIC



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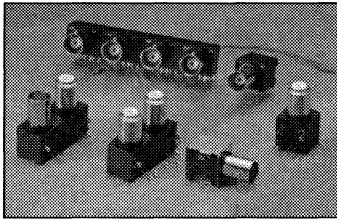
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BNC CONNECTORS

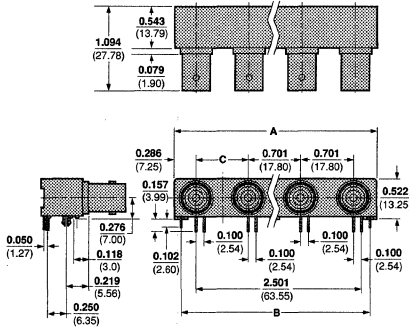


MBNC SERIES

Right-Angle PCB Mount
Receptacle



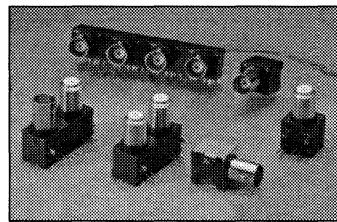
DIMENSIONS



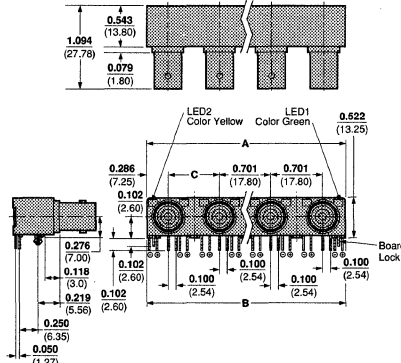
Ports	A	B	C
1	0.571 14.50	0.400 10.16	—
2	1.272 32.31	1.10 27.97	0.701 17.81
4	2.67 68.89	2.50 63.53	0.701 17.81

MBNC SERIES

Right-Angle PCB Mount
Receptacle with LED



DIMENSIONS



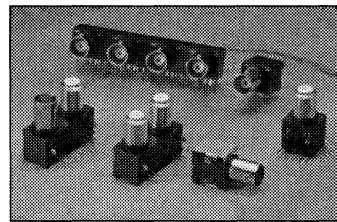
LED Characteristics

Luminous Intensity: (MCD)
Min: 10 mA AC 0.5Vs
Max: 10 mA @ 1.25Vs
Wavelength (nm): LED1 Green: 565nm
LED2 Yellow: 590nm
Viewing Angle: 20-1/2' @ 110°

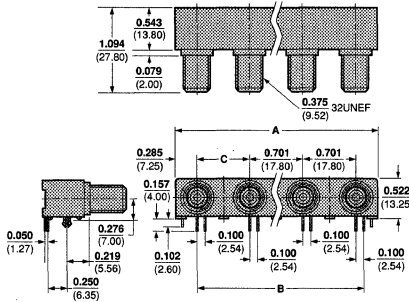
Ports	A	B	C
1	0.571 14.50	0.400 10.16	—
2	1.272 32.31	1.10 27.97	0.701 17.81
4	2.67 68.89	2.50 63.53	0.701 17.81

MNF SERIES

F Connector, Right-Angle
PCB Mount Receptacle



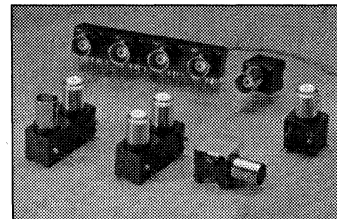
DIMENSIONS



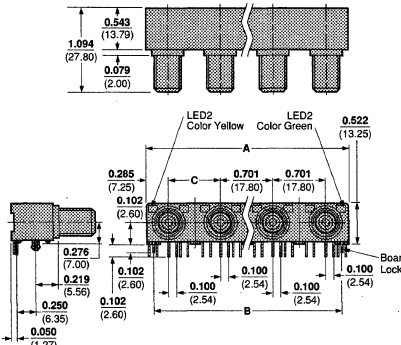
Ports	A	B	C
1	0.571 14.50	0.400 10.16	—
2	1.272 32.31	1.10 27.97	0.701 17.81
4	2.67 68.89	2.50 63.53	0.701 17.81

MNF SERIES

F Connector, Right-Angle
PCB Mount Receptacle
with LED



DIMENSIONS



LED Characteristics

Luminous Intensity: (MCD)
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1	0.571 14.50	0.400 10.16	—
2	1.272 32.31	1.10 27.97	0.701 17.81
4	2.67 68.89	2.50 63.53	0.701 17.81

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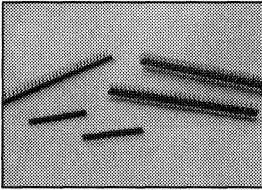
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HEADERS-0.079 (2MM) HEADER

2M210, 2M220 SERIES

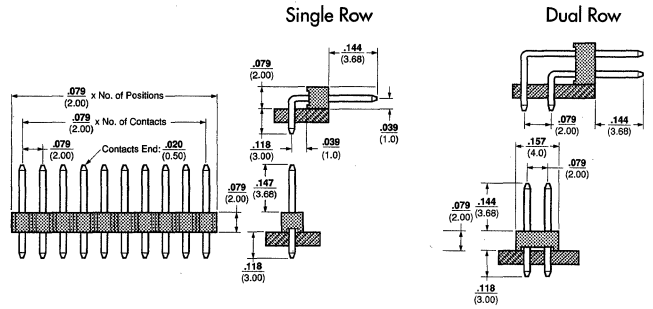
0.079 (2mm) Centers,
Single and Dual Row



FEATURES

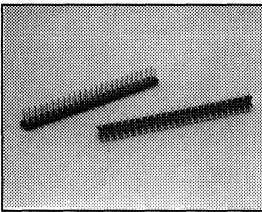
- 0.020 (0.50mm) square contact post
- 0.79 (2mm) centers between post spacing
- Stack headers end to end or side to side without loss of positions
- Mates with .079 x 0.079 grid female connector
- Single row from 1 to 40 positions
- Dual row from 2 to 40 positions
- Any pin can be void of gold plating option
- Tin or three types of gold plating options
- Any pin length available to 3.5 inches maximum

DIMENSIONS



2MS220 SERIES

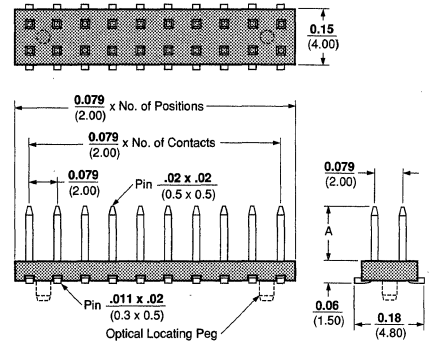
0.079 (2mm) Centers, Dual Row Surface Mount



FEATURES

- 0.020 (0.50mm) square contact post
- 0.79 (2mm) centers between post spacing
- Stack headers end to end or side to side without loss of positions
- Mates with .079 x 0.079 grid female connector
- Dual row from 4 to 50 positions per row
- Any pin can be void of polarization
- Tin or three types of gold plating options
- Any pin length to 3.5 inches maximum

DIMENSIONS



2M210BS, 2M220BS SERIES

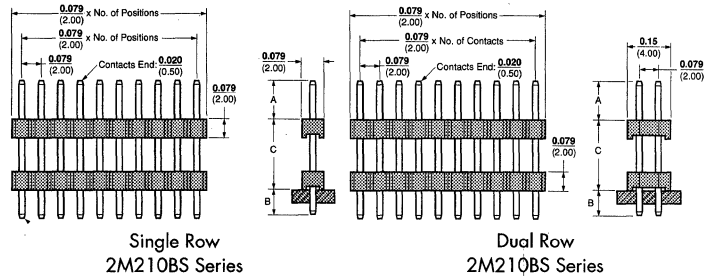
0.079 (2mm) Centers
Single and Dual Row



FEATURES

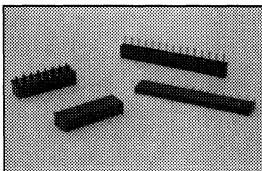
- 0.020 (0.50mm) square contact post
- 0.79 (2mm) centers between post spacing
- Single row from 2 to 40 positions
- Dual row from 4 to 80 positions
- Tin or three types of gold plating options
- Side and end stackable (on unbroken edges)
- Notches for easy breakage
- Maintains dimension between two PC boards
- Standoffs facilitate post soldering clean

DIMENSIONS



2M410, 2M420 SERIES

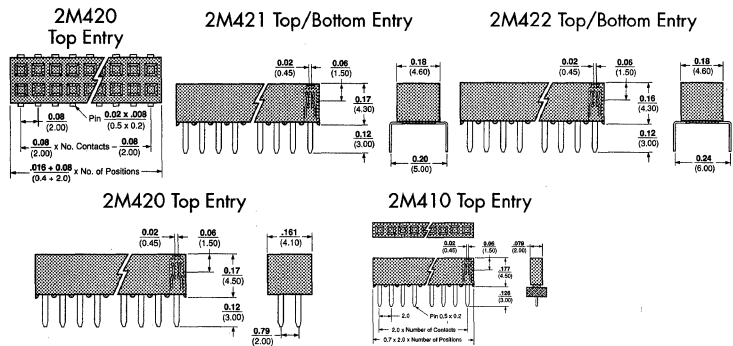
0.079 (2mm) Centers,
Single and Dual Row



FEATURES

- Low profile: 4.3mm height
- Designed for parallel and vertical board stacking
- Mating with 2.0mm grid, dual row male header
- 4-80 positions

DIMENSIONS



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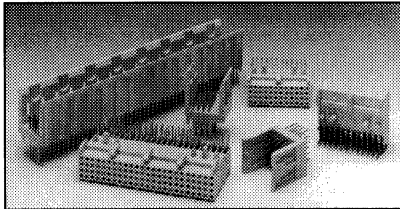
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BACK PLANE CONNECTORS



MMFCS SERIES

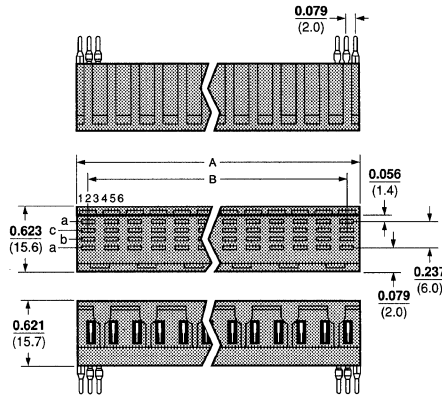
Vertical, Male, Signal, PC Tail .079 (2.00mm)



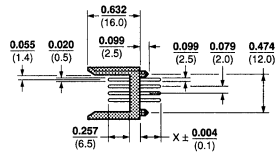
FEATURES

- Meets FCC and UL specifications
- High density .079 (2.00mm)
- Blind mated compatible
- Future Bus + architecture

DIMENSIONS



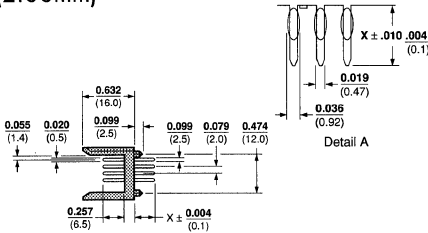
Position	A	B	X
24	0.472 11.95	0.395 10.00	1:4.3
48	0.947 23.95	0.870 22.00	
96	1.895 47.95	1.818 46.00	2:6.3
192	3.792 95.95	2.715 94.00	



MMFCS SERIES

Vertical, Male, Signal, Press Fit .079 (2.00mm)

DIMENSIONS

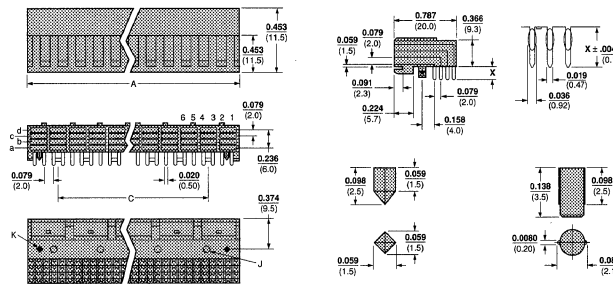


Position	A	B	X
24	0.472 11.95	0.395 10.00	1:4.3
48	0.947 23.95	0.870 22.00	
96	1.895 47.95	1.818 46.00	2:6.3
192	3.792 95.95	2.715 94.00	

MFFCP SERIES

Right Angle, Female, Power, Press Fit .079 (2.00mm)

DIMENSIONS

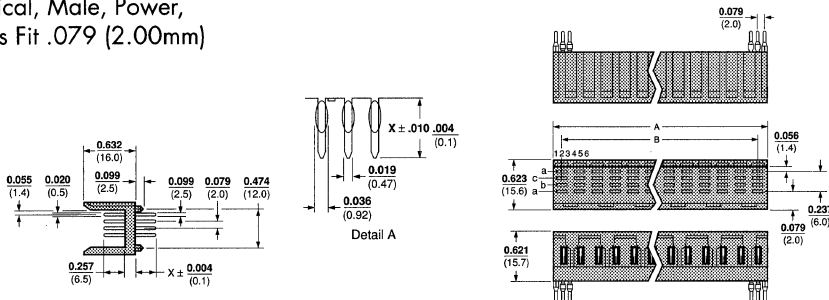


Position	A	B	X
24	0.472 11.95	0.395 10.00	1:4.3
48	0.947 23.95	0.870 22.00	
32	1.895 47.95	1.818 46.00	2:6.3
64	3.792 95.95	2.715 94.00	

MFFCP SERIES

Vertical, Male, Power, Press Fit .079 (2.00mm)

DIMENSIONS



Position	A	B	X
08	0.472 11.95	0.395 10.00	1:4.3
16	0.947 23.95	0.870 22.00	
32	1.895 47.95	1.818 46.00	2:6.3
64	3.792 95.95	2.715 94.00	

CALL TODAY FOR PRICE AND DELIVERY



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1-888-50-MAXCN

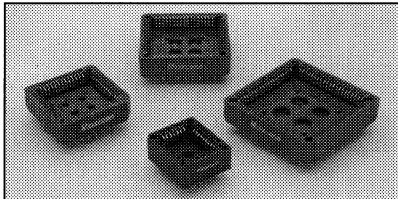
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PLCC AND LCC SOCKETS



MH-PLCC SERIES

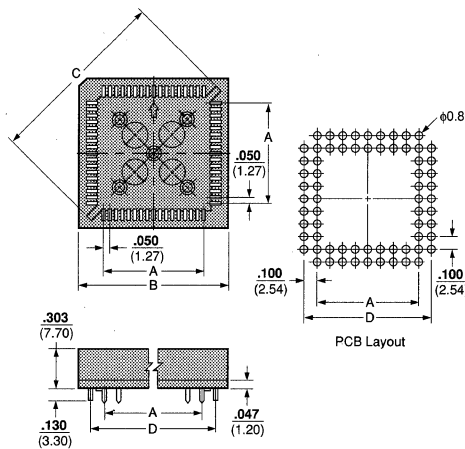
PLCC Sockets .303 High
20 to 100 pins



FEATURES

- .303 high
- Low profile construction
- Closed bottom for excellent protection from solder wicking into contact area
- Molded in stand-offs allow easy removal of flux residue in the assembly operation

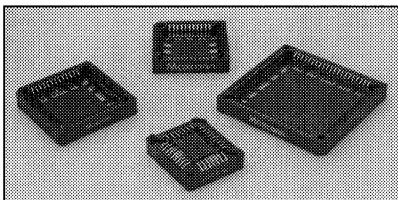
DIMENSIONS



Number of Contact Positions	A	B	C	D
PBT Material				
20	0.200	0.611	0.722	0.400
	5.08	15.52	18.34	10.16
28	0.300	0.719	0.817	0.500
	7.62	18.28	20.76	12.70
32	0.300	0.737	0.907	0.600
	7.62	18.74	23.05	15.24
44	0.500	0.925	1.121	0.700
	12.70	23.50	28.48	17.78
52	0.600	1.018	1.292	0.800
	15.24	25.88	32.82	20.32
68	0.800	1.228	1.510	1.000
	20.32	31.20	38.36	25.40
84	1.00	1.423	1.795	1.200
	25.40	36.15	45.60	30.48
100	1.200	1.663	2.136	1.400
	30.48	42.23	54.25	35.56
PPS Material				
44	0.500	0.921	1.090	0.700
	12.70	23.40	27.70	17.78
68	0.800	1.228	1.510	1.000
	20.32	31.20	38.36	25.40
84	1.000	1.423	1.795	1.200
	25.40	36.15	45.60	30.48

MSM-PLCC SERIES

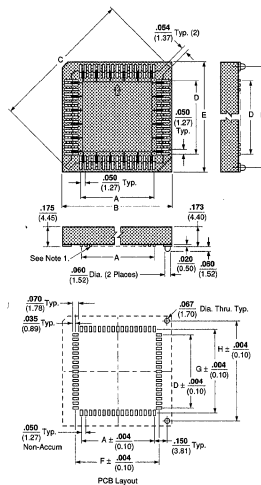
Surface Mount PLCC Sockets .175 High
High 20 to 84 Positions



FEATURES

- J-leads
- Open bottom for easy inspection of the solder process
- Molded in stand-offs allow easy removal of flux residue in the assembly operation
- Side and end stackable
- Tape and reel packaging available

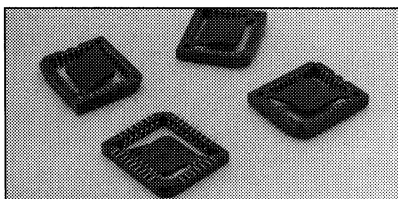
DIMENSIONS



Number of Contact Positions	A	B	C	D	E	F	G	H
20	0.200	0.602	0.702	0.200	0.702	0.344	0.344	0.488
	5.08	15.30	17.84	5.08	17.78	8.48	8.48	12.40
28	0.300	0.702	0.842	0.300	0.702	0.434	0.434	0.590
	7.62	17.84	21.40	7.62	17.84	11.02	11.02	15.00
32	0.300	0.702	0.920	0.400	0.804	0.434	0.534	0.690
	7.62	17.84	23.36	10.16	20.42	11.02	13.56	17.52
44	0.500	0.909	1.139	0.500	0.909	0.634	0.634	0.807
	12.70	23.10	28.94	12.70	23.10	16.10	16.10	20.50
52	0.600	1.003	1.270	0.600	1.003	0.734	0.734	0.890
	15.24	25.48	32.32	15.24	25.48	18.64	18.64	22.60
68	0.800	1.220	1.567	0.800	1.220	0.934	0.934	1.109
	20.32	30.98	39.48	20.32	30.98	23.72	23.72	28.18
84	1.000	1.420	1.264	1.000	1.420	1.134	1.134	1.300
	25.40	36.06	46.72	25.40	36.06	28.80	28.80	33.00

MSM-LCC SERIES

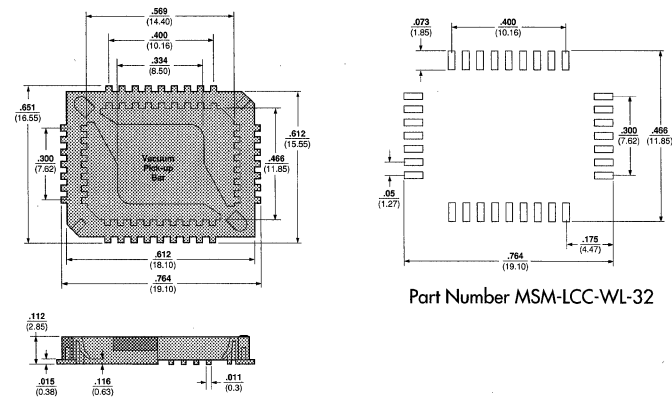
Ultra Low Profile, .112 High
32 Position



FEATURES

- Gullwing leads
- Break-away vacuum pick-up bar
- Retention clip for shock and vibration
- Available in 32 positions
- Tape and reel packaging available

DIMENSIONS



Part Number MSM-LCC-WL-32

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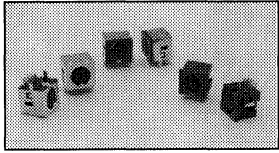
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CIRCULAR DIN CONNECTORS



MMDF SERIES

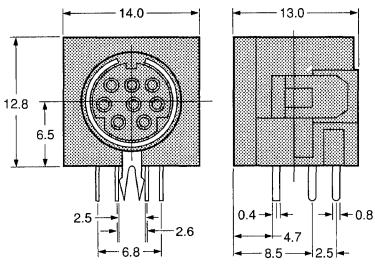
Circular Non-Shielded, Shielded, and Fully Shielded



FEATURES

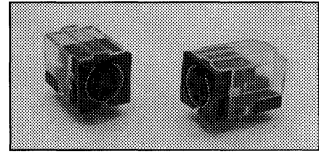
- Miniature size
- One shell size, 3 to 9 positions
- Non-shielded, shielded, and fully shielded
- Polarization key
- Switch option (consult factory)
- Choice of colors: black, platinum* pearl white*
- Grounding tabs or brackets
- Ferrite option for added EMI/RFI noise suppression

DIMENSIONS

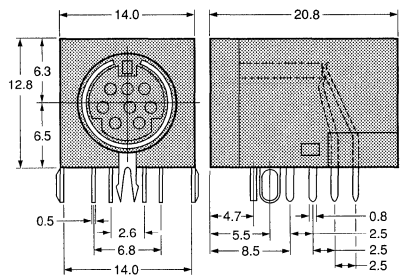


MMDS SERIES

Circular, Shielded, and Fully Shielded with Switch

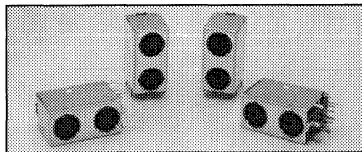


DIMENSIONS



MMDFS SERIES

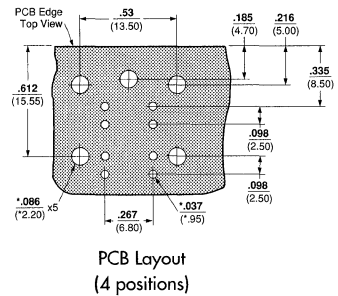
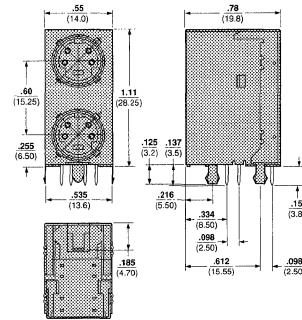
Stacked, 4, 6 and 8 Positions, Top and Bottom



FEATURES

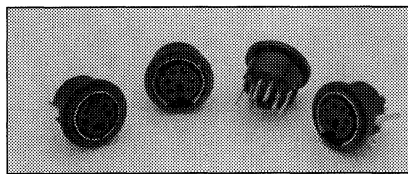
- Vertical dual-port construction allows for space saving on the panel and printed circuit board
- 4, 6, 8-positions available

DIMENSIONS

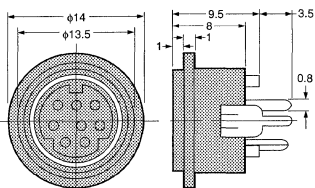


MMDV SERIES

Circular Connectors Vertical Type, 3 to 8 Contacts

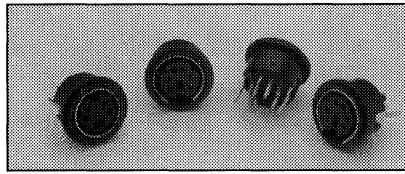


DIMENSIONS

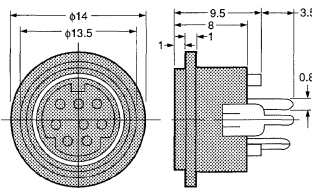


MMDV SERIES

Circular Connectors Vertical Type, 9 Contacts

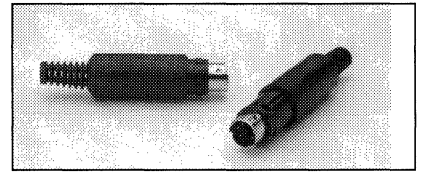


DIMENSIONS

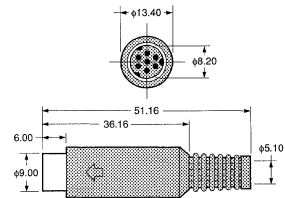


MMDM SERIES

Shielded Male Plug



DIMENSIONS



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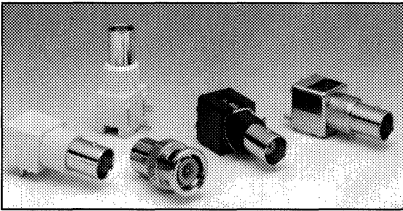
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BNC CONNECTORS



MBNC SERIES

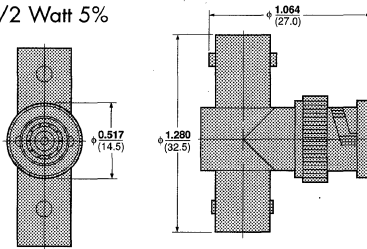
Right Angle, Vertical, Terminators, and Filtered Board Level Connectors



DIMENSIONS

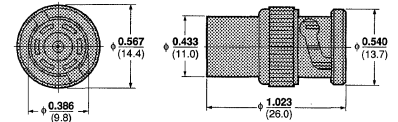
MBNC-T-2

1/2 Watt 5%



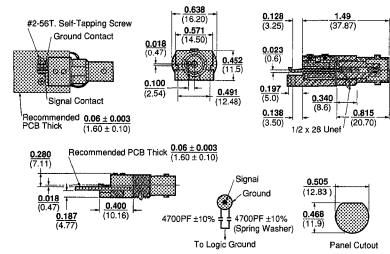
MBNC-2TT1

50 ohm "T", F-M-F Adapter



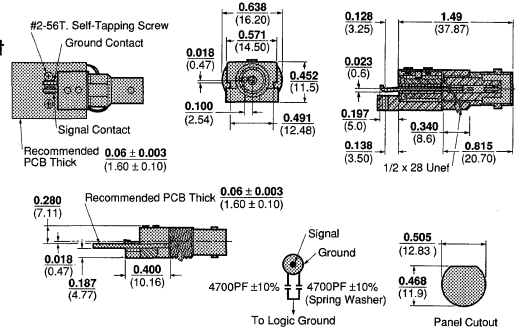
MBNCF-RBS-1

50 ohm, Filtered 9400pf .515 Height, Surface Mount



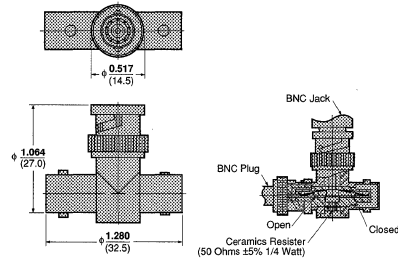
MBNC-RBS-1

50 ohm Right Angle .515 Height, Surface Mount



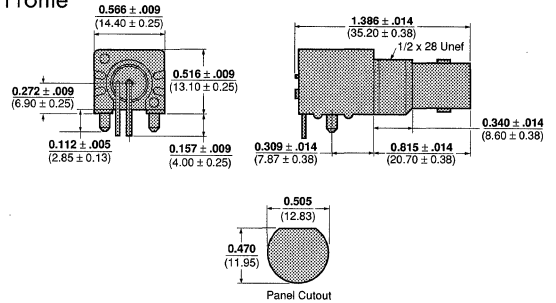
MBNC-T1 SERIES

50, 75, 93 ohm Adapter 'T', F-M-F



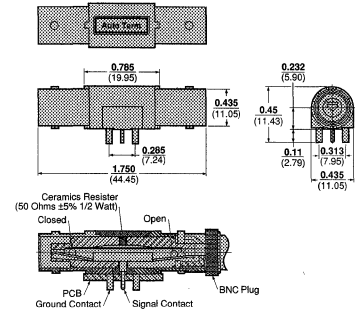
MBNC-RW-1

50 ohm Right Angle, Low Profile .516 Height, Thru Hole



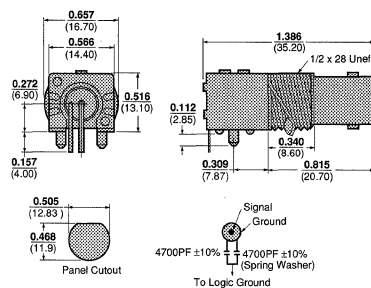
MBNC-TFF-1

50 ohm, PCB 'T', F-F Adapter Terminator



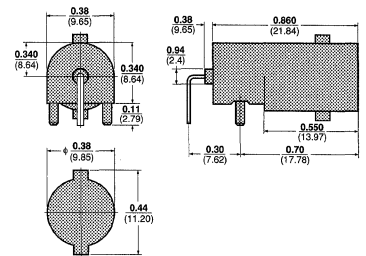
MBNCF-RB-2

50 ohm, Right Angle, Filtered 9400 pf, .516 Height, Thru Hole



MBNC-R-1

50 ohm, Right Angle, Low Profile .340 Height, Non-Insulated, Thru-Hole



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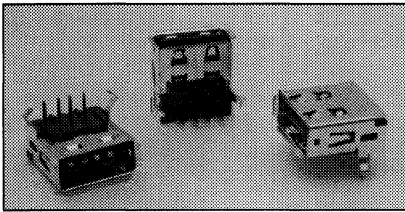
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MUSB, SMART CARD



MUSB SERIES

Right Angle Termination Single

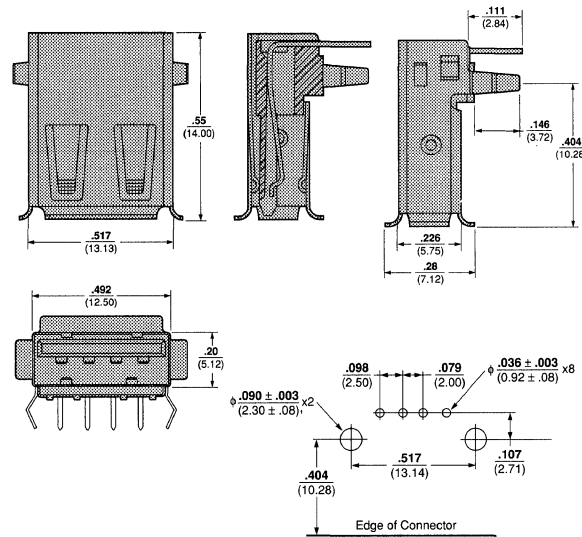


FEATURES

- Plug and play Technology
- Hot pluggable
- Single 4, 8-position connectors
- Consolidates serial ports and parallel ports, keyboard ports, mouse ports, and game ports
- Compatible with asynchronous and isochronous data transfer methods
- Compatible with Windows '95 operating system
- Standard feature in new PC chipsets
- Eliminates the need for terminators

DIMENSIONS

MUSB-4R-P

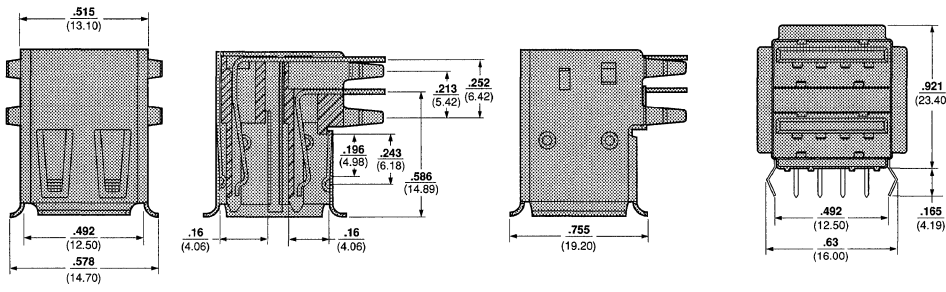


Contact Number	Signal Name	Device
1	VCC	Cable Power
2	- Data	System
3	+ Data	System
4	Ground	Cable Ground

MUSB-8R-P SERIES

Right Angle Termination, Stacked

DIMENSIONS

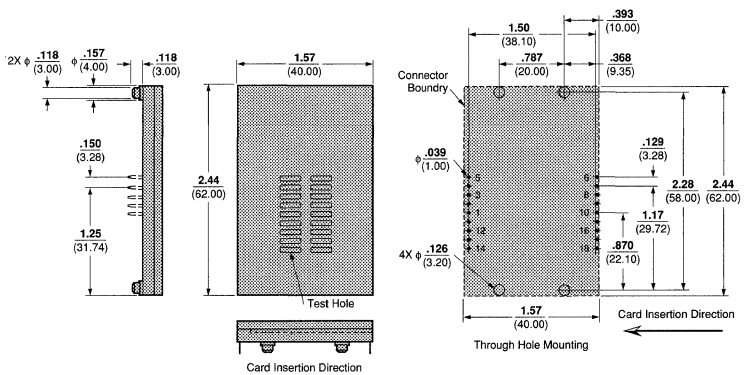
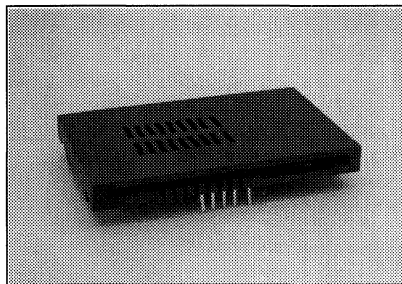


Contact Number	Signal Name	Device
1	VCC	Cable Power
2	- Data	System
3	+ Data	System
4	Ground	Cable Ground

MSC SERIES

Excepts ISO 7818 IC Card

DIMENSIONS



CALL TODAY FOR PRICE AND DELIVERY



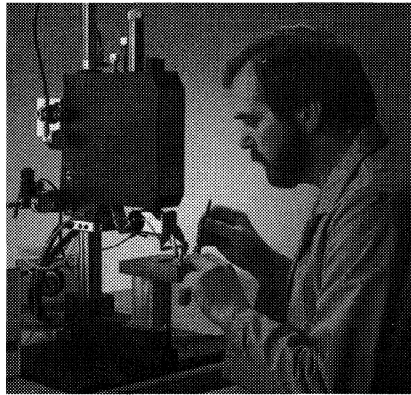
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A Profile

Meritec, a Division of Associated Enterprises (AE) has evolved from its 1967 beginnings to become a preferred manufacturer of proprietary, high-performance Electronic Interconnect Products - all proudly made in the USA.

Meritec products provide cost-effective solutions to the electronic and mechanical challenges posed by ever increasing higher signal frequencies and ever decreasing package sizes. We offer a full line of standard interconnect products for applications requiring the critical control of electrical parameters. We are a group dedicated to excellence, flexibility and responsiveness; providing our customers with on-time delivery of standard products.

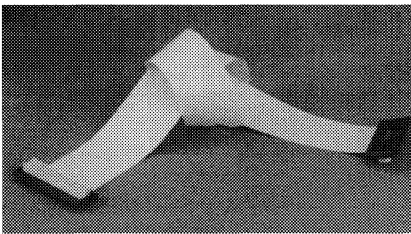


In those instances where off-the-shelf solutions are not desirable or would require compromises in performance or packaging

specifications, Meritec is able to provide quick responsiveness and creativity in solving unusual interconnect problems. We have the talents, tools and technologies under our direct control to understand your problem, create a cost-effective solution, and manufacture the resulting products. All products are specified and built to the most stringent SPC and ISO 9000 Standards. Our Customer-Supplier partnerships built over the years enable quick turn-around supported by EDI purchasing, bar-coding systems, dock-to-stock and JIT Stock Certification.

Meritec attributes our consistent growth to providing our customers with unmatched service and satisfaction. Your business is important to us and we appreciate every opportunity to serve you.

Flat Flexible Cable (FFC) Assemblies for LCD's

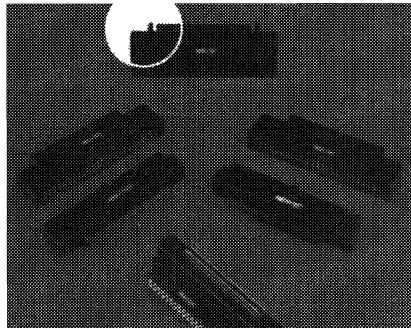


Meritec's new Flat Flex Cable (FFC) is ideally suited for board-to-LCD interconnects. It saves space, is cost effective and easy to install. The low profile, overmolded strain relief is designed for critical mechanical applications. The folding and flexing features of the FFC laminated cable easily solve difficult routing requirements.

FEATURES / BENEFITS

- .5 mm laminated cable
- 31 or 41 conductors
- Mates with 1mm dual row connectors
- Compatible with Hirose connectors
- Mates with .5 mm ZIF connectors
- Shielded or unshielded
- Selective grounding
- Molded strain relief
- Reliable termination
- FFC can be folded for easy routing
- Length options
- Low profile
- Suitable in notebook hinge areas
- Extraction tools available

SCSI Interface Adapters

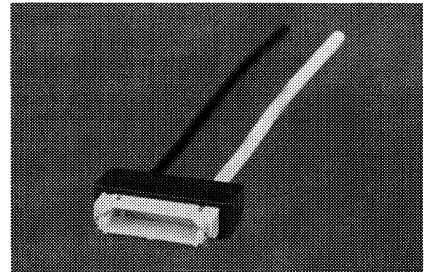


Meritec's adapters allow reliable interfacing between a SCSI-1 and SCSI-3. Meritec offers a variety of adapters to connect SCSI-1 male or female to SCSI-3 male or female. These adapters are available with customer specific pinout, filtering and termination. The 68 position is offered with and without latch posts.

FEATURES / BENEFITS

- Allows reliable interfacing of 8 bit to 16 bit and 16 bit to 8 bit devices
- Eliminates the need for multiple cable assembly configurations
- Short overall length between mating faces allows dense packaging
- High withdrawal force contacts
- Dual wipe contacts
- Low SCSI/fast-20 compliant
- Meets ANSI Specifications X3-131-1986
- Standard product pinouts meet SCSI specifications
- With or without EMI/RFI electrical shielding
- Available in customer specific pinout, filtering, termination, with or without latch posts

Flat Panel Display (FPD) 2 Circuit Power Cable Assembly

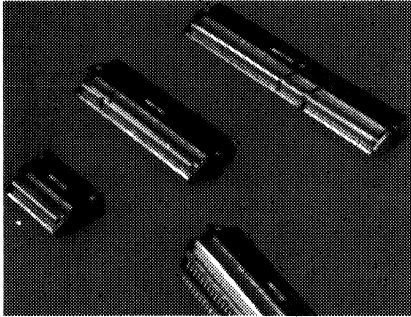


Meritec's new 8 mm (.315") pitch power cable assembly is ideally suited for board-to-LCD interconnect. It allows convenient extension where existing LCD cables limit length. The overmolded strain relief is designed for critical mechanical applications where reliable termination is a must. The assembly allows for customer specific termination on the opposite end and is available in various lengths and circuit sizes. Consult factory for availability of optional circuit sizes

FEATURES / BENEFITS

- Mates with JST BH receptacle, P/N SM02 (8.0) B-BHS-1-TB
- Compatible with most liquid crystal displays (LCD)
- Internal power cable assembly
- Extends LCD power cord
- Termination on opposite end (customer specific)
- Custom cable lengths available
- Overmolded strain relief
- Reliable solder termination
- Low profile design fits in tight locations
- Suitable in notebook hinge areas, point of sale machines, projector systems

3.3V and 5V Right Angle PCI Connectors

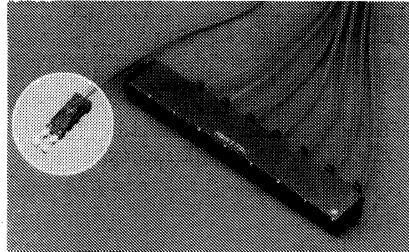


Now you can mount your PCI expansion board parallel to the mother board in both 3.3V and 5V configurations, with Meritec's Right Angle Connectors ranging in heights from .230" to .657". These Connectors reduce box height while meeting PCI packaging needs; and meet PCI local bus standard, revision 2.0. Offerings include 2 x 25 Right Angle Card Edge Connector; 25° 32 Bit Connector, and 32 and 64 Bit Right Angle Connectors.

FEATURES/BENEFITS

- Plastic cover protects unused PCI connectors from dust and debris, and supports connector for hybrid soldering applications requiring convection/IR heating
- Through hole solder mount application compatible with wave soldering process
- Solves space problems where low clearance above motherboard prohibits use of vertical components
- Insert molded in liquid crystal polymer for stability in hybrid board applications involving surface mount components
- Offers motherboard design flexibility
- Designed to mate with .062" thick PCB

Meritec's New Single Signal Carrier Systems (SSC™) Design Strengthens Strain Relief for Single Signal Assemblies (SSI™)

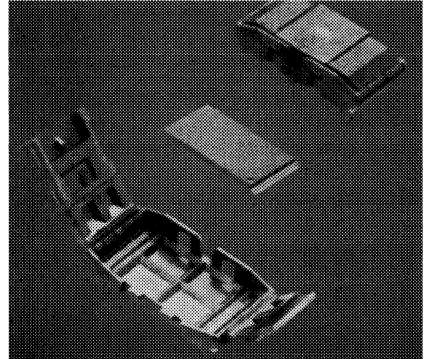


Meritec's new design for their 1 x 2 and 1 x 3 Single Signal Interconnect (SSI™) strain relief assemblies and Ground Plane Interconnect (GPI™) Terminations strengthens and protects the latch, increasing the number of latch matings in the field. The spring latch connects the strain relief to the Single Signal Carrier System (SSC™) housing. The SSC™ system is available in side and end stackable carriers, latch and eject and 96 position triple row DIN carriers, and right angle cable exits. UL/CSA approved, 100% electrically tested.

FEATURES/BENEFITS

- Built for reliability in applications where performance is critical
- Engineered to match application requirements for controlled impedance, high speed and lower crosstalk
- Overmolded to provide reliable strain relief
- Square socket terminations offer:
 - Resistance welded socket contacts/ conductors for ultimate electrical continuity
 - Mating with .025" square or round pins
 - Side and end stackability on .100" grid
 - Choice of pinout configurations
 - Axial or right angle cable exits

Surface Mount (SMT) Sockets Target OEM Applications

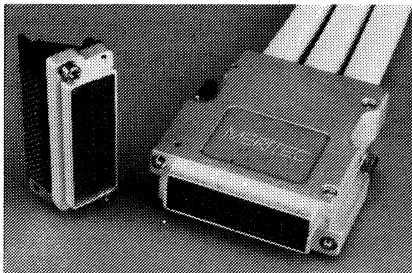


Meritec's newly designed SMT Sockets are now available for use in OEM applications. From developing to programming, from testing to final production, Meritec's unique positive locking lid secures your device to high normal force surface mount contacts. The common land-pad footprint of the socket and device eliminates the need to modify your PCB layout after development stages. The small outline package (SOP) socket allows the use of high density chips without wasting valuable real estate. These zero insertion force sockets can be effortlessly loaded and unloaded minimizing the potential risk of damaged leads. Meritec's surface mount sockets are available in 44 lead PSOP, 56 lead SSOP and 56, 48 and 40 lead TSOP. Upon request, a DXF file diskette with design aids and application notes is available.

MERITEC...
Where Quality Assures Performance

CP-50 I/O™ Coaxial Interconnect System

Meritec's Close Pitch .050" Centerline Systems for Coax and Twinax Cables (CP-50 I/O™) are now available and feature high density and controlled impedance for up to 160 coaxial lines. Cable connectors and receptacles are fully shielded and feature both polarized keying and jack screws. Standard shielded and jacketed cables are terminated with a computer controlled welding process to provide high reliability. Available in 50 Ω Coax, 100 Ω Twinax, and controlled impedance twisted pairs.



70 Position PCMCIA I/O Memory Card Interconnect System

Meritec's 70 Position PCMCIA I/O Cable Interconnect System mates with a standard PCMCIA Type II memory card. The cable assembly is designed to handle up to 68 signals and 2 shield grounds.

The opposite end of the PCMCIA cable assembly is available with either a shielded or unshielded 68 position male or female SCSI-3 connector. The PCMCIA cable is a controlled impedance, low cross talk TPE flat ribbon cable.





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Waved Metal Gaskets For D-Sub Connectors

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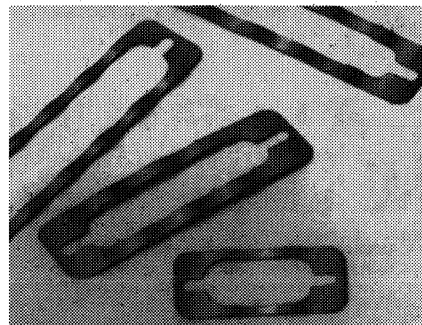
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MCI's Line of Waved Metal Gaskets for Maximum EMI Filter Performance

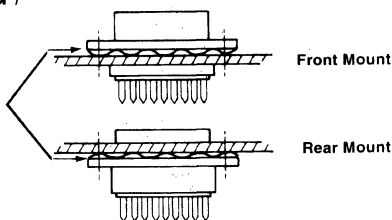
Proper mounting of an EMI filter is critical to achieving optimum filtering performance. For applications requiring very high attenuation, it is necessary to fill the gaps at the mounting surface-to-connector interface. The length of any gap must be short, relative to the wavelength of the signal to be attenuated. MCI supplies a line of "waved" gaskets. This design ensures the maximum "gap length" will not exceed the wave pitch, .200" (5.08 mm), even on surfaces with poor flatness. This ensures maximum filter performance to 1 GHz and beyond.

SPECIFICATIONS

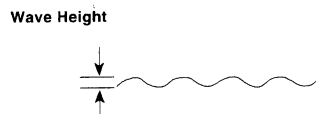
- **Material** Beryllium Copper, CA 172 (per QQ-C-533)
- **Finish** Electro tin plate, 100 micro inches (per MIL-T-10727)
- **Material Thickness**0005" (.13mm) compressed
- **Wave Height**030" +.020/-0.015 (.76 +.51/-.38mm)
- **Length increase when flattened**0008" (.20mm) per inch



WAVED METAL GROUNDING / SHIELDING GASKET (shown in free state)



WAVE HEIGHT



HOW TO ORDER

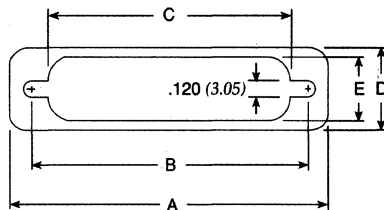
572019-00XXX-70

Select part number by filling in "xxx" (ie: 572019-00xxx-70) referring to the tables at right.

MOUNTING (Front mounted pin or socket connector, rear mounted pin connector)

Shell Size	A ±.020" (0.51)	B ±.020" (0.51)	C ±.020" (0.51)	D ±.020" (0.51)	E ±.005" (0.13)	"XXX"
9	1.213 (30.81)	0.984 (24.99)	0.777 (19.74)	0.600 (15.24)	0.440 (11.18)	100
15	1.541 (39.14)	1.312 (33.32)	1.105 (28.07)	0.600 (15.24)	0.440 (11.18)	101
25	2.088 (53.04)	1.852 (47.04)	1.645 (41.78)	0.600 (15.24)	0.400 (11.18)	102
37	2.729 (69.32)	2.500 (63.50)	2.293 (58.24)	0.600 (15.24)	0.440 (11.18)	103
50	2.635 (66.93)	2.406 (61.11)	2.190 (55.63)	.710 (18.03)	.550 (13.97)	104

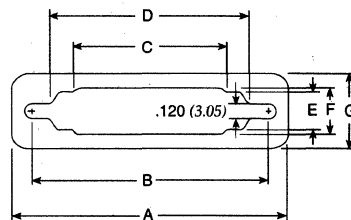
Dimensions in inches (mm).



MOUNTING (Rear mounted socket connectors only)

Shell Size	A ±.020" (0.51)	B ±.020" (0.51)	C ±.020" (0.51)	D ±.020" (0.51)	E ±.005" (0.13)	F ±.005" (0.13)	G ±.020" (0.51)	"XXX"
9	1.213 (30.81)	0.984 (24.99)	0.450 (11.43)	0.660 (16.76)	0.324 (8.23)	0.360 (9.14)	0.600 (15.24)	105
15	1.541 (39.14)	1.312 (33.32)	0.670 (17.02)	0.988 (25.10)	0.324 (8.23)	0.360 (9.14)	0.600 (15.24)	106
25	2.088 (53.04)	1.852 (47.04)	1.110 (28.19)	1.528 (38.81)	0.324 (8.23)	0.360 (9.14)	0.600 (15.24)	107
37	2.729 (69.32)	2.500 (63.50)	1.550 (39.37)	2.176 (55.27)	0.324 (8.23)	0.360 (9.14)	0.600 (15.24)	108
50	2.635 (66.93)	2.406 (61.11)	1.550 (39.37)	2.082 (52.88)	0.436 (11.07)	0.470 (11.94)	0.710 (18.03)	109

Dimensions in inches (mm).



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For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass filters).





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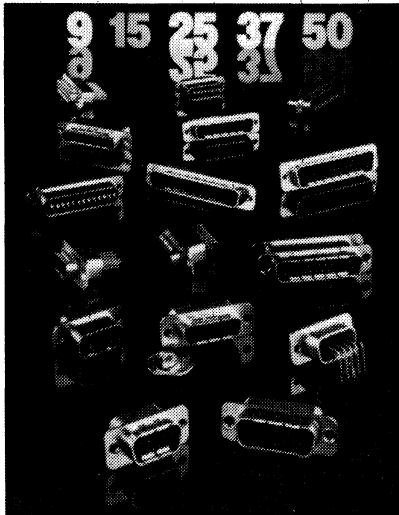
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D-Sub Connectors

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EMI Filtered D Subminiature Connector Pi & Feed-Thru Series 700



Our in-house stock includes all five shell sizes, 9, 15, 25, 37 and 50 position connectors in pin contacts (plugs), socket contacts (receptacles) and in the very versatile pin/socket adaptors.

MCI has the world's largest inventory of filtered D-subminiature connectors. D subminiature connectors are designed to provide a cost effective method of complying with FCC Part 15, Sub Part J, VDE and MIL-STD-461 A/B regulations. The filters are feed-thru capacitors and pi sections.

FEATURES

- Provides optimum positioning of interference control at interconnect interface.
- Ground plane design provides superior EMI shielding
- Provides maximum volumetric efficiency
- Design is based on proprietary ceramic technology of proven reliability and RF performance
- Connectors mount in existing chassis hole pattern
- A cost effective solution to electromagnetic compatibility (EMC)
- Provides a wide range of filter performance options
- Adaptor styles provide for ease of retrofitting existing equipment
- Testing 100% for key parameters ensures quality levels
- Designed to provide compatibility with EIA RS-232 and RS-449

MECHANICAL SPECIFICATIONS

- **Shell** Zinc diecast, nickel plated
150 microinches min.
- **Insulators** Glass-filled polyester, flammability UL94V-0
- **Pin Contacts** Copper alloy,
15 microinch gold plated over nickel
- **Socket Contacts** Copper alloy,
30 microinch gold plated over nickel
- **Terminations** Gold flash for PC tails and solder cups. Solder dipped also available
- **Ground Plane** Brass, solder plated
- **Grounding Springs** Beryllium copper, tin plated per MIL-T-10727
- **Operating Temp.** -55°C to +125°C
- **Capacitors** Proprietary barium titanate ceramic formulations

ELECTRICAL SPECIFICATIONS

- **Current Rating** 5 Amps
- **RF Current Rating** 0.3 Amps
- **Contact Resistance** ..10 milliohms maximum
- **UL Recognized** Under category of communication circuit accessories, File #E149046

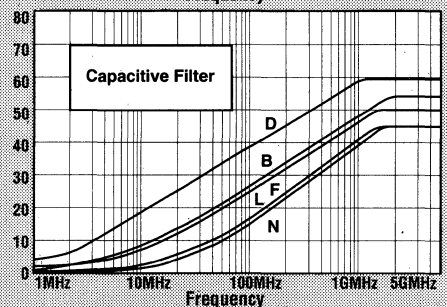
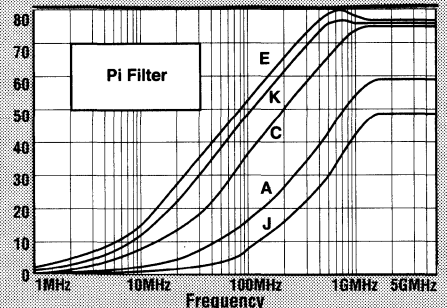
WE OFFER QUICK SOLUTIONS TO NOISE POLLUTION

ELECTRICAL SPECIFICATIONS: SERIES 700 STANDARD HIGH PERFORMANCE CONNECTORS

Filter Designation	Filter Circuits	Capacitance		3 dB Cut-off Frequency Max. (MHz)	Dielectric With-Standing Voltage	Working Voltage DC -55°C to +125°C	Minimum Insertion Loss - Decibels (dB)									
		Value	Tolerance				5 MHz	10 MHz	20 MHz	50 MHz	100 MHz	200 MHz	500 MHz	1 GHz	2 GHz	5 GHz
J	Pi	100 pF	+100 / -0%	32	300V	100V	—	—	—	2	6	11	27	40	43	40
A		310 pF	±20%	17	300V	100V	—	—	3	7	13	21	36	43	50	45
C		1000 pF	+100 / -0%	3.2	300V	100V	—	5	9	19	30	43	62	70	68	63
K		2500 pF	+100 / -0%	1.3	150V	50V	8	13	18	33	45	58	73	78	70	65
E		4000 pF	+100 / -0%	0.8	150V	50V	8	13	20	35	48	61	76	80	70	65
N	C	375 pF	±20%	14	600V	200V	—	—	2	7	13	20	29	35	30	29
L		500 pF	±20%	10.6	600V	200V	—	—	3	10	15	22	31	37	33	31
F		830 pF	±20%	6.4	600V	200V	—	4	9	16	22	28	35	39	38	36
B		1000 pF	+100 / -0%	3.2	600V	200V	—	5	10	17	23	30	37	43	44	42
D		5000 pF	+100 / -0%	0.64	300V	100V	10	16	22	30	35	41	50	52	52	50

Filter designation "G" for grounded contacts, "I" for insulated (not filtered) contacts
Filter designation "O" for omitted contact and no hole in ground plane. Above data represents guaranteed minimum.

TYPICAL INSERTION LOSS



Above curves represent application of proper grounding fundamentals, for assistance consult with MCI.

Insertion loss measured per MIL-STD-220, no load, 50 ohm source & load.

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For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass filters).



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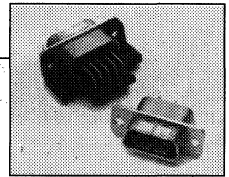
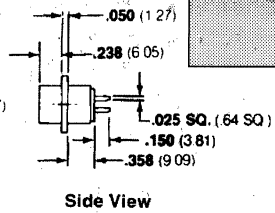
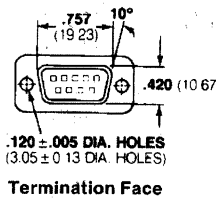
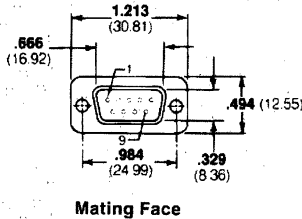
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9 Shell Size Series 700 Pin Contacts

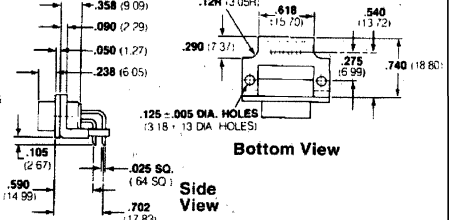
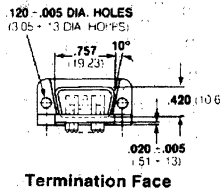
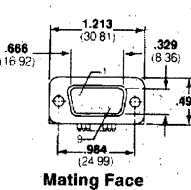
PRINTED CIRCUIT BOARD MOUNT

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-701-001	A	310 pF Pi
56-701-002	B	1000 pF C
56-701-003	C	1000 pF Pi
56-701-004	D	5000 pF C
56-701-005	E	4000 pF Pi
56-701-028	F	830 pF C
56-701-029	J	100 pF Pi
56-701-030	K	2500 pF Pi
56-701-047	N	375 pF C
56-701-086	L	500 pF C



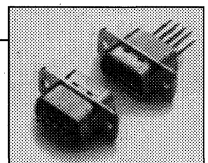
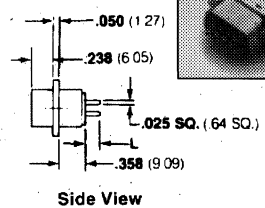
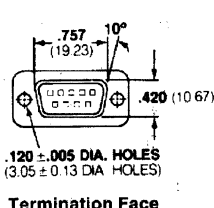
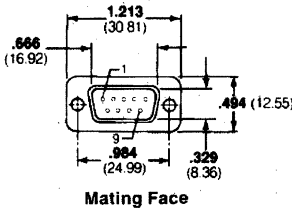
PRINTED CIRCUIT BOARD RIGHT ANGLE MOUNT

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-702-001	A	310 pF Pi
56-702-002	B	1000 pF C
56-702-003	C	1000 pF Pi
56-702-004	D	5000 pF C
56-702-005	E	4000 pF Pi
56-702-007	F	830 pF C
56-702-008	J	100 pF Pi
56-702-009	K	2500 pF Pi
56-702-013	N	375 pF C
56-702-033	L	500 pF C



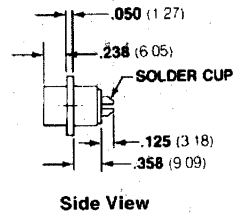
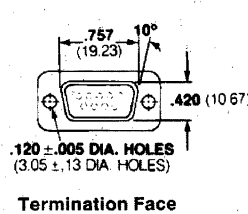
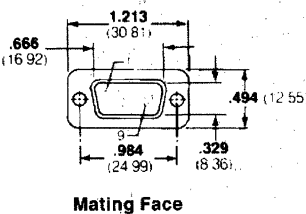
SOLDERLESS WIRE WRAP

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-701-006	A	310 pF Pi
56-701-007	B	1000 pF C
56-701-008	C	1000 pF Pi
56-701-009	D	5000 pF C
56-701-010	E	4000 pF Pi
56-701-037	F	830 pF C
56-701-038	J	100 pF Pi
56-701-039	K	2500 pF Pi
56-701-050	N	375 pF C



SOLDER CUP TERMINATION

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-701-011	A	310 pF Pi
56-701-012	B	1000 pF C
56-701-013	C	1000 pF Pi
56-701-014	D	5000 pF C
56-701-015	E	4000 pF Pi
56-701-040	F	830 pF C
56-701-041	J	100 pF Pi
56-701-042	K	2500 pF Pi
56-701-081	N	375 pF C
56-701-087	L	500 pF C



** See Typical Insertion Loss charts on page C-1317.

Dimensions in inches (mm)

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For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass Filters).



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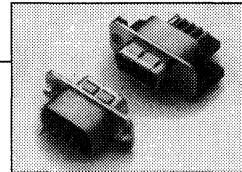
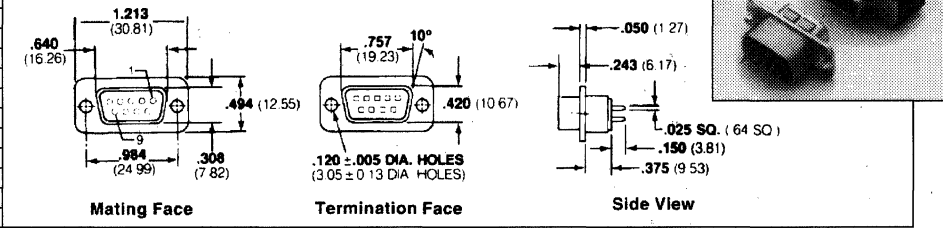
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9 Shell Size Series 700 Socket Contacts

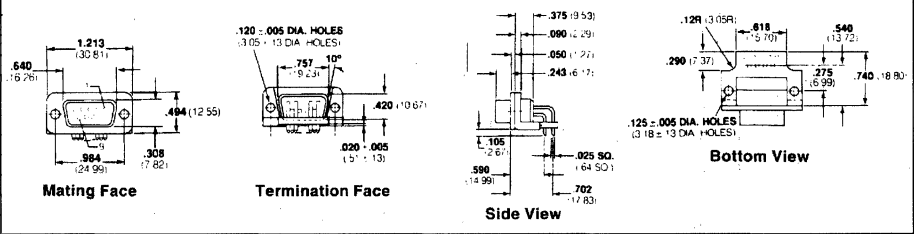
PRINTED CIRCUIT BOARD MOUNT

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-703-001	A	310 pF Pi
56-703-002	B	1000 pF C
56-703-003	C	1000 pF Pi
56-703-004	D	5000 pF C
56-703-005	E	4000 pF Pi
56-703-022	F	830 pF C
56-703-023	J	100 pF Pi
56-703-024	K	2500 pF Pi
56-703-036	N	375 pF C
56-703-047	L	500 pF C



PRINTED CIRCUIT BOARD RIGHT ANGLE MOUNT

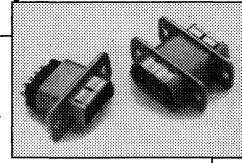
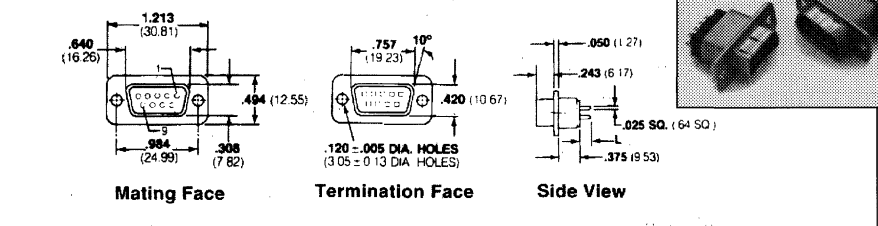
MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-704-001	A	310 pF Pi
56-704-002	B	1000 pF C
56-704-003	C	1000 pF Pi
56-704-004	D	5000 pF C
56-704-005	E	4000 pF Pi
56-704-007	F	830 pF C
56-704-008	J	100 pF Pi
56-704-009	K	2500 pF Pi
56-704-018	N	375 pF C
56-704-035	L	500 pF C



9 Shell Size Series 700 Socket Contacts & Pin/Socket Adapter

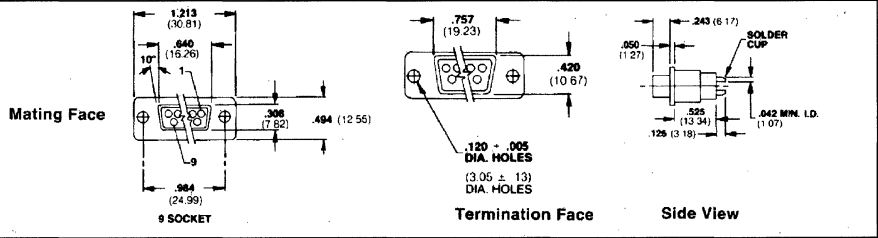
SOLDERLESS WIRE WRAP

MCI Part Number	EMI Filter Filter Desig.**	Capacitor Value	
56-703-006	-016	A	310 pF Pi
56-703-007	-017	B	1000 pF C
56-703-008	-018	C	1000 pF Pi
56-703-009	-019	D	5000 pF C
56-703-010	-020	E	4000 pF Pi
56-703-031	-028	F	830 pF C
56-703-032	-029	J	100 pF Pi
56-703-033	-030	K	2500 pF Pi
56-703-039	-038	N	375 pF C



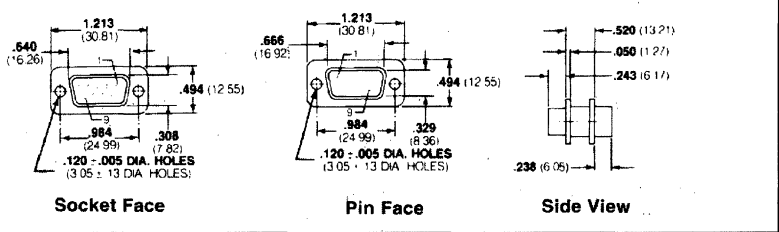
SOLDER CUP TERMINATION

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-706-001	A	310 pF Pi
56-706-002	B	1000 pF C
56-706-003	C	1000 pF Pi
56-706-004	D	5000 pF C
56-706-005	E	4000 pF Pi
56-706-006	F	830 pF C
56-706-007	J	100 pF Pi
56-706-008	K	2500 pF Pi
56-706-009	N	375 pF C
56-706-017	L	500 pF C



PIN/SOCKET ADAPTER

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-705-001	A	310 pF Pi
56-705-002	B	1000 pF C
56-705-003	C	1000 pF Pi
56-705-004	D	5000 pF C
56-705-005	E	4000 pF Pi
56-705-008	F	830 pF C
56-705-009	J	100 pF Pi
56-705-010	K	2500 pF Pi
56-705-026	N	375 pF C
56-705-049	L	500 pF C



** See "Typical Insertion Loss" charts on page C-1317.

Dimensions in inches (mm)

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For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass filters).



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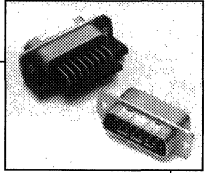
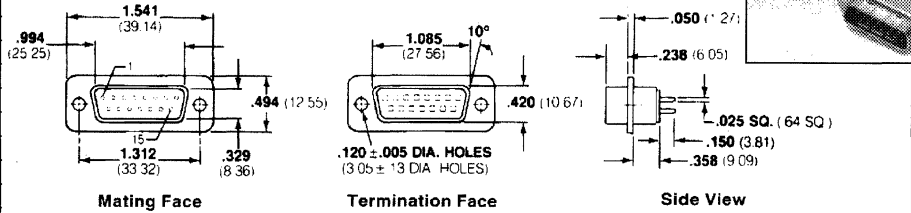
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15 Shell Size Series 700 Pin Contacts

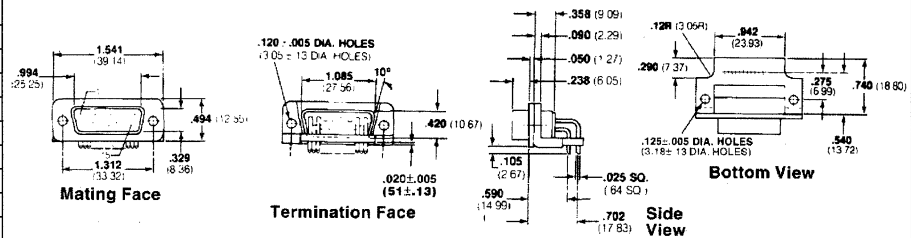
PRINTED CIRCUIT BOARD MOUNT

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-711-001	A	310 pF Pi
56-711-002	B	1000 pF C
56-711-003	C	1000 pF Pi
56-711-004	D	5000 pF C
56-711-005	E	4000 pF Pi
56-711-028	F	830 pF C
56-711-029	J	100 pF Pi
56-711-030	K	2500 pF Pi
56-711-048	N	375 pF C
56-711-088	L	500 pF C



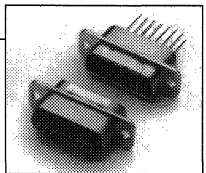
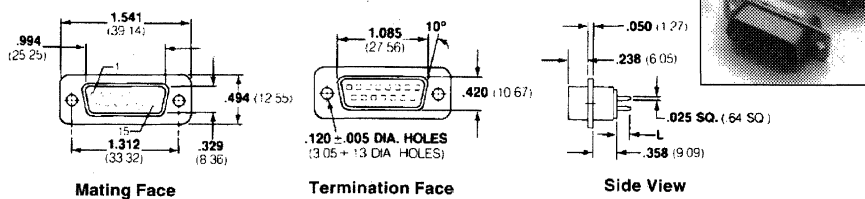
PRINTED CIRCUIT BOARD RIGHT ANGLE MOUNT

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-712-001	A	310 pF Pi
56-712-002	B	1000 pF C
56-712-003	C	1000 pF Pi
56-712-004	D	5000 pF C
56-712-005	E	4000 pF Pi
56-712-007	F	830 pF C
56-712-008	J	100 pF Pi
56-712-009	K	2500 pF Pi
56-712-017	N	375 pF C
56-712-039	L	500 pF C



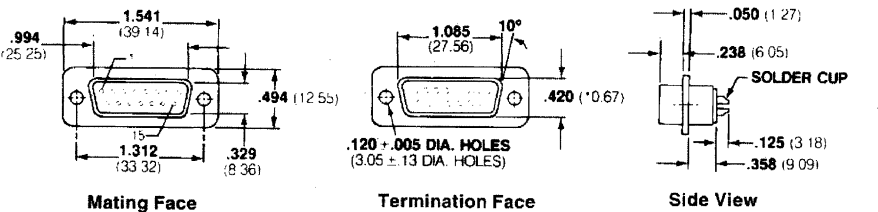
SOLDERLESS WIRE WRAP

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-711-006-023-018	A	310 pF Pi
56-711-007-024-019	B	1000 pF C
56-711-008-025-020	C	1000 pF Pi
56-711-009-026-021	D	5000 pF C
56-711-010-027-022	E	4000 pF Pi
56-711-037-034-031	F	830 pF C
56-711-038-035-032	J	100 pF Pi
56-711-039-036-033	K	2500 pF Pi
56-711-051-050-049	N	375 pF C



SOLDER CUP TERMINATION

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-711-011	A	310 pF Pi
56-711-012	B	1000 pF C
56-711-013	C	1000 pF Pi
56-711-014	D	5000 pF C
56-711-015	E	4000 pF Pi
56-711-040	F	830 pF C
56-711-041	J	100 pF Pi
56-711-042	K	2500 pF Pi
56-711-085	N	375 pF C
56-711-086	L	500 pF C



** See 'Typical Insertion Loss' charts on page C-1317.

Dimensions in inches (mm)

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For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass filters).



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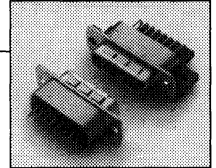
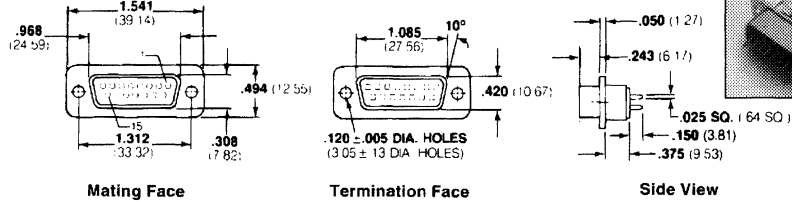
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15 Shell Size Series 700 Socket Contacts

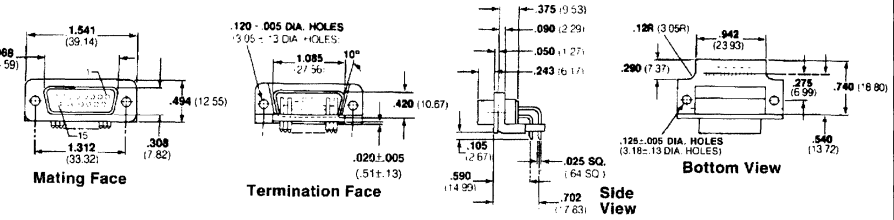
PRINTED CIRCUIT BOARD MOUNT

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-713-001	A	310 pF Pi
56-713-002	B	1000 pF C
56-713-003	C	1000 pF Pi
56-713-004	D	5000 pF C
56-713-005	E	4000 pF Pi
56-713-021	F	830 pF C
56-713-022	J	100 pF Pi
56-713-023	K	2500 pF Pi
56-713-037	N	375 pF C
56-713-045	L	500 pF C



PRINTED CIRCUIT BOARD RIGHT ANGLE MOUNT

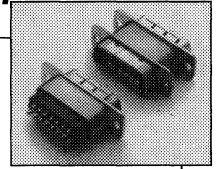
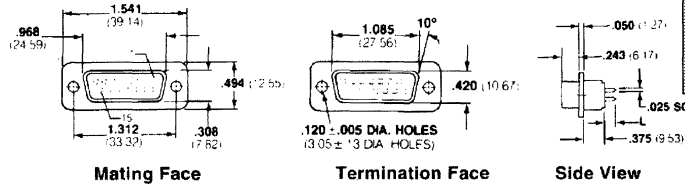
MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-714-001	A	310 pF Pi
56-714-002	B	1000 pF C
56-714-003	C	1000 pF Pi
56-714-004	D	5000 pF C
56-714-005	E	4000 pF Pi
56-714-006	F	830 pF C
56-714-007	J	100 pF Pi
56-714-008	K	2500 pF Pi
56-714-017	N	375 pF C
56-714-031	L	500 pF C



15 Shell Size Series 700 Socket Contacts & Pin/Socket Adapter

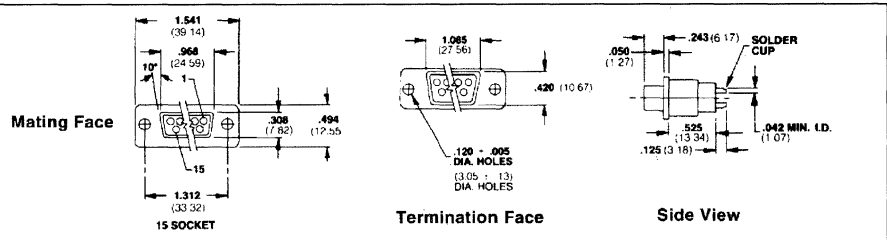
SOLDERLESS WIRE WRAP

MCI Part Number	EMI Filter Filter Desig.**	Capacitor Value
56-713-006	-016 -011	A 310 pF Pi
56-713-007	-017 -012	B 1000 pF C
56-713-008	-018 -013	C 1000 pF Pi
56-713-009	-019 -014	D 5000 pF C
56-713-010	-020 -015	E 4000 pF Pi
56-713-030	-027 -024	F 830 pF C
56-713-031	-028 -025	J 100 pF Pi
56-713-032	-029 -026	K 2500 pF Pi
56-713-040	-039 -038	N 375 pF C



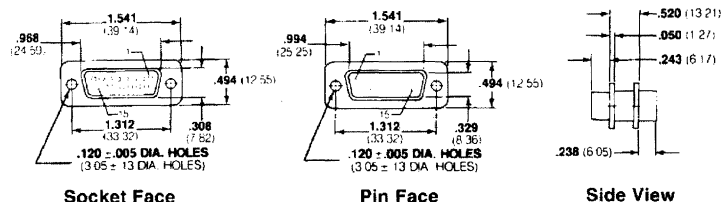
SOLDER CUP TERMINATION

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-716-001	A	310 pF Pi
56-716-002	B	1000 pF C
56-716-003	C	1000 pF Pi
56-716-004	D	5000 pF C
56-716-005	E	4000 pF Pi
56-716-006	F	830 pF C
56-716-007	J	100 pF Pi
56-716-008	K	2500 pF Pi
56-716-009	N	375 pF C
56-716-013	L	500 pF C



PIN/SOCKET ADAPTER

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-715-001	A	310 pF Pi
56-715-002	B	1000 pF C
56-715-003	C	1000 pF Pi
56-715-004	D	5000 pF C
56-715-005	E	4000 pF Pi
56-715-007	F	830 pF C
56-715-008	J	100 pF Pi
56-715-009	K	2500 pF Pi
56-715-015	N	375 pF C
56-715-040	L	500 pF C



** See 'Typical Insertion Loss' charts on page C-1317.

Dimensions in inches (mm)

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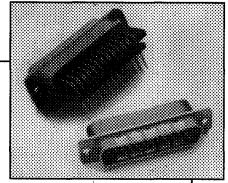
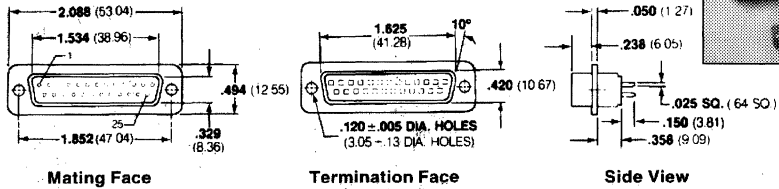
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25 Shell Size Series 700 Pin Contacts

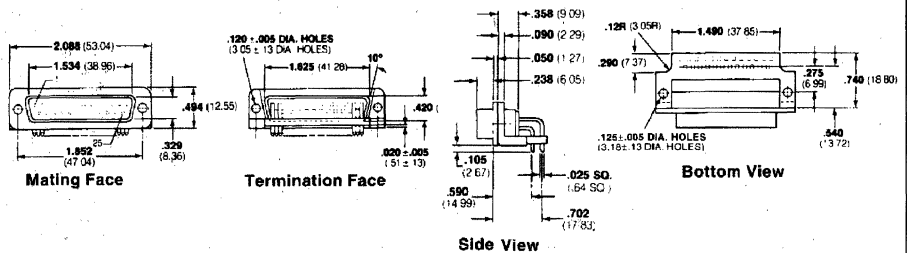
PRINTED CIRCUIT BOARD MOUNT

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-721-001	A	310 pF Pi
56-721-002	B	1000 pF C
56-721-003	C	1000 pF Pi
56-721-004	D	5000 pF C
56-721-005	E	4000 pF Pi
56-721-033	F	830 pF C
56-721-034	J	100 pF Pi
56-721-035	K	2500 pF Pi
56-721-063	N	375 pF C
56-721-111	L	500 pF C



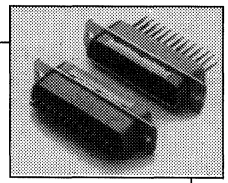
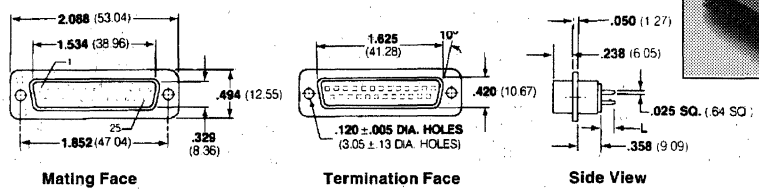
PRINTED CIRCUIT BOARD RIGHT ANGLE MOUNT

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-722-001	A	310 pF Pi
56-722-002	B	1000 pF C
56-722-003	C	1000 pF Pi
56-722-004	D	5000 pF C
56-722-005	E	4000 pF Pi
56-722-008	F	830 pF C
56-722-009	J	100 pF Pi
56-722-010	K	2500 pF Pi
56-722-027	N	375 pF C
56-722-060	L	500 pF C



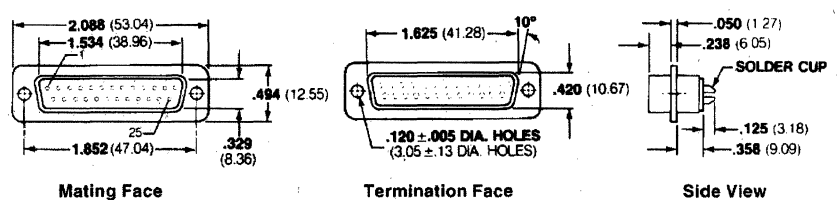
SOLDERLESS WIRE WRAP

MCI Part Number	EMI Filter	
	Filter Desig.**, Select One	Capacitor Value
56-721-006	-028 -024	A 310 pF Pi
56-721-007	-029 -025	B 1000 pF C
56-721-008	-030 -026	C 1000 pF Pi
56-721-009	-031 -022	D 5000 pF C
56-721-010	-032 -027	E 4000 pF Pi
56-721-042	-039 -036	F 830 pF C
56-721-043	-040 -037	J 100 pF Pi
56-721-044	-041 -038	K 2500 pF Pi
56-721-066	-065 -064	N 375 pF C



SOLDER CUP TERMINATION

MCI Part Number	EMI Filter	
	Filter Designation**	Capacitor Value
56-721-011	A	310 pF Pi
56-721-012	B	1000 pF C
56-721-013	C	1000 pF Pi
56-721-014	D	5000 pF C
56-721-015	E	4000 pF Pi
56-721-045	F	830 pF C
56-721-046	J	100 pF Pi
56-721-047	K	2500 pF Pi
56-721-070	N	375 pF C
56-721-112	L	500 pF C



** See "Typical Insertion Loss" charts on page C-1317.

Dimensions in inches (mm)

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For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass filters).



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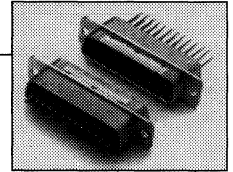
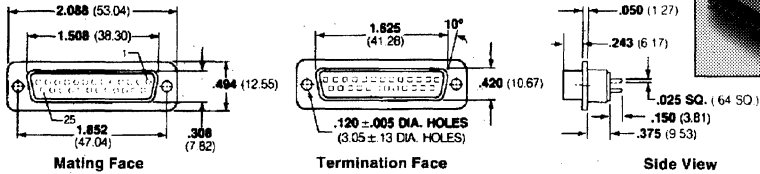
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25 Shell Size Series 700 Socket Contacts

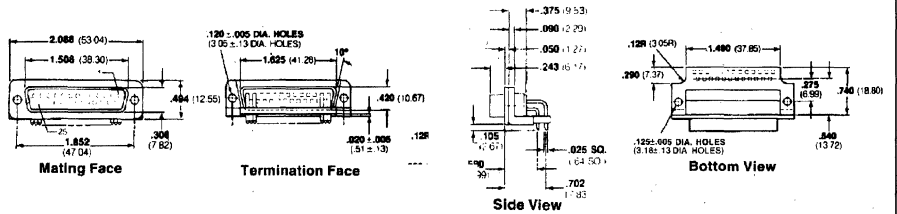
PRINTED CIRCUIT BOARD MOUNT

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-723-001	A	310 pF Pi
56-723-002	B	1000 pF C
56-723-003	C	1000 pF Pi
56-723-004	D	5000 pF C
56-723-005	E	4000 pF Pi
56-723-023	F	830 pF C
56-723-024	J	100 pF Pi
56-723-025	K	2500 pF Pi
56-723-045	N	375 pF C
56-723-069	L	500 pF C



PRINTED CIRCUIT BOARD RIGHT ANGLE MOUNT

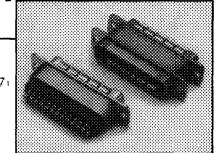
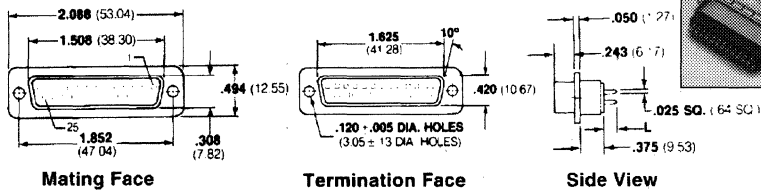
MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-724-001	A	310 pF Pi
56-724-002	B	1000 pF C
56-724-003	C	1000 pF Pi
56-724-004	D	5000 pF C
56-724-005	E	4000 pF Pi
56-724-008	F	830 pF C
56-724-009	J	100 pF Pi
56-724-010	K	2500 pF Pi
56-724-021	N	375 pF C
56-724-046	L	500 pF C



25 Shell Size Series 700 Socket Contacts & Pin/Socket Adapter

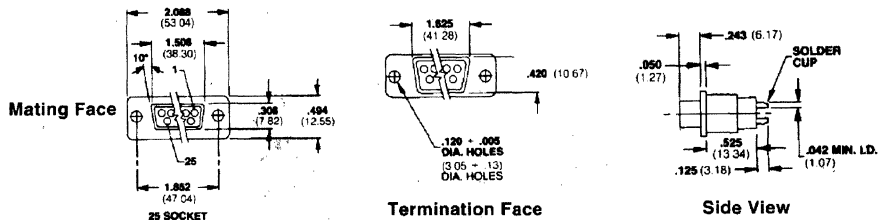
SOLDERLESS WIRE WRAP

MCI Part Number	EMI Filter Filter Desig.**	Capacitor Value		
56-723-006	-017	-012	A	310 pF Pi
56-723-007	-018	-013	B	1000 pF C
56-723-008	-019	-014	C	1000 pF Pi
56-723-009	-020	-015	D	5000 pF C
56-723-010	-021	-016	E	4000 pF Pi
56-723-032	-029	-026	F	830 pF C
56-723-033	-030	-027	J	100 pF Pi
56-723-034	-031	-028	K	2500 pF Pi
56-723-048	-047	-046	N	375 pF C



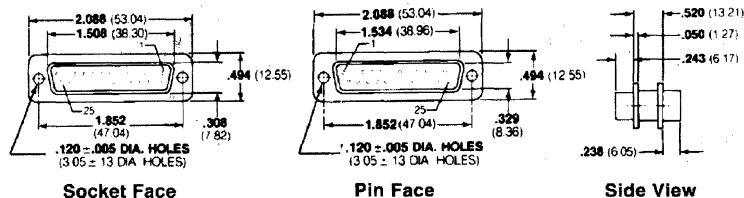
SOLDER CUP TERMINATION

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-726-001	A	310 pF Pi
56-726-002	B	1000 pF C
56-726-003	C	1000 pF Pi
56-726-004	D	5000 pF C
56-726-005	E	4000 pF Pi
56-726-006	F	830 pF C
56-726-007	J	100 pF Pi
56-726-008	K	2500 pF Pi
56-726-009	N	375 pF C
56-726-021	L	500 pF C



PIN/SOCKET ADAPTER

MCI Part Number	EMI Filter Filter Desig.**	Cap. Value
56-725-001	A	310 pF Pi
56-725-002	B	1000 pF C
56-725-003	C	1000 pF Pi
56-725-004	D	5000 pF C
56-725-005	E	4000 pF Pi
56-725-019	F	830 pF C
56-725-020	J	100 pF Pi
56-725-021	K	2500 pF Pi
56-725-064	N	375 pF C
56-725-073	L	500 pF C



** See 'Typical Insertion Loss' charts on page C-1317.

Dimensions in inches (mm)

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Feed-Thru Filtered D-Sub Connectors

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Low Profile Feed-Thru (0.318" footprint) EMI Filtered Connector Series 500

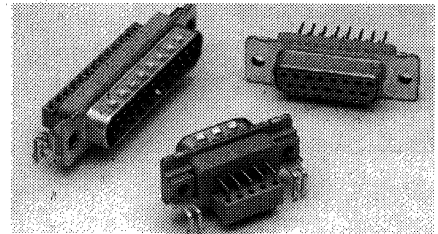
FEATURES

- "Drop-in" replacements for unfiltered D-sub
- Compact design, featuring .318" footprint
- Tubular feed-thru capacitors provide filtering superior to on-board components
- Ground plane design provides EMI shielding
- Full interchangeability; based on MIL-C-24308
- Each connector position is tested 100% for critical electrical parameters to ensure consistent performance
- Insulators are UL recognized UL94-V0 flammability rated
- 9, 15, and 25 shell sizes
- Available with board lock feature and 4-40 mounting threads
- Selective filtering available
- UL/CSA approval pending
- Greater than 40 dB filtering up through 1 GHz without resonances
- Bi-Directional control of EMI at the I/O ports

MECHANICAL SPECIFICATIONS

- **Shell** Steel, tin Plated
 - **Insulators** Glass-filled polyester flammability UL94V-0
 - **Pin Contacts** Copper alloy CA725, 15 microinch gold plated* over nickel
 - **Socket Contacts** Copper alloy CA725, 30 microinch gold plated* over nickel
- * Heavier gold plating available upon request.
- **Ground Plane** .. Phosphor bronze, nickle plated
 - **Operating Temp.** -40°C to +125°C
 - **Capacitors** Proprietary barium titanate ceramic tubes

Other environmental tests such as shock, vibration, humidity, etc. are performed as detailed in our filtered connector performance specifications in our catalog.

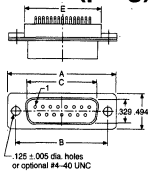


ELECTRICAL SPECIFICATIONS

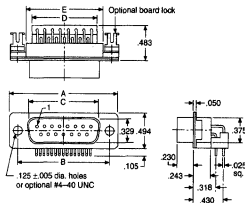
- **Current Rating** 5 Amps
- **RF Current Rating** 0.3 Amps
- **Contact Resistance** 10 milliohms maximum
- **Capacitance** 120, 440, 840, 1000, 1500 pF ±30%
- **Working Voltage** 100 VDC
- **Dielectric Withstand Voltage** 300 VDC
- **Insulation Resistance** 1 Gohm minimum
- **UL Recognized** Under category of communication circuit accessories, File # E149046

PIN CONTACT (plug)

Straight PC Tail

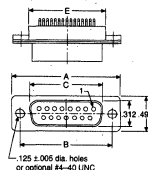


90° PC Tail

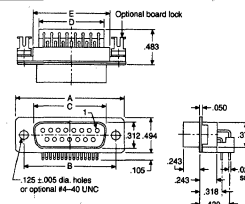


SOCKET CONTACT (receptacle)

Straight PC Tail



90° PC Tail



Size	A ±.005"	B ±.005"	C ±.005"	D ±.005"	E ±.005"
9	1.213	0.984	0.666	0.540	0.748
15	1.541	1.312	0.994	0.867	1.076
25	2.088	1.852	1.534	1.412	1.616

Size	A ±.005"	B ±.005"	C ±.005"	D ±.005"	E ±.005"
9	1.213	0.984	0.642	0.540	0.748
15	1.541	1.312	0.970	0.867	1.076
25	2.088	1.852	1.510	1.412	1.616

HOW TO ORDER **56 - 5 2 4 - 013 - GBL**

FILTERED D-SUB CONNECTORS:

SERIES 500 CONNECTORS:

SHELL SIZE/ NUMBER OF CONTACTS:
 0 - 9 size 1 - 15 size 2 - 25 size

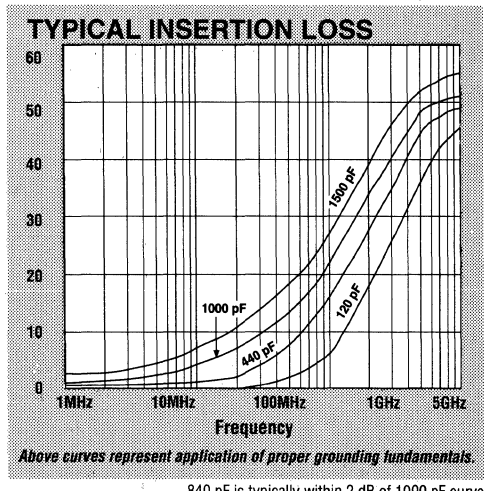
CONTACT TYPE/TERMINATION:
 2 - Pin to 90° PCB tail 3 - Socket to straight PCB tail
 4 - Socket to 90° PCB tail 7 - Pin to straight PCB tail

CAPACITANCE VALUE:
 010 - 120 pF 011 - 440 pF 012 - 840 pF
 013 - 1000 pF 014 - 1500 pF

MOUNTING OR HARDWARE OPTIONS:
 TI - 4-40 threads on mounting flange (.125" hole if not selected).
 GBL - Grounded board lock, includes 4-40 threads (available only on 90° PCB)
 F - Ferrite slab provides the enhanced performance of an (LC) filter (available only on 90° PCB)

This part number represents a Series 500 filtered D-sub connector with 25 contacts, socket to 90° PCB tail configuration. The filter has a capacitance value of 1000 pF and the connector includes a grounded board lock.

For special needs or combinations of features, contact MCI engineering



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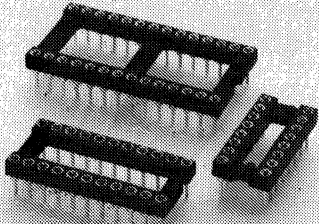
For additional information please see our data pages in Section 1500 (Resin-sealed bolt-in filters & feed-through capacitors), Section 2700 (Low Pass filters).



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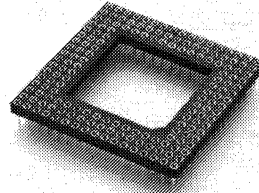
"The name you connect with trust."

DIP SOCKETS & CARRIERS



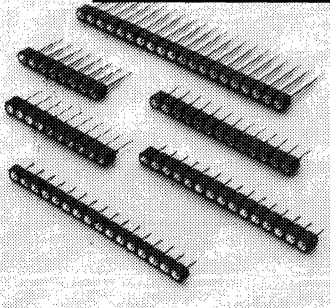
- Standard
- Open & Closed Frame
- Low Profile
- Solderless
- Capacitor
- Surface Mount
- Wrappost
- Right Angle
- Carrier Type

PGA SOCKETS



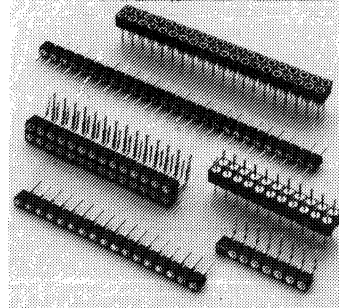
- Standard
- Low Profile
- Wrappost
- Carrier Type
- Interstitial Grid
- Heat Sink
- Pin Headers

SIP SOCKETS & CARRIERS



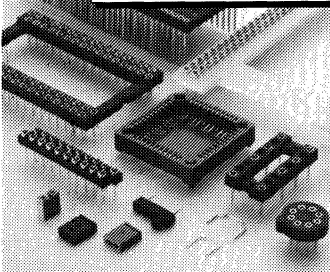
- Standard
- Single & Double Row
- Solderless
- Carrier Type

INTERCONNECTS



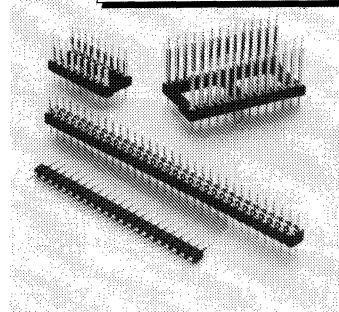
- Single & Dual Row
- .050" Grid
- 2mm Grid
- Solderless Press-Fit
- .018" dia. Pin
- .025" Square Pin
- .030" dia. Pin
- .040" dia. Pin
- Low Profile

SPECIALTY SOCKETS



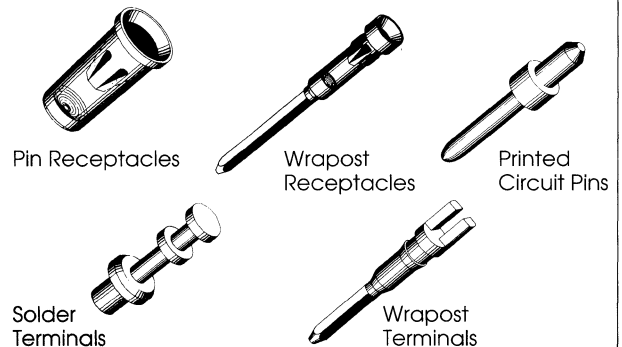
- BGA Adapters **NEW**
- Quad
- Zig-Zag
- Turbocache
- Transistor
- Jumpers
- Shrinkdip
- Relay
- PLCC

PIN HEADERS



- Solder Tail
- Wrappost
- Slotted
- Turret
- Solder Cup
- Single Row Header Strips
- Double Row Header Strips
- Header Interconnects

LOOSE PIN INTERCONNECTS



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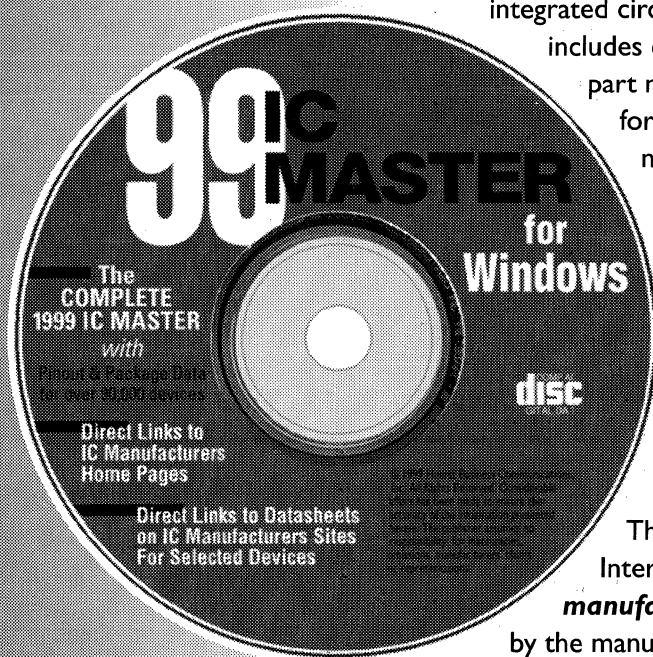
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The CD-ROM search program can launch your Internet browser and *link* you directly to **the manufacturer's own website**. And, for devices selected by the manufacturer, *link* you directly to **the actual datasheets** for the device on the manufacturer's website.

There is simply no better time-saving tool for IC buyers and specifiers.

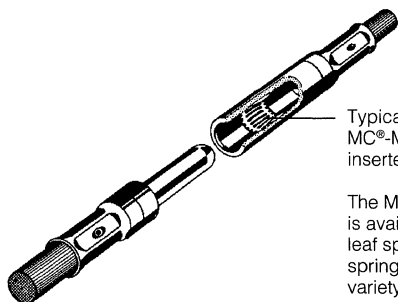
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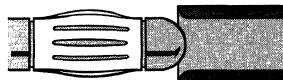
From Low Current to High Current: Always the Right Connector.*

Our manufacturing facilities have been certified per ISO 9001.



Typical application of MC®-MULTILAM™ contact band inserted in socket.

The MC®-MULTILAM™ band is available in two basic styles: leaf spring louvers and torsion spring louvers, both in a large variety of types and dimensions.



MC®-MULTILAM™ contact band convex-fitted to plug



MC®-MULTILAM™ contact band concave-inserted into socket

Low Current Product Line

PCB Connectors

Connectors for PCBs from 0.5 - 2 mm dia



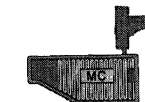
Plugs

MC®-MULTILAM™ banana plugs



Patch Cords

Patch Cords with separate insulations



Safety Patch Cords UL-listed

Touchproof patch cords up to 1500 V



Safety Jacks UL-recognized

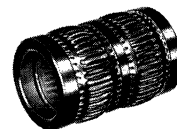
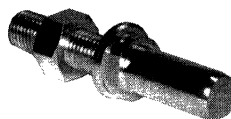
Jacks for instruments



High Current Product Line

Non-insulated Plugs and Sockets

Plugs and sockets with external threads for connection to bus bars from 10 to 5000 Amps



Insulated Plugs and Sockets

Panel-mount and cable connectors for 180 and 280 Amps with quick-lock device



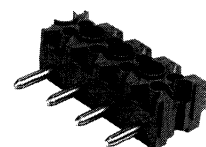
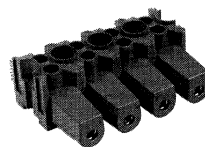
Panel-mount Cable Connectors

Insulated, color-coded panel mount plugs and sockets up to 100 Amps with quick-lock device



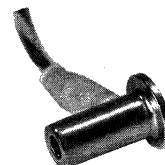
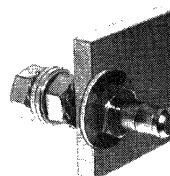
Blind Mate Rack and Panel Connectors

Connector designed for slide-in rack systems; with copper crimp sleeves or set screws, up to 10 modules can be gang-locked



Equipotential Grounding Connectors

Rotating grounding connectors according to TUV standards for medical environments



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NAS solder and flux bearing leads—the 100% solution to soldering hybrids and PCBs.

NAS leads produce perfect solder joints every time, in one easy step.

As electronic components grow increasingly smaller, nothing overcomes the challenges of lead attachment better than NAS solder and flux bearing edge clips.

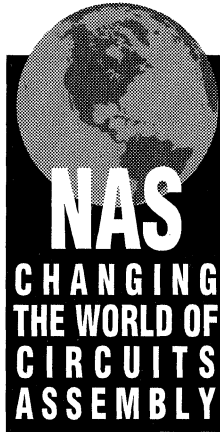
Since 1977, we have helped many of the world's leading electronics manufacturers eliminate all their soldering problems, saving them significant time and money.

NAS developed the breakthrough concept of mechanically attaching to each lead clip a precise amount of solder and flux that can be easily reflowed and directed to the conductor pad. This unique solution for attaching leads to hybrid and PCB circuits offers a world of advantages, including:

One-step assembly. The NAS lead can be simply pushed onto a substrate and reflowed – with no intermediate operations required. This simple, one-step method of assembly and reflow is the key to substantially reducing process costs.

Consistent high quality. NAS leads bear a uniform solder slug with a core of flux, which creates a perfect mechanical and electrical bond every time – and a significantly more consistent, higher quality finished product.

100% solderability. The unique design of NAS "claw" type leads permits direct contact between the solder and conductor



pad. This design makes unsoldered joints virtually non-existent.

Reduced rejects. With conventional solder paste and dipping, the chance of bridging and wicking greatly increases as pitches become smaller. NAS leads eliminate this problem. In fact, NAS leads eliminate virtually all of the costly inspection and rework necessary with other methods.

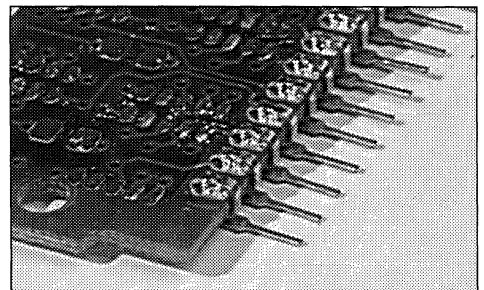
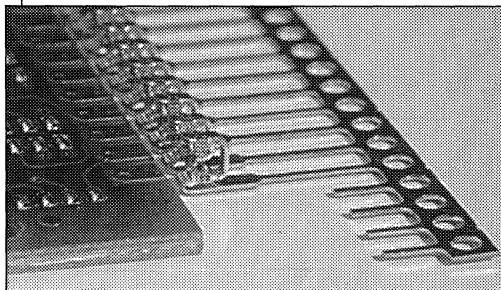
More flexible production. NAS leads allow greater flexibility in stacked and compound soldering operations.

Adaptability to safe, local heating. The chances of damaging prepopulated components are greatly reduced, because NAS leads can be bonded to pads without raising the temperature of the rest of the board to the reflow point.

Elimination of thermal mismatch and vibration failure. The spring action of NAS surface mount clip legs compensates for different rates of expansion between ceramic components and PCB's, and resists vibration failures.

And overall... significantly reduced costs. While NAS solder and flux bearing leads do cost more than conventional leads, their greatly reduced process costs result in a significantly less expensive finished product.

The fast, simple method of applying NAS solder and flux bearing leads.



Find out more... NAS will be pleased to provide you with:

- Additional product information/catalogs
- Free copies of our informative NAS video
- Live demonstrations of NAS leads and equipment



NAS INTERPLEX INC.

120-12 28th Avenue, Flushing, NY 11354

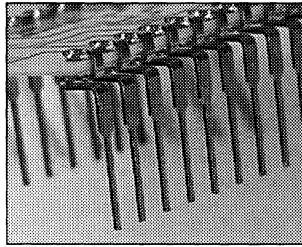
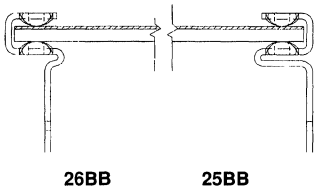
Tel 718/ 961-6757 ■ Fax 718/ 539-9115

Visit our World Wide Web Site at <http://www.nasinterplex.com>

Some of the most common applications for NAS leads include:



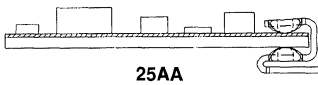
Typical substrate with DIL leads.



NAS offers a complete line of solder and flux bearing leads for virtually any application, including:

- Dual Inline Packages
- Single Inline Packages
- Quad Packages
- Press Fit Technology
- Zigzag Inline Packages
- Multi-Chip Circuits
- Surface Mount Applications
- Custom Applications

A typical substrate with a SIP lead mount.



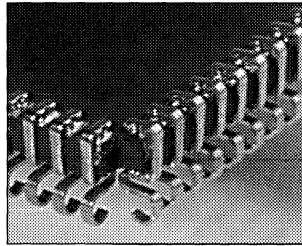
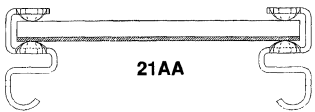
MATERIAL SELECTION

We can provide edge clips in a variety of base materials including beryllium copper, phosphor bronze and customer specified materials.

FINISHES/PLATING

Our in-house manufacturing capabilities allow us to provide rapid turnaround on plating and finish types including controlled depth and selective area plating. We offer a variety of finishes, including gold, silver, palladium, nickel, bright nickel, tin, bright tin, tin/lead, and copper.

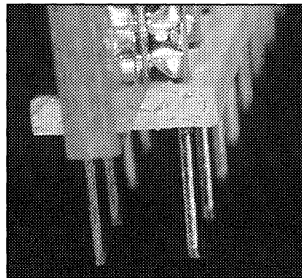
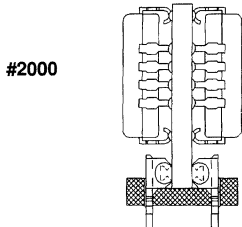
A .050 (1,27) pitch lead mounted to a substrate. This mounting is also typical for normal chip carriers.



SOLDER AND FLUX

Our unique process of including a precise amount of solder and flux on each clip allows our customers the opportunity to specify solder alloys and flux types for each application.

An adaptor connector for mounting a memory module on a .100 (2,54) square grid. The adaptor is also available in ZIP form offset .050 (1,27).



CUSTOM DESIGNS

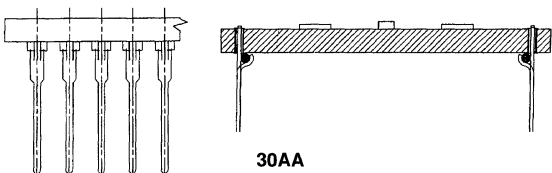
No matter what your requirements are, NAS application and design engineers can create a unique solution for lead attachment that eliminates all your solder problems.

SAVE TIME AND MONEY WITH NAS ASSEMBLY MACHINES

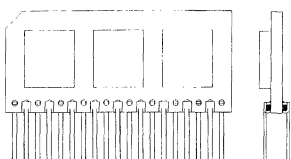
NAS machines offer complete, semi-automatic lead assembly and reflow in one simple step, including:

- Insertion of leads on DIP, SIP, Quad, Press Fit or Surface Mount substrates.
- Fully programmable, user-friendly operation.
- Selective lead elimination, trimming and substrate singulation.
- Programmable reflow unit with pre-heat and direct contact hot bar.
- Assembly of up to 1,500 substrates per hour (based on a 2" length).

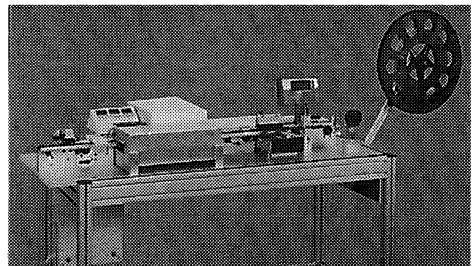
Press-Fit solder bearing header pin. Automatically inserted and soldered to daughter board in one operation.



A "daughter board" with leads offset .050 (1,27) from each other on a .100 (2,54) square grid.



29AA



Complete SIP lead assembly and reflow with the S5Y4321.

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Series S

Available in four sizes and several designs. Hermaphroditic keying. Mates with selected **LEMO S-Series** connectors

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Mechanical key with pin and groove. Mates with selected **LEMO B-Series** connectors. Environmental and custom designs available.

Series F

Mechanical keying with half shells. Available in five sizes. Mates with selected **W. W. Fischer** connectors. Environmental and custom designs available.

Heavy Duty Power Connectors



Heavy Duty

Heavy Duty

ODU Heavy Duty industrial connectors are designed to operate in the most severe environments. There are several versions available. All connectors have ODU Springtac™ sockets.

Series 200

The Series 200 has threaded locking system. Connectors come in three sizes, different styles and with many different inserts. Housings are nickel-plated brass or black anodized aluminum.

Series 300

Series 300 connectors have bayonet locking. Available in three sizes and many inserts with crimp or solder contacts. Up to 350 A per contact. Housing are made from die-cast aluminum or bronze.

Industrial Modular Connectors



ODU-MAC

Modular

The ODU-MAC offers a simple and flexible system to custom-build connectors for automated testing (ATE) or other critical industrial applications. All contacts are springwire sockets.

In Open Frames

ODU-MAC in open frame is ideally suited for ATE or backplane applications. Modules are available for power, signal, RF, fiber optic, and pneumatic connections.

In DIN Housings

ODU-MAC in DIN enclosures are used for cable to panel connections. DIN housings are available in four sizes. Quick-lock features permit fast connect and disconnect.

Single Contacts



Springtac™ and Lamella™

Springwire Contacts

Springwire contacts for:

- 100,000s mating cycles
- low insertion force
- reliable connections
- high current load
- excellent under vibration

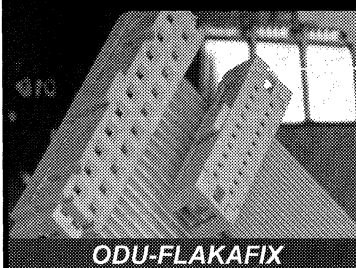
Springtac™

Invented in 1939 by Otto Dunkel, the Springtac™ contact offers extreme reliability. Contacts have been tested to > 1 million mating cycles. Available in many sizes.

Lamella™

The Lamella™ contact is a cost-effective version of the Springtac™ contact. Stamped contact bands provide excellent performance in severe applications. Available in many sizes.

Circuitboard Connectors



ODU-FLAKAFIX

IDC

ODU offers IDC connectors in .100" and .050" grid. The MINIFIX line of .050" miniature IDC connectors mates for the ODU surface-mount product line for board-to-cable connections.

Surface-Mount

ODU supplies a large number of surface-mount (SMT) connectors worldwide. Most connectors have .050" contact spacing. Headers are available in many heights to accommodate many board stacking distances.

Custom

In addition to the standard PCB connectors ODU supplies many custom connectors to OEMs worldwide. Please contact us for details.

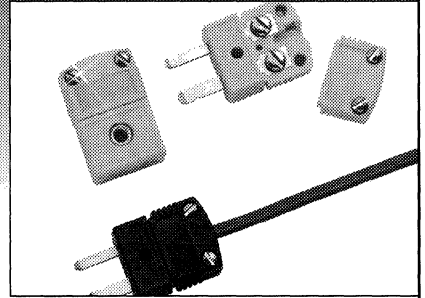


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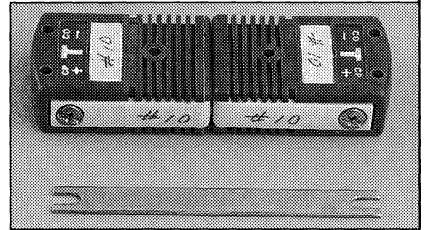
Thermocouple Connectors



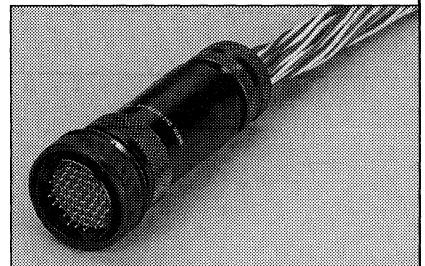
- ✓ 2- and 3-Pin Connectors for Thermocouple Types J, K, T, E, R, S, B, G, C, D, N and Uncompensated
- ✓ Standard and Subminiature Sizes, Available with Write-on Pads
- ✓ Ground Strap Available for Low Noise Connections
- ✓ Glass-Filled Nylon, Liquid Crystal Polymer or High Temperature Ceramic Shell Construction
- ✓ Heavy Duty Solid Pin Construction Available
- ✓ Multipin Connectors
- ✓ High-Temperature Liquid Crystal Polymer Connectors



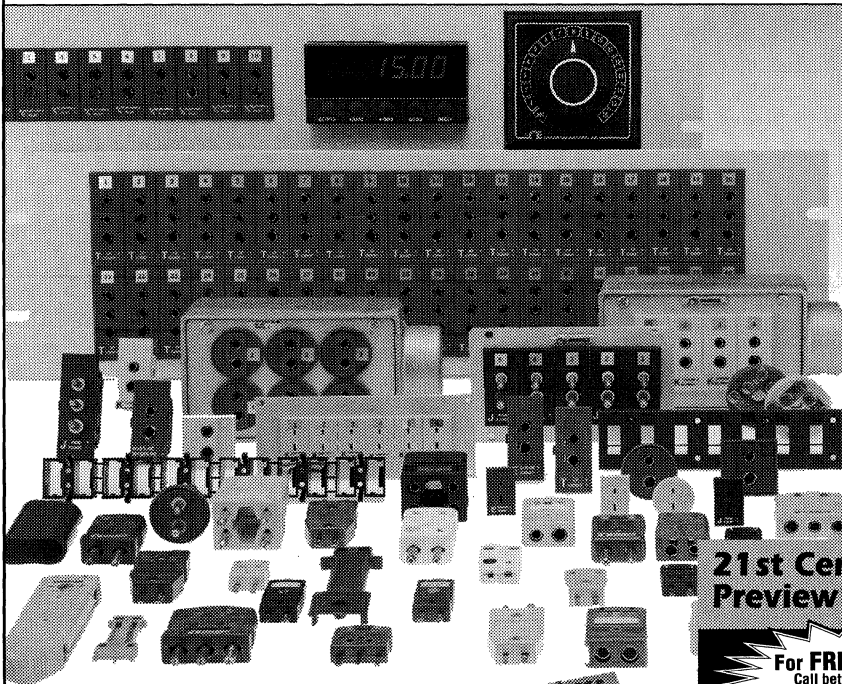
Now Available with Ferrite Cores for EMI Protection



Low-Noise Connectors and Probes

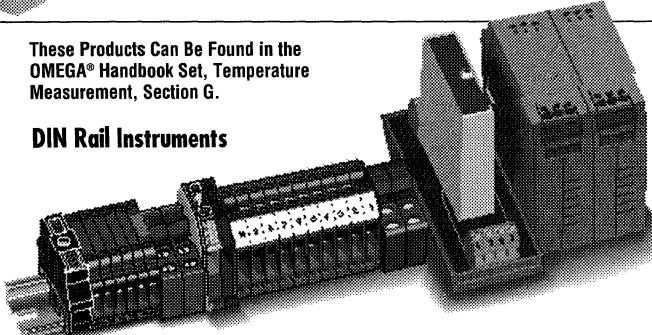


Multi Pin Connector Systems



These Products Can Be Found in the OMEGA® Handbook Set, Temperature Measurement, Section G.

DIN Rail Instruments



This Product Can Be Found in the OMEGA® Handbook Set, Temperature Measurement, Section N.

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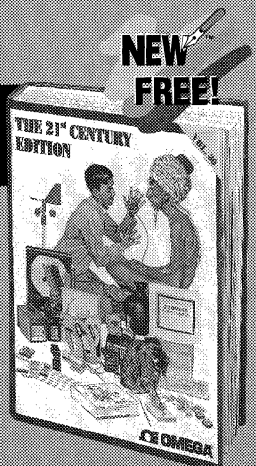
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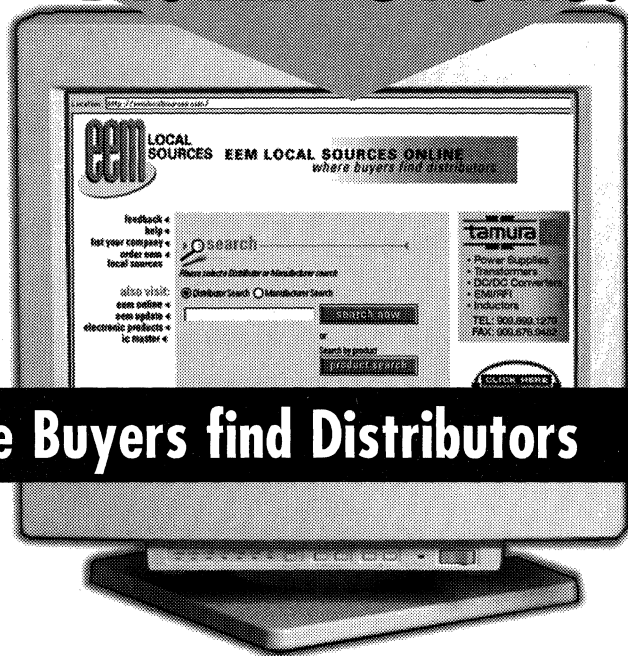
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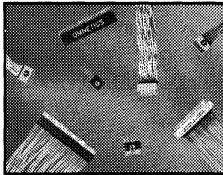
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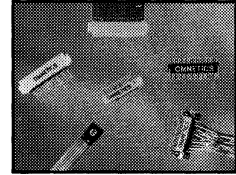
Omnetics designs and produces both standard and custom Micro and Nano Miniature Connectors, conforming to MIL-C-83513. Performance specifications include a current rating of up to 3 amps, up to 10,000 matings cycles with insertion forces ranging from 3 oz. to 6 oz. We have been supplying these extremely reliable connectors for applications in military, space, avionics, test and measurement and high-temperature environments for over 20 years.

NANO CONNECTORS

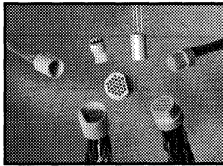


FEATURES

- .025" and .0125" centers
- Single-in-line or dual row
- Up to 60 positions
- Wire, surface mount or thru-hole terminations
- Optional keying and hardware

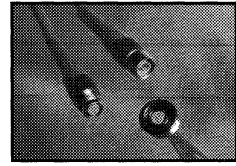


CIRCULAR CONNECTORS



FEATURES

- Available in three diameters and 2-27 contacts
- Polarized to prevent mis-mating
- Wire-to-wire or wire-to-board termination
- Soldercups available

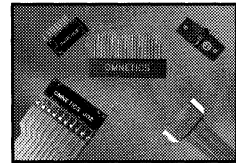


.050" CENTERLINE

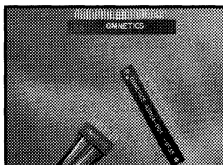


FEATURES

- Low profile
- No tools required
- Latch serves as keying/guiding device
- Available for side or end mounting

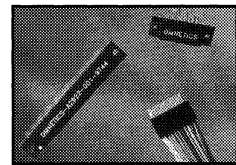


DUAL ROW & DUAL ROW OFFSET



FEATURES

- Low profile
- Offset: .050" centers/.025" tails
- Up to 97 contacts
- Various terminations
- Available with or without mounting holes

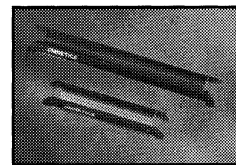


CROSSOVER & TEST CONNECTORS

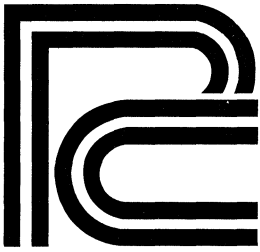


FEATURES

- Easy access for test and programming
- Designed for SEM applications
- Four contact spacings
- Variety of sizes available



Additional standard and custom connectors available. Please consult factory.



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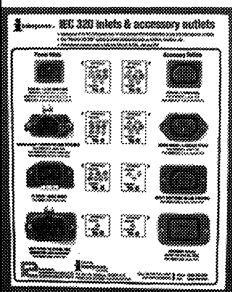
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- We have no minimum order and can ship orders for items in stock quickly.
- Designer's Kits, shown below, aid in design of international products.



Interpower™ International Designer's Kits & Panels

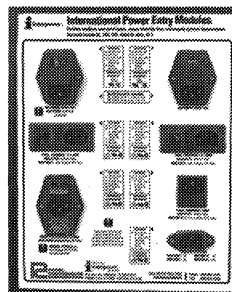
Panel of IEC 320 Inlets/Outlets



For convenience in designing the power entry portion of your product, this panel contains four IEC 320 power inlets and four accessory power outlets. Both 10A international/15A North American and 16A international/20A North American models are included. Push-in, panel, and pc-mounting types are included in this panel.

#83010010: Designer's Panel of IEC 320 Inlets & Accessory Outlets
Size: 9" x 12" x 2"; approx. 2#
This panel is free upon request.

Panel of Power Entry Modules



Designer's panel contains seven international multifunction power entry modules, rated 6-10A/250VAC. Depending on model, these modules combine: IEC 320 power inlet, voltage selector, fuse, RFI filter, power switch, accessory outlet, or circuit breaker.

#83111010: Designer's Panel of Multifunction Power Entry Modules
Size: 9" x 12" x 2"; approx. 3#
This panel is free upon request.

Kit of International Plugs



For use in designing electrical and electronic equipment that will be exported with foreign power cords/cordsets, this kit contains nine of the most common international plugs.

#88090020: Designer's Kit of International Plugs
Size: 12" x 13" x 4"; approx. 2lbs.

Kit of International Sockets



For use in design and test/burn-in of electrical and electronic equipment that will be exported with foreign power cords/cordsets. Kit contains nine of the most common international sockets.

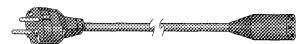
#88090030: Designer's Kit of International Sockets
Size: 12" x 13" x 4"; approx. 2lbs.

Designer's Kit of International Cordsets



The nine cordsets in this kit represent the major plug standards used in the world today. For use in designing the power entry portion of export products, the kit can also be used by international travelers who carry and use equipment which must be properly plugged in and grounded (be sure to set equipment at the proper voltage and frequency before operation). Each cordset is terminated with the IEC 320 sheet C13 connector, a common standard in the industrialized world. Complete specifications on each cordset are included for use in developing your purchasing specifications. The kit also contains information on world plug and socket standards and world electrical voltages and frequencies.

#86599011: Designer's Kit of International Cordsets
Size: 19" x 15-1/2" x 4"; weight approx. 10lbs.



Cordsets are illustrated and described in EEM section 6000

DESIGNING FOR EXPORT? WE MAKE IT EASY! See also EEM sections 4050, 4300, 5600, & 6000

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IEC 320 Power Inlets & Connectors



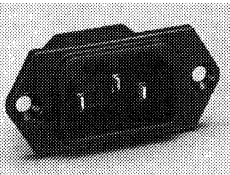
10-15A/65°C 10-15A/120°C 16-20A/65°C

The IEC 320 power inlet is the most commonly used means of connecting a detachable cordset to electrical or electronic equipment that consumes up to 16A at 220-240V (20A/120V) or less. (European voltages and frequencies are typically 230VAC, 50Hz). IEC 320 inlets are used in Europe, North America, and throughout the industrialized world. An IEC 320 power inlet allows the manufacturer to

attach the correct international cordset just before shipment (see Sec. 6000 for cordsets).

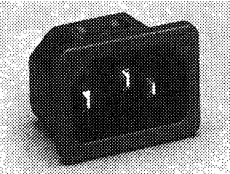
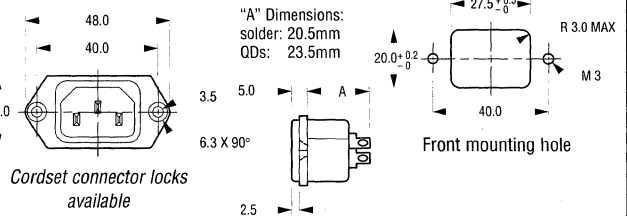
Modules that combine an IEC 320 power inlet and other functions and accessory power connections based on IEC 320 are shown on the following pages. All items normally available from stock with no minimum order. See Sec. 6000 for cordsets with molded on connectors.

IEC 320 inlets & connector — 10A international (15A North America)



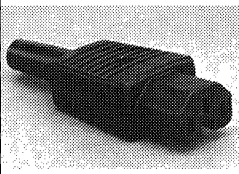
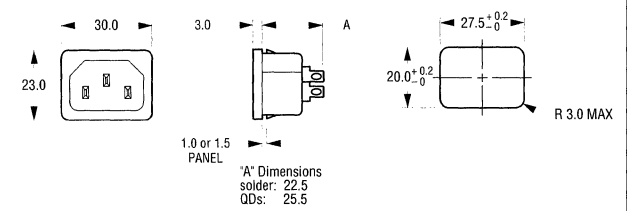
C14 Screw mount, 65°C

#8301211: with solder tabs
#8301212: with 4.8 mm (.187") solder/QDs
#8301213: with 6.3 mm (.25") solder/QDs
 Screw mount. Tin-plated brass contacts; UL 94 V-0 polyamide thermoplastic insulator.
Approvals: VDE, DEMKO, IMQ, KEMA, NEMKO, OVE, SEMKO, FIMKO, SEV (10A/250VAC); UL recog. & CSA (15A/250VAC).



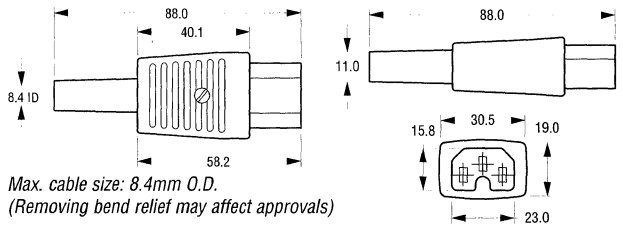
C14 Push-in mount, 65°C

#8301311: 1.5mm panel, 3.5mm solder tabs
#8301312: 1.5mm panel, 6.3mm sold./QDs
#83013111: 1.0mm panel, 3.5mm solder tabs
#83013121: 1.0mm panel, 6.3mm sold./QDs
 Push-in mount. Tin-plated brass contacts; UL 94 V-0 polyamide thermoplastic insulator.
Approvals: VDE, DEMKO, IMQ, KEMA, NEMKO, OVE, SEMKO, SEV, FIMKO, (10A/250VAC); UL recog. & CSA (15A/250VAC).

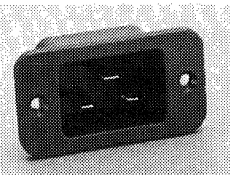


C15 Cable-mount, 120°C

#8943 W 60: Rewirable IEC 320 power cord connector for use at 120°C. Mates with both 10A/65°C (above) and 10A/120°C standard C 16 inlets (not shown). Screw-type connections. Solid brass contacts; UL 94 V-2 polyamide-type thermoplastic insulator.
Approvals: OVE, SEMKO, SEV, VDE (10A/250VAC), CSA cert. & UL recog. (15A/250VAC)
 Assembly services available.

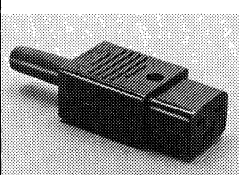
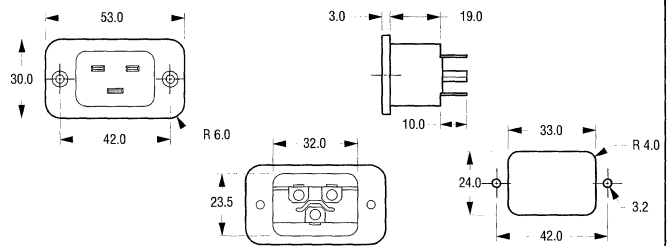


IEC 320 inlet & connector — 16A international (20A North America)



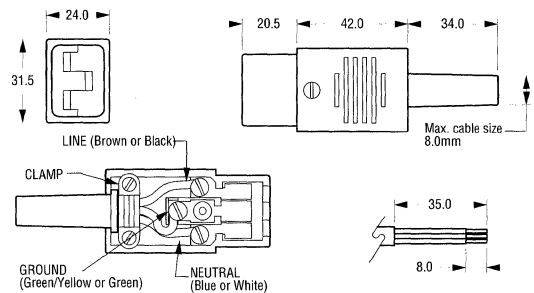
C20 Screw-mount inlet, 65°C

#83011340: IEC 320 C20 power inlet (65°C) for detachable connections at higher ratings. UL 94 V-0 nylon insulator. Nickel-plated brass contacts. 6.3mm QD tabs.
Approvals: UL recog., CSA cert. (20A/250VAC); VDE (16A/250VAC)
 Accessory outlet and receptacle also available—see following pages.



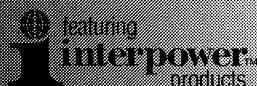
C19 Cable-mount connector; 65°C

#83011380: Rewirable IEC 320 (C19) power connector for detachable connections at higher ratings. UL 94 V-0 nylon insulator. Nickel-plated brass contacts. Screw-type connections. Made to order cable assembly services available.
Approvals: UL recog.; CSA cert. (21A/250VAC)
NOTE: 83011430 (not pictured here) is a compact version of part above; UL, CSA, & VDE approvals



Dimensions are in mm

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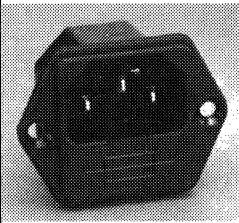
International Power Entry Modules



Power modules aid in configuring a product with the correct cordset, voltage, and fusing for international or North American markets, and can also save on space, assembly costs, and components management because several functions are combined in one unit. A power module can also make a product

safer. It is impossible to access the fuseholder or voltage selector while the power entry connector is engaged. The equipment user must then remove the power cord before changing a fuse or adjusting a voltage selector. See EEM Sec. 4300 for fuses. All items normally available from stock with no minimum order.

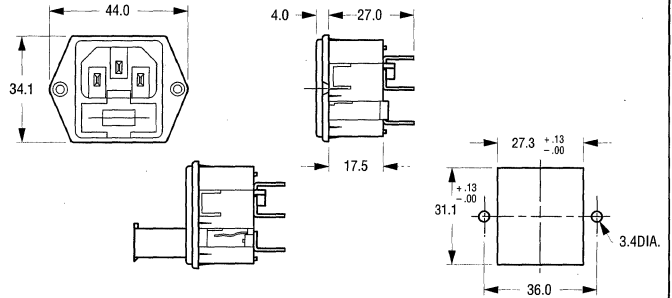
2 Function Module



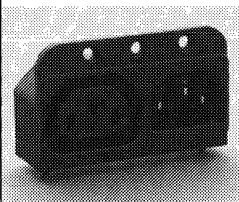
C14 Screw-mount, 65°C

Push-in mount models and twin fused models are also available.

#83110111: (shown at left): screw mount; solder tabs
#83110131: screw-mount: 6.3mm QDs Combines 1) IEC 320 inlet 2) carrier for 5x20mm fuse; order fuse separately. Nickel-plated brass contacts; UL 94 V-0 polyamide-type thermoplastic insulator.
Approvals: VDE, SEMKO, SEV, UL recog., CSA cert., at 10A/250VAC
#83110170: twin fused screw mount: UL, CSA cert., & VDE at 10A/250VAC
#83110180: twin fused push-in mount: UL, CSA cert., & VDE at 10A/250VAC

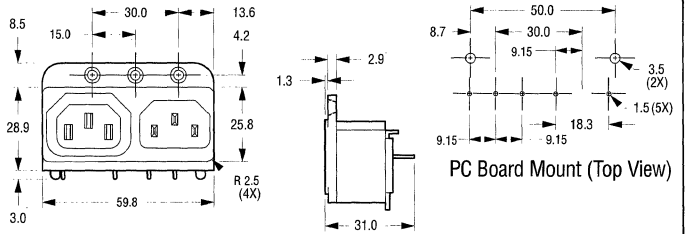


2 Function Module



Screw-mount, 65°C

#83511400: Printed circuit board mounting power entry module combines: 1) IEC 320 inlet; 2) accessory outlet. Connections made by solder pins. Screw mount. Nickel-plated brass contacts; UL 94 V-0 polyamide-type thermoplastic insulator.
Approvals: UL recog., VDE at 10A/250VAC, CSA cert. at 15/250VAC

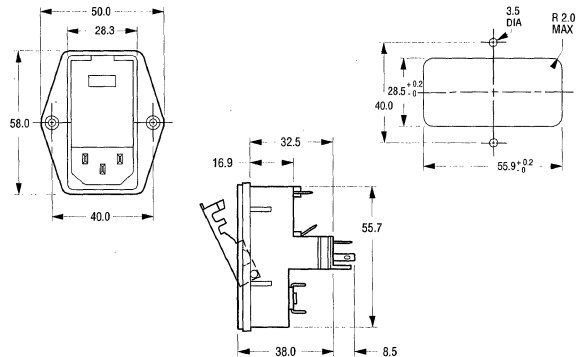


3 Function Module

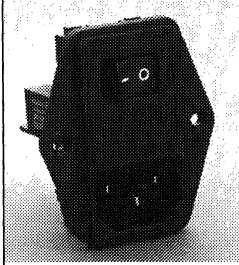


Screw-mount, 65°C

#83110011: Power entry module combines: 1) IEC 320 inlet; 2) fusing for international 5 x 20mm or North American 1/4" x 1 1/4" fuse; 3) 4-position voltage selector (100, 120, 220 & 240VAC). Connections made via solder tabs. Screw mount. Nickel-plated brass contacts; UL 94 V-0 polyamide-type thermoplastic insulator.
Approvals: UL recog., CSA cert. at 6A/250VAC; VDE at 10A/250VAC
Order fuse carrier separately:
#83110050: for int'l. 5x20mm fuse
#83110040: for 1/4" x 1 1/4" fuse



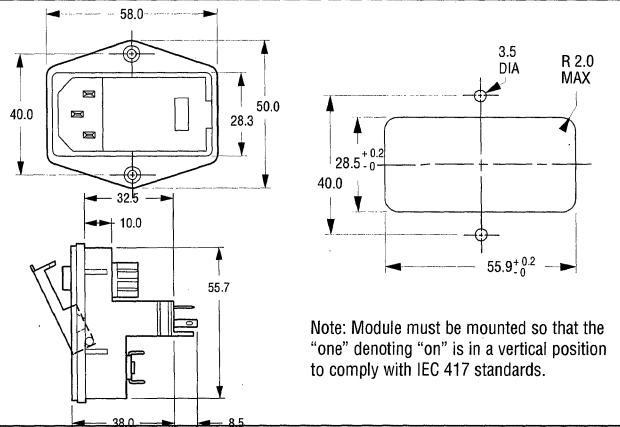
3 Function Module



Screw-mount

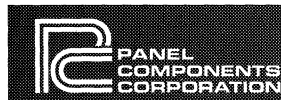
Dimensions are in mm

#83110032: Panel-mount power entry module combines: 1) IEC 320 inlet; 2) carrier for int'l. 5 x 20mm fuse or North American 1/4" x 1 1/4" fuse; 3) double-pole off/on rocker switch. Connections made via solder tabs & 4.8mm solder/QDs. Screw mount. Nickel-plated brass contacts; UL 94 V-0 polyamide-type thermoplastic insulator.
Approvals: UL recog., CSA cert. at 6A/250VAC; VDE at 10A/250VAC
Order fuse carrier separately:
#83110050: for int'l. 5x20mm fuse
#83110040: for 1/4" x 1 1/4" fuse



Note: Module must be mounted so that the "one" denoting "on" is in a vertical position to comply with IEC 417 standards.

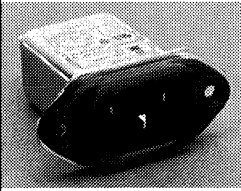
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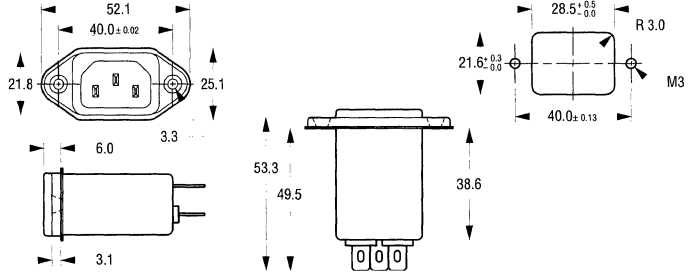
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International Power Entry Modules, continued *Normally available from stock • No minimum order*



2 Function Module

#83510312: 1A
 #83510352: 3A
 #83510412: 6A
 #83510442: 10A
 Power entry module combines: 1) IEC 320 inlet; 2) RFI filter. Connections made by 6.3mm solder/QDs.
Approvals: UL recog., CSA cert., VDE

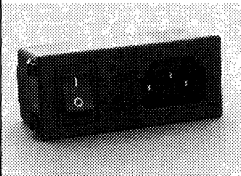


C14 Screw-mount, 65°C

Block style filters also available

INSERTION LOSS DATA FOR 2 FUNCTION MODULE ABOVE

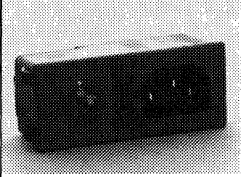
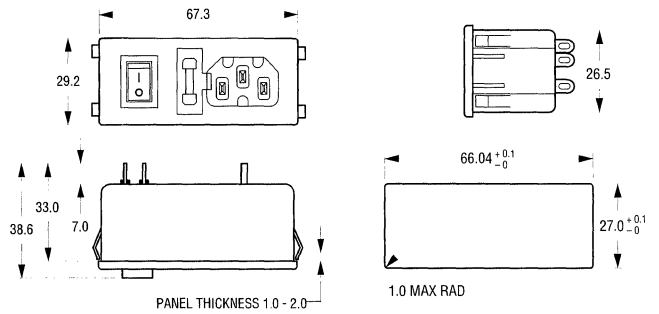
Part Number	Cur. Rat. (115/250 VAC)	C1 Capacitor	C2 Capacitors	Inductor	Min. Common Mode Insertion Loss (L-G) (dB in 50Ω system) Frequency—MHz								Min. Differential Mode Insertion Loss (L-L) (dB in 50Ω system) Frequency—MHz							
					.05	.10	.15	.50	1.0	5.0	10	30	.05	.10	.15	.50	1.0	5.0	10	30
83510312	1A	0.033 μF (X2)	2 X 2200 pF (Y)	2 X 5 mH	18	25	28	40	45	45	45	45	0	2	10	20	40	42	40	
83510352	3A	0.033 μF (X2)	2 X 2200 pF (Y)	2 X 1.8 mH	10	15	22	30	35	45	45	45	0	2	5	14	38	40	40	
83510412	6A	0.033 μF (X2)	2 X 2200 pF (Y)	2 X 0.6 mH	4	8	12	20	25	40	45	45	0	2	5	10	35	38	40	
83510442	10A	0.033 μF (X2)	2 X 2200 pF (Y)	2 X 0.18 mH	0	2	4	10	15	30	38	45	0	2	5	10	25	35	40	



Push-in mount, no filter

3 Function Module

#83510160: Power entry module combines: 1) IEC 320 inlet; 2) integral carrier for 5 x 20mm fuse; 3) double-pole off/on rocker switch. Snap-in mounting for panel thickness of 1.0-2.0mm (0.04-0.08"). Connections made via solder tabs.
Approvals: UL recog. and CSA certified—6A/115VAC (4A/250VAC); VDE—10A/250VAC

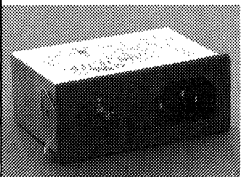
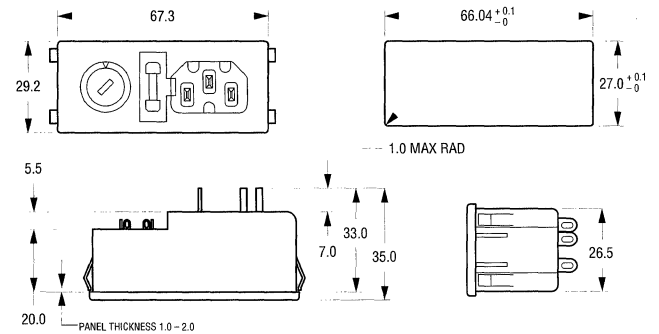


Push-in mount, no filter

Note: Voltage selector is not designed to be switched while power is applied; selection must be made before connecting the unit to the power mains.

3 Function Module

#83510170: Power entry module combines: 1) IEC 320 inlet; 2) integral carrier for 5x20mm fuse; 3) and 2-position voltage selector for N.A. 110VAC & Cont. European 220VAC. Push-in mounting for panel thickness of 1.0-2.0mm (0.04-0.08"). Connections are made via solder tabs. Order fuses separately (see Section 4300).
Approvals: VDE at 10A/250, UL recog., CSA cert. at 6A/250VAC



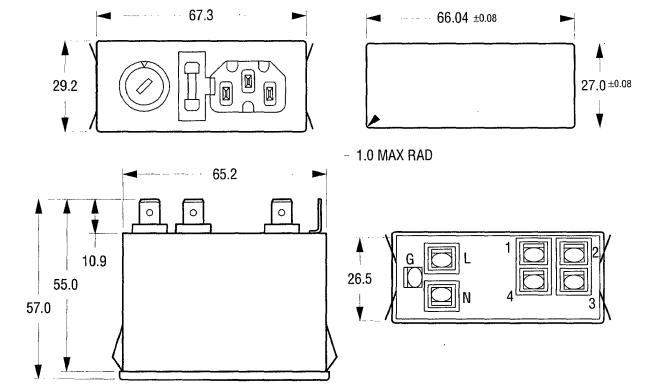
Push-in mount, with filter

Note: Voltage selector is not designed to be switched while power is applied; selection must be made before connecting the unit to the power mains.

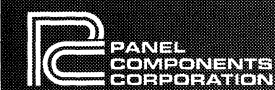
Dimensions are in mm

4 Function Module

#83510071: Power entry module combines: 1) IEC 320 inlet; 2) integral carrier for 5x20mm fuse; 3) 2-position voltage selector for N.A. 110VAC & Cont. European 220VAC; 4) RFI line filter. Push-in mounting for panel thickness of 1.0-2.0mm (0.04-0.08"). Connections are made via 6.3mm QDs. Order fuses separately (see Section 4300).
Approvals: VDE, UL recog., CSA cert. at 6A/250VAC



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International Power Entry Modules, continued *Normally available from stock • No minimum order*

5-Function Module

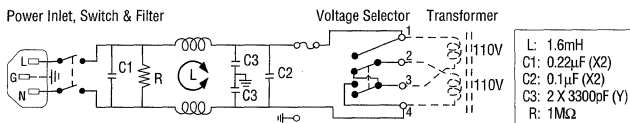
#83511420: Power entry module combines: 1) IEC 320 inlet; 2) carrier for 5x20mm or N.A. ¼" x 1¼" fuse; 3) double-pole on/off rocker switch; 4) 2-position voltage selector (110-120VAC No. Amer. or 220-240 int'l); 5) RFI power line filter. Voltage selector, filter, and connections are internally wired; make connections via 6.3mm QDs.

Approvals: UL recog. solder/QDs at 10A/250VAC; CSA cert. at 6A/250VAC

The integral fuse drawer doubles as a voltage selector by rotating the drawer. Insert a North American ¼" x 1¼" fuse in the "110-120VAC" side of the fuse drawer or an international 5x20mm fuse in the "220-240VAC" side.

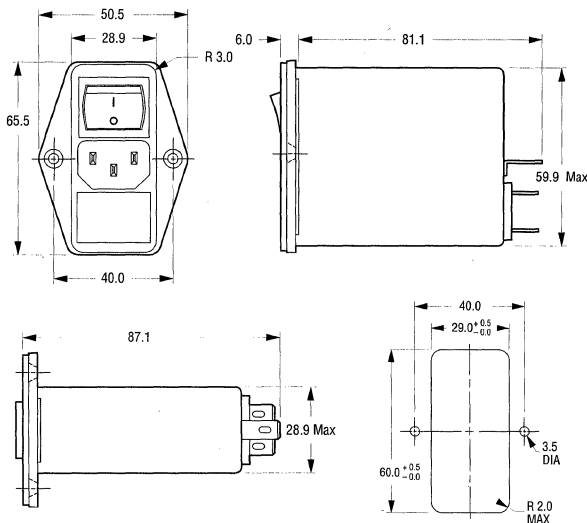
SPECIFICATIONS:

- Body:** UL 94V-0 rated polyamide-type thermoplastic
- Max. leakage current:** L to G @ 115VAC, 60Hz: 0.25mA
L to G @ 250VAC, 50Hz: 0.45mA
- Hipot rating (one minute):** L to G: 2250VDC
L to L: 1450VDC
- Operating Frequency:** 50-60Hz
- Rating:** 115-250VAC, 65°C



Filter Performance:

Minimum insertion loss in dB (50 ohm system)	Frequency—MHz							
	.05	.10	.15	.50	1.0	5.0	10	30
Common mode, L-G	10	15	15	25	30	40	40	30
Differential mode, L-G	2	5	3	35	45	40	40	30



C14 Screw-mount, 65°C

5-Function Medical Modules—with low leakage RFI filter



These power entry modules combine the features of part #83511420 shown above, but utilize a low-leakage RFI power line filter rated at 6A for use in medical applications. Two models are available to accommodate the different fusing requirements for international and North American medical applications:

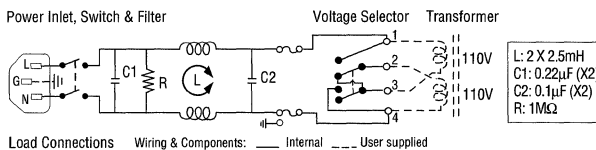
#83511430: for international medical applications requiring two 5x20mm fuses (to fuse both line and neutral where the connections are non-polarized).
Approvals: VDE at 6A/250VAC

#83511440: for North American medical applications which requires the use of only one ¼" x 1¼" fuse.
Approvals: UL recog., CSA cert. at 6A/125VAC

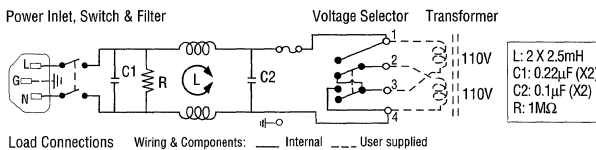
Filter Performance:

Minimum insertion loss in dB (50 ohm system)	Frequency—MHz							
	.05	.10	.15	.50	1.0	5.0	10	30
Common mode, L-G	10	15	20	30	35	25	20	10
Differential mode, L-G	2	5	3	40	50	40	40	35

83511430 schematics



83511440 schematics



C14 Screw-mount, 65°C

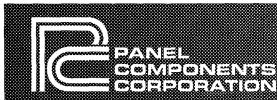
See model #83511420 above for dimensional drawings

SPECIFICATIONS:

- Body:** UL 94V-0 rated polyamide-type thermoplastic
- Max. leakage current:** Line to ground @ 115VAC, 60Hz: 2.0 µA
Line to ground @ 250VAC, 50Hz: 5.0 µA
- Hipot rating (one minute):** Line to ground: 2250VDC
Line to line: 1450 VDC
- Operating Frequency:** 50-60Hz
- Rating:** 115-250VAC, 65°C

Dimensions are in mm

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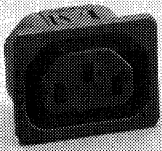
Accessory Power Outlets & Plug Connectors

Accessory power connections are based on IEC 320. For multiple accessory connections, see the International Power Strip and Jumper Cordset on the following page.

All items normally available from stock with no minimum order. We offer in-house made-to-order cord assembly services; contact us for a quotation.

Accessory Power Outlets

Normally available from stock • No minimum order

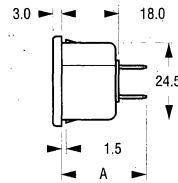
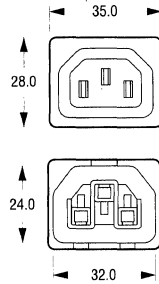


Sheet F Push-in mount outlet, 65°C

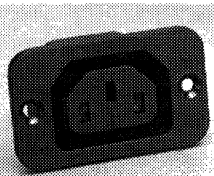
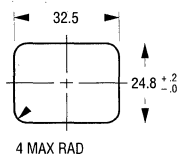
#8301611: with solder tabs
#8301612: with 6.3 (.25") solder/QDs
 Accessory power outlet in two contact styles. Push-in mounting for 1.5mm panel. Insulators molded from UL 94 V-0 polyamide-type thermoplastic. 65°C. Nickel-plated brass contacts.

Approvals: VDE, IMQ, SEV, FIMKO, OVE, SEMKO, NEMKO, KEMA at 10A/250VAC; UL recognized, CSA certified at 15A/250VAC.

Screw mount models also available.



"A" Dimension:
 solder tabs: 24.1
 QDs: 27.9



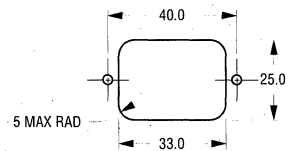
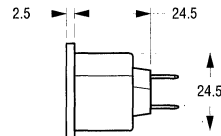
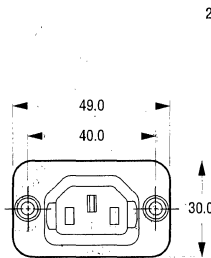
Screw-mount outlet

Note: line & neutral are shuttered

#83011220: with 6.3 (.25") solder/QDs
 Accessory power outlet. Special safety feature: line & neutral contacts are shuttered to prevent contact with object other than mating plug. Insulators molded from UL 94 V-0 polyamide-type thermoplastic. 65°C. Tin-plated lead contacts.

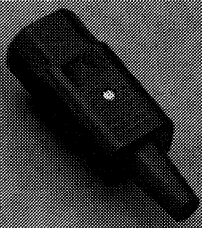
Approvals: VDE, BEAB, UL recognized, CSA certified at 10A/250VAC.

Push-in mount model also available.



Accessory Power Plug Connectors

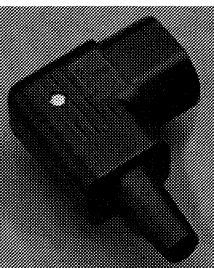
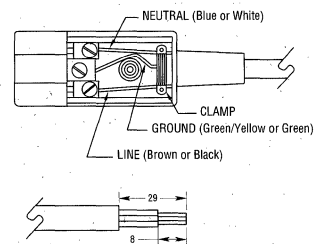
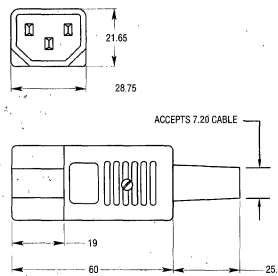
Made-to-order Assembly Services Available



Cable-mount—straight entry

#83011060: Cable-mount accessory power connector. Insulator molded from UL 94 V-0 polyamide-type thermoplastic. 65°C. Nickel-plated brass contacts. Screw-type connections.

Approvals: UL recog. and CSA at 15/250VAC, VDE at 10/250VAC

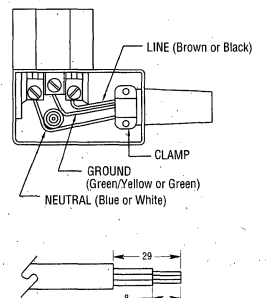
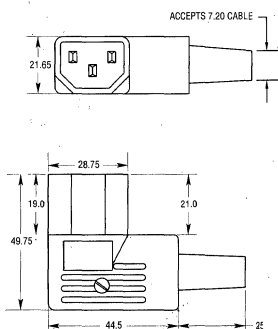


Cable-mount—angled entry

Dimensions are in mm

#83011070: Angled entry cable-mount accessory power connector. Insulator molded from polyamide-type thermoplastic. 65°C. Nickel-plated brass contacts. Screw-type connections.

Approvals: UL recog. and CSA at 15/250VAC, VDE at 10/250VAC



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Accessory Power Strip & Jumper Cords



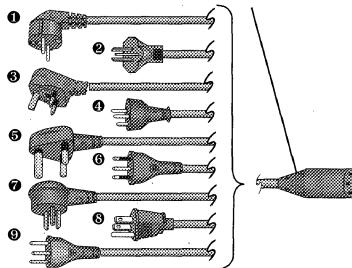
A power distribution system based on IEC 320 (instead of country-specific sockets) is ideal when you are designing a product for both

international and North American markets. See "Universal" Power Distribution System below. All items normally available from stock.

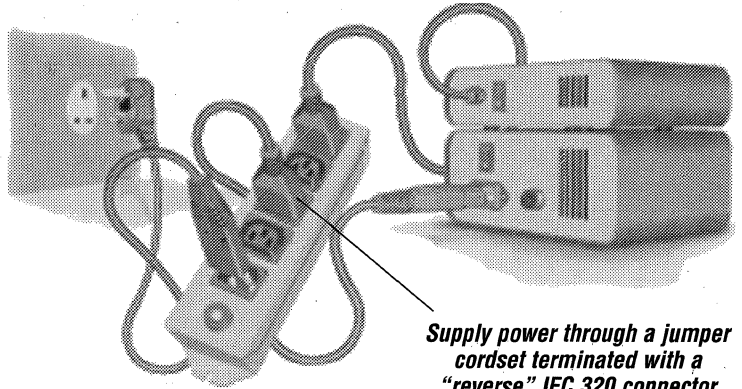
A "Universal" Power Distribution System based on IEC 320

This power distribution system is based on the standard IEC 320 connector outline which makes it easy to design a power distribution system for both North American and international markets.

Supply input power to the Accessory Power Strip through a cordset terminated with an IEC 320 connector.

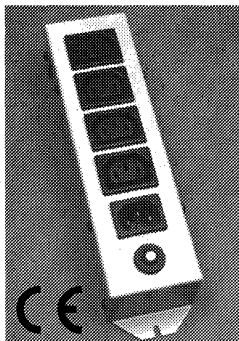


- 1 Cont. Europe
- 2 Australia
- 3 U.K./Ireland
- 4 Denmark
- 5 India/South Africa
- 6 Italy
- 7 Israel
- 8 North America
- 9 Switzerland



Supply power through a jumper cordset terminated with a "reverse" IEC 320 connector (such as #86557000 through #86557060 below)

Accessory Power Strip



Now available with 6 outlets!

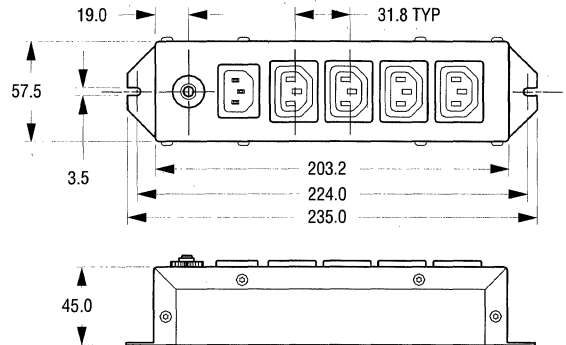
#85010070: Interpower™ Accessory Power Strip contains one IEC 320 power inlet, four "reverse" IEC 320 power outlets, beige metal casing, 10 amp single-pole circuit breaker.

Approvals: UL recognized, CSA certified, (10A/250VAC)

#85010080 (not shown): similar to #85010070 above, with *six* "reverse" IEC 320 power outlets and 10A double-pole circuit breaker.

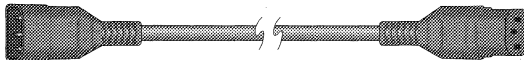
Approvals: UL recognized, CSA certified, VDE (10A/250VAC)

Dimensions are in mm



"Universal" Jumper Cordsets (CSA, SEV & VDE)

With sockets based on the IEC 320 power connector, the Interpower™ International Socket Strip (shown above) allows you to power accessories and peripherals anywhere in the world. Input power is supplied through a cordset terminated with an IEC 320 connector. Accessories are powered through a jumper cordset such as #86557000 (below) or those shown in the chart at right.



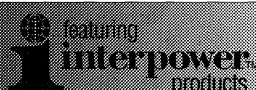
#86557000: "Universal" Jumper Cordset for use with Accessory Power Strip; meets requirements of North American and international safety agencies. Jumper Cordset utilizes black Harmonized cordage. One meter long.

Approvals: VDE, BSI, SEMKO, DEMKO, FIMKO, IMQ, OVE, KEMA, SEV, CEBEC, NEMKO, UTE (10A/250VAC), CSA

Additional "Universal" Jumper Cordsets cordsets, listed at right, carry same approvals and ratings as #86557000 above. Cordsets vary only in length from the part listed above.

Part #	Current Rating	Maximum Temperature	Color	Length (± 0.1m)	Cordage
86557000	10A 250VAC	60°/UL, CSA 65°/VDE	Black	1 meter	3 x 1.0 mm ² Harmonized
86557010	10A 250VAC	60°/UL, CSA 65°/VDE	Black	2.5 meters	3 x 1.0 mm ² Harmonized
86557030	10A 250VAC	60°/UL, CSA 65°/VDE	Black	0.5 meter	3 x 1.0 mm ² Harmonized
86557040	10A 250VAC	60°/UL, CSA 65°/VDE	Black	1.5 meters	3 x 1.0 mm ² Harmonized
86557050	10A 250VAC	60°/UL, CSA 65°/VDE	Black	2.0 meters	3 x 1.0 mm ² Harmonized
86557060	10A 250VAC	60°/UL, CSA 65°/VDE	Black	3.0 meters	3 x 1.0 mm ² Harmonized

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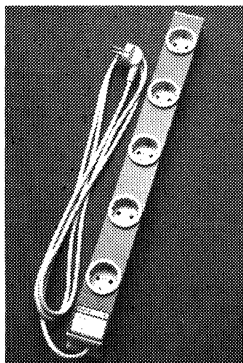
International Socket Strips

All items normally available from stock.
No minimum order.

For power distribution systems based on specific socket patterns. See "Universal" Power Distribution System shown on previous page

if you are designing a product for both International and North American markets.

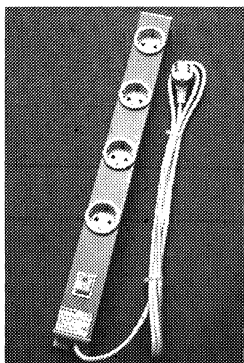
Continental Europe (Schuko)*



Continental European socket strip with 5, 9 or 13 CEE 7 sockets (see below). Cable is 2.5m long, terminated with CEE 7/7 plug. Metal casing. Color: Orange. Current Rating: 16A/250VAC. Approval: VDE.

Part No.	# of skts.	Dimensions (mm)
85023050	5	52W x 38H x 566L*
85023090	9	52W x 38H x 966L*
85023130	13	52W x 38H x 1365L*

*length includes mounting flange

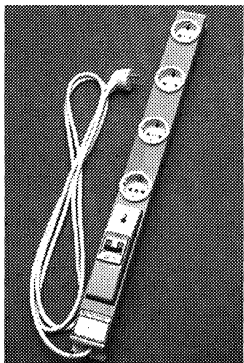


With lighted rocker switch

Continental European socket strip with rocker switch and 4, 8 or 12 CEE 7 sockets (see below). Cable is 2.5m long, terminated with CEE 7/7 plug. Metal casing. Color: Orange. Current Rating: 16A/250VAC. Approval: VDE.

Part No.	# of skts.	Dimensions (mm)
85003040	4	52W x 38H x 546L*
85003080	8	52W x 38H x 945L*
85003120	12	52W x 38H x 1345L*

* length includes mounting flanges



With circuit breaker

Continental European socket strip with circuit breaker and 4 CEE 7 sockets. Cable is 2.5m long, terminated with CEE 7/7 plug. Metal casing. Color: Orange. Current Rating: 16A/250VAC. Approval: VDE.

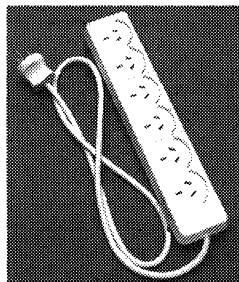
Part No.	# of skts.	Dimensions (mm)
85013040	4	52W x 38H x 611L*

*length includes mounting flanges

85032050: French/Belgian socket strip, (with male grounding pin in socket) also available. Five sockets. Cable is 2.5m long, terminated with CEE 7/7 plug. Metal casing. Color: Orange. Current Rating: 15A/250VAC. Approval: (none)

* Continental European CEE 7 sockets are used in Germany, Austria, Finland, the Netherlands, Norway, and Sweden.

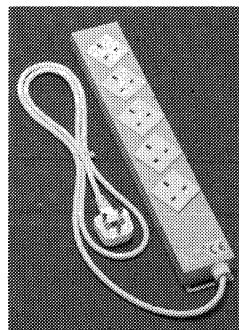
Australia/New Zealand



Australian socket strip with six AS 3112 sockets and circuit breaker. Used in Australia, New Zealand, Fiji, Papua New Guinea. Cable is 1m long, terminated with an Australian plug. Current rating: 10A/250VAC. Plastic casing. Color: White. Approval: EANSW.

Part No.	# of skts.	Dimensions (mm)
85010050	6	47.8W x 26.7H x 313L

United Kingdom

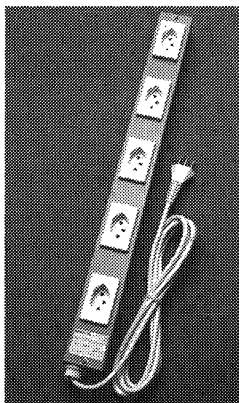


British socket strip with five BS 1363 sockets and fuse. Used in the U.K. & Ireland. Cable is 1.8m long, terminated with a BS 1363 plug. Current rating: 13A/250VAC. Metal casing. Color: Beige.

Part No.	# of skts.	Dimensions (mm)
85031053	5	75.2W x 38H x 482L*

* length includes mounting flanges

Switzerland

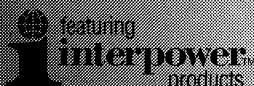


Swiss socket strip with five SEV 1011 sockets. Cable is 2.5m long, terminated with a SEV 1011 plug. Current rating: 10A/250VAC. Metal casing. Color: Orange.

Part No.	# of skts.	Dimensions (mm)
85030050	5	51W x 39.5H x 565L*

* length includes mounting flanges

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International Plugs & Sockets

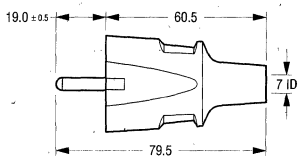
All items normally available from stock
In-house made-to-order assembly services available

International sockets are used for power distribution and in test and burn-in racks for equipment that is being exported (note our International Power Source in EEM Section 4050).

International cords and cordsets are available—see EEM Section 6000: Designer's Kits of International Plugs and Sockets also available. Items normally available from stock. No minimum order.

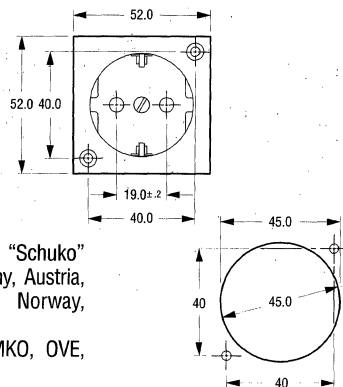
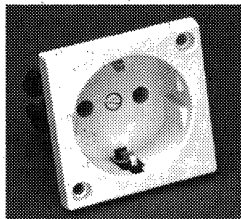
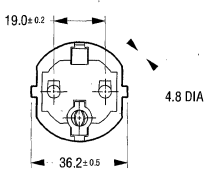
Continental Europe (Schuko) & Russia

Dimensions are in mm

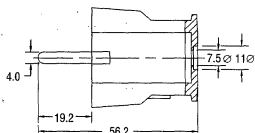
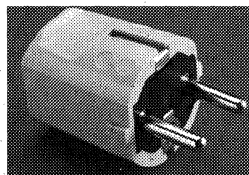


Cont. European/German Plug

#88010801: Cont. European "Schuko" CEE 7/7 plug used in Germany, Austria, Finland, the Netherlands, Norway, & Sweden. Color: Gray.
Approvals: VDE, NEMKO, SEMKO, FIMKO, CEBC, 16A/250VAC
Also available: **#88010701**—Without Boot;
#88010920—Black; **#88010820**—Brown;
#88010965—Angled

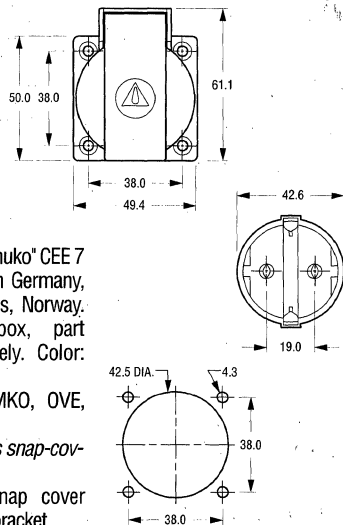
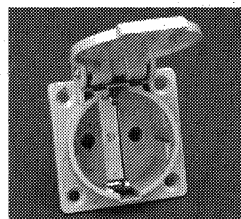
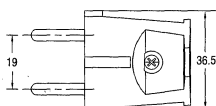
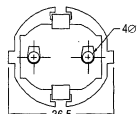


#88010610: Cont. European "Schuko" CEE 7 socket used in Germany, Austria, Finland, the Netherlands, Norway, Sweden. Color: Ivory.
Approvals: VDE, KEMA, SEMKO, OVE, 16A/250VAC
#88010611: Color: Black: (same as above)



Russian Plug

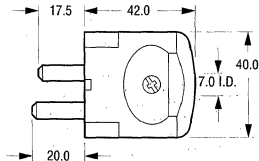
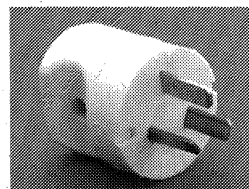
#88010340: Russian CEE 7/7 plug used in former Soviet Union. Similar to "Continental Europe" (German standard) plug shown above. Contact pins are 19mm apart, but the pins are only 4.0mm in diameter. Color: Light Gray
Approvals: (none)
Ratings: 10A/250, 16A/250VAC



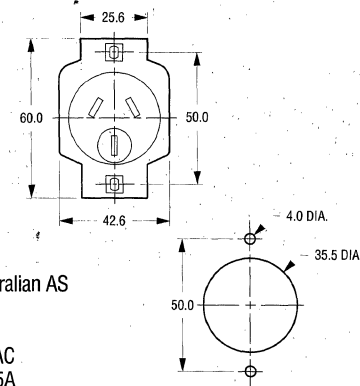
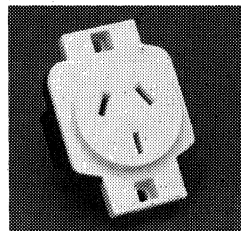
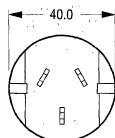
#88010300: Cont. European "Schuko" CEE 7 socket with snap cover. Used in Germany, Austria, Finland, the Netherlands, Norway. Optional gray mounting box, part #88090040, available separately. Color: Gray.
Approvals: VDE, NEMKO, FIMKO, OVE, KEMA, 16A/250VAC
NOTE: French/Belgian and Swiss snap-cover models also available
Also available: **#88010310**—snap cover socket with attached mounting bracket.

Australia/New Zealand

In-house made-to-order assembly services available



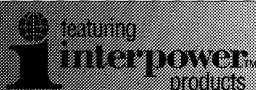
#88010713: Australian AS 3112 plug. Color: white.
Approval: EANSW, 10A/250VAC
Also available: **#88010450**—15A
#88010455—20A
#88010712—10A, Clear medical plug: (different style body)



#88010512: Panel-mount Australian AS 3112 socket. Color: white.
Approval: EANSW, 10A/250VAC
Also available: **#88010441**—15A

Dimensions are in mm

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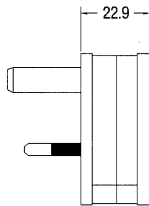
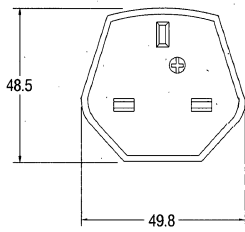
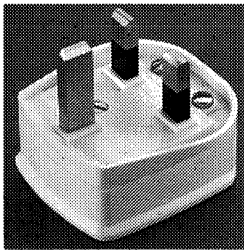
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International Plugs & Sockets, continued

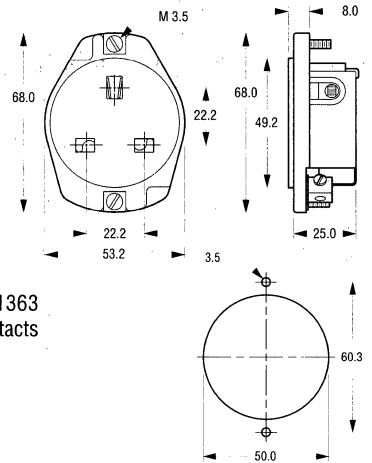
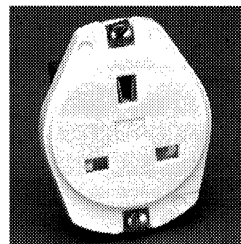
All items normally available from stock

United Kingdom & Ireland

In-house, made-to-order assembly services available



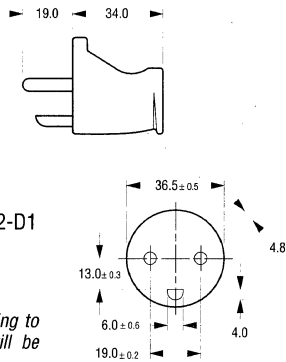
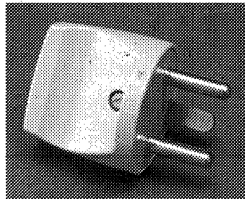
#88040011: British BS 1363 plug (contains 13-amp fuse). Color: white.
#88040021: (not pictured): As above but black.
Approvals: ASTA, 13A/250VAC



#88010621: British BS 1363 socket. Line and neutral contacts shuttered. Color: white.
Rating: 13A/250VAC

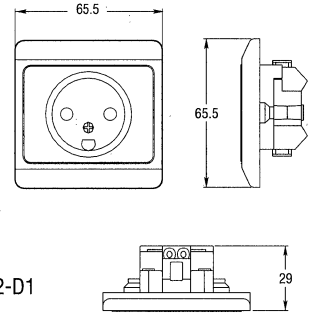
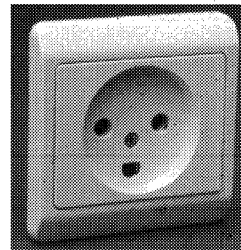
Denmark

In-house, made-to-order assembly services available



#88010741: Danish Afsnit 107-2-D1 plug. Color: gray.
Approval: DEMKO, 10A/250VAC

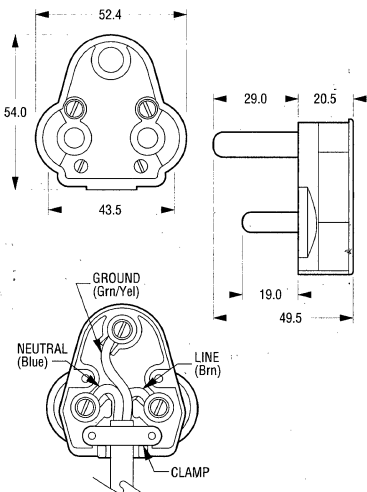
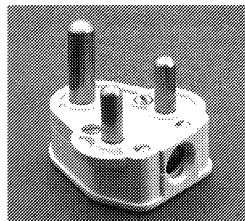
Note: Use a Danish plug when exporting to Denmark to ensure that the plug will be grounded.



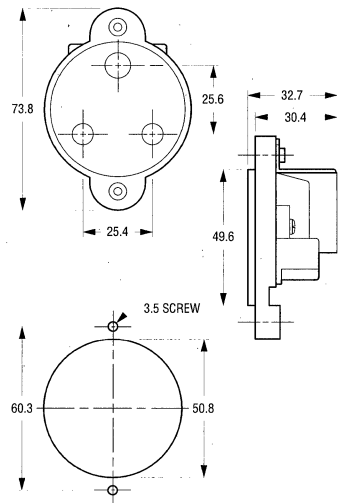
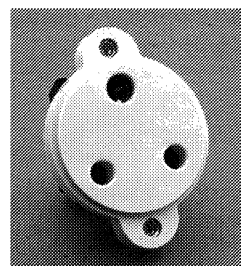
#88010541: Danish Afsnit 107-2-D1 socket. Color: white.
Approval: DEMKO, 10A/250VAC

India/South Africa (old British standard BS 546)

In-house, made-to-order assembly services available



#88010763: Old British standard BS 546 plug used in India/South Africa, & Hong Kong. Color: white.
Current rating: 15A/250VAC



#88010561: Old British standard BS 546 socket used in India/South Africa, & Hong Kong. Line and neutral contacts are shuttered. Color: white.
Current rating: 15A/250VAC

Dimensions are in mm

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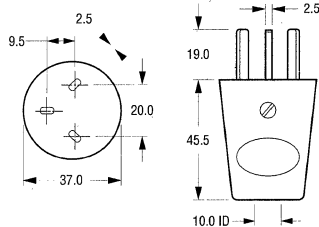
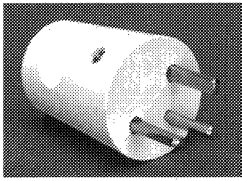
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International Plugs & Sockets, continued

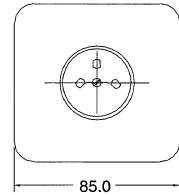
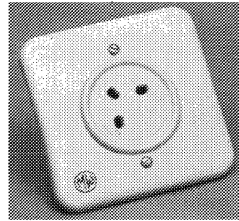
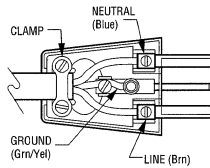
All items normally available from stock

Israel

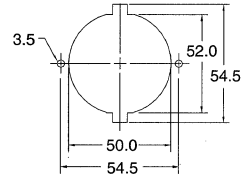
In-house made-to-order assembly services available



#88010780: Israeli SI 32 plug.
Color: white.
Approval: SII, 16A/250VAC

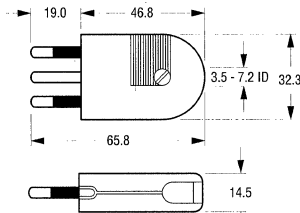
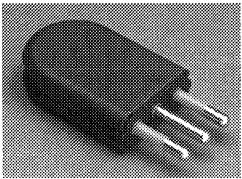


#88010580: Israeli SI 32 socket.
Color: white.
Approval: SII, 16A/250VAC

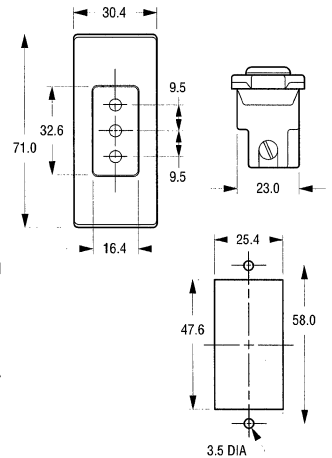
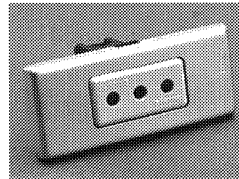
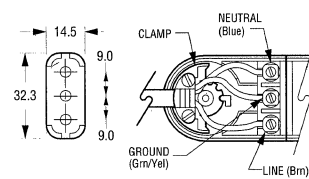


Italy

In-house made-to-order assembly services available



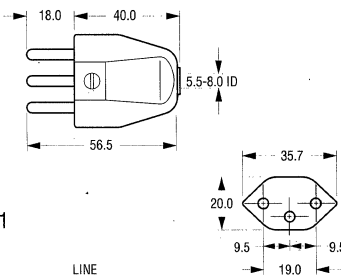
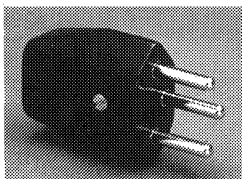
#88010771: Italian CEI 23-16/VII 10 amp plug.
Color: charcoal.
Rating: 10A/250VAC
Approval: IMQ, 10A/250VAC
Also available: #88010871—16A



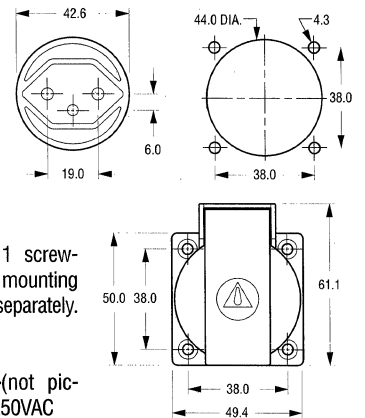
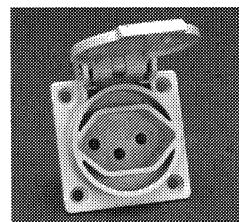
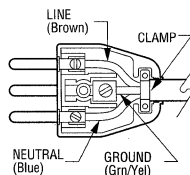
#88010572: Italian CEI 23-16/VII 10 amp socket. Panel-mounting socket with snap-on cover plate.
Color: silver.
Approval: IMQ, 10A/250VAC
Also available: #88010672—16A

Switzerland

In-house made-to-order assembly services available



#88010732: Swiss SEV 1011 plug.
Color: black.
Approval: SEV, 10A/250VAC.
Also available: #88010731—plug is 7 cm in length



#88010330: Swiss SEV 1011 screw-mount socket. Optional gray mounting box, part #88090040, available separately.
Color: gray.
Approval: SEV, 10A/250VAC.
Also available: #88010431—(not pictured): black in line socket: 10/250VAC

Note: Continental European and French/Belgian snap-cover models also available.

Dimensions are in mm

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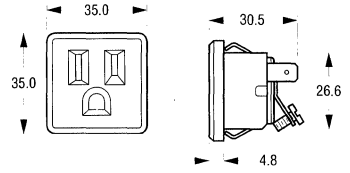
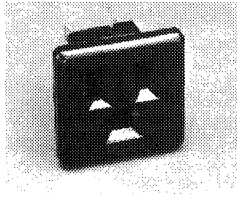
TOLL-FREE (U.S., Can., V.I., P.R.):
Call toll-free (800) 409-0081
FAX toll-free (800) 409-0082
Internet: www.panelcomponents.com

North American Plugs & Sockets

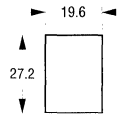
15A/125VAC Straight blade models (NEMA 5-15)

For all of your North American plug and connector needs... call Panel Components. Our Interpower™ North American plugs, in-line connectors, and sockets are available in a wide range of sizes and configurations. Both straight blade and locking styles are available, as well as flanged-mounting devices. Interpower™ NEMA plugs and in-line connectors are designed with color coded wire entries that make it easy for field installers to connect line, neutral, and ground properly. The wire entries are funnel-shaped so stripped conductors slide in easily with little chance of a strand remaining outside the wire funnel. The cable strain relief is designed to accept a wide range of outside cable diameters. Most items are UL Listed and CSA Certified.

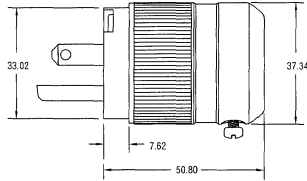
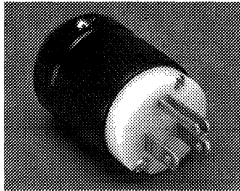
Call our Customer Service Department at **800-409-0081** for more information. All items are normally available from stock with no minimum order.



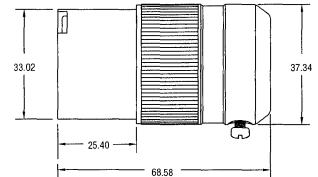
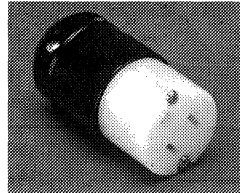
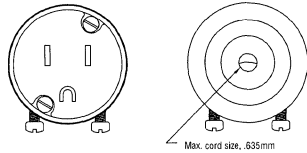
For panel thickness
.031" - .070"
(0.8 - 1.79mm)



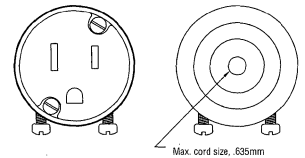
#88010641: NEMA 5-15R receptacle. Screw-type ground connections and solder/QD's line and neutral.
Color: black.
Approvals: UL recognized; CSA certified, 15A/125V



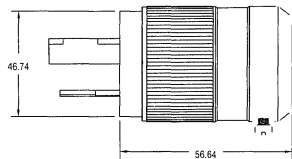
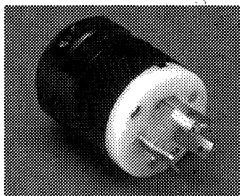
#88030100: NEMA 5-15P plug. Screw-type connections. Nylon housing; solid brass contacts. Color: black/white.
Approvals: UL; CSA certified, 15A/125VAC.



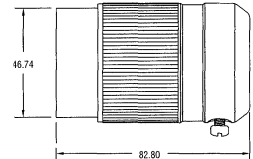
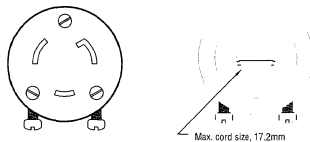
#88030110: NEMA 5-15R in-line connector. Screw-type connections. Nylon housing; solid brass contacts. Color: black/white.
Approvals: UL; CSA certified, 15A/125VAC



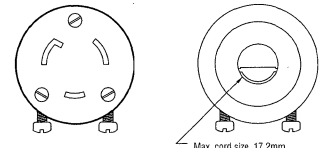
20A/250VAC Locking Pair (NEMA L6-20)



#88030160: NEMA L6-20P locking plug. Screw-type connections. Nylon housing; solid brass contacts. Color: black/white.
Approvals: UL; CSA certified, 20A/250VAC



#88030170: NEMA L6-20R in-line, locking connector. Screw-type connections. Nylon housing; solid brass contacts. Color: black/white.
Approvals: UL; CSA certified, 20A/250VAC



Dimensions are in mm

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International Socket Strips — test products before export

The International Socket Strip incorporates seven of the main overseas socket standards in one device. Connect it to your own power source in burn-in racks or test labs where products with international cords or cordsets are being prepared for export; or, use it for receiving inspection on international cords and cordsets.

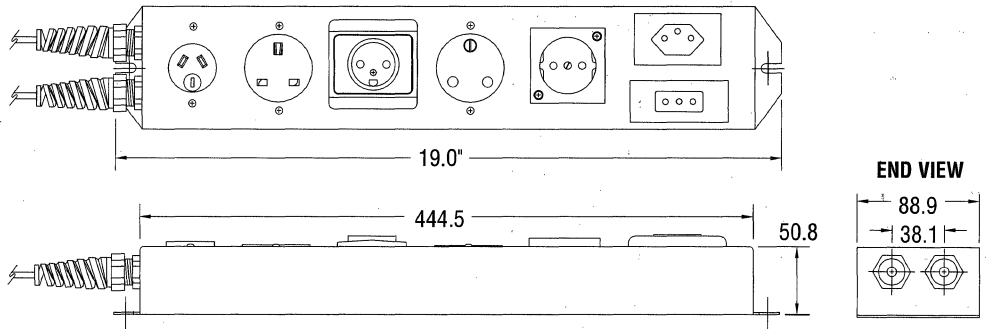
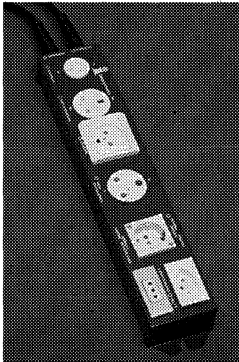
Installation to your power source: The International Socket Strip is equipped with two unterminated power cords—one for connection to your 230VAC/50Hz power source, the other to a 240VAC/50Hz power source. Conductor size is 1.5mm²—slightly larger than 16 AWG which

is 1.23mm². Each cord is 2.5 meters long and clearly marked as to voltage. The jacket and primary insulation are stripped and ready for installation to the appropriate power source. The primary insulation is color-coded in accordance with international standards: green/yellow=ground • brown=line • blue=neutral. Usually available from stock.

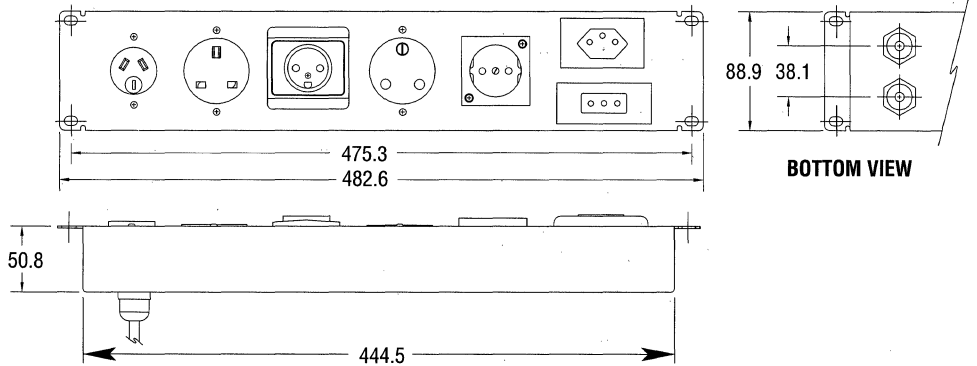
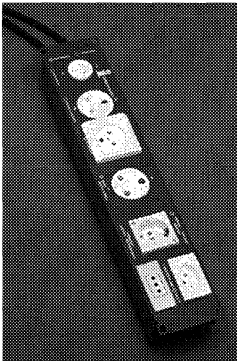
Note: Our "International Power Source" converts standard North American input voltage of 15A/115V/60Hz to output voltages of 100V, 115V, 220V, 230V or 240V at 50/60Hz; see EEM section 4050.

Dimensions are in mm

#85010102: Table mount model



#85010112: Rack mount model



INTERNATIONAL SOCKETS INCLUDED AND THEIR RATINGS:

230VAC/50Hz circuit:

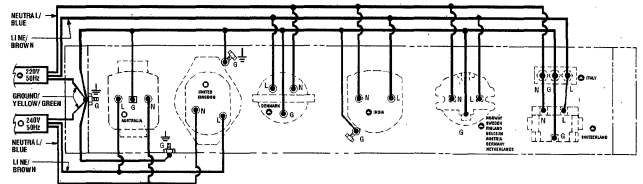
- Cont. Eur. (CEE 7) *16A
- Denmark10A
- Italy10A
- India/South Africa15A
- Switzerland10A

240VAC/50Hz circuit:

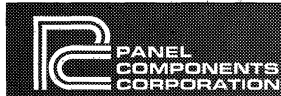
- Australia/N.Z./China10A
- U.K./Ireland13A

* CEE 7 is used in Austria, Finland, Netherlands, Norway, Sweden, Germany; variation is used in France/Belgium.

INTERNAL WIRING DIAGRAM



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Plastics One, Inc. manufactures durable, ultra-flexible molded cable and connector systems using high strength tinsel wire. Since 1949, we have served world-wide markets in the medical, hearing and communication fields. We specialize in prototype-to-product custom design, toolmaking and insert molding. We set the standard for superior quality, flexibility and durability.

TOUCHPROOF CONNECTOR SYSTEMS

All of these connector systems were designed to comply with EN60601-1

1MM CONNECTORS
MULTIPLE CONNECTIONS
IN A SMALL PACKAGE

249/
37341

TouchProof
2 position
straight
connector

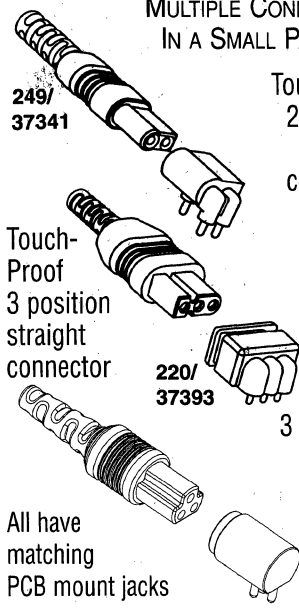
Touch-
Proof
3 position
straight
connector

220/
37393

Touch-
Proof
3 position,
keyed,
circular-
format

444/
37817

All have
matching
PCB mount
jacks



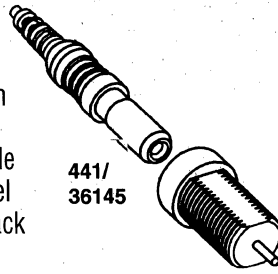
1.5MM CONNECTORS
TOUCHPROOF CONNECTOR SYSTEMS
MEETING DIN 42-802

Single
molded
plug with
female
receptacle
and panel
mount jack

441/
36145

Not shown:
497 - Single molded plug with
sheathed male pin
455 - Stackable single plug with
sheathed male pin and
female receptacle

Adapters are available for use with
2mm pins

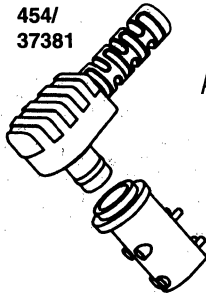


TOUCHPROOF SWIVEL
DESIGNED TO REPLACE A 2.5MM OR
3.5MM PHONE PLUGS

454/
37381

Right
Angle Swivel
Plug with
mating
PCB mount
jack

Not shown:
518 - Straight-in Swivel plug
37999 - PCB Jack with additional
board clearance



PLASTICS ONE HAS OVER 1000 CONNECTOR SYSTEMS ENGINEERED FOR YOUR DESIGN NEEDS

Audio & Power Plugs: Industry standard audio phone plugs and power plugs to mate with your equipment. Binaural and "Y" cords can be produced with a wide selection of binders and junction pods.

Miniature 2 & 3 Pin Plugs: Durable connections that have been the standard for the hearing and communications industry for over 45 years. Molded jacks are available for most plugs.

Electrode Connectors: Custom electrodes for medical monitoring and stimulation requirements. Uses include EEG, EMG, TENS, muscle stimulation and more.

Custom Insert Molding: A variety of electrical and magnetic components including transformers, transmitter coils, magnets and circuit boards are overmolded to meet custom applications.

Wire: With a variety of wire styles and more than 12 standard colors, we are able to further customize your designs. Our specialty is tinsel wire connections.

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Molding the Future  INC.

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IEC CONNECTORS INDEX

59 Lakeside Ave., West Orange, N.J. 07052 • (800) 999-5409 • Fax: (973) 736-8930 • www.powerdynamics.com

POWER DYNAMICS HAS THE WIDEST RANGE OF IEC CONNECTORS IN COMPLIANCE WITH INTERNATIONAL APPROVALS.

Power Dynamics IEC Connectors have been submitted, tested and approved by most recognized National Testing Agencies. These prior approvals eliminate the necessity of a retesting program when submitted in equipment being evaluated by these same testing agencies.

MEETS OR EXCEEDS INTERNATIONAL REQUIREMENTS NATIONAL TESTING AGENCIES CLEARLY MARKED

Every component bearing the PDI label meets or exceeds all international safety requirements. Products have been designed so that any component can be used in as many countries as possible.

Use of Internationally approved components reduces the manufacturer's cost because of the ease of adapting

equipment for use in any country. Since only one product style is necessary, equipment manufacturers can generally

reduce costs by combining several components such as fuse holders, voltage selectors and power switches into one integral unit.

In many cases, a single Power Dynamics Connector incorporates all features necessary for use in domestic and international markets. All Power Dynamics IEC Connectors are clearly marked with the various safety agency logos.

Power Dynamics Connectors are designed in accordance with IEC-320 and CEE-22 specifications.

In the United States, IEC and CEE documents can be ordered from: ANSI/American National Standards Institute, Sales Dept., 1420 Broadway, New York, NY 10018.

MATERIALS USED IN PDI IEC CONNECTORS

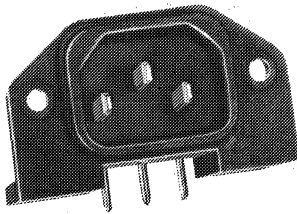
HOUSING MATERIAL:
Polycarbonate or P.B.T.

CONTACT PINS: Nickel Plated Brass

TERMINALS:
Solder type - Electro Tin Plate over Copper Plate
Quick Connect - Brass, Electro Tin Plate or Copper Plate

UL FLAMMABILITY RATING:
UL 94V-0

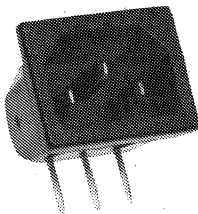
42R65



Combination power cord connector with printed circuit terminals. Conforms with all international safety requirements. Rated 15 amp., 250 VAC, 65°C for UL and CSA. For automated assembly operations.

UL CSA VDE

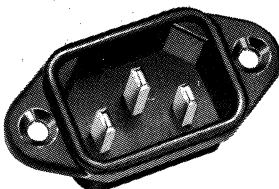
42R05



General purpose power cord connector with printed circuit terminals. Conforms with all international safety requirements. Rated 15 amp., 250 VAC, 65°C, for UL and CSA.

UL CSA VDE

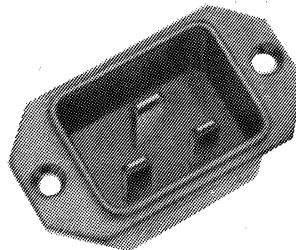
42R01, 2, 3



42R01, 2, 3 General purpose power cord connector. Screw, quick connect, or solder lug terminal configuration. Rated 15 amp., 250 VAC for UL and CSA. 65°C, 120°C and 155°C operating temperature. Designed for versatile mounting. Available in screw or snap-in panel mount and eight mounting configurations.

UL	SEMKO	DEMKO
VDE	NEMKO	SETI
CSA		FEMKO

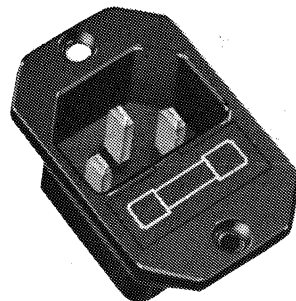
42R06, 7, 8



Power connectors rated at 16 amp., 250 VAC, 65°C, 120°C and 155°C operating temperature. Available 20A for UL and CSA. Units are available with screw, quick connect or solder lug terminal configurations. Designed for versatile mounting, 42R06, 42R07 and 42R08 are available in screw or snap-in panel mount and three mechanical mounting configurations.

UL CSA VDE

42R31, 32, 33



Combination single fuse holder/power cord connector for domestic & international markets. Fuse holder is touch proof in accordance with international safety requirements. Accommodates one international 5 x 20mm fuse with space for a spare fuse. Terminal connections: screw, quick connect or solder lug. Rated 10 amp., 250 VAC, 65°C and 120°C operating temperature. Fuse connections are externally accessible and isolated from power connections. Screw or snap-in mount and five mounting configurations.

UL	CSA	SEMKO
VDE		NEMKO
		DEMKO

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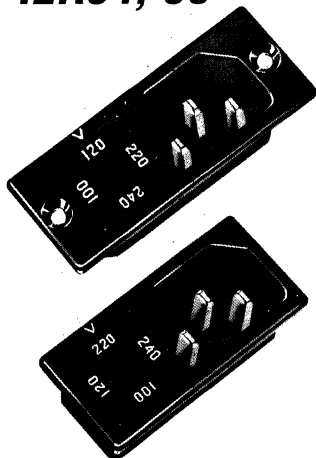
PDI[®]

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IEC CONNECTORS INDEX

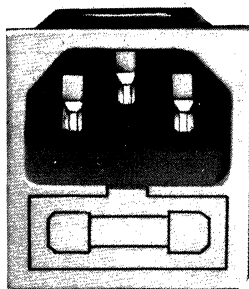
42R34, 38



Integral combination IEC power cord connector/fuse holder/voltage selector. Designed to switch voltages 115, 125, 230, 250 by removing fuse cartridge & rotating to desired voltage, then snapping the cartridge back into connector housing. Series 42R34 accepts one international 5 x 20mm fuse. Series 42R38 accepts one standard 3 AG American type fuse. Rated 10 amp., 250 VAC, 65°C and 120°C operating temperature. Screw or snap-in mount configurations.

UL	CSA	SEMKO
VDE		NEMKO
		DEMKO

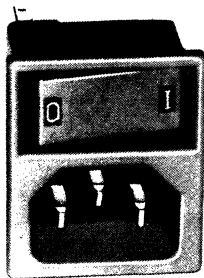
42R35



Combination single or double fuse holder power cord connector for domestic and international markets. Fuse holder is touch proof in accordance with international product safety requirements. Accepts either American or European fuse. Solder lug & quick connect (terminal configurations) available. Rated 10 amp., 250 VAC, 65°C and 120°C with single or double fuse versions.

UL	CSA	SEMKO
VDE		

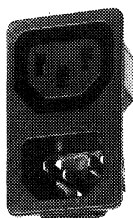
42R36



Combination power cord connector with single or double pole On/Off snap action power switch. Designed to eliminate discrete purchase, inventory & assembly of connector & switch. Terminal connector & switch. Terminal connections are solder or quick connect. Rated 10 amp., 250 VAC, 65°C and 120°C, double pole on/off switch.

UL	CSA	SEMKO
VDE		

PD-44R04-1

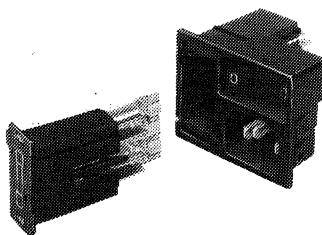


Universal IEC connector with snap-in tabs that allow insertion into a wide variety of panel thicknesses. Conforms with all international safety requirements. Rated 15 Amp., 250 VAC for UL and CSA; 10 Amp., 250 VAC for VDE; 65°C operating temperature. Nickel-plated brass contacts.

UL	CSA	VDE
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For engineering specifications, access our Website: www.powerdynamics.com

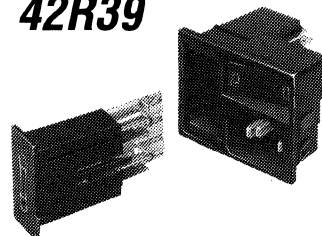
42R37



Integral combination IEC power cord connector, fuse holder & On/Off switch. Designed to eliminate, discrete purchase, inventory & assembly of individual components. Fuse holder accepts either single or double American or European fuses for maximum versatility. Rated 10 amp., 250 VAC, 65°C and 120°C. Single or double pole snap action On/Off switch. Terminal connections are solder lug or quick connect.

UL	CSA	NEMKO
VDE		SEMKO

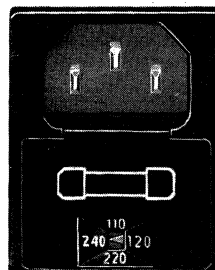
42R39



Same features as 42R37 but with voltage selector. Change voltages by rotating fuse cartridge. Meets all international safety requirements. Fuse holder accepts 3 AG American or 5 x 20mm European fuses.

UL	CSA	NEMKO
VDE		SEMKO

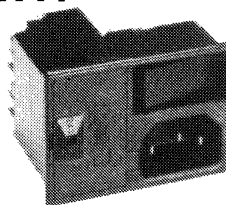
42R40



Integral combination IEC Connector, fuse holder & voltage selector. The voltage selector is designed to switch to four different voltages & provides a simple means to change transformer primary connections. Fuse Holder accepts either single or double European 5 x 20mm or 3AG American 1/4 x 1 1/4 fuses. Rated 10 amp., 250 VAC, 65°C and 120°C. Connectors are available in quick connect or solder terminals.

UL	VDE	CSA
----	-----	-----

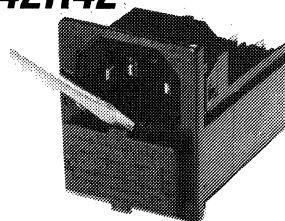
42R41



Same features as 42R40 but with on/off power switch. Meets all international safety requirements.

UL	CSA	SEMKO
VDE		NEMKO
		DEMKO

42R42



Same features as 42R35 but with voltage selector. Change voltages by rotating fuse cartridge. Meets all international safety requirements. Fuse holder accepts single or double 3AG or 5 x 20mm fuses for fusing both line and neutral.

UL	VDE	CSA
----	-----	-----

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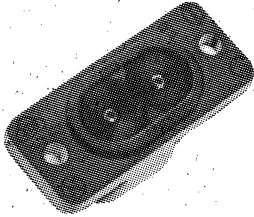


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IEC CONNECTORS INDEX

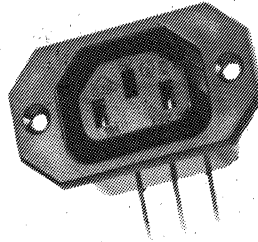
42R51



Miniature power connector, in accordance with DIN 49455 and CEE 22 standards. Designed for low profile applications i.e., laptop and notebook computers. Available with solder terminals.

UL	VDE	CSA
SEMKO		NEMKO

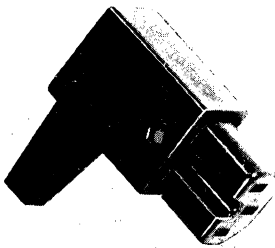
43R09



General purpose female power cord connector with printed circuit terminals. Conforms with all international safety requirements. Rated 15 amp., 250 VAC, 65°C and 120°C. For UL and CSA.

UL	CSA	NEMKO
VDE	SEV	SEMKO

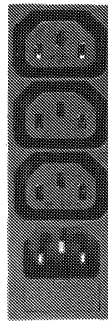
43R01



Female power cord plug with 10 amp., 250 VAC rating from 65°C, 120°C and 155°C operating temperature. Integral cable clamp strain relief & internal screw type connection. Three mounting angle configurations. Maximum wire gauge is 16AWG stranded.

UL	CSA	NEMKO
VDE	SEV	SEMKO

44R01

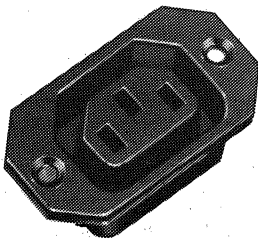


Exceptionally versatile combination fused connector. Combining our single male fused connector with our female connector, allowing for a selection of 1 male inlet with 1 to 6 female outlets. Accepts European style fuse only, 5 x 20mm. Rated 10 amp., 250 VAC, 65°C and 120°C. Available 15A for UL and CSA. Simple snap-in mounting.

UL	CSA	SEV
VDE		

Designed for power supply and power distribution applications.

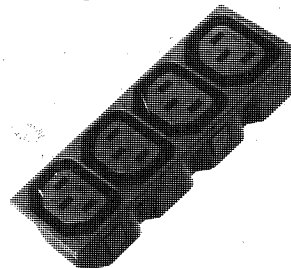
43R02, 3, 4



General purpose female power cord connector. Three terminal configurations: screw, quick connect & solder lug. Rated 15 amp., 250 VAC, 65°C and 120°C. For UL and CSA. Designed for versatile mounting. Screw or snap-in panel mount. Three mounting configurations.

UL	CSA	NEMKO
VDE	SEV	SEMKO

44R02

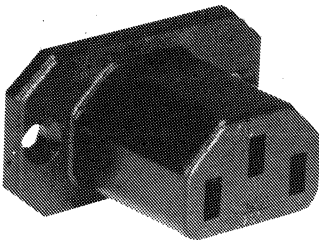


All female connector (2 to 6 units). Rated 15 amp., 250 VAC, 65°C for UL and CSA. Solder terminals.

UL	CSA	VDE
----	-----	-----

Designed for power supply and power distribution applications.

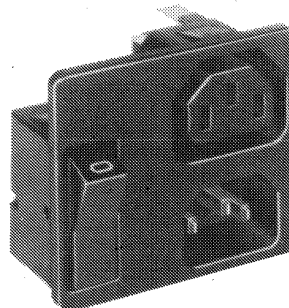
43R05



General purpose female power cord connector designed for recessed and rack or panel mounting. Available for quick connect and solder terminals. Rated 10 amp., 250 VAC, 65°C and 120°C. Also available 15A for UL and CSA. Designed for versatile mounting.

UL	VDE	CSA
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44R03



Integral combination male inlet IEC connector/female outlet connector & on/off power switch. Designed to eliminate discrete purchase, inventory & assembly of individual components. Meets all international safety requirements. Unit allows for a cost effective method of providing auxiliary power to peripheral equipment. Switch is rated 10 amp., 250 VAC, 65°C and 120°, double pole; labeled with the international I/O on/off markings.

UL	VDE	CSA
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For engineering specifications, access our Website: www.powerdynamics.com

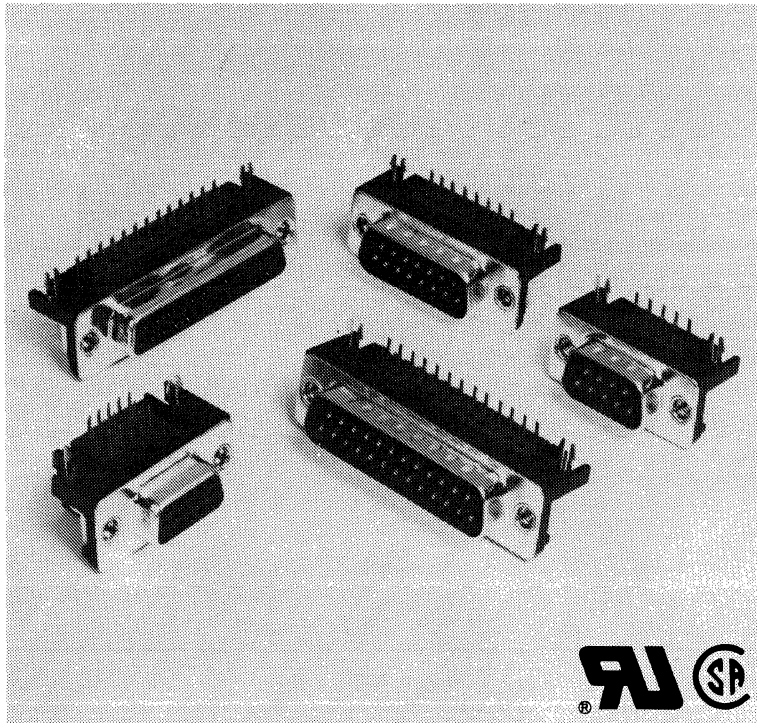
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D-SUB MINIATURE CONNECTORS (FILTERED & UNFILTERED)

Power Dynamics, Inc.

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MATERIAL AND FINISH:

Shell:

Material: JIS G3141 SPCC-SD
Equivalent to ANSI 1008
Plating: Tin
Thickness: Base Copper: 40 μ"
Base Nickel: 40 μ"
Tin: 120 μ"

Contacts:

Material: Brass (male)
Brass or Phosphor Bronze (female)
Plating: Gold Plate or Tin/Lead over Nickel
Thickness: Gold Flash
30 μ" Nickel base
60 μ" Tin/Lead

Insulator:

P.B.T. and glass-fiber reinforced
UL 94V-0

Mechanical:

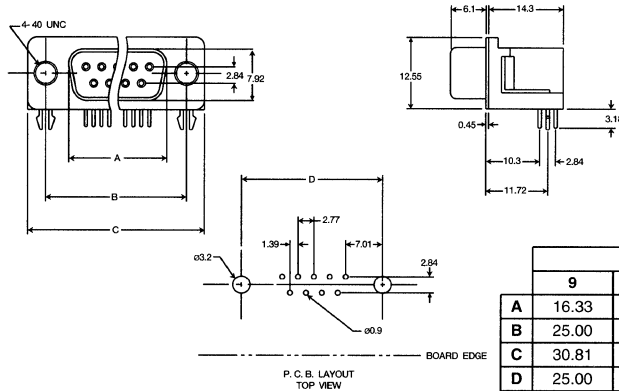
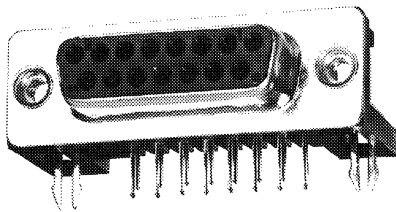
Mating Force: **9 PIN 15 PIN 25 PIN 37 PIN**
3 kg 5 kg 10 kg 15 kg
Unmating Force: **9 PIN 15 PIN 25 PIN 37 PIN**
minimum: 0.5 kg 1.0 kg 2.5 kg 3 kg
maximum: 2.5 kg 4.5 kg 8.0 kg 15 kg

ELECTRICAL SPECIFICATIONS:

Rated Current: 5 A
Rated Voltage: 300 VDC
Insulator Resistance: 3000 Megaohm min. @ 500 VDC
Contact Resistance: 15 milliohm max.
Dielectric Withstanding Strength: 1000 VAC @ 0.5 mA
for 1 minute.
Temperature: -55°C to 105°C

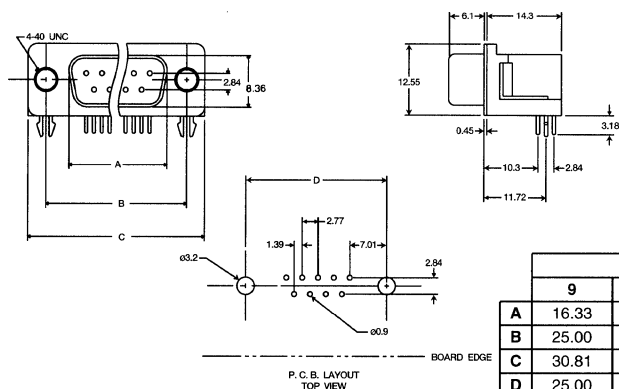
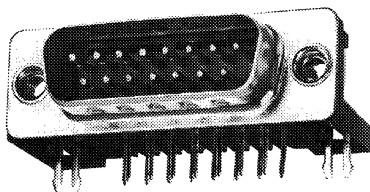


PDI-15R-9
(shown)



	NUMBER OF PINS			
	9	15	25	37
A	16.33	24.66	38.38	54.84
B	25.00	33.32	47.04	63.50
C	30.81	39.14	53.04	69.92
D	25.00	33.30	41.10	63.50

PDI-15S-9
(shown)



	NUMBER OF PINS			
	9	15	25	37
A	16.33	24.66	38.38	54.84
B	25.00	33.32	47.04	63.50
C	30.81	39.14	53.04	69.92
D	25.00	33.30	47.10	63.50

Other Footprints and mounting options available, please contact factory.

For engineering specifications, access our Website: www.powerdynamics.com

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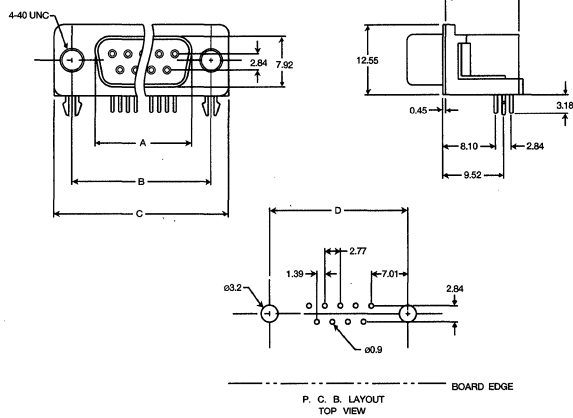
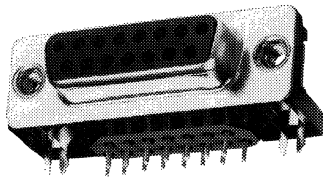


FILTERED D-SUB MINIATURE CONNECTORS

Power Dynamics, Inc.

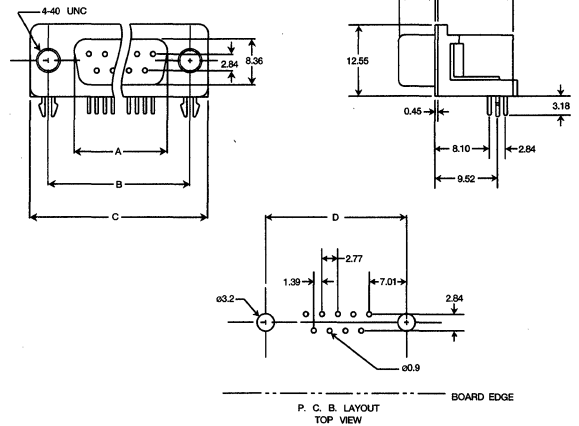
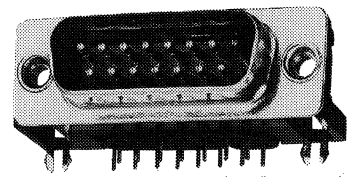
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PDF-15R (shown)



	NUMBER OF PINS			
	9	15	25	37
A	16.92	25.25	38.96	55.42
B	25.00	33.32	47.04	63.50
C	30.81	39.14	53.04	69.92
D	25.00	33.30	47.10	63.50

PDF-15S (shown)

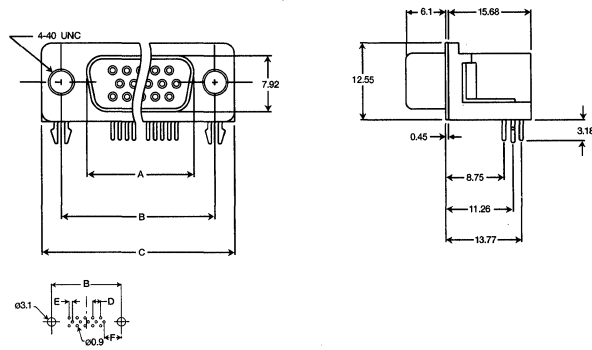
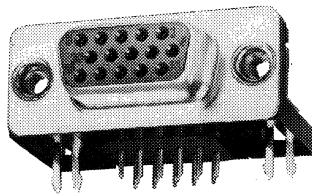


	NUMBER OF PINS			
	9	15	25	37
A	16.92	25.25	38.96	55.42
B	25.00	33.32	47.04	63.50
C	30.81	39.14	53.04	69.92
D	25.00	33.30	47.10	63.50

PDF-15RH (shown)



high density

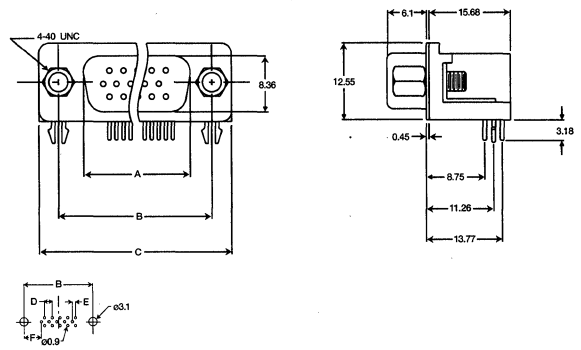
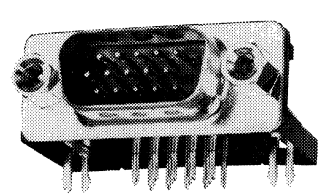


	NUMBER OF PINS			
	15	26	44	62
A	16.30	24.66	38.38	54.70
B	24.99	33.10	47.04	63.50
C	30.80	39.14	53.10	69.50
D	2.29	2.29	2.29	2.41
E	1.145	1.145	1.145	1.205
F	7.04	6.88	6.88	6.99

PDF-15SH-J (shown)



high density



	NUMBER OF PINS			
	15	26	44	62
A	16.30	24.66	38.38	54.70
B	24.99	33.10	47.04	63.50
C	30.80	39.14	53.10	69.50
D	2.29	2.29	2.29	2.41
E	1.145	1.145	1.145	1.205
F	7.04	6.88	6.88	6.99

Other Footprints and mounting options available, please contact factory.

For engineering specifications, access our Website: www.powerdynamics.com

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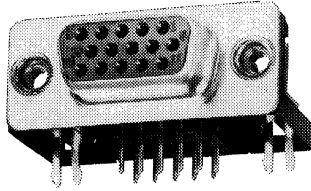
D-SUB MINIATURE CONNECTORS, UNFILTERED

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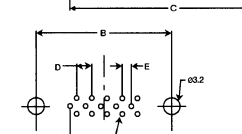
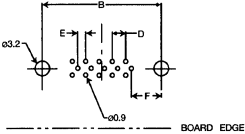
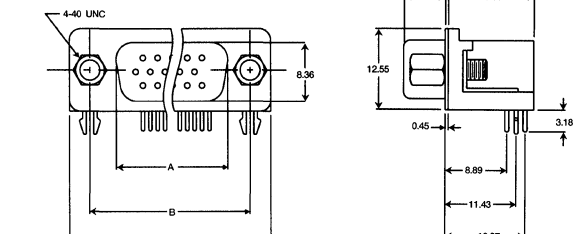
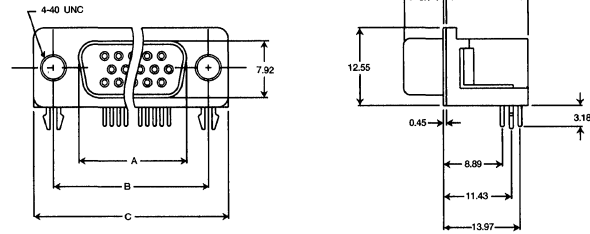
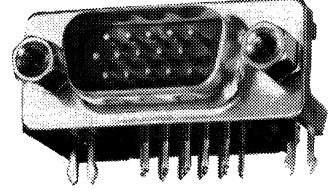
PDI-15RH (shown)

high density



PDI-15SH-J (shown)

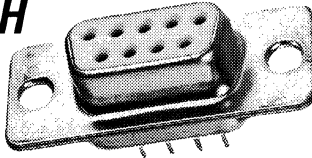
high density



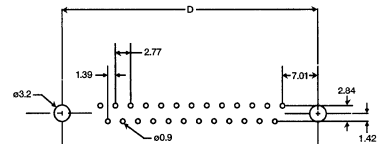
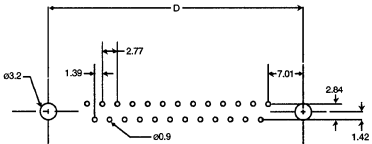
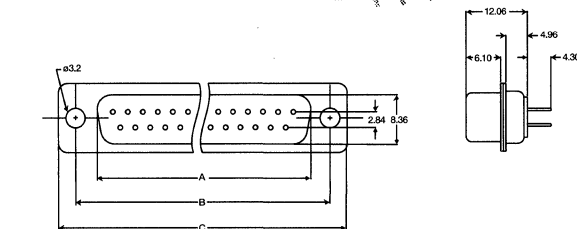
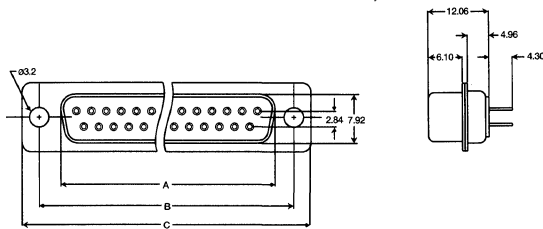
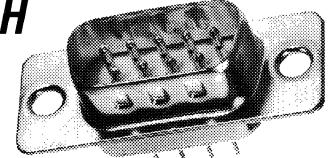
		NUMBER OF PINS			
		15	26	44	62
A	16.30	24.66	38.38	54.80	
B	25.00	33.32	47.04	63.50	
C	30.81	39.20	53.10	69.40	
D	2.29	2.29	2.29	2.41	
E	1.145	1.145	1.145	1.205	
F	7.04	6.88	6.88	6.99	

		NUMBER OF PINS			
		15	26	44	62
A	16.92	25.25	38.96	55.42	
B	25.00	33.32	47.04	63.50	
C	30.81	39.20	53.10	69.40	
D	2.29	2.29	2.29	2.41	
E	1.145	1.145	1.145	1.205	
F	7.04	6.88	6.88	6.99	

PDI-09RS-W-H (shown)



PDI-09SS-W-H (shown)



		NUMBER OF PINS			
		9	15	25	37
A	16.33	24.66	38.38	54.84	
B	25.00	33.32	47.04	63.50	
C	30.81	39.14	53.04	69.92	
D	25.00	33.30	47.10	63.50	

		NUMBER OF PINS			
		9	15	25	37
A	16.33	24.66	38.38	54.84	
B	25.00	33.32	47.04	63.50	
C	30.81	39.14	53.04	69.92	
D	25.00	33.30	47.10	63.50	

Other Footprints and mounting options available, please contact factory.

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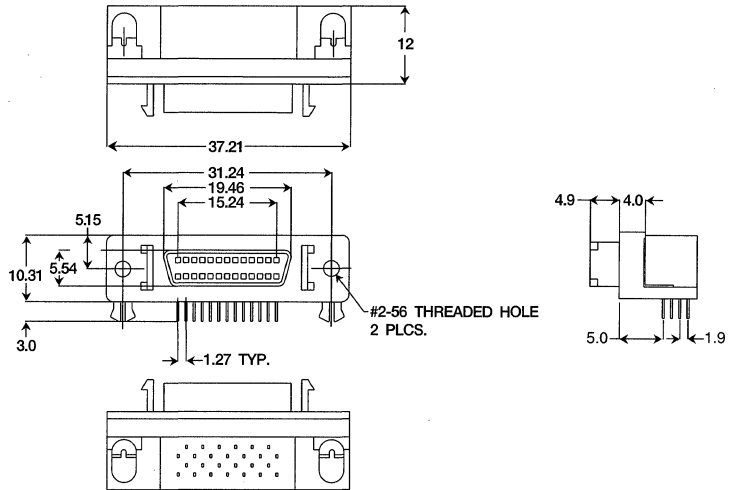
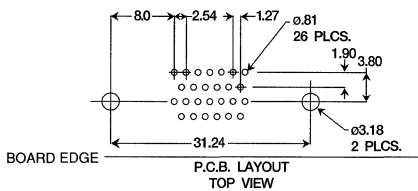
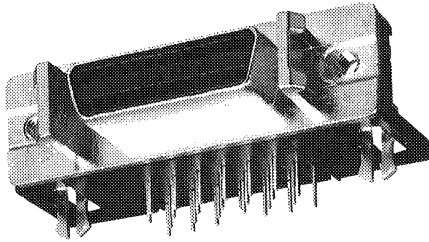


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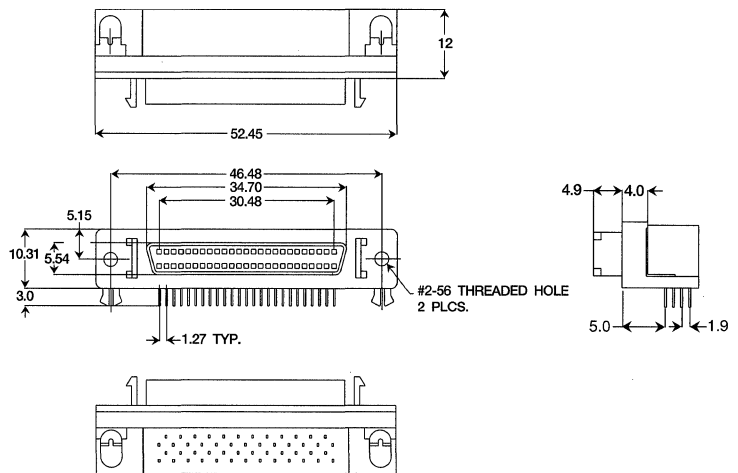
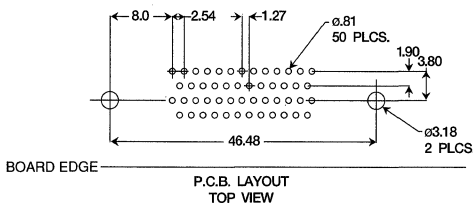
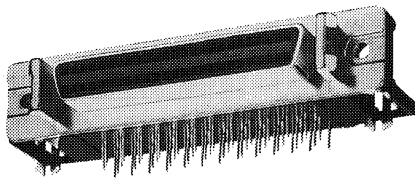
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S.C.S.I. CONNECTORS

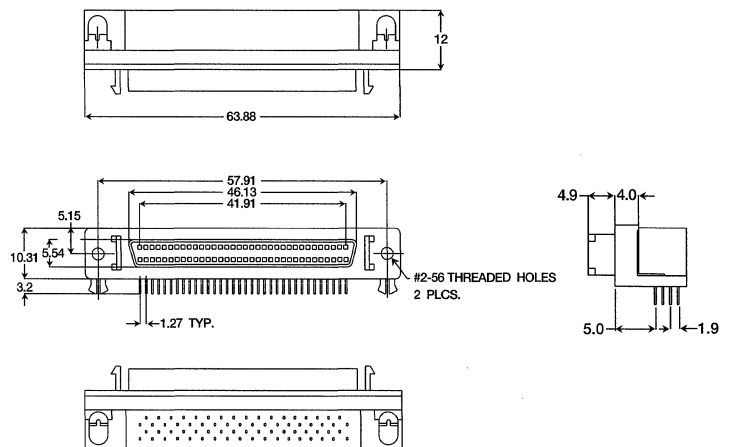
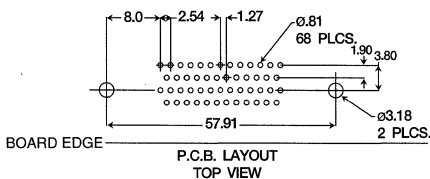
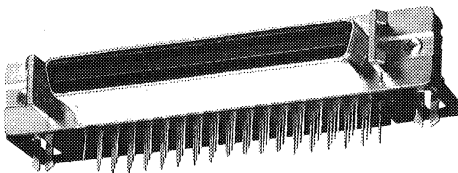
RIGHT ANGLE, P.C.B PDI-26RV



PDI-50RV



PDI-68RV



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UNIVERSAL SERIAL BUS (USB) CONNECTORS

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USB-8FP

P.C.B. LAYOUT

USB-4FP

P.C.B. LAYOUT

USB CABLE

Contact PDI for options.

Specifications subject to change without notice. Dimensions in mm.

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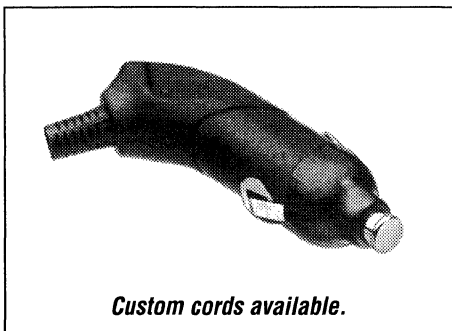


Power Dynamics, Inc.

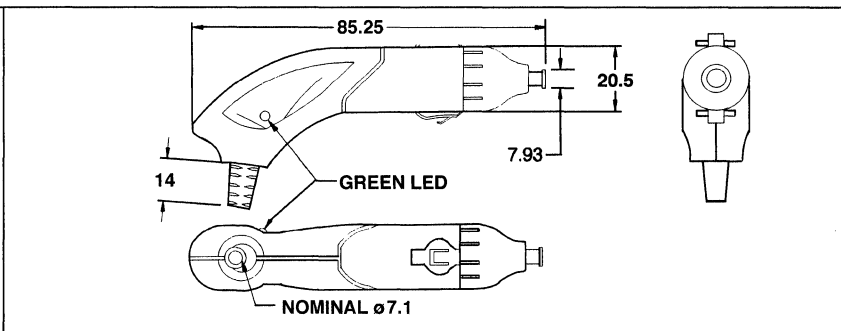
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CIGARETTE LIGHTER ADAPTERS

CIG-14



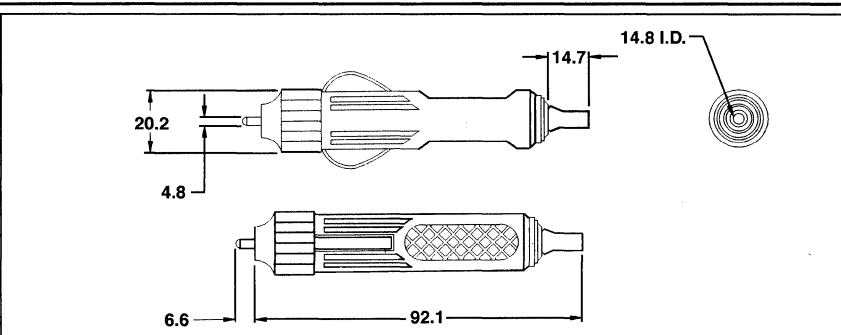
Custom cords available.



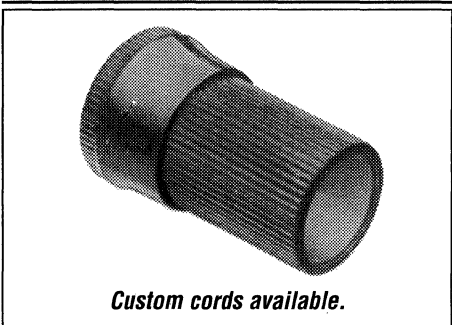
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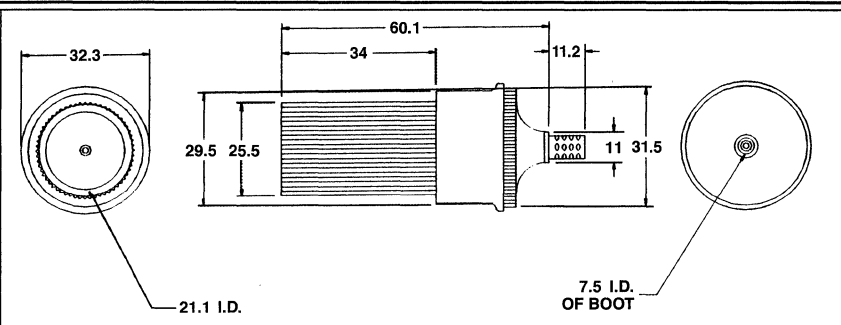
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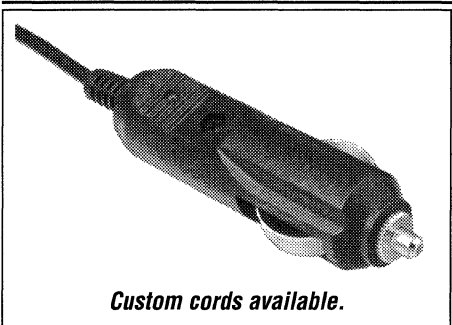
CAS-0001



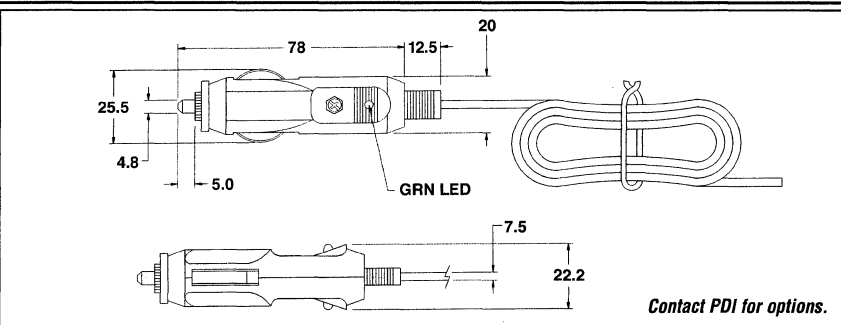
Custom cords available.



CIGARETTE ADAPTER CORD



Custom cords available.



Contact PDI for options.

Specifications subject to change without notice. Dimensions in mm.

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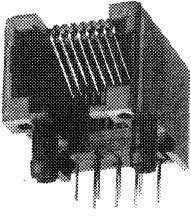
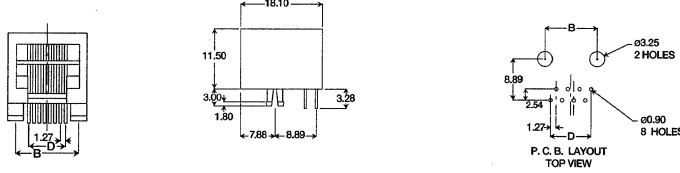
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TELEPHONE JACKS & PLUGS

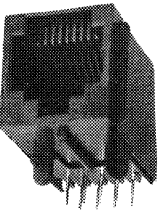
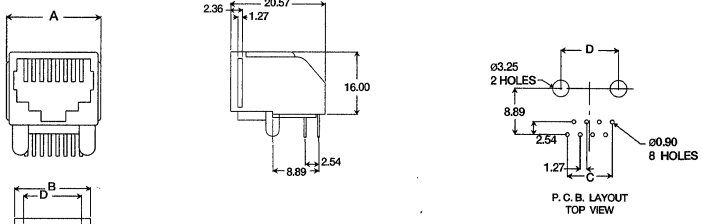
LOW PROFILE JACKS

PHJ-8P8C-1-6-5 (shown)

NO. OF POSITIONS	DIMENSIONS			
	A	B	C	D
4	11.18	7.62	3.05	3.81
6	13.21	10.16	5.08	6.35
8	15.24	11.43	7.11	8.89

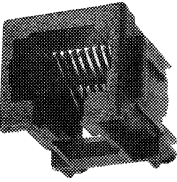
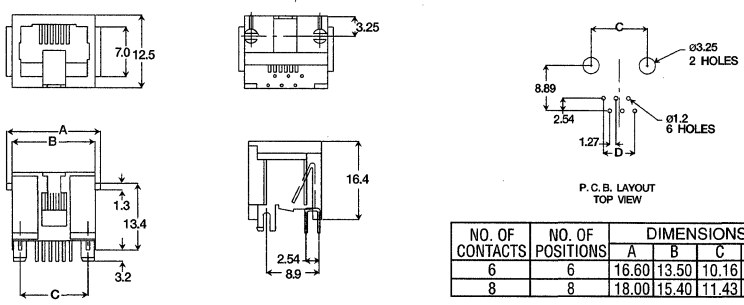
PHJ-8P8C-1-J-5 (shown)

NO. OF POSITIONS	DIMENSIONS			
	A	B	C	D
4	13.72	11.18	3.81	7.62
6	15.75	13.21	6.35	10.16
8	17.78	15.24	8.89	11.43

VERTICAL JACKS

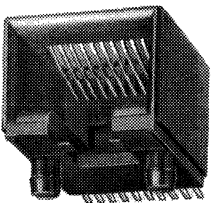
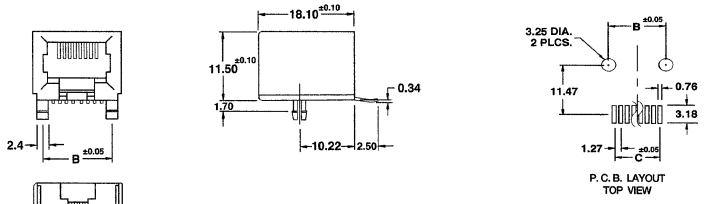
PHJ-8P8C-1-2-5 (shown)

NO. OF CONTACTS	NO. OF POSITIONS	DIMENSIONS			
		A	B	C	D
6	6	16.60	13.50	10.16	6.35
8	8	18.00	15.40	11.43	8.89

SURFACE MOUNT DATA JACKS

PHJ-10P10C-1-U-5 (shown)

NO. OF POSITIONS	DIMENSIONS		
	A	B	C
4	11.21	7.62	3.81
6	13.21	10.16	6.35
8	15.24	11.43	8.89
10	15.24	11.43	11.43

Specifications subject to change without notice. Dimensions in mm.

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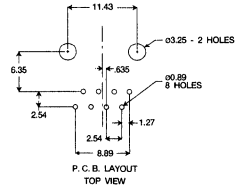
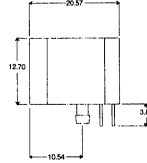
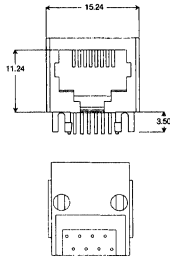
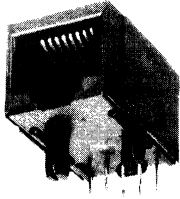


TELEPHONE JACKS & PLUGS

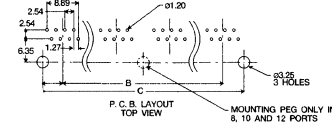
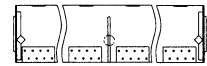
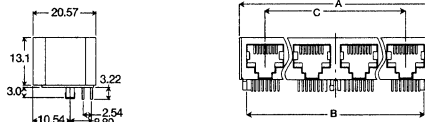
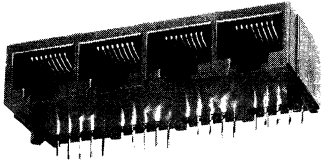
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RIGHT ANGLE JACKS

PHJ-8P8C-1-6-5



PHJ-8P8C-X-8-5

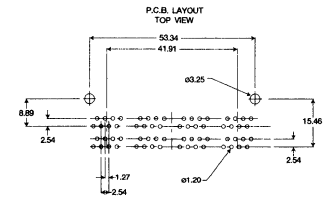
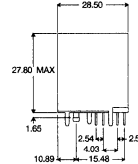
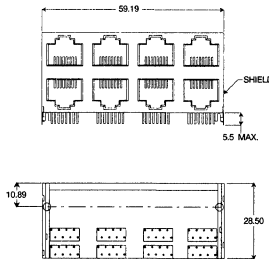
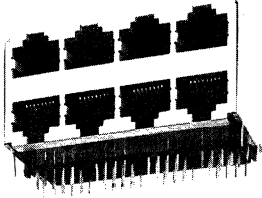


	A	B	C
2 PORTS	31.12	13.97	25.40
4 PORTS	59.06	41.91	53.34
6 PORTS	87.00	69.85	81.28
8 PORTS	1114.94	97.79	109.22
10 PORTS	142.24	125.73	137.16
12 PORTS	170.78	153.67	165.10

X = Number of Ports

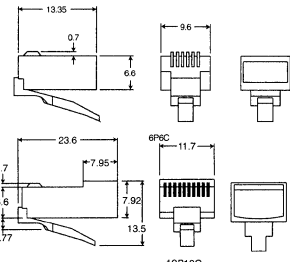
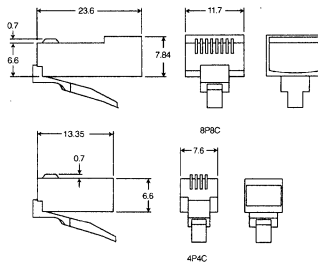
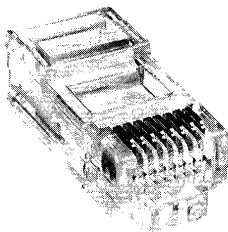
MODULAR JACKS

PHJ-8P8C-8-D-5



PLUGS

PHP-8P8C-5



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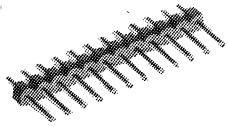
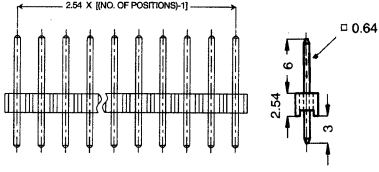
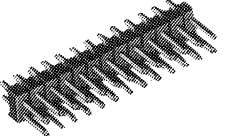
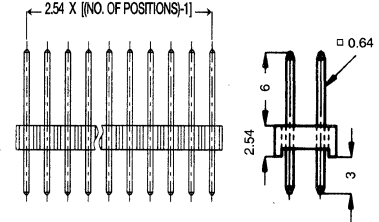
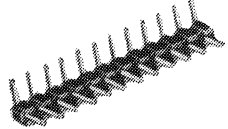
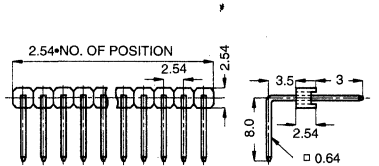
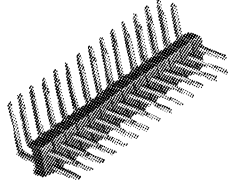
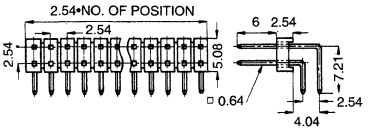
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PIN HEADERS

 <p>TCM-001 through TCM-040</p>	 <p>Shown: 2.54 mm. Also available: 1.27 mm and 2.0 mm</p>	<p>PIN HEADER (STRAIGHT, SINGLE ROW TYPE): NO. OF CONTACT: 01-40 Current Rate: 3A Voltage: 1000V AC RMS for one minute Insulation Resistance: 1000 Megohms (Min.)</p>
 <p>TCMD-004 through TCMD-080</p>	 <p>Shown: 2.54 mm. Also available: 1.27 mm and 2.0 mm</p>	<p>PIN HEADER (STRAIGHT, DOUBLE ROW TYPE): NO. OF CONTACT: 04-80 Current Rate: 3A Voltage: 1000V AC RMS for one minute Insulation Resistance: 1000 Megohms</p>
 <p>TRM-001 through TRM-040</p>	 <p>Shown: 2.54 mm. Also available: 2.0 mm</p>	<p>PIN HEADER (RIGHT ANGLE, SINGLE ROW TYPE): NO. OF CONTACT: 01-40 Current Rate: 3A Voltage: 1000V AC RMS for one minute Insulation Resistance: 1000 Megohms</p>
 <p>TRMD-004 through TRMD-080</p>	 <p>Shown: 2.54 mm. Also available: 2.0 mm</p>	<p>PIN HEADER (RIGHT ANGLE, DOUBLE ROW TYPE): NO. OF CONTACT: 04-80 Current Rate: 3A Voltage: 1000V AC RMS for one minute Insulation Resistance: 1000 Megohms</p>

All dimensions are in mm.

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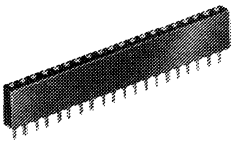
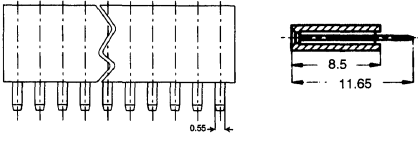
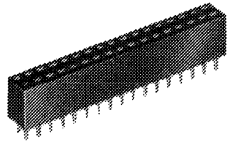
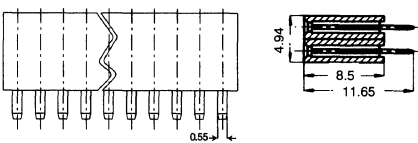
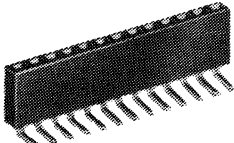
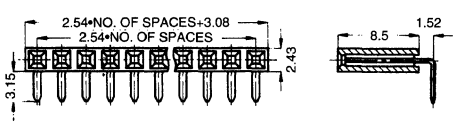
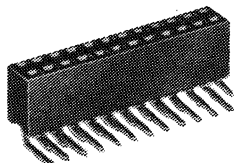
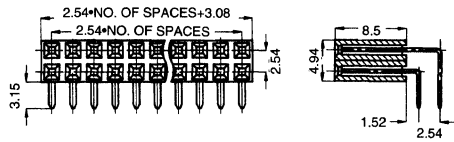
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PIN RECEPTACLES

 <p>TCS-004 through TCS-043</p>	 <p>Shown: 2.54 mm. Also available: 1.27 mm and 2.0 mm</p>	<p>RECEPTACLE (STRAIGHT, SINGLE ROW TYPE): NO. OF CONTACT: 04-43 Current Rating: 1A Insulator Resistance: 1000MΩ min.@500 VDC Dielectric Withstanding Strength: 500 VDC for 1 min. Contact Res.: 30mΩ max.@6VDC at .3A Temperature: -55°C to 105°C Housing: Material: P.B.T. glass filled, Nylon 6T Rating: UL94V-0 Contacts: Material: Phosphor Bronze Plating: Gold Flash</p>
 <p>TCSD-008 through TCSD-086</p>	 <p>Shown: 2.54 mm. Also available: 1.27 mm and 2.0 mm</p>	<p>RECEPTACLE (STRAIGHT, DOUBLE ROW TYPE): NO. OF CONTACT: 08-86 Current Rating: 1A Insulator Resistance: 1000MΩ min.@500 VDC Dielectric Withstanding Strength: 500 VDC for 1 min. Contact Res.: 30mΩ max.@6VDC at .3A Temperature: -55°C to 105°C Housing: Material: P.B.T. glass filled, Nylon 6T Rating: UL94V-0 Contacts: Material: Phosphor Bronze Plating: Gold Flash</p>
 <p>TRS-004 through TRS-043</p>	 <p>Shown: 2.54 mm. Also available: 2.0 mm</p>	<p>RECEPTACLE (STRAIGHT, SINGLE ROW TYPE): NO. OF CONTACT: 04-43 Current Rating: 1A Insulator Resistance: 1000MΩ min.@500 VDC Dielectric Withstanding Strength: 500 VDC for 1 min. Contact Res.: 30mΩ max.@6VDC at .3A Temperature: -55°C to 105°C Housing: Material: P.B.T. glass filled, Nylon 6T Rating: UL94V-0 Contacts: Material: Phosphor Bronze Plating: Gold Flash</p>
 <p>TRSD-008 through TRSD-086</p>	 <p>Shown: 2.54 mm. Also available: 2.0 mm</p>	<p>RECEPTACLE (STRAIGHT, DOUBLE ROW TYPE): NO. OF CONTACT: 08-86 Current Rating: 1A Insulator Resistance: 1000MΩ min.@500 VDC Dielectric Withstanding Strength: 500 VDC for 1 min. Contact Res.: 30mΩ max.@6VDC at .3A Temperature: -55°C to 105°C Housing: Material: P.B.T. glass filled, Nylon 6T Rating: UL94V-0 Contacts: Material: Phosphor Bronze Plating: Gold Flash</p>

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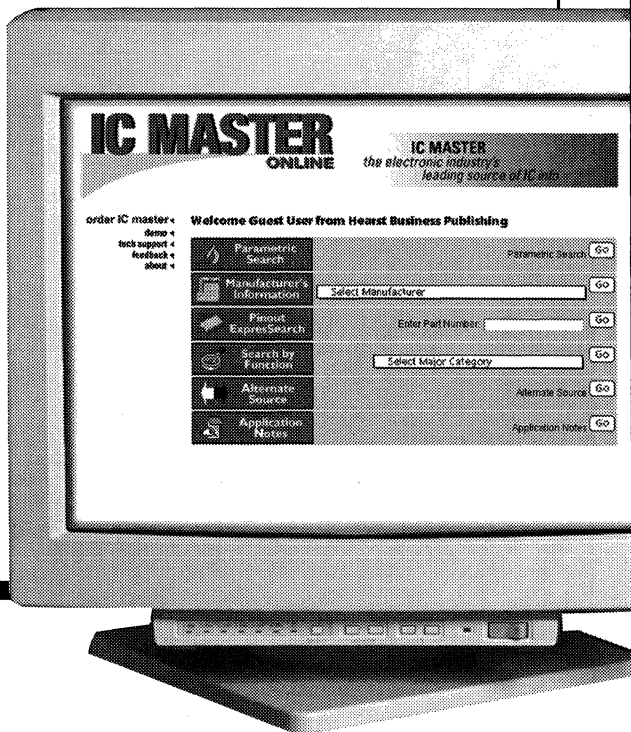
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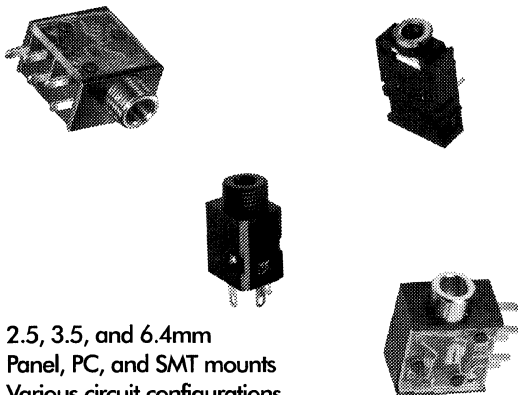
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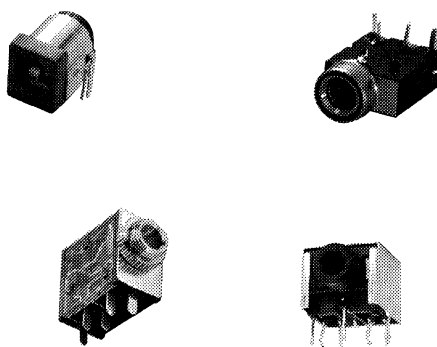
Connectors

Audio Jacks



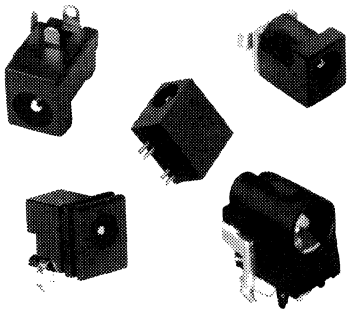
- 2.5, 3.5, and 6.4mm
- Panel, PC, and SMT mounts
- Various circuit configurations
- Insulated or non-insulated bushings

Shielded Jacks



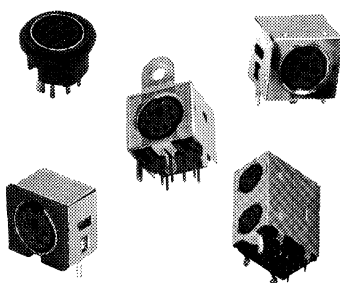
- 3.5mm with and without insulated bushing
- DC power type, through-hole

DC Power Jacks



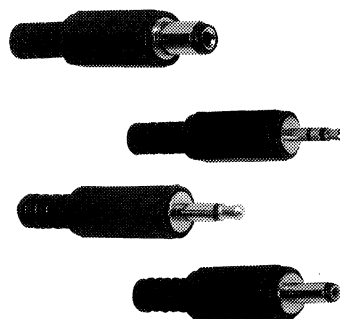
- Open and closed frame designs
- Various inner pin diameters
- Through-hole and SMT versions
- PC, panel, and chassis mount

Mini Dins

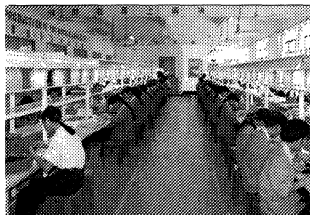


- UL, CSA, and VDE approved
- PC, panel, and chassis mount configurations
- Shielded or unshielded for EMI emissions
- Single or dual

Plugs



- Solder type plug assemblies to mate with all RDI jacks
- Round and hexagonal housing configurations



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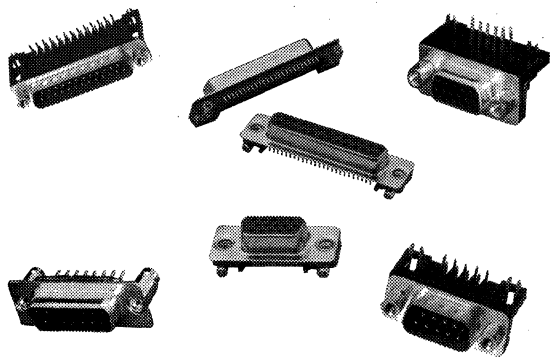
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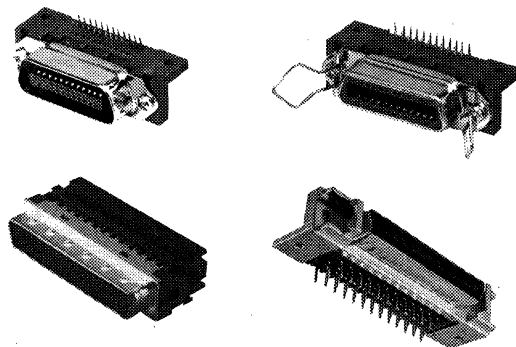
Connectors

D-sub



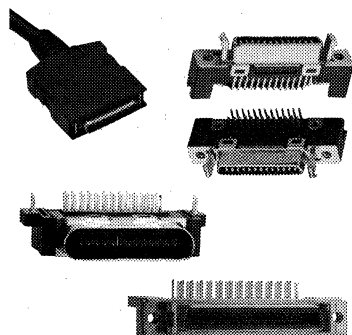
- UL and CSA approved
- PC, solder cup, edge mount, and IDC versions
- .200", .318", and .590" footprints

Centronic and SCSI



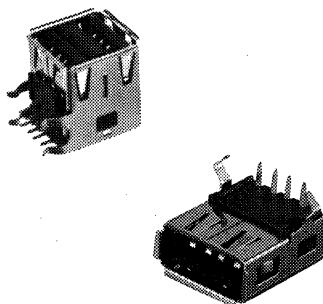
- PC, solder cup and IDC versions
- With and without bale locks or flanges
- UL and CSA approved

Half Pitch D-sub



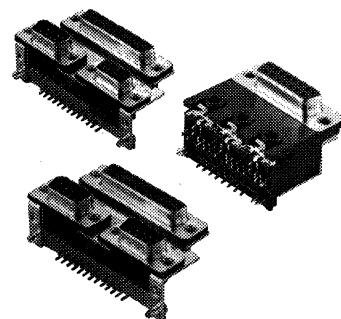
- SMT, edge mount, and through-hole types
- Mating solder type with cover

USB Connectors

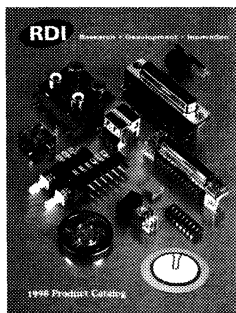


- Single and dual versions
- Series A and Series B styles
- Right angle and vertical configurations

Stacked D-sub



- Dual standard D-sub=9/9, 15/15, 25/25
- Dual row = 15/3 phone jacks
- Dual row = 25/9(x2)
- Dual row = 25/9/15 high density



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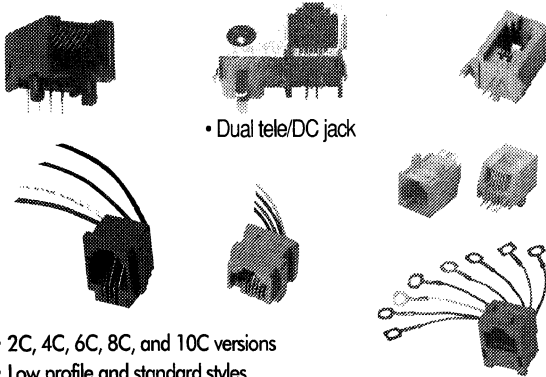
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Connectors

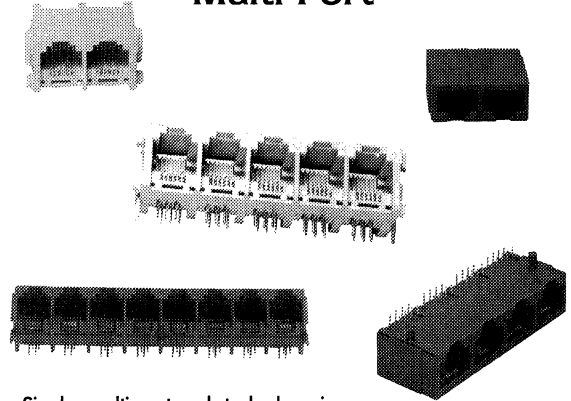
Telephone Jacks



• Dual tele/DC jack

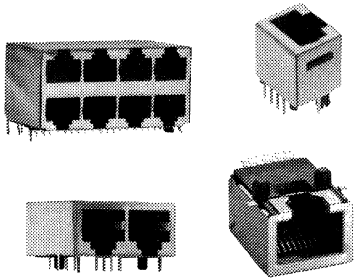
- 2C, 4C, 6C, 8C, and 10C versions
- Low profile and standard styles
- SMT, wire leaded, right angle and vertical PC mount configurations
- UL AND CSA approved, FCC-68 compliant

Multi Port



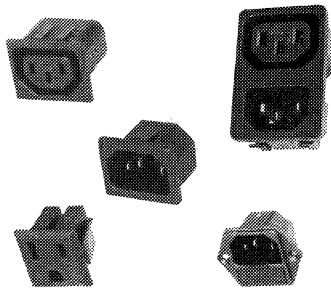
- Single, multi-port and stacked versions
- Partially or fully shielded
- UL AND CSA approved, FCC-68 compliant

Shielded Telephone Jacks



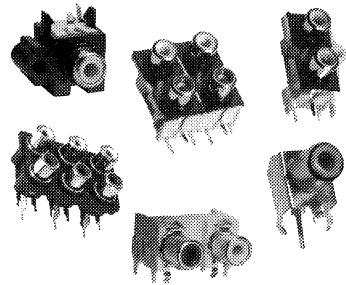
- Low profile and standard styles
- In-line or stacked versions
- UL AND CSA approved, FCC-68 compliant

AC Receptacles



- Universal IEC type, unfiltered
- Single and multiple styles
- Fused and unfused
- Snap-in and PC mount

RCA



- Single, dual and multiple versions
- Multi-color inserts
- PC or chassis mount
- Shielded or unshielded face plate
- Gold plated contacts & barrel available



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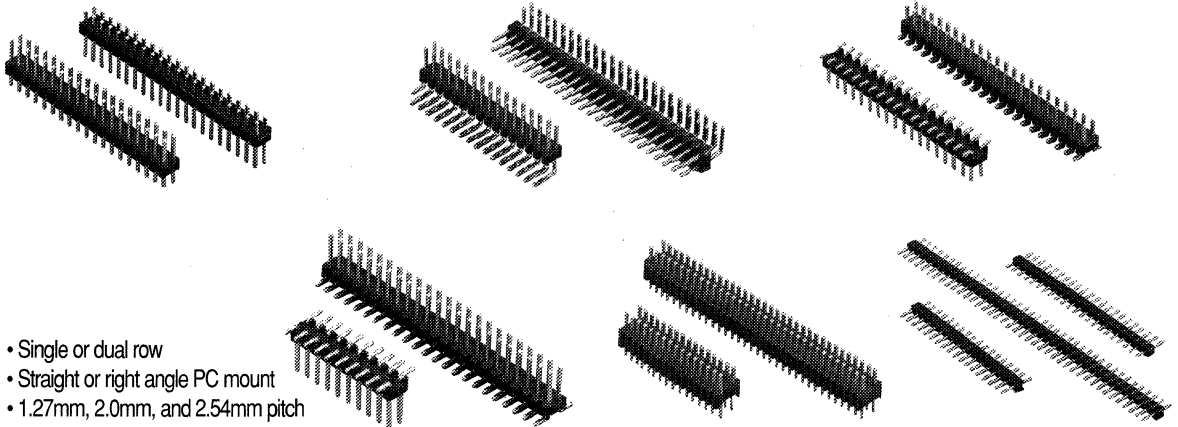
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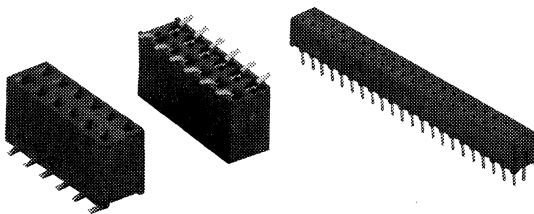
Connectors

Pin Headers



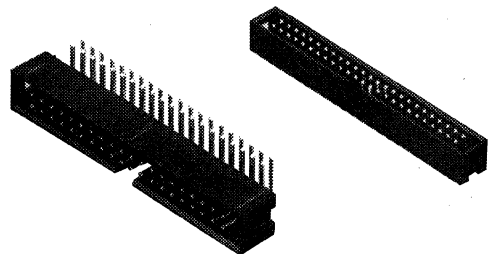
- Single or dual row
- Straight or right angle PC mount
- 1.27mm, 2.0mm, and 2.54mm pitch
- Through-hole and SMT types

PC Board Sockets



- Single or dual row
- Straight or right angle PC mount
- 1.27mm, 2.0mm, and 2.54mm pitch
- Through-hole and SMT types

Box Headers



- Straight or right angle PC mount
- 2.0mm, and 2.54mm pitch



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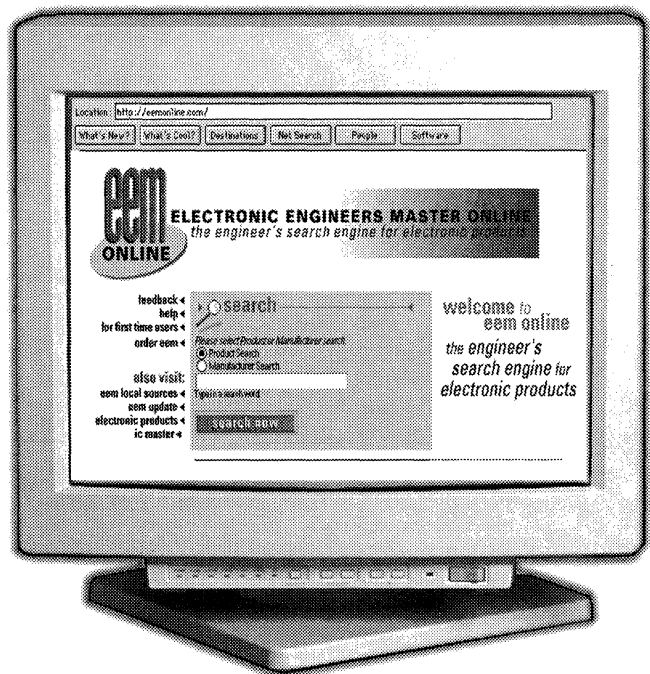
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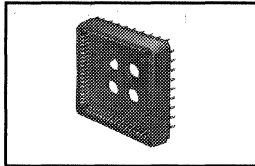
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http://www.robinsonnugent.com

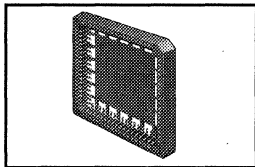
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Sockets



PLCC
Series

.050" PLCC Sockets*



PLCC SMT
Series

.050" SMT PLCC Sockets

Features:

Thru-hole*
20-84 positions*
Closed bottom design*
Low profile—.200" maximum profile
20-84 positions (26 & 34 for RTC & NVRAM)
Footprint matches device

Options:

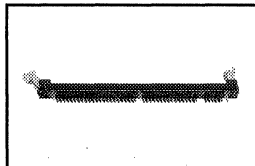
Locator posts
Tape/reel packaging
Very Low Profile: .155"/32 position and
.175"/44 position

Materials:

Contact: Phos. Bronze
Body: PPS
Plating: Sn/Ni

Performance:

Insulation Resistance: 1000 megohms
Dielectric Withstanding: 650 volts
Current Rating: 1 amp/pin
Flammability: UL 94V-0



DIM
Series

DIMM Sockets

Features:

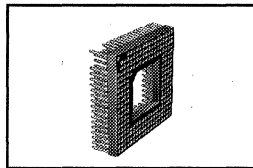
100, 144, & 200 positions
168 position 8-Byte Dual Readout Sockets
Accepts JEDEC standard modules
Multiple voltage/DRAM options
Vertical entry plug-in, built-in ejector latch/lock
High temp, SMT compatible

Materials:

Contact: Phos Bronze
Body: High Temp Thermoplastic
Plating: ROBEX®/Ni

Performance:

Capacitance: 1 picofarads max
Insulation Resistance: 10,000 megohms min.
Flammability: UL 94V-0
Temperature Range: -55°C to + 105°C



PGA
Series

Pin Grid Array Sockets

Features:

Low insertion force
High temp
8x8 - 21 x21 grid

Options:

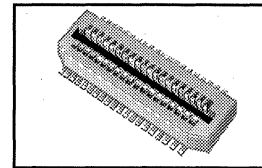
Interstitial sockets

Materials:

Contact: Beryllium Copper
Body: High Temp
Plating: Au/Sn/Ni or Sn/Sn/Ni

Performance:

Insertion Force: 1.5 oz/pin max
Insulation Resistance: 5000 megohms
Dielectric Withstanding: 500 volts
Current Rating: 1 amp/pin
Flammability: UL 94V-0
Temperature Range: -65°C to +105°C



RN PAK-8
Series

Fine Pitch Board Stacking

Features:

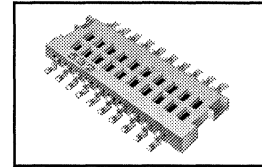
High density - 0.8mm pitch
3.0 to 11.5mm mated heights
20, 30, 40, 50, 80, 100 positions
Audible tactile "click" for blind mate applications

Materials:

Contact: Phos Bronze
Body: High Temp Plastic
Plating: Au/Sn/Ni

Performance:

Insulation Resistance: 1000 megohms min
Test voltage: 250V DC
Current Rating: 0.5 amp/pin
Rated Voltage: AC, DC 60V
Flammability: UL 94V-0



RN PAK-10
Series

Fine Pitch Board Stacking

Features:

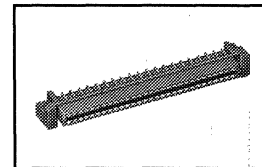
High density - 1.0mm pitch
2.0 and 2.5mm mated heights
10, 16, 20, 30 positions

Materials:

Contact: Phos Bronze
Body: High Temp Plastic
Plating: Au/Ni

Performance:

Insulation Resistance: 1000 megohms min
Test Voltage: 250V DC
Current Rating: 0.5 amp/pin
Rated Voltage: AC, DC 60V
Flammability: UL 94V-0
Temperature Range: -55°C to +85°C



RN PAK-50®
Series

.050" 2-Piece Board-to- Board and Cable-to-Board Connectors

Features:

.050" pitch high density
20-200 contacts
Low insertion force
Audible tactile "click" for blind
mate applications
Straight and right angle mating

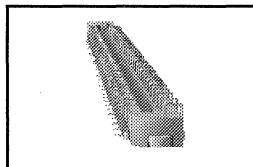
Materials:

Contact: Phos Bronze
Body: Glass-filled black nylon
Plating: Au/Sn/Ni

Performance:

Insulation Resistance: >1000 ohms @ 500V DC
Current Rating: 0.5 amp/pin
Flammability: UL 94V-0
Temperature Range: -55°C to +105°C

PCB Connectors



RN PAK-5
Series

Fine Pitch Board Stacking

Features:

High density - 0.5mm pitch
3, 4, 5, and 6mm mated heights
20, 30, 40, 50, 80, 100 positions
Audible tactile "click" for blind mate applications
Optional floating contact absorbs torsional and
positional discrepancies.

Materials:

Contact: Phos Bronze
Body: High Temp Plastic
Plating: Au/Sn/Ni

Performance:

Insulation Resistance: 1000 megohms min
Test voltage: 150V DC
Current Rating: 0.2 amp/pin
Rated Voltage: AC, DC 60V
Flammability: UL 94V-0

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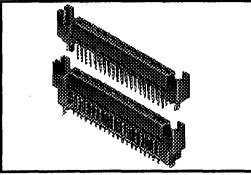
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Disk Drive to Backplane Connector



SCA-2
Series

SCA-2/FC

Features:

Single Connector Attachment for Disk Drive to System Backplane
ESD with "Blind Mating" capability
80 pin supports SCSI parallel data transmission requirements
40 pin supports Fibre Channel serial data transmission requirements

Options:

Extended height
Variable tail lengths

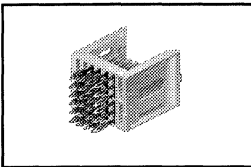
Materials:

Contact: Phos. Bronze
Body: High Temp
Plating: Robex®/PdNi

Performance:

Contact Resistance: 35 milliohms max
Insulation Resistance: 1000 megohms min
Dielectric Withstanding: 500 VRMS min
Current Rating: 1 amp/pin continuous
Flammability: UL 94V-0

PCB to Backplane Connectors



METPAK*2
Series

2mm Futurebus+ Connectors

Features:

High density, 2mm x 2mm grid
4-row and 5-row modular insulators
24-480 pin counts, high temp, SMT compatible

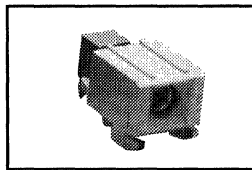
Options: Power and signal modules pressfit solder tail, right angle pressfit receptacle for SMT PCBs, EMLB contacts, monoblock insulators

Materials:

Contact: Beryllium Copper (Socket)
Phos Bronze (Header)
Body: High temp LCP
Plating: ROBEX®/Ni

Performance:

Insulation Resistance: 5000 megohms
Dielectric Withstanding: 1000 volts
Durability: 500 cycles
Current Rating: 3.0 amps max/signal contact



METPAK*2
Series

2mm Power Connectors

Features:

PCB mounted, single and multi-row high power 2 mm connectors

Options: 1, 8 or 10 pin modules, pressfit and solder. EMLB contacts for "Hot Swap"

Materials:

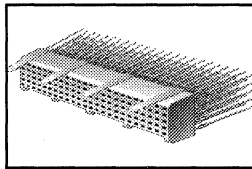
Contact: Beryllium Copper (Socket)
Phos Bronze (Header)

Body: High Temp

Plating: ROBEX®

Performance:

Current Rating: Six of R30 amps per contact for power supply and distribution



METPAK*2
Inverse
Series

2mm Inverse Connectors

Features:

High density, user accessible, "Hot Swap" Backplane receptacle and PCB mounted header 2mm x 2mm, 5-row modular insulator with 30-420 pins, Alternative to Futurebus+

Options: Pressfit or solder tail, EMLB contacts

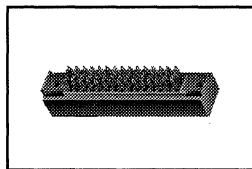
Materials:

Contact: Beryllium Copper (Socket)
Copper Alloy (Header)

Plating: ROBEX®/Ni

Performance:

Insulation Resistance: 5000 megohms
Dielectric Withstanding: 1000 volts
Durability: 500 cycles
Current Rating: 3.0 amps max/signal contact



HDC
Series

High Density Connectors

Features:

Rugged 2-piece backplane connectors 3 & 4 row, up to 488 contacts, sockets and headers, straight and right angle. Low insertion force, pressfit and solder options. Right angle pressfit socket available for SMT PCBs.

Materials:

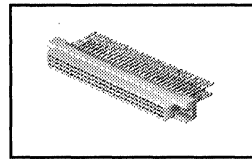
Contact: Beryllium Copper (Socket)
Copper Alloy (Header)

Body: LCP/PBT

Plating: ROBEX®/Ni or Au/Sn/Ni

Performance:

Insulation Resistance: 1000 megohms
Dielectric Withstanding: 900 volts
Current Rating: 3 amp/pin max



DIN
Series

DIN 2-Piece Connectors

Features:

48-150 positions
For VME and VXI applications

Options: Sequenced pins for "Hot Swap", EMLB contacts, pressfit and solder tail, PCB retention clips

Materials:

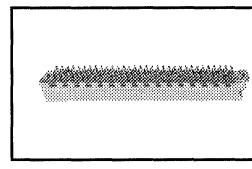
Contact: Phos Bronze

Body: High temp thermoplastic

Plating: ROBEX®/Ni

Performance:

DIN 41612 Quality Class 11



DIN
Inverse
Series

DIN Inverse Connectors

Features:

Pressfit or solder headers and PCB mounted receptacles 48-150 positions, Floating FLEX PRESS® pins ideal for sequencing

Options: EMLB contacts, pressfit and solder tail PCB retention clips

Materials:

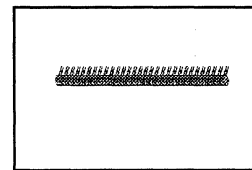
Contact: Phos Bronze

Body: High temp thermoplastic

Plating: ROBEX®/Ni

Performance:

DIN 41612 Quality Class 11
Insulation Resistance: $\geq 10^{12}$ ohms
Test Voltage: 1000 VRMS
Current Rating: 1 amp/pin



ICE-CP
SBE-CP
Series

Solderless Backplane Socket

Features:

Pressfit pin eliminates soldering
01-64 positions (SIP)
06-64 positions (DIP)
Accepts SIP resistors or DIP packages

Materials:

Contact: Beryllium Copper

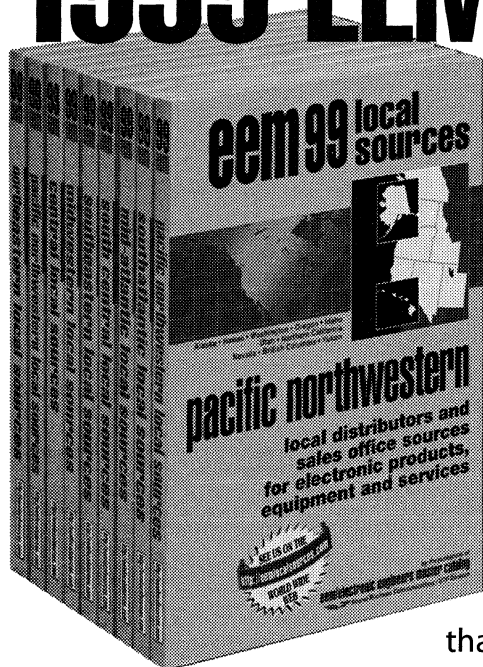
Body: High Temp Plastic

Plating: Au/Sn/Ni or Sn/Ni

Performance:

Insulation Resistance: > 5000 megohms
Dielectric Withstanding: 500 VRMS
Current Rating: 1.0 amp/pin
Flammability: UL 94V-0
Temperature Range: -65°C to +125°C

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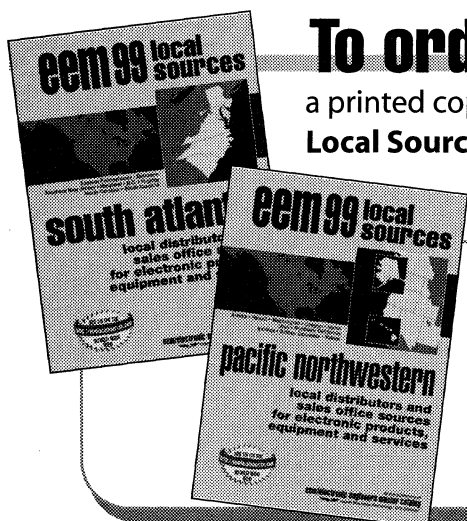
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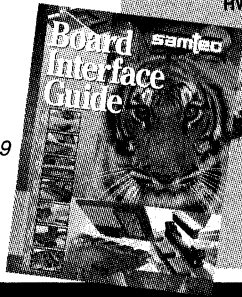


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ZW-06-10-G-T-400-230

DW-12-13-L-D-720

.025" SQ BOARD SPACERS DW, EW, ZW & HW SERIES

TYPE STRIP	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	TAIL OPTION
<p>DW = .110" (2,79) Tail</p> <p>EW = .330" (8,38) Tail</p> <p>ZW = Custom Tail</p> <p>HW = High Temp Custom Tail</p>	<p>01 thru 50</p> <p>Single Row Double Row Triple Row</p> <p>Surface Mount not available with -T Surface Mount -02 to -36 pins per row only</p>	<p>-G =10µ" (0,25µm) Gold on contact area of longer tail Gold flash on balance</p> <p>-T =200µ" (5,08µm) Tin</p> <p>-L =10µ" (0,25µm) Gold on contact area of longer tail 200µ" (5,08µm) Tin on tail</p> <p>-S =30µ" (0,76µm) Gold on contact area of longer tail 200µ" (5,08µm) Tin on tail</p>	<p>-S = Single Row</p> <p>-D = Double Row</p> <p>-T = Triple Row</p>	<p>-XXX = Stacker Height</p> <p>-XXX = ZW or HW Tail Length</p> <p>-SM = Surface Mount</p> <p>-02 to -36 Positions only Requires: HW Series Styles -08 thru -12, -15 thru -17 and -20 only Options -S & -D only</p>		

Mates with:
SSW, SSQ, ESW, ESQ, CLH, CES, SLW, BSW, BCS, SSM, IDSS, IDSD

Specifications: DW, EW, ZW

Insulator Material: Black Glass Filled Polyester

Terminal Material: Phosphor Bronze

Current Rating: 3A continuous

Operating Temp Range: -65°C to +125°C with Gold
-65°C to +105°C with Tin

Plating: Au or Sn over 50µ" (1,27µm) Ni

Specifications: HW

Same as ZW except:

Insulator Material: Natural Liquid Crystal Polymer except -SM option lower body is Black LCP

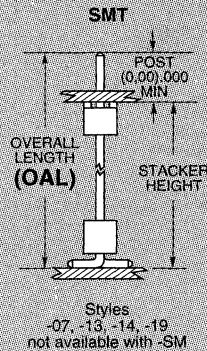
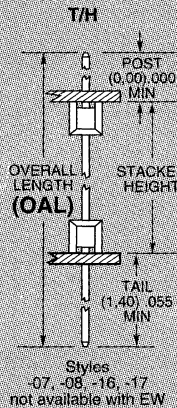
Max Processing Temp: 230°C for 60 seconds

SMT Lead Coplanarity: .006" (0,15mm) max

Note: These Series are non-standard, non-returnable.

Specify LEAD STYLE from chart

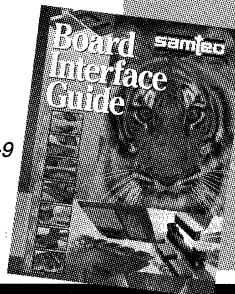
LEAD STYLE	OAL (T/H)	OAL (SMT)
-07	(10,92) .430	—
-08	(13,46) .530	(11,81) .465
-09	(18,54) .730	(16,69) .665
-10	(21,08) .830	(19,43) .765
-11	(23,62) .930	(21,97) .865
-12	(26,16) 1.030	(24,51) .965
-13	(31,24) 1.230	—
-14	(36,32) 1.430	—
-15	(16,00) .630	(14,35) .565
-16	(11,30) .445	(9,65) .380
-17	(12,19) .480	(10,54) .415
-19	(33,78) 1.330	—
-20	(28,70) 1.130	(27,05) 1.065



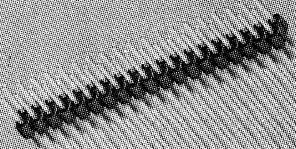
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TSW-116-11-G-S



TSW-120-13-L-D

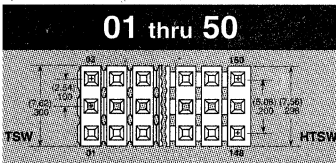
.025"sq TERMINAL STRIPS TSW SERIES

Mates with:
SSW, SSQ, ESW, ESQ,
BCS, BSW, IDSD, IDSS,
CES, SLW

Precision Drawn Terminal Strips

Samtec terminal strips are precision drawn Phosphor Bronze wire for a high quality low cost .025" square post. The basic interconnect and many of the available options are shown on this page. Additional styles are available. Samtec prides itself on being a full line supplier of square post products. If you don't see what you need please give us a call and we'll help you locate it.

TYPE STRIP	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
TSW = Standard						- RA or - RE = Right Angle
HTSW = Hi-Temp				- G = 10µ" Gold on contact area, Gold flash on balance	- S = Single Row	
				- T = 200µ" Tin	- D = Double Row	
				- S = 30µ" Gold on contact area, 200µ" Tin on tail (Styles -05 & -06 N/A)	- T = Triple Row	- "XXX" = Polarized (Specify "xxx" as position number)
				- L = 10µ" Gold on contact area, 200µ" Tin on tail (Styles -05 & -06 N/A)	- Q = Double Row .200" row space	



Specifications:

TSW
Insulator Material: Black Glass Filled Polyester
Terminal Material: Phosphor Bronze
Current Rating: 3A continuous
Operating Temp Range: -65°C to +125°C with Gold, -65°C to +105°C with Tin
Plating: Au or Sn over 50µ" (1,27µm) Ni

Specifications: HTSW
Same as TSW except:
Insulator Material: Natural Liquid Crystal Polymer
Max Processing Temp: 230°C for 30 to 60 seconds

Note: Some lengths, styles and options are non-standard, non-returnable.

Straight Pin Versions

(Specify "LEAD STYLE" from chart)

STYLE	A	B	C
* -05	(3,30) .130	(8,51) .335	(2,67) .105
* -06	(2,41) .095	(7,62) .300	(2,67) .105
* -07	(2,54) .100	(10,92) .430	
* -08	(5,08) .200	(13,46) .530	
* -09	(10,16) .400	(18,54) .730	(5,84) .230
-10	(12,70) .500	(21,08) .830	
-11	(17,78) .700	(26,16) 1.030	
-12	(22,86) .900	(31,24) 1.230	
* -14	(2,79) .110	(13,46) .530	(8,13) .320
* -15		(18,54) .730	(13,21) .520
* -16	(7,87) .310		(8,13) .320
* -17	(2,79) .110	(21,08) .830	(15,74) .620
* -18		(23,62) .930	(18,29) .720
* -19		(26,16) 1.030	(20,93) .820
* -20	(2,79) .110	(31,24) 1.230	(25,91) 1.020
* -21		(36,32) 1.430	(30,99) 1.220
* -22	(7,62) .300	(18,00) .630	(5,84) .230
* -23	(2,92) .115	(11,30) .445	
* -24		(12,15) .480	(6,73) .265
* -25	(5,33) .210	(18,00) .630	(8,13) .320
-26	(3,20) .125	(11,58) .456	
-27	(25,40) 1.000	(33,78) 1.330	(5,84) .230
-28	(20,32) .800	(28,70) 1.130	
-29	(25,40) .910	(33,78) 1.330	(8,13) .320
-30	(18,03) .710	(28,70) 1.130	

Except: Style -26 (0,46) .018" DIA Tail

* Available with -LL (Locking Lead) Option

Right Angle Versions

(Specify "LEAD STYLE" from chart)

-RA LEAD STYLE	SINGLE (-S)	DOUBLE (-D)	TRIPLE (-T & -Q)
* -08	(2,29) .090	(2,29) .090	(2,29) .090
* -09	(7,37) .290	(7,37) .290	(7,37) .290
-10	(9,31) .390	(9,31) .390	(9,31) .390
-11	(12,45) .490	(12,45) .490	(12,45) .490
-12	(14,99) .590	(14,99) .590	(14,99) .590
-13	(20,07) .790	(20,07) .790	N/A
* -16	(5,08) .200	(8,13) .320	(5,08) .200
-21	(25,15) .990	(5,84) .230	N/A
* -22	(4,83) .190	(4,83) .190	(4,83) .190
* -25	(2,54) .100	(8,13) .320	(2,54) .100
-27	(22,61) .890	(5,84) .230	N/A
-28	(17,53) .690	(17,53) .690	N/A
-29	(20,32) .800	(8,13) .320	N/A
-30	(15,24) .600	(15,24) .600	

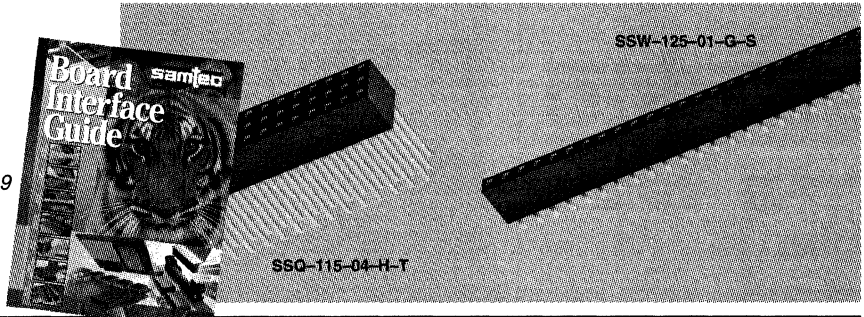
-RA Options
HTSW -S & -D = 36 positions max
-RE Options

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Call 1-800-SAMTEC-9
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.025" SQ SOCKET STRIPS SSW & SSQ SERIES

Mates With:
TSW, MTSW, FHW,
MTLW, BST, LCW, EW,
ZW, TSS, ZSS, TSM,
CTSWS

Specifications:
SSW, SSQ
HI-TEMP

Insulator Material:
Black Liquid Crystal
Polymer (-S & -D) or
Black High Temperature
Thermoplastic (-T)

Contact Material:
Phosphor Bronze

Current Rating:
3A continuous

Operating Temp Range:
-65°C to +125°C with Gold
-65°C to +105°C with Tin

Plating:
Au or Sn over
50µ" (1,27µm) Ni

Contact Resistance:
10 mΩ max

Insertion Depth:
.100" (2,54 mm) to
.250" (6,35 mm)

Insertion Force:
(-S plating)
Standard= 6 oz (1,67N) avg
(.025" (0,64mm) SQ pin);
SSW Low Insertion Force=
3 oz (0,83N) avg

SSQ Low Insertion Force=
3.3 oz (0,92N) avg

Withdrawal Force:
(-S plating)
Standard= 5 oz (1,39N) avg
(.025" (0,64mm) SQ pin);
SSW Low Insertion Force=
2.6 oz (0,72N) avg

SSQ Low Insertion Force=
2.9 oz (0,81N) avg

Impedance:
50Ω (system @ 50Ω)

Propagation Delay:
76.0pS @ 100pS

Cross Talk:
-18.3 dB G/S/S/G @ 1.0 GHz

Max Cycles:
100 with 10µ" (0,25µm) Au

TYPE STRIP	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	TAIL OPTION
SSW = Solder Tail	01 thru 50			-S = Single Row -D = Double Row -T = Triple Row	-RA = Right Angle (Leave blank for straight pin version) -VS = Vertical Surface Mount (Leave blank for straight pin version)
SSQ = Square Tail				-Q = Double Row .200" (5,08mm) row space (outer rows filled only)	

-G = 20µ" (0,51µm) Gold on contact Gold flash on tail
-T = 200µ" (5,08µm) Tin on contact and tail (Tin N/A on LIF contacts)
-S = 30µ" (0,76µm) Gold on contact 200µ" (5,08µm) Tin tail

Straight Pin Versions (Specify "LEAD STYLE" from chart)

LEAD STYLE	Standard Insertion Force	Low Insertion Force*	SINGLE DOUBLE OR TRIPLE	
			A	B
-01	-21	(2,54) .100	(11,05) .435	
-02	-22	(4,83) .190	(13,34) .525	
-03	-23	(9,91) .390	(18,42) .725	
-04	-24	(14,73) .580	(23,24) .915	
-06**	N/A	(3,00) .118	(11,50) .453	

* LIF N/A with Tin Plating
** Style -06 N/A with SSQ

Surface Mount Versions (Requires SSW and "LEAD STYLE" -21 (-S & -D only))

Right Angle Versions (Specify "LEAD STYLE" from chart)

LEAD STYLE	Standard Insertion Force	Low Insertion Force*	SINGLE	DOUBLE	TRIPLE
			(-S & -P)	(-D)	(-T & -Q)
-02	-22	(2,54) .100	(2,54) .100	(2,54) .100	
-03	-23	(7,62) .300	(7,62) .300	N/A	
-04	-24	(12,45) .490	N/A	N/A	

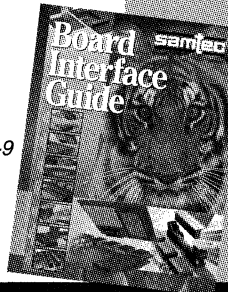
* LIF N/A with Tin Plating

Note:
Some lengths, styles and options are non-standard, non-returnable.

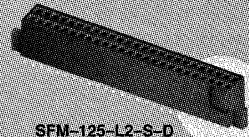
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Call 1-800-SAMTEC-9 for Full Line Catalog



SFM-110-03-S-D-A



SFM-125-L2-S-D

.050" x .050" MICRO STRIPS SFM SERIES

Specifications: SFM HI-TEMP

Insulator Material: Black Liquid Crystal Polymer
Contact Material: BeCu
Current Rating: 2A @ 80°C ambient
Operating Temp Range: -65°C to +125°C
Max Processing Temp: 230°C for 60 seconds
Plating: Au over 50µ" (1.27µm) Ni
SMT Lead Coplanarity: .006" (0,15mm) max (30-50) .004" (0,10mm) max (05-25)
Contact Resistance: 15 mΩ max
Insertion Depth: .100" (2,54mm) to .150" (3,81mm)
Insertion Force: Standard= 5oz (1,39N) avg; LIF= 2.0oz (0,56N) avg.
Normal Force: Standard= 70g (0,69N) avg; LIF= 40g (0,39N) avg.
Withdrawal Force: Standard= 4oz (1,11N) avg; LIF= 1.5oz (0,42N) avg.
Max Cycles: 100 with 10µ" (0,25µm) Au

Mates with: TFM, FTS (LIF), FW (LIF)

Note: Some sizes, styles and options are non-standard, non-returnable.



High reliability Tiger-Claw contacts

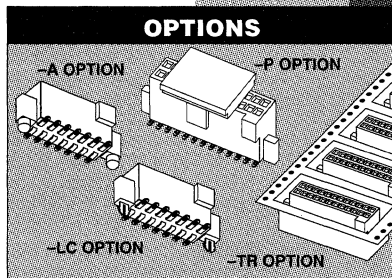
.050" x .050" (1,27mm x 1,27mm) micro pitch

Available with optional pick and place pads



Mated with TFM

Impedance: 50Ω average (system @ 50Ω)
Capacitance: 0,4pF average @ 1MHz
Inductance: 7nH average
Propagation Delay: 57ps @ 1:1
 83ps @ 7:1
Cross Talk: -26,0 dB G/S/S/G



Slotted SMT tails or choice of through hole tail lengths

Choice of alignment pin or locking clip options



05, 10, 15, 20, 25, 30, 35, 40, 45, 50

= SFM Series (Call Samtec for other sizes)
 See SFMC Series for more sizes

LEAD STYLE (Through Hole)	A	B
-01, -L1	(3,05) .120	(0,51) .020
-03, -L3	(1,91) .075	(0,41) .016

-01, -03
= Through Hole

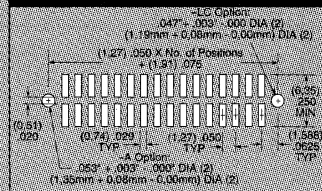
-L1, -L3
= Low Insertion Force Through Hole

-02
= Surface Mount

-L2
= Low Insertion Force Surface Mount

-S
= 30µ" (0,76µm) Au contact
 150µ" (3,81µm) Tin tail

PCB LAYOUTS

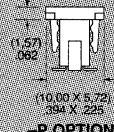
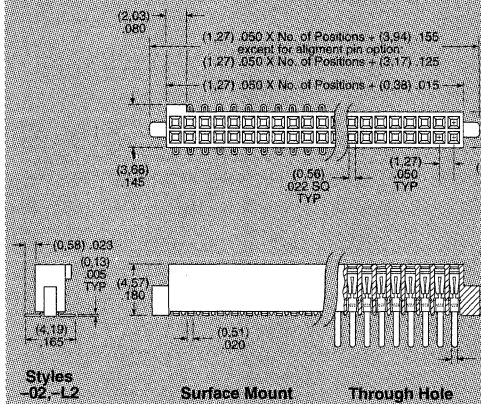


-A
= Alignment Pin (Metal or plastic at Samtec discretion) (N/A with -LC)

-LC
= Locking Clip (N/A with -A) Style -02 & -L2 only

-P
= Pick & Place Pad

-TR
= Tape & Reel (Styles -02 & -L2 only, N/A with -A or -LC)



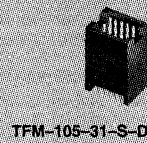
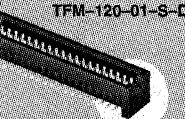
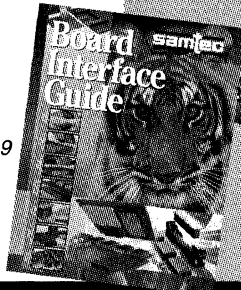
TAPE & REEL AVAILABILITY
 No tooling charges.
 125 piece minimum order.
 Order any quantity above minimum.
 In-house design, manufacture.
 Quick turn-around.
 Call Samtec for specifications and ordering information.

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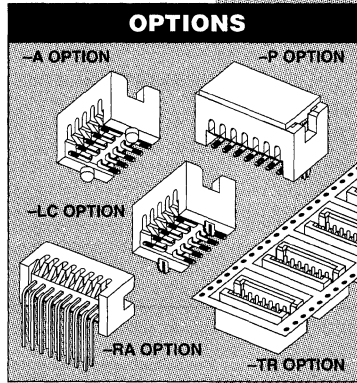
.050" X .050" MICRO STRIPS TFM SERIES

Specifications:

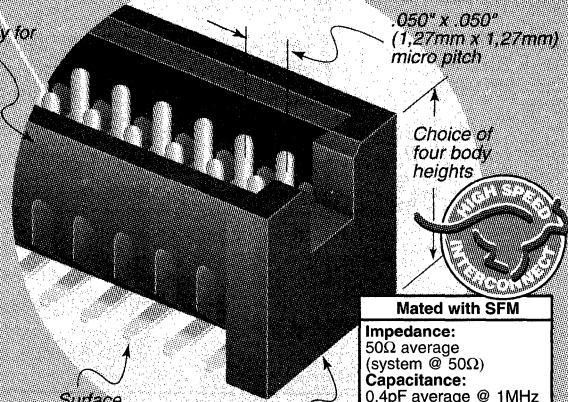
TFM HI-TEMP

Insulator Material: Black Liquid Crystal Polymer
Terminal Material: Phosphor Bronze
Current Rating: 2A @ 80°C ambient
Operating Temp Range: -65°C to +125°C
Max Processing Temp: 230°C for 60 seconds
Plating: Au over 50µ" (1,27µm) Ni
SMT Lead Coplanarity: .006" (0,15mm) max (30-50) .004" (0,10mm) max (05-25)

Mates with: SFM, SFMC



Shrouded body for blind mating



.050" x .050" (1,27mm x 1,27mm) micro pitch

Choice of four body heights



Surface mount or through hole

Alignment pin or locking clip options available

Mated with SFM	
Impedance:	50Ω average (system @ 50Ω)
Capacitance:	0.4pF average @ 1MHz
Inductance:	7nH average
Propagation Delay:	57pS @ 1:1; 83pS @ 7:1
Cross Talk:	-26.0 dB G/S/G

Note: Some sizes, styles and options are non-standard, non-returnable.



05, 10, 15, 20, 25, 30, 35, 40, 45, 50
(Call Samtec for other sizes)

Specify LEAD STYLE from chart

-S
= 30µ" (0,76µm) Gold post, 150µ" (3,81µm) Tin tail

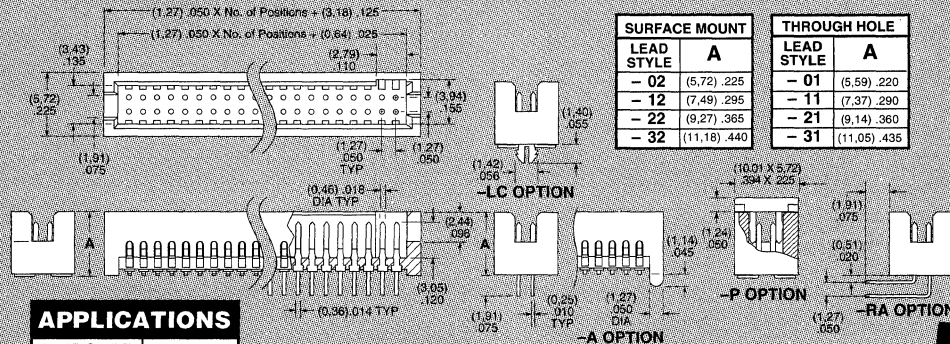
-A
= Alignment Pin (Metal or plastic at Samtec discretion) (Style -01 & -02 only) (N/A with -LC or -RA)

-LC
= Locking Clip (N/A with -A or -RA)

-P
= Pick & Place Pad

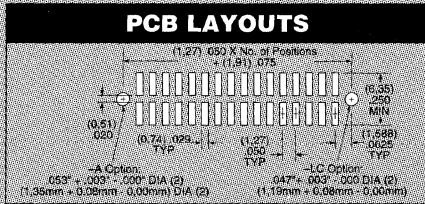
-RA
= Right Angle (Style -01 only)

-TR
= Tape & Reel (Surface mount only. N/A with -A or -LC)



SURFACE MOUNT		THROUGH HOLE	
LEAD STYLE	A	LEAD STYLE	A
-02	(5,72) .225	-01	(5,59) .220
-12	(7,49) .295	-11	(7,37) .290
-22	(9,27) .365	-21	(9,14) .360
-32	(11,16) .440	-31	(11,05) .435

APPLICATIONS		
LEAD STYLE	MATED HEIGHT	
TFM SFM		
-01	(5,97) .235	
-11	(7,75) .305	-01
-21	(9,53) .375	
-31	(11,43) .450	
-02	(6,35) .250	-02
-12	(8,13) .320	
-22	(9,91) .390	
-32	(11,81) .465	



TAPE & REEL AVAILABILITY
 No tooling charges.
 125 piece minimum order.
 Order any quantity above minimum.
 In-house design, manufacture.
 Quick turn-around.
 Call Samtec for specifications and ordering information.

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SS-116-TT-2

SL-120-G-10

SS-124-T-1B

SOCKET STRIPS SL, SDL, SS, SD & HSS SERIES

Mates with:
TS-1, TD-1, HTS,
BBS, BBD, BBL, BDL,
BHS

Specifications:
SS, SD,
SL, SDL

Insulator Material:
Black Glass Filled
Polyester
Flammability Rating:
UL 94V-O
Insulation Resistance:
5000 MΩ min
Operating Temp Range:
-65°C to +125°C
Dielectric Withstanding
Voltage:
1000 VRMS
Contact: BeCu
Shell: Brass
Plating:
Au or Sn over 50μ" (1,27μm) Ni
Current Rating: 1A
Contact Resistance:
10 mΩ max
Socket Retention in Body:
5 lbs (22,25N) against barb
Lead Size Range:
.015" to .022" (0,38mm to 0,56mm) DIA and most IC leads
Insertion Force:
Standard=
9 oz (2,50N) avg,
16 oz (4,45N) max
(.017" (0,43mm) DIA probe)
Low Insertion Force=
2.5 oz (0,70N) avg,
5.5 oz (1,53N) max
(.018" (0,46mm) DIA probe)
Withdrawal Force:
Standard=
2.5 oz (0,70N) avg,
1.5 oz (0,42N) min (after 12 insertions with .017" (0,43mm) DIA probe);
Low Insertion Force=
2.0 oz (0,56N) avg,
0.35 oz (0,10N) min (after 12 insertions with .018" (0,46mm) DIA probe)

Specifications:
HSS
Same as SS-1
except:
Insulator Material:
Black Liquid Crystal Polymer
Max Processing Temp:
230°C for 30 to 60 sec.

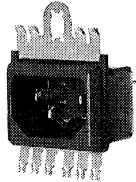
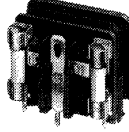



Note: Some lengths, styles and options are non-standard, non-returnable.

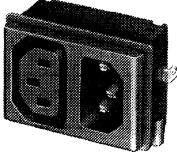




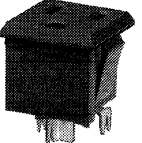
TYPE STRIP	1	NO. PINS PER ROW	PLATING OPTION	LEAD STYLE																				
		01 thru 32 =SS & SL Series																						
		01 thru 36 =HSS & SD & SDL Series																						
			-G = 30μ" (0,76μm) Gold contact 10μ" (0,25μm) Gold shell																					
			-T = 30μ" (0,76μm) Gold contact 200μ" (5,08μm) Tin shell																					
			-S = 10μ" (0,25μm) Gold contact 200μ" (5,08μm) Tin shell (Styles 2 & 22 only)																					
			-TT = 200μ" (5,08μm) Tin contact and shell (Styles 1, 2, 10, 11, 12, 18, 19, 21 & 22 only)																					
SS = Single Row Standard Socket Strip																								
HSS = Single Row High Temp Socket Strip																								
SD = Double Row Standard Socket Strip																								
SL = Single Row Low Profile Socket Strip																								
SDL = Double Row Low Profile Socket Strip																								
			-1A, -1B or -1C For LIF specify -21A, -21B or -21C																					
			 <table border="1"> <thead> <tr> <th>LEAD STYLE</th> <th>Y</th> </tr> </thead> <tbody> <tr> <td>-1A or -21A</td> <td>(9,14) .380</td> </tr> <tr> <td>-1B or -21B</td> <td>(12,95) .510</td> </tr> <tr> <td>-1C or -21C</td> <td>(6,60) .260</td> </tr> </tbody> </table>		LEAD STYLE	Y	-1A or -21A	(9,14) .380	-1B or -21B	(12,95) .510	-1C or -21C	(6,60) .260												
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			-2, -22*, -5A, -7 or -38* *For LIF specify -22 or -38																					
			<table border="1"> <thead> <tr> <th>LEAD STYLE</th> <th>X DIA</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>-2 OR -22</td> <td>(0,51) .020</td> <td>(3,18) .125</td> <td>(7,62) .300</td> </tr> <tr> <td>-38</td> <td>(0,51) .020</td> <td>(4,57) .180</td> <td>(8,89) .350</td> </tr> <tr> <td>-7</td> <td>(0,64) .025</td> <td>(10,41) .410</td> <td>(15,24) .600</td> </tr> <tr> <td>-5A</td> <td>(0,89) .035</td> <td>(12,95) .510</td> <td>(17,86) .703</td> </tr> </tbody> </table>		LEAD STYLE	X DIA	Y	Z	-2 OR -22	(0,51) .020	(3,18) .125	(7,62) .300	-38	(0,51) .020	(4,57) .180	(8,89) .350	-7	(0,64) .025	(10,41) .410	(15,24) .600	-5A	(0,89) .035	(12,95) .510	(17,86) .703
LEAD STYLE	X DIA	Y	Z																					
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-38	(0,51) .020	(4,57) .180	(8,89) .350																					
-7	(0,64) .025	(10,41) .410	(15,24) .600																					
-5A	(0,89) .035	(12,95) .510	(17,86) .703																					
-10 Low Profile For LIF Specify -30	-11 Low Profile For LIF Specify -31	-12 Micro-Socket For LIF Specify -32	-19 Micro-Socket For LIF Specify -39																					



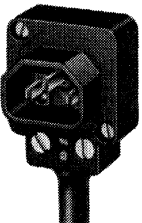

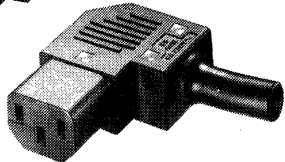
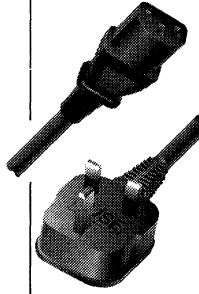
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 Due to technical progress, all designs, specifications and components are subject to change without notice.


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**Selector Chart –
IEC 320 & NEMA Connectors**


ISO 9001 / ISO 14001

Inlets and outlets	NEW EMI shield 	NEW "Piggy-back" fuse clips 	NEW Pcb mount with or without flange 		
	Series	GRF	GSF	GSP1 / GSP2	6100 / 6102 / 4300	6600 / 4300
AC inlet	•	•	•	•	
AC outlet					•
Snap-in mounting (panel)	•			•	•
Screw mounting (panel)		"split-panel" mounting	"split-panel" mounting	•	•
Pcb mounting		•	•		•

Inlets and outlets	NEW Pcb Mount 	"Hot" connections 	High current 	Low current 	 NEMA 
	Series	KP / 4300	6110 / 6120	6153 / 6653	4300	4300
AC inlet	•	•	•	•	
AC outlet	•		•		•
Snap-in mounting (panel)		•		•	•
Screw mounting (panel)	"split-panel" mounting	•	•	•	
Pcb mounting	•			•	

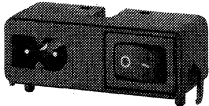
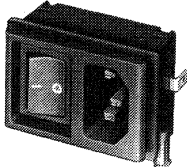
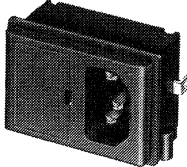
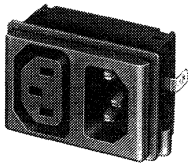
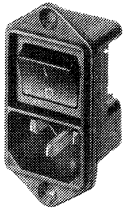
Plugs and cordsets	 		 	
	Series	4300		4300	4300
Inlets for cable connection	•			
Outlets for cable connection			•	
90° cable entry	•		•	
Straight cable entry	•		•	
International cordsets				•

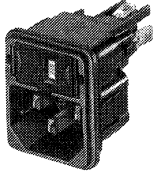
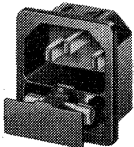
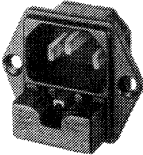
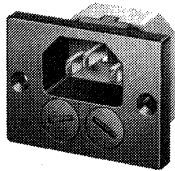
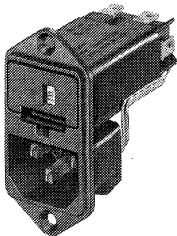
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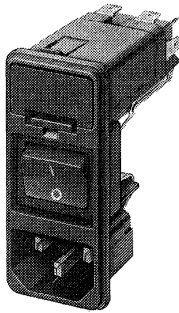
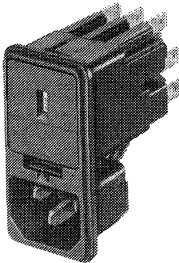
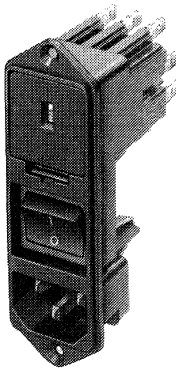
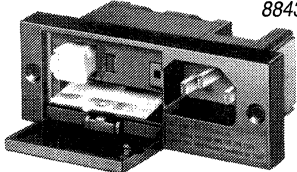
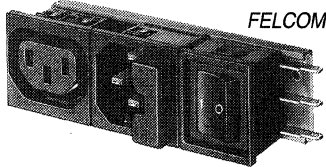
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Selector Chart – Power Entry Modules

ISO 9001 / ISO 14001

	NEW Miniature Module 	NEW Pcb Mount 	NEW Pcb Mount 	NEW Pcb Mount 	
Series	CMF	KP	KP	KP	KEB
AC inlet	• low current	•	•	inlet / outlet	•
Fuseholder (5x20mm)			•		
On/off line switch	•	•			•
Voltage selector					









					
Series	KEA	6200	6220	0040	KEC
AC inlet	•	•	•	•	•
Fuseholder (5x20mm)	•	•	•	•	
Fuseholder (5x20mm or 1/4 x 1 1/4")					•
Voltage selector	• step				• step









				 <i>8843</i>	 <i>FELCOM</i>
Series	KD	KE	KG	8843	FELCOM
AC inlet	•	•	•	•	with or without outlet
Fuseholder (5x20mm)					with / without fuseholder
Fuseholder (5x20mm or 1/4 x 1 1/4")	•	•	•	•	
On/off line switch	•		•	with or without switch	with or without switch
Voltage selector	• step	• series/parallel	• series/parallel	• series/parallel	




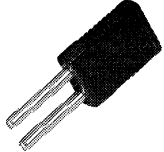


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**Selector Chart –
.08" Test Jacks & Probes**

ISO 9001 / ISO 14001

Test Jacks				
				
Series	PBF	PBF	PB	PB
Order numbers (request brochure for details)	0040.1031 to 0040.1035 0040.1361 to 0040.1365	0040.1041 to 0040.1045 0040.1371 to 0040.1375	0040.1011 to 0040.1015	0040.1101 to 0040.1105 0040.1521 to 0040.1525
Rated current	6.3A	6.3A	10A	10A
Panel mounting	•	•		
Pcb mounting			•	•

Test Jacks	<i>flux proof</i> 	<i>• flux proof • kicked terminals for increased stability</i> 	<i>• flux proof • kicked terminals for increased stability</i> 	<i>DIN 41649/1</i> 
				
Series	PBD	PBD	PB	PB
Order numbers (request brochure for details)	0040.1211 to 0040.1215	0040.1231 to 0040.1235 0040.1281 to 0040.1285	0040.1151 TO 0040.1155 0040.1501 TO 0040.1505	0040.1071 TO 0040.1075
Rated current	6.3A	6.3A	6.3A	6.3A
Panel mounting				
Pcb mounting	•	•	•	•

Test Jacks and Probes				
				
Series	PB	PB	PBD	PS
Order numbers (request brochure for details)	0040.1021 to 0040.1025	0040.1061 to 0040.1065	0040.1141 to 0040.1145	0040.1161 to 0040.1165
Rated current	6.3A	6.3A	6.3A	6.3A
Panel mounting				
Pcb mounting	•			

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Audio/DC Power Jacks & Plugs

Standard & Custom Designs. Any Spec...Any Time.

Audio Jacks

Standard specifications (subject to modification)

- PC mount, lead wire & in-line models.
- Life test:
 - 5,000 cycles of insertion & extraction (with the matching plug) at a rate of 20 to 30 cycles per minute, under no load.
- Insulation resistance:
 - Between mutually insulated terminals or metallic parts shall not be less than 50 megohms before test or initial, using a 500 volts DC insulation resistance meter.
- Contact resistance:
 - Between terminals of the jack (to be made a closed circuit) shall not exceed 30 milliohms before test or initial, and shall not exceed 60 milliohms after life test, at a current of below 100mA and at a frequency of 1KHz, by the voltage drop method or four terminals method.
- Test conditions:
 - Unless otherwise specified, all measurements and tests shall be made at a temperature of 5°C to 35°C, and at a relative humidity of 40% to 85%.

2.5 mm Audio Jacks

- Insertion force:
 - Before test or initial: 0.4 kg to 2 kg.
 - After life test: 0.3 kg to 2 kg.
- Extraction force:
 - Before test or initial: 0.4 kg to 2 kg.
 - After life test: 0.3 kg to 2 kg.

3.5 mm Audio Jacks

- Insertion force:

- Before test or initial: 0.5 kg to 2 kg.
- After life test: 0.3 kg to 2 kg.
- Extraction force:
 - Before test or initial: 0.4 kg to 2 kg.
 - After life test: 0.3 kg to 2 kg.

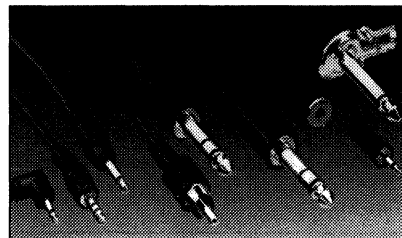
6.3 mm Audio Jacks

- Insertion force:
 - Before test or initial: 0.5 kg to 3 kg.
 - After life test: 0.3 kg to 3 kg.
- Extraction force:
 - Before test or initial: 0.5 kg to 3 kg.
 - After life test: 0.3 kg to 3 kg.

Mating Audio Plugs: 2.5 mm • 3.5 mm • 6.3 mm

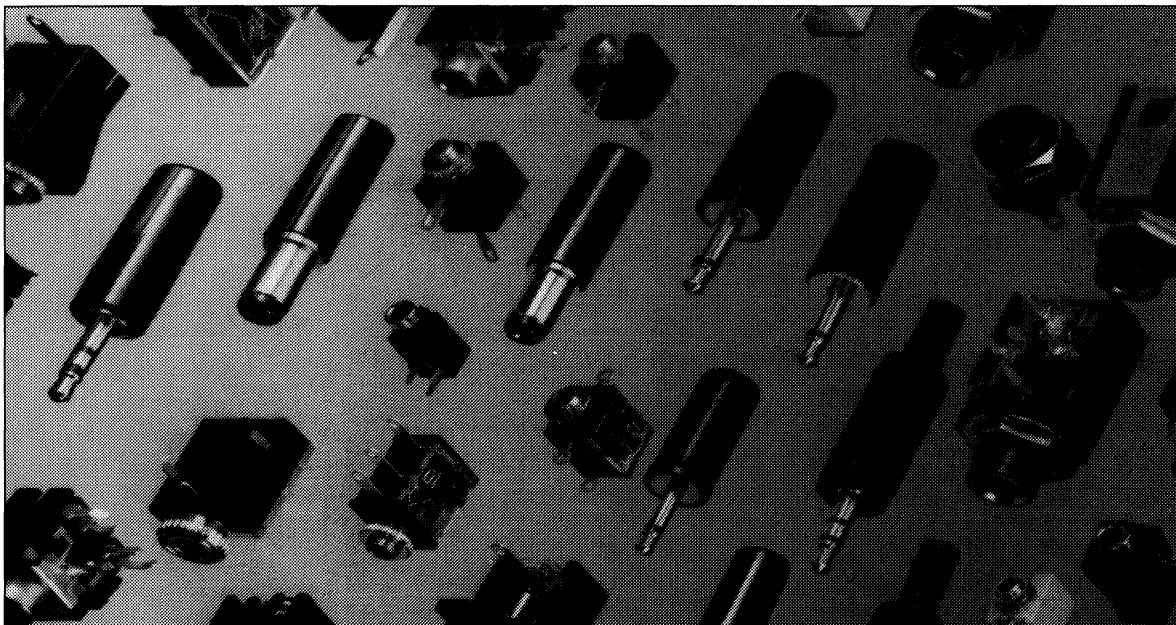
Standard specifications (subject to modification)

- Mono/2 conductor & stereo/3 conductor.
- Plastic, bakelite & shielded handles.
- Screw terminal & right angle plugs available.



Pre-Molded Cable Assemblies

- Jacks, plugs, lengths, gauges, coils, shielding, strain reliefs, etc. to specification.



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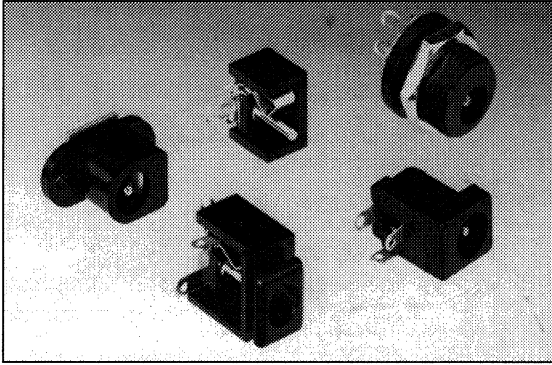
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Audio/DC Power Jacks & Plugs

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DC Power Jacks

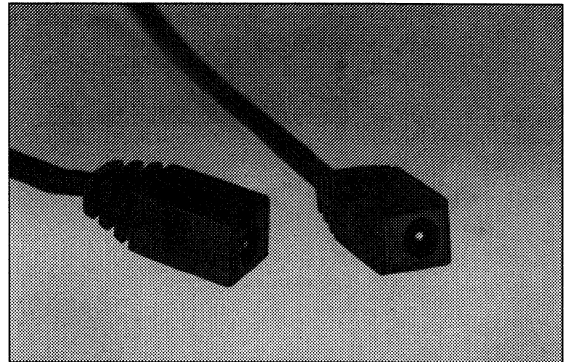
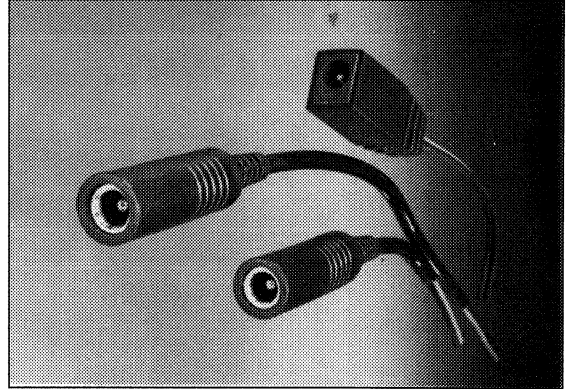
Standard specifications (subject to modification)

- 2.5 mm, 2.0 mm & 1.3 mm center pins.
- PC mount & lead wire models.
- Insertion force:
 - Before test or initial: Maximum 3 kg.
 - After life test: Maximum 3 kg.
- Extraction force:
 - Before test or initial: 0.3 kg to 3 kg.
 - After life test: 0.2 kg to 3 kg.
- Life test:
 - 5,000 cycles of insertion & extraction (with the matching plug) at a rate of 20 to 30 cycles per minute, under no load.
- Insulation resistance:
 - Between mutually insulated terminals or metallic parts shall not be less than 100 megohms before test or initial, using a 500 volts DC insulation resistance meter.
- Contact resistance:
 - Between terminals of the jack (to be made a closed circuit) shall not exceed 30 milliohms before test or initial, and shall not exceed 60 milliohms after life test, at a current of below 100mA and at a frequency of 1KHz, by the voltage drop method or four terminals method.
- Test conditions:
 - Unless otherwise specified, all measurements and tests shall be made at a temperature of 5°C to 35°C, and at a relative humidity of 40% to 85%.

Mating DC Power Plugs

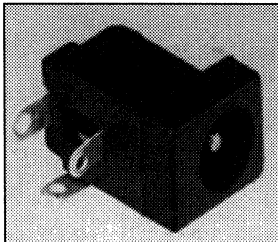
Standard specifications (subject to modification)

- 2.5 mm, 2.0 mm, 1.9 mm & 1.3 mm center pins.
- Available to specifications as pre-molded cable assemblies.
- Bakelite handles.

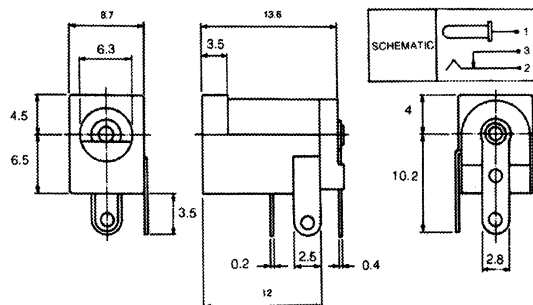


Pre-Molded Cable Assemblies

- Jacks, plugs, lengths, gauges, collings, shielding, strain reliefs, etc. to specification.



SJS-014 (PC mount, center pin 2.0mm)
SJS-014A (PC mount, center pin 2.5mm)



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RCA Phono Jacks & Plugs

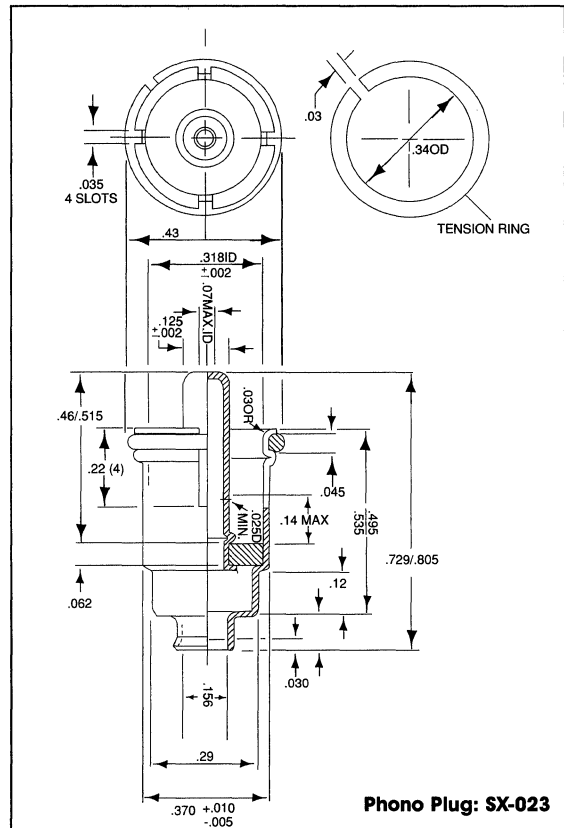
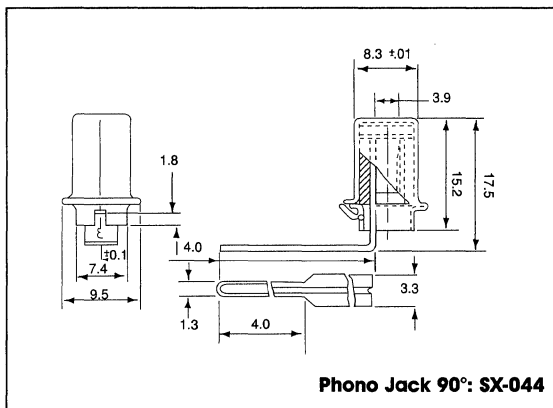
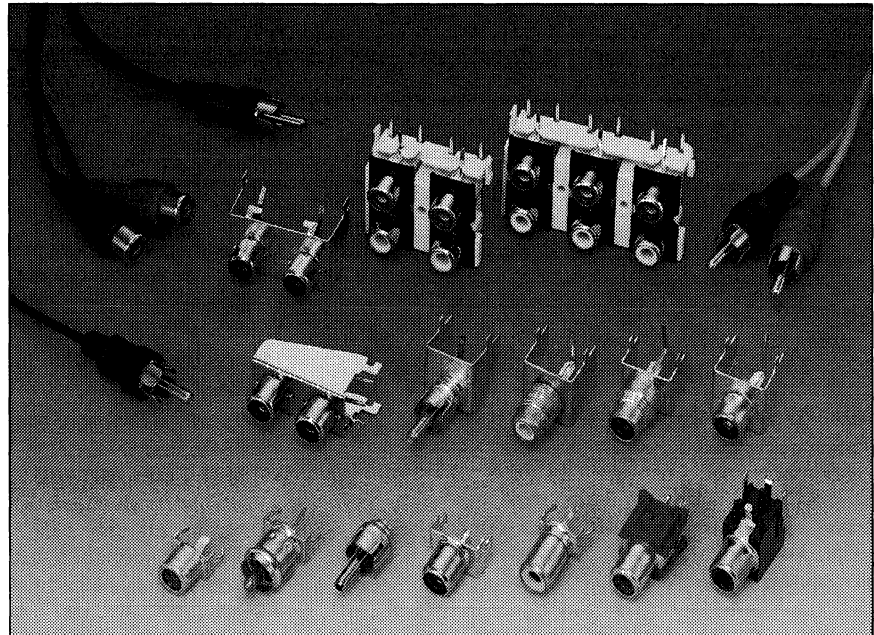
Standard & Custom Designs. Any Spec...Any Time.

Standard specifications (subject to modification)

- Single or multiple units.
- Perpendicular or vertical mounting.
- PCB terminals.
- Gold plating available.
- Standard materials:
 - Shell: C.R. Steel 0.3 mm thick. Tin lead plated with copper undercoat.
 - Center contact: Spring brass or high-retention phosphor bronze tin plated with copper undercoat.
 - Insulator bushing: Ceramic or nylon66+33% glass fiber.
 - Insulator washer: Glass material polyester, name grade GPO-2 glastic copr. USA or ABS.
 - Bracket: Zinc coating mass, 0.8 mm thick.
- Insertion force: (Initial, using a 2 micro-inch finish polished pin): $\text{Ø}3.25$ mm dia., ± 0.05 , with 1.6 mm end radius to 5.45 kg max.
- Contact resistance: 20 milliohms max.
- Dielectric strength: 1,080 Vrms for 1 minute.
- Insulation resistance: 1,000 megohms min. at 250 volts.

Pre-Molded Custom Cable Assemblies

- Jacks, plugs, lengths, gauges, coilings, shielding, strain reliefs, etc. to specification.



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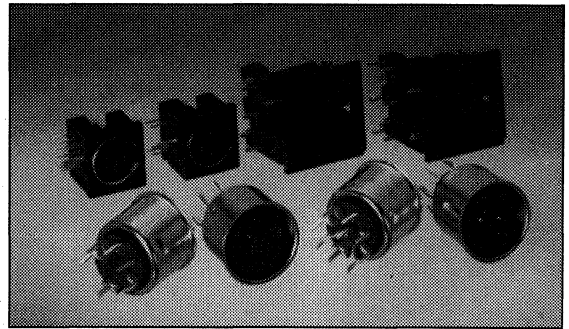
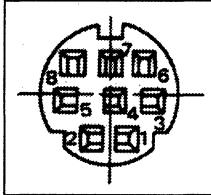
Circular, Coaxial & DIN Connectors

Standard & Custom Designs. Any Spec...Any Time.

Miniature Circular Connectors—Crimping, Vertical & Quick Lock

Standard specifications (subject to modification)

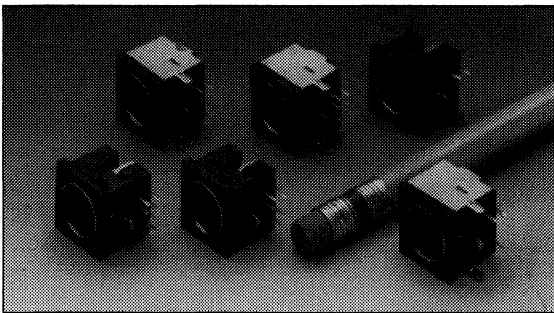
- 3 – 8 contacts.
- Rating: 1 amp, 100V AC, 2 or 3 amp, 12V DC.
- Insulation resistance: 50 M Ω min.
- Dielectric strength: 250V AC or DC/1 minute
- Contact resistance: 30m Ω max.
- Insertion force: 0.8 – 5.0 kg
- Extraction force: 0.8 – 4.0 kg
- PC mount & lead wire models.
- Shielded or unshielded.



Circular Pre-Molded Cable Assemblies

Standard specifications (subject to modification)

- 3 – 8 contacts.
- Rating: DC20V, 5.0 amp & 7.5 amp max.
- Contact resistance: 30m Ω max.
- Insulation resistance: DC250V, 50 M Ω min.
- Withstanding voltage: AC250V, 1 minute.
- Insertion force: 4.0 kg & 4.5 kg max.
- Extraction force: 0.5 – 3.0 kg & 0.5 – 3.5 kg.
- With/without end terminals.



Mating Din & Mini Din Plugs (Male)—Molded Type

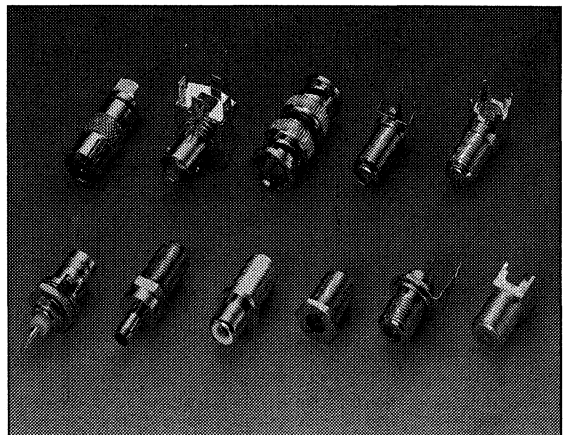
Standard specifications (subject to modification):

- 3 – 8 contacts.
- Rating: 1 amp, 100V AC, 2 amp, 12V DC.
- Insulation resistance: 50 M Ω min.
- Dielectric strength: 250V AC/1 minute
- Contact resistance: 30m Ω max.
- Suitable wire: 22 TO 30 AWG.
- PC mount & lead wire models.
- Shielded or unshielded.

Coaxial Connectors

Standard specifications (subject to modification):

- RF connector plugs.
- Mating panel or chassis mount jacks.
- Two-way, right angle and "T" type three-way connectors.
- Double & triple male, female & male/female configurations.



Din & Mini Din Jacks

Standard specifications (subject to modification)

- 3 – 8 contacts.
- Contact resistance: 30m Ω max.
- Insulation resistance: 100 M Ω min. at 500V DC.
- Withstanding voltage: 500V AC for 1 minute.
- Soldering heat test: 260 \pm 5 $^{\circ}$ C for 5 \pm 1 seconds.
- Insertion force: 0.5 – 5.0 kg (Mini: 0.5 – 4.5 kg).
- Extraction force: 0.5 – 5.0 kg (Mini: 0.4 – 3.5 kg).
- Life: 5,000 cycles min.

Pre-Molded Custom Cable Assemblies

- Jacks, plugs, lengths, gauges, coilings, shielding, strain reliefs, etc. to specification.

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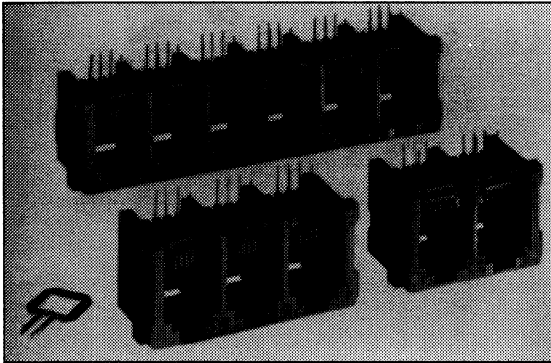
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Telephone Modular Components

Standard & Custom Designs. Any Spec...Any Time.

PCB Jacks

- Parallel (side entry, flangeless, 4, 6 & 8 positions).
- Vertical (top entry, flangeless, 4, 6, & 8 positions).
- Low profile (flanged/flangeless, 4 & 6 positions).
- Mini low profile (flangeless, 4 & 6 positions).
- 8 positions/8 wires.
- 616 & 623 types (4 & 6 positions).
- Very low profile (side entry, 4, 6 & 8 positions).



PCB Gang Jacks

- Side entry.
- Top entry.

PCB Sockets

- 664A (4 positions).
- Bottom entry (6 positions).
- Side entry (4, 6 & 8 positions).
- Top entry (4, 6 & 8 positions).

Hand Set Cord Connectors

- 616W, 616B, 616C, 616D, 616E, 616L, 616M, 616P, 616T

Inserts

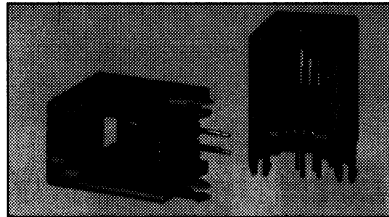
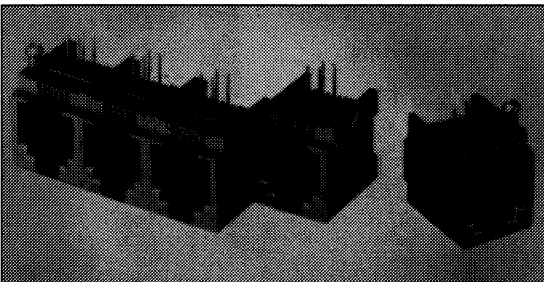
- 227, 625F, 645.

Line Cord Connectors

- 623D, 623K, 623P, 623T

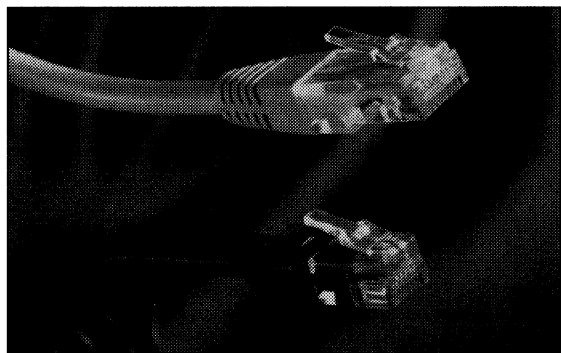
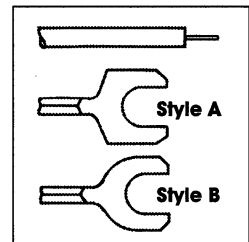
8 Wire Connectors

- 641 (without key), 647 (with key), 616A, 623A.



Standard specifications (subject to modification)

- Insulation resistance: 10 M Ω min.
- Withstanding voltage: 500V AC for 1 minute.
- Contact voltage: 20 M Ω min.
- Rating current: 1.5 mA
- Mating force:
 - 350 grams: 2 wire lead.
 - 500 grams: 4 wire lead.
 - 750 grams: 6 wire lead.
 - 900 grams: 8 wire lead.
- Retention strength: 7.7 kg (17 lbs.).
- Crimp tensile strength: 2.27 kg (5.01 lbs.).
- Housing:
 - Standard: ABS resin (UL 94 v-O).
 - Optional: Glass reinforced nylon 66 (UL 94 v-O).
 - Color: Medium Gray.
 - Color options: Black, ivory.
- Spring wire: 0.46 mm dia. phosphor bronze. Optional gold plating over 2.54 μ m nickel golding plating.
- Terminal: mm thick 3/4 hard brass. 2.5 μ m < solder (fin-lead).
- Lead end terminal styles:
 - Strip & dip:
 - Style A:
 - Style B:
- Wire style:
 - UL-1061 E41396 AWM80°C VW-1 300V 26AWG.
 - PVC insulation.
 - Top coated UL 1061 wire.



Custom Cable Assemblies

- Jacks, plugs, lengths, gauges, etc. to specification.

SHOGYO
Any spec...any time.

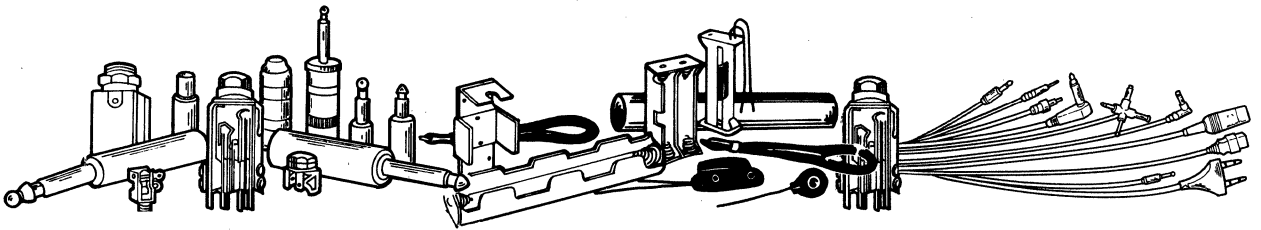
For complete specifications, samples & technical assistance:
Tel: (516) 349-5200 Fax: (516) 349-7744 E-mail: info@shogyo.com

Visit our web site: <http://www.shogyo.com>

Shogyo International Corporation
45 Executive Drive • Plainview, NY 11803

Connectors, Cable Assemblies, Jacks, Plugs & Battery Holders

STANDARD OR TO YOUR SPECIFICATIONS



- **Audio, coaxial, din, DC power, computer, medical, IC, PCB and cardedge connectors for all of your interconnection requirements**
- **Battery holders and snaps with your choice of terminals and configurations**
- **Cable Assemblies- All types, all styles - any lengths, any ends. Produced to your requirements.**
- **Engineered & tested for longer lasting and superior performance in every project**
- **Over 70,000 OEM components- Direct from our overseas factories**
- **On Time Deliveries- We deliver to meet your deadlines. We won't make you a promise that we can't keep.**

Shokai's problem solving engineers are ready to help. Work samples, as well as assistance with designs to your specs are available.

When you need OEM quality components specify SHOKAI. We are an American company, with over 30 years experience manufacturing and importing components from the Far East. We understand your needs.

We control every aspect in the manufacturing of our products. We consistently ensure the highest standards of production and design. All of which results in an assortment of quality components designed to meet our customers every requirement.

That's why more and more components engineers & purchasing managers have turned to SHOKAI.

We encourage you to challenge us with your exact requirements. You can count on SHOKAI for consistently superior quality, competitive pricing, and unbeatable values for exactly the part you want without compromising your design to accept second best.

Call, fax or write us for all your component needs.

We Make Your Ideas Profitable™



SHOKAI™
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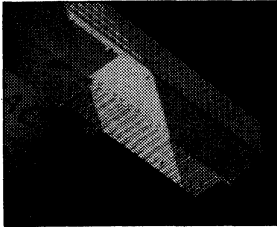
SIEMENS

Siemens Electromechanical Components Inc.
200 South Richland Creek Drive, Princeton, Indiana 47671-0001
Tel: 812.386.1000 • Fax: 812.386.2072 • e-mail: info@sec.siemens.com

Connectors

Metric
USB
Automotive
Mobile Com
RF (Coax)
D-Sub
DIN 41612

SIPAC® Connectors



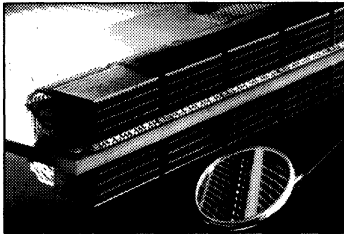
- 5 row metric on 2.5 mm grid
- Completely modular per IEC 917
- Press-in technology
- Shielded

SpeedPac® Connectors



- High speed backplane connector
- Data rates to 2.5 Gbits/s
- Zero insertion force
- Beam on pad connector

DensiPac Connectors



- High density surface mount connector
- 1.25 mm grid
- Up to 576 pins per 100 mm card edge
- Male connector is available as press-in or SMT

Connectors for Mobile Communication



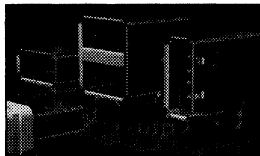
- Battery connector
- SIM-card connector
- I/O connector
- Board to board connectors

RF Connectors



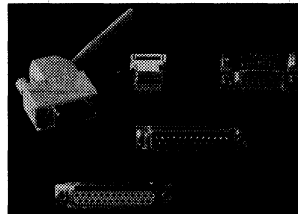
- Series 1.0/2.3, 1.8/5.6 and 1.6/5.6 coax
- Coax inserts for DIN 41612
- Micro miniature coax (0.7/1.6)
- SMT Multi coax

Universal Serial Bus Connectors



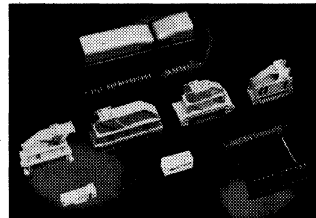
- Series A and B configurations
- Upright, right-angle and right-angle stacked receptacles
- Overmolded plug connectors

D-subminiature Connectors



- Two and three-row
- Male and female
- 180 or 90 degrees
- SMT, press-in and solder types for PCB
- Solder, crimp and IDC types for cable

Automotive Connectors



- Convenience electronics
- Passenger protection
- Drive train
- Vehicle network
- Flexible connectors
- ELO-Power

DIN 41612 Connectors

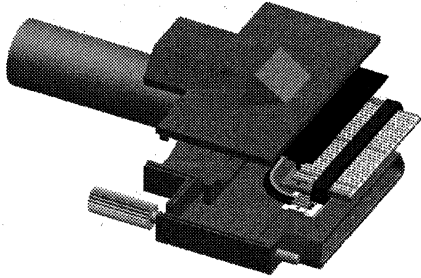


- Type B, C, D, F, G, H, M, Q, R & W
- Numerous termination options
- Post- / pre-mating contacts
- 126 coding possibilities

Visit our website at www.sec.siemens.com for more product information and details about our firm.



Cable assemblies made with Sonicrimp[®] Technology



SONICRIMP[®] FEATURES

- No IDC or soldering
- Cost effective mass termination
- Better stability in vibration and flex
- Simple and fast custom designs

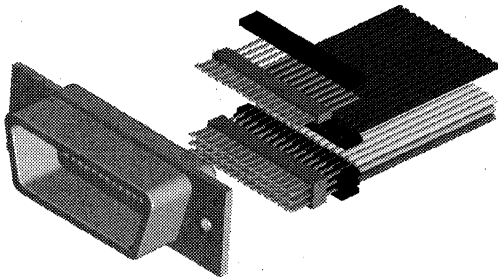
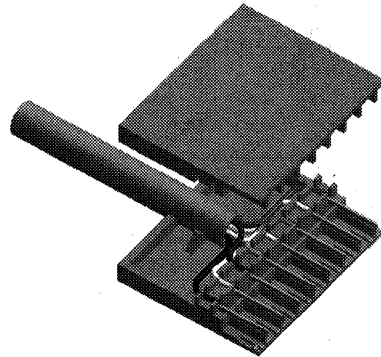
DATA CABLES

- **SCSI .8mm**

Mass terminates 28AWG wire,
IDC requires 30 AWG wire

- **LFH connectors (Molex)**

Mass terminates 15 contacts, current
method is to solder individually



TELECOM PRODUCTS

- **110 Patch Cords**

No IDC, instant strain relief

- **CAT 5 Modular Couplers**

Lowest cost, no PCBs

CUSTOM TERMINATIONS

Easily adapts to mass termination of contacts or wire to printed circuit boards, flex circuitry, polyester films and custom terminals.

Sonic Connections, Inc. 24 Walpole Park South, Walpole, MA 02081

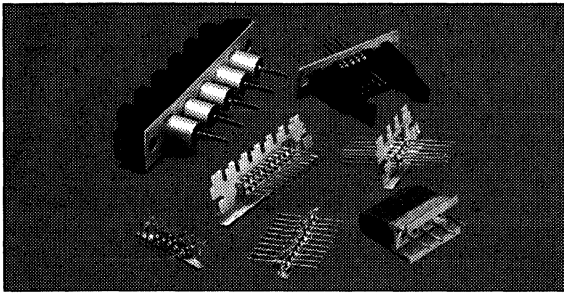
PHONE: 888 - 54 SONIC FAX: (508) 668-7142

E-Mail Teksonic@TIAC.net Web Site: www.SONICONNECT.com

EMI/RFI Filters and Connectors



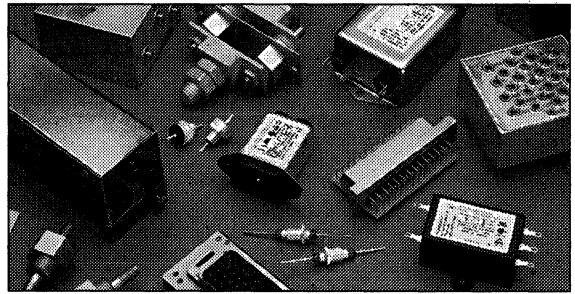
Filtered Arrays



Filter plates provide an EMI filtered signal line between electronic system modules that simplifies installation and reduces costs. Plates come in bolt-in and Patented Easy Mate® "snap-in" styles. These plates deliver excellent EMI filtering at frequencies from 5 MHz to 18 GHz. **Filtered terminal blocks** provide high insertion loss for EMI filtering of power and control lines. Available in "barrier strip" or PCB models, the rugged construction of these blocks protects the filter element from damage common during changes in field wiring.

Applications: Telecommunications equipment, cellular base stations, linear power amplifiers, cellular microcell repeaters, industrial, scientific and medical equipment, power supplies, instrumentation and power distribution.

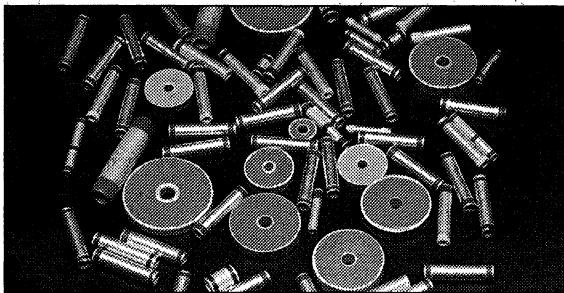
Power Entry Filters



Standard power entry filters as well as custom designed filters enable you to satisfy varied mounting and/or filtering requirements. Safety and reliability are ensured through 100% testing of critical parameters. Multisection filters are built in accordance with MIL-F-15733. UL, CSA, TUV and VDE recognition is available on selected filters.

Applications: Power and signal line filters for power supplies, military/secure communication, UPS systems, aerospace, medical equipment and computers.

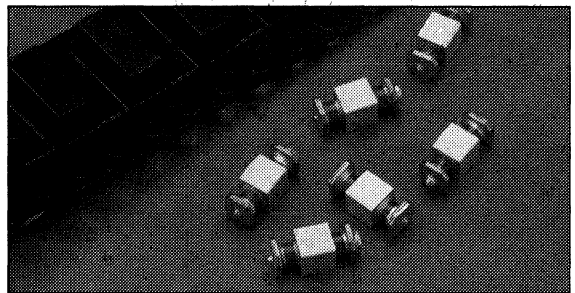
Tubular/Discoidal Filters and Capacitors



The small size of these components offers mounting advantages by allowing for high density placement. All parts are 100% tested to critical parameters, available in wide capacitance value range and temperature stability, and supplied with solderable, plated terminations with nickel barrier to prevent leaching.

Applications: Components used in the assembly of filter pins, filtered connectors and filter plates.

High Current Surface Mount Filter



New surface mount filter effectively eliminates EMI/RFI on printed circuit boards operating at currents up to 20 Amps. PSM series filters replace conventional thru-hole filters at these higher currents, allowing designers to create an "RF fence" without expensive RFI bulkheads. PSM filters are available with capacitance values up to 10,000 pF and provide excellent high frequency noise suppression.

Applications: Power amplifiers, high current bus lines, switching power supplies, signal and data lines in electronic equipment.

ISO 9001
CERTIFIED

SPECTRUM CONTROL INC.

A Control Products and Systems Company

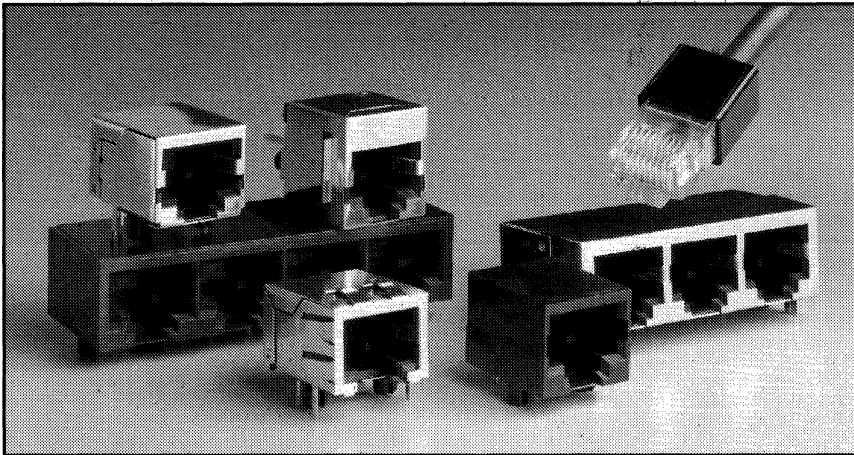
6000 West Ridge Road, Erie, PA 16506 ■ Phone: 814-835-1510 ■ Fax: 814-835-9000 ■ <http://www.spectrumcontrol.com>

Performance is in the details.

Stewart plugs and jacks are designed better to perform better.

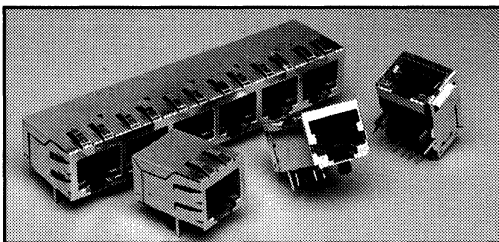
If reliable, dependable performance is important, choose plugs and jacks from Stewart. No other connectors are designed and manufactured with more attention to the details that ensure reliability and performance. Like selectively plated drawn-wire contacts for superior

mechanical and electrical performance. Low porosity plating for long-term reliability. Electropolished finishes for 1000-mating-cycle durability. Fact is, with all the attention to detail, we received dual ISO 9001 Certification — your sign of quality by design.



Modular Plugs and Jacks

- Designed to meet FCC requirements
- Discrete and harmonica multiport jacks
- Industry-standard footprints for drop-in designs
- 4, 6, 8, and 10 positions
- Wide range of keying, flanges, and configuration options



NEW

MagJack® Modular Jacks

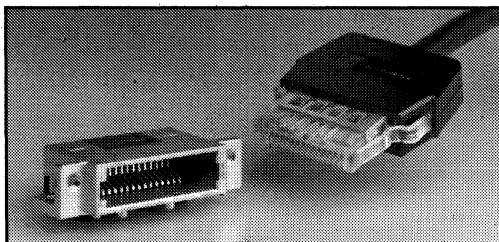
- MagJack incorporates magnetics directly into the jack body
- Protects your signal from internally generated noise
- Saves pc board space
- Meets FCC dimensional and mechanical requirements



NEW

StackJack™ Modular Jacks Shielded and Unshielded

- Two-row configuration
- 8 position
- 2 to 16 ports
- Industry-standard or low-profile versions
- One-piece shield with enhanced grounding tabs



Compu-shield® Plugs and Jacks

- The shielded solution for digital interconnections
- 6, 8, 10, 15, and 25 positions
- Horizontal and vertical jacks, with variety of flange and keying options
- Patented load bar speeds plug assembly
- Tested through 400 MHz



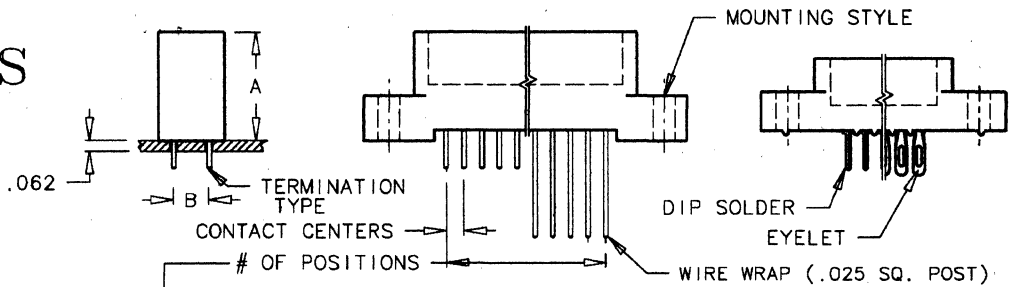
Stewart Connector Systems, Inc.
 Insilco Technologies Group
 11118 Susquehanna Trail South
 Glen Rock, PA 17327-9199
 (717) 235-7512 Fax: (717) 235-7954
<http://www.stewartconnector.com>



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Fax : (760)744-6081
Web : www.edgecards.com

EDGE CARDS



PART NUMBER CODING: **EZM 43 DCW N**

CONTACT CENTERS	
RXB	= .050"
EZC	= .100"
EZA	= .125"
EZJ	= .150"
EZM	= .156"

TERMINATION TYPE	DIMENSIONS A	DIMENSIONS B	APPLICATION
DSX	0.431	-	DIP SOLDER
DCM DCW DRT DSE DRX DRJ	0.610	-	WIRE WRAP
	0.610	0.200	DIP SOLDER
	0.431	0.140	EZA SERIES D/S
	0.431	0.140	DIP SOLDER
	0.431	0.200	EYELET
DCA DRA	0.610	0.150	RIGHT ANGLE
	0.431	0.156	RIGHT ANGLE
DCH	0.610	0.100	DIP SOLDER
DCR*	0.610	0.062	CARD EXTENDER (.050" CC)
DCF*	0.610	-	SURFACE MOUNT (.050" CC)

MOUNTING STYLE (high profile shown)	
N	EARS REMOVED
D	Ø.125
T	#4-40
H	Ø.125
I	#4-40
S	Ø.125

FEATURES

High reliability bellow contact design. A variety of contact materials, contact finishes and special modifications are available upon request. Optimum electrical and mechanical performance is obtained from a Thermoplastic Polyester insulator and a Phosphor Bronze contact with .150 gram normal force minimum.

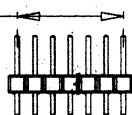
HEADERS

*Contact factory for P/N on different contact centers.

PART NUMBER CODING

PZC 36 DAAN

OF POSITIONS



.025" SQ, .100" X .100" GRID, .062" BOARD

SAAN	SBAN	DAAN	DBAN
-------------	-------------	-------------	-------------

SERIES, CONSULT FACTORY FOR OTHER VARIATIONS.

WINNING AWARDS FOR EXCELLENCE

Winner
1996 Milton S. Kiver
Award for Excellence
in Electronic Packaging
and Production



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LOOK TO TEKA FOR STANDARD AND CUSTOM CONNECTORS-
Our Revolutionary solder-flux bearing lead technology solves the toughest PCBA assembly problems with the lowest applied cost. Connectors also available: • Card Edge • Flex Circuit • DIN • Application Specific.

PCMCIA and COMPACT FLASH - Headers and Receptacles with Solder-Flux Bearing Leads

General Information

TEKA'S award winning SBL technology mechanically attaches to each lead a precise and predetermined amount of solder and flux that can easily be reflowed. Once the connector is placed on the PCB, application of general or localized heat reflows each lead, forming a 100% reliable rework free solder joint.

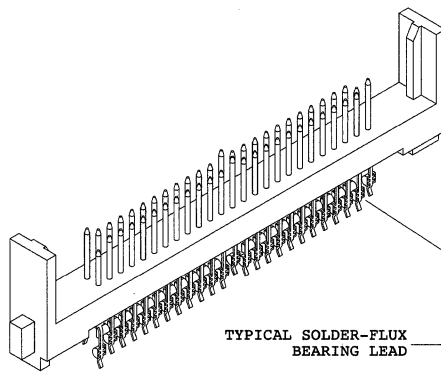
TEKA Solder Bearing Lead Connectors can be soldered in line with any conventional SMT conveyer oven or with the TEKA HBS 6800 reflow machine.

A high yield, automated process of connector attachment is now available on PCMCIA and CompactFlash product. Hand soldering and rework due to lead coplanarity problems or PCB warp can now be eliminated.

Design Features

- Meets all applicable PC card and CompactFlash Specifications
- PCB real estate savings
- IR, convection or vapor phase compatibility
- Lower applied cost with greater reliability
- Different solder/flux combinations available
- "Claw" design provides direct wiping action between solder/flux preforms and conductor pads
- Mechanical integrity of straddle mounting
- Proven technology - reliability not an issue
- Coplanarity not an issue, connector leads pre-loaded on pads
- Pre-applied solder and flux preforms open up many automation possibilities
- Modular tooling allows compatible with any frame type

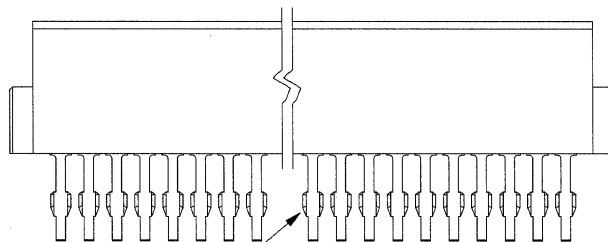
Contact TEKA sales for details on HBS Soldering Machine



LOW PROFILE
Straddle Mount Header with Solder-Flux Bearing Leads
CompactFlash - 50 pin
PCMCIA - 68 pin

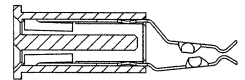
TYPICAL SOLDER-FLUX BEARING LEAD

Straddle Mount Receptacles with Solder-Flux Bearing Leads CompactFlash - 50 pin PCMCIA - 68 pin

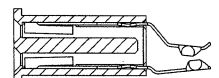


TYPICAL SOLDER-FLUX BEARING LEAD

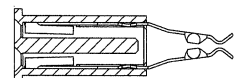
Termination Options Contact TEKA sales for other options



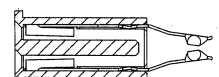
Offset Straddle
,64 (.025")



Minimized Offset Straddle
,64 (.025")



Central Straddle



Minimized Central Straddle

TEKA
Interconnection
Systems

an
Interplex
Industries
company

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E-mail: sales@tekais.com

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TEKA HEADERS AND RECEPTACLES with Solder-Flux Bearing Leads

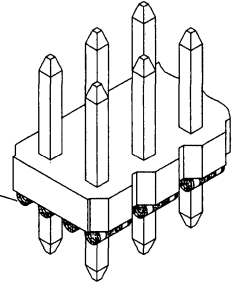
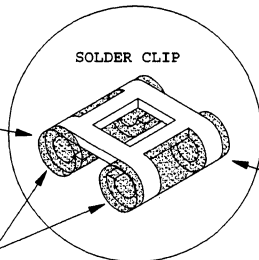
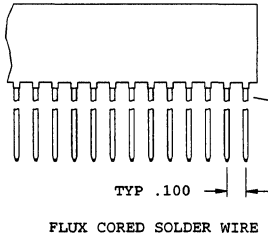
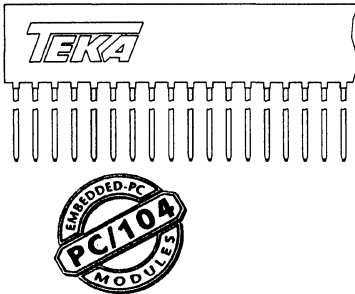
Eliminate additional process on mixed technology PCBAs

General Information

TEKA'S PC series receptacles and CH series headers are available with solder-flux bearing leads. PC and CH series connectors are easily reflowed in an SMT convection oven or hot air bath without adding any additional solder, solder paste, or flux, thereby eliminating additional process steps on mixed technology PCBAs.

Design Features

- Very low applied cost
- Eliminates wave and hand soldering and "paste in hole" process
- No solder balls
- Double the solder volume of solder paste
- A low cost alternative to press fit
- Solder through-hole connectors on same pass as other SMT devices



Contact TEKA Sales for Hot Air Bath Specifications

TEKA TKO™ PCB CONNECTORS

General Information

TEKA'S TKO connectors feature Mil-spec reliability at competitive commercial prices. The unique contact design features beryllium copper alloy and heavy gold plating.

TKO connectors are fully interchangeable with other manufacturers' receptacles and intermateable with industry standard .025" square headers.

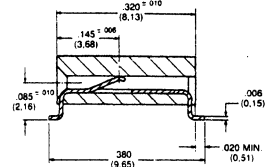
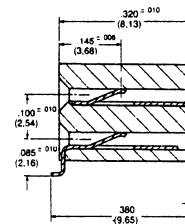
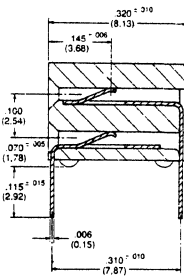
Design Features

- VRM Module versions
- Low profile and high profile versions
- Vertical and horizontal mount
- SMT or through hole
- Rear entry versions
- Single and double row
- High temp thermoplastic housings
- Low insertion force
- 30μ inches Gold in contact area and Tin-Lead tails

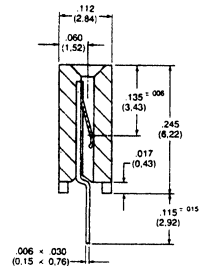
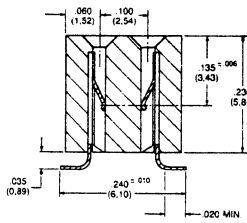
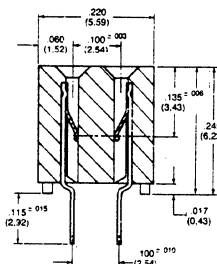
Technical Data

- Current rating = 3 amps max.
- Dielectric withstanding voltage = 1000 VAC RMS min.
- Insulation Resistance = 10,000 megohms min.
- Contact resistance = 30 milliohms max.
- Operating temp = -65°C to +125°C
- Durability = 200 mating cycles min.
- UL Approved

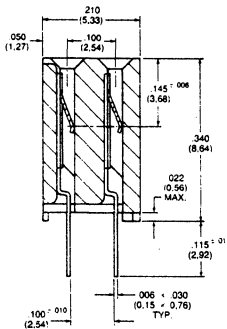
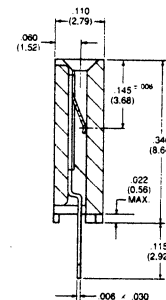
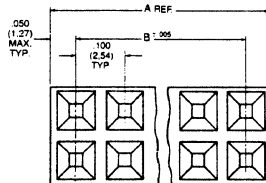
Horizontal Mount – SMT and Thru-Hole Applications



Low Profile Vertical Mount – SMT and Thru-Hole Applications



High Profile Vertical Mount – Single and Dual Rows



Visit our Web Site at
[HTTP://WWW.TEKAI.COM](http://www.tekais.com)
for product drawings

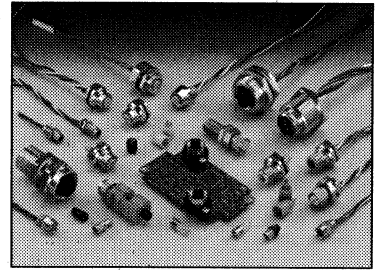


TEKA • 100 Pioneer Avenue • Warwick, RI 02888
TEL: (401) 785-4110 • FAX: (401) 781-5730
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Solve Difficult Connection Problems with TURCK's Broad Line Of Industry Standard Connectors and Cordsets.

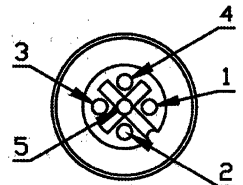
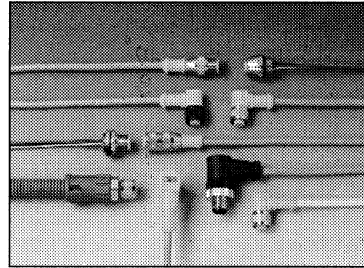
OEM CONNECTORS

Hundreds of components for buses, networks, panels, circuit boards, enclosures and machines. Choose *eurofast*® receptacles from the following options, rear mount with solder cups, leads or PCB pins and PCB receptacles in straight or right angle. Network and panel solutions include feed-thru bulkhead and back panel mount receptacles. Many other components including sealed contact carriers, sub-assemblies and receptacle parts in the *minifast*®, *eurofast*®, *microfast*®, & *picofast*® style connectors.



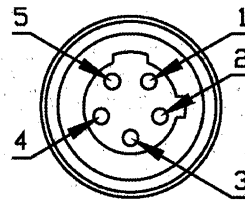
eurofast® 12mm connector

Used on DC devices come in 2 to 6-pin versions with optional LED, IP 68 and 1200 psi washdown seal ratings. Cable options include NAMUR blue or yellow PVC, tough abrasion and oil resistant PUR or CPE rubber. Connector styles choices include nickel plated brass, stainless steel or nylon coupling nuts with a molded polyurethane plug body.



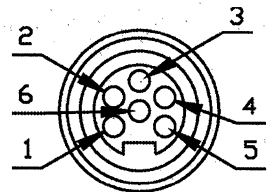
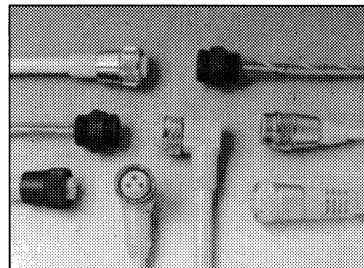
microfast® 1/2=20 UNF

Molded industry standard connector used in AC systems available in 2 to 5-pin versions with IP 68 and 1200 psi washdown seal ratings. Dual keying prevents mis-mating with 12mm DC systems. Options include cable jackets of PUR, PVC or CPE rubber and brass, stainless steel or nylon coupling nuts.



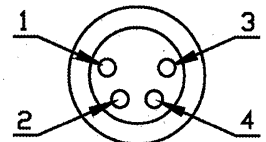
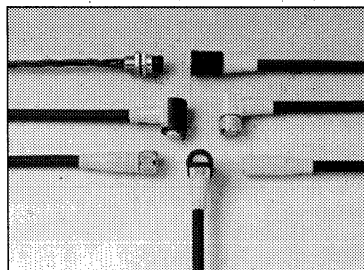
minifast® 7/8=16 UN

Molded connectors come in 2 to 6-pin versions and IP 67 and 1200 psi washdown seal ratings. Factory proven for welding, robotics and machine tools these cordsets have an extra heavy duty brass (nylon or stainless steel, optional) coupling nut that supports the contact to cable connection. Cable jacket options include PUR, PVC or CPE rubber with 300 – 600V ratings.



picofast® 8 mm

Fully molded connectors have IP 67 seal rating in 3, 4, and 6 pin styles with snap on or threaded metal couplings and optional LED's. Cable options include oil resistant PUR with or without aluminized polyester shield, or high grade flexible PVC. Many hardware and component parts are available including splitters, adapters, field wireables, receptacles, PCB receptacles and other connector/sensor inserts.



Domestic manufacturing and 100% performance testing of all TURCK products assures reliability for your application. Call today for our latest product literature.

TURCK, Inc., 3000 Campus Drive, Minneapolis, MN 55441.
Phone: 1-800-588-8725 • Fax: 612-553-0708 • www.turck.com • e-mail: tcolle@turck.com

Connectors



DIN 41612 **DIN Power** **Custom Connectors for Automobile Electronics**

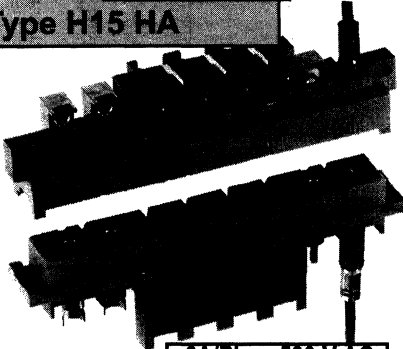
2E is an ISO 9001 company manufacturing connectors for use in Telecom, VME, Transportation and Medical Electronics.

If you have a hard to solve power connector problem, give us a call at **1 888 801 0429**

or see our Home Page at <http://www.2esyscom.com>

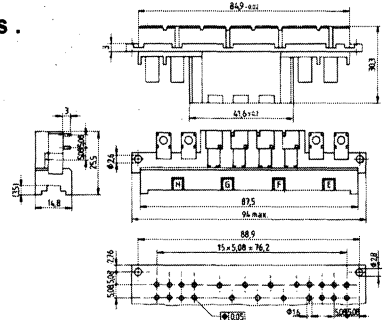
15 & 50 A/Pin

Type H15 HA



**Mixed Pin H and H high power contacts .
15 and 50 A/Pin**

This connector provides up to 4 pins at 50 Amps per pin for high power applications, and 10,9 or 7 H15 pins at 15 A/Pin. Combination 9+1+2 uses one H15 pin slot for keying. H15 contacts can be silver plated or tinned. HA 50 Amp contacts are gold plated. Also available are Fiberoptic and Coax contacts.



Type F
6A/Pin, 500 V AC
48 pins at three rows of 16, 5.08mm Grid



Type F DIN 41612 provides 48 pins for a current rating of 6 Amps per pin. A series of mixed pin F/H connectors (shown at right) provides 7 H type pins at 15A/Pin and 24 F type pins at 6 Amps per Pin.

15A/Pin, 500 V AC

Type H15

Two rows of Pins (7&8) 5.08mm Grid

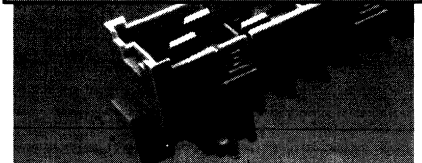


Standard H15 DIN 41612 connector for 15 power pins at 15 A/Pin. Pins loaded in row d and z, available in solder, solder eylet, or faston . Extended pin on male connector allows power up of sensitive components or powergrid.

15A/Pin, 250 & 500 V AC

Type H15 Slimline

Saves board space

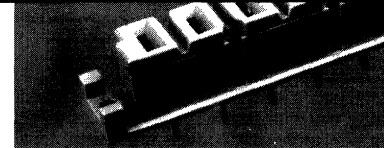


This special version of the H15 DIN allows for increased space for components on the Printed Circuit Board. The output pins are in one row, except for high voltage pins which can be extended at customer specified positions for 250 volt throughput.

20 A/Pin

Type H11

11 pins one row, 5.08mm Grid

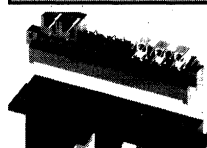


Based on the H Series specifications with one row of pins for 20 A/Pin. Standard H15 provides more pins but only 15 A/Pin. Also available in 5 pin Half H11 version which can be placed in J0 P0 position in VME. Same package size as Half C.

6, 15,20 & 50A/pin

Type E Multimod

Customizable modular connector type G.

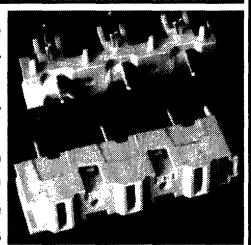


The Multimod series consists of a male and female connector complying with the mounting specifications of the standard G series. Each connector is assembled in a frame using various modules for power and signal contacts, according to customer specifications.

2 and 3 pins 20 A/pin

Type E MSP

Snap together modules of 2 and 3 pins



These modules are based on the H 15 specifications for providing power to PCBs in applications where the H11 and Half H series use too much space. Rated at 20 A/Pin at 750 Volts. The female connector goes on the backplane for a fully protected high voltage contact. Create your own combinations of 2 and 3 pins.

Call 1 888 801 0429

Type B Two rows of 32 Pins
2.54mm Grid 2 A/Pin



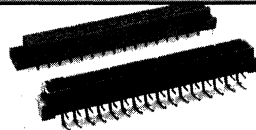
Standard B series DIN 41612 connector for 64 signal pins. Male and Female 64 pin connectors with wire wrap and solder terminations. Also available in Half B version with 32 pins, 2 rows of 16 pins.

Type C 96 Pins (3x32)
2.54mm Grid 2 A/Pin



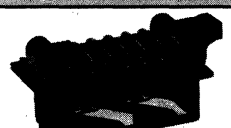
Standard C series DIN 41612 connector for 96 signal pins, or Half C for 48 pins. Also available in IDC version C and Half C. This connector is used in VME and other 96 pin applications for signal transfer.

Type D 32 pins (2x16)
5.08mm Grid 5.5 A/Pin



The D series DIN is the same package size as C series, with 32 pins on 5.08 mm spacing for increased power throughput.

Custom Connectors For Automotive, Telecom, Industrial Electronics.



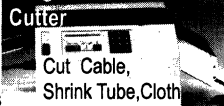
2E manufactures a variety of special connectors for customers in all branches of the electronics industry. From Automotive to Medical electronics, our reputation for close cooperation and quality product make us the premier partner for solving your connectivity problems. Call for information.

PCB Depanelizer Strip Saw



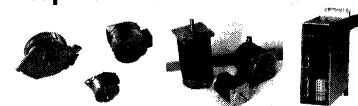
Cutoff saw for Headers

Programmable cable



Cut Cable, Shrink Tube, Cloth

Step Motors & Controllers



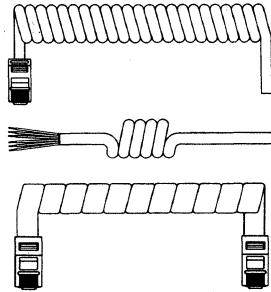


VIRGINIA PLASTICS COMPANY

RETRACTILE CORDS and CORDSETS

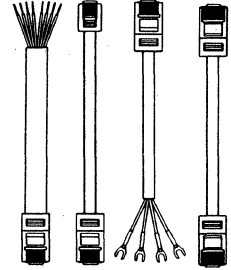
RETRACTILE CORD FEATURES

- ◆ Your choice of flat or round cable
- ◆ C75 vinyl/rubber blend for outer jacket compound providing increased coil life
- ◆ PVC outer jacket compound for more economical applications
- ◆ Retracted lengths up to 48" long
- ◆ Extended lengths may vary depending on diameter of bulk cable
- ◆ Available from shielded bulk cable
- ◆ Prototype or production runs can be accommodated



CORDSETS

- ◆ Manufactured from straight cable or retractile cords
- ◆ Available terminated with Virginia Plastics modular plugs, blunt cut, stripped, and/or tinned conductors. *Other types of connectors may be available, please call for consultation.*
- ◆ All terminated cordsets are tested 100% for reliability
- ◆ Prototype or production runs can be accommodated



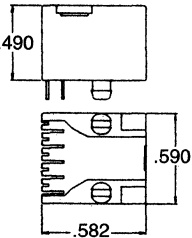
There are different needs for different applications. We would be pleased to talk about what is necessary for your system.

MODCOM-C® MODULAR CONNECTORS

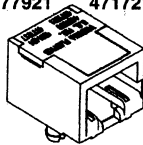
Technically Advanced — Superior Quality

MODCOM-C® MODULAR FEMALE CONNECTORS

UNIVERSAL PRINTED CIRCUIT BOARD LAYOUT FOR ALL MODULAR CONNECTORS



VIRGINIA PLASTICS
U.S. PATENTS
4457570 4501464
4577921 4717217

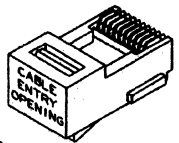


LOW PROFILE FEATURES:

- ◆ Total height less than 1/2 (.50) inch
- ◆ Occupies minimum PCB real estate
- ◆ Connector depth less than .75 inch
- ◆ Keyed or unkeyed
- ◆ One PCB layout fits all connectors in this product family
- ◆ Fully covered contacts
- ◆ **VSWR 1.1 at 100-200 mbps**
- ◆ Conforms to FCC Part 68 and UL 1863
- ◆ Mating life 1,000 cycles minimum

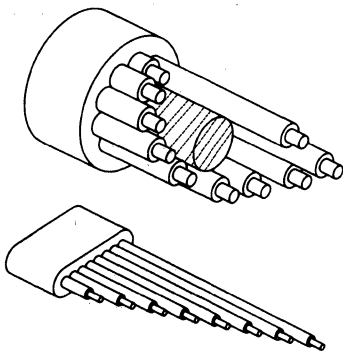
ADVANCED RELIABILITY IN A MODULAR MALE PLUG

- ◆ Unique plug design for solid or stranded wire
- ◆ Fatigue resistant, long life springback latching arm
- ◆ Data rates to 200 Mbps
- ◆ Variable strain relief accommodates wide range of cable sizes
- ◆ Mating life of 500 cycles minimum
- ◆ Keyed or unkeyed versions
- ◆ Meets FCC Part 68 and UL 1863
- ◆ Up to 10 Contacts



BULK CABLE

Virginia Plastics Company Meets All Your Cable Needs



- ◆ Manufactured on-site
- ◆ Available shielded or unshielded
- ◆ Prototype or production runs can be accommodated

- ◆ Uniform capacitance throughout the cable or any cable section
- ◆ Provides consistent electrical transmission properties between multiple lots of cable
- ◆ Higher field reliability than standard I/O cables
- ◆ UL Styles available
- ◆ Insulated conductors are uniformly positioned
- ◆ Designed for termination by data modular male plugs
- ◆ Improved flexibility for easier installation and enhanced appearance
- ◆ Conductor bundle arrangement minimizes stress on conductors during bending or movement for field reliability
- ◆ Eliminates impedance mismatches that are typically found in a cable length
- ◆ Customized sizes, colors and constructions

Conductors:

- Metal: Copper or cadmium bronze
- Tinsel: High flexibility to high strength types
- Plating: Tin or silver (for high temperature)
- Size: From 14 AWG to 31 AWG, stranded or solid

Cable Shield:

- Aluminum/Polyester (Spiral wrap and braid are available)
- Shields provide 100% coverage with a minimum overlap of 20%
- Has high compression contact with drain wire along entire length of cable

Outer Jacket:

- C75 Vinyl/Rubber Blend (severe duty/extended life)
- PVC (High durability/ high impedance/ supple cable)
- C58 Thermoplastic Rubber (excellent coil memory and dielectric properties)

All outer jacket materials can be color matched to customer specifications

* Mylar is the registered trademark of E.I. DuPont de Nemours & Co. (Inc.)

For information concerning part numbers, test data, samples, pricing and sales representatives in your area, contact a MODCOM-C® Sales Engineer at

1701 Midland Road, Salem, Virginia 24153 • Phone 540-375-0100 • Fax 540-375-0135



CONNECTORS

- Edgeboard
- PC Board
- Rack & Panel
- Custom and Specials

EEM DESCRIPTIONS

CONNECTORS:

- Circular, Metal Shell
- Hermetically Sealed, Pressurized, or Waterproof
- High Voltage
- LCD
- Missile (Umbilical, Interstage, Post Boost)
- Mixed Contact Configuration
- Plug-in, Program Board
- Printed Circuit, Card Edge
- Printed Circuit (Other than Card Edge)
- Rack & Panel
- Solderless
- Test
- Wirewrap

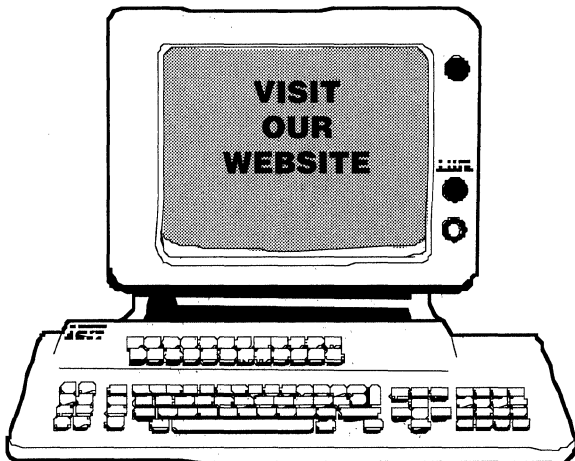
FLASHFAXSM

Fax 1-800-835-4272 for literature.

Or call Vishay's FlashFaxSM at 1-800-487-9437. Request document 9999. This is a listing of data sheets you can order by fax in a flash!

12 Connector data sheets are available.

INTERNET



EDGEBOARD

.054 - .071 CARD THICKNESS



MODEL	PIN SPACING/GRID PATTERN	TERMINALS	BODY SIZES (Contacts per side)
EB4 Dual Readout	.100" C-C x .150" [2.54 x 3.81] .100" C-C x .200" [2.54 x 5.08]	Standard and Right Angle	20 (10 to 65)
EB6 Dual Readout	.125" C-C x .150" [3.17 x 3.81] .125" C-C x .200" [3.17 x 5.08] .125" C-C x .250" [3.17 x 6.35]	Standard and Right Angle	19 (6 to 50)
EB7D Dual Readout	.156" C-C x .140" [3.96 x 3.56]	Standard and Right Angle	8 (6 to 43)
EB7S Single Readout	Single	Standard	6 (6 to 22)
EB8 Dual Readout	Dual	Standard	8 (6 to 25)
EBT156 Single Readout	Single	Standard and Right Angle	6 (6 to 22)

UL listed per File 65525, Project 77CH3889.

Between-contact polarization standard on all models.

All models except EBT 156 are available in high-temperature versions for burn-in oven and automatic temperature testing.

Standard body material is black, flame retardant (UL-94V-0)

glass-filled thermoplastic polyester (other materials available).

PRINTED CIRCUIT BOARD, RACK & PANEL



PC Board, Dip Solder

Model 300

- Male connector for permanent board mounting. Mating female connector available.
- 7, 15, 19 and 25 contacts. Gold plated phosphor bronze contacts.
- Right angle or standard terminals.
- .250" [6.35] contact spacing in staggered rows provides a .125" [3.18] grid.
- Current rating, 7.5 amps.
- Glass-filled diallyl phthalate, body per MIL-M-14, Type GDI-30F, green.

Rack and Panel

Models MM22, MM24, SM20

- For reliable connection in minimum space under adverse conditions. Rectangular with a wide choice of hardware.
- Models MM22 and MM24 are microminiature, qualified to MIL-C-28748/7/8, are available with 5 to 50 contacts and have various hood options.
- Model SM20 is subminiature, lightweight, with the overall height kept to a minimum and is available with 5 to 50 contacts.

CUSTOM APPLICATIONS

- Broad experience in custom development for military and industrial applications.
- Design and production from prototype to large production runs.
- Custom products certified to DOE requirements.
- Latest in CAD capabilities.
- Complete facilities for internal design, fabrication, assembly and testing.
- Latest plating technologies (barrel, rack, vibrobot and reel-to-reel).

Weidmüller 

The Interface Partner



Connectors for
Printed Circuit Boards

BL/SL 3.50 mm Series

3.50/180° Plugs

Poles	Locking Part No.	Non-Locking Part No.
2	161578	161567
3	161579	161568
4	161580	161569
5	161581	161409
6	161582	161018
7	161583	161019
8	161584	161570
9	161585	161571
10	161586	161020
11	161587	161572
12	161588	161573
13	161589	161574
14	161590	161575
15	161591	161576
16	161592	161577

3.50/180° Headers

Open End Non-Locking Part No.	Closed End Non-Locking Part No.	Closed End Locking Part No.
161421	161424	161614
161593	161602	161615
161594	161603	161616
161595	161604	161617
161015	161605	161618
161016	161606	161619
161422	161425	161427
161596	161607	161620
161017	161608	161621
161597	161609	161622
161598	161610	161623
161599	161611	161624
161600	161612	161625
161601	161613	161626
161423	161426	161627

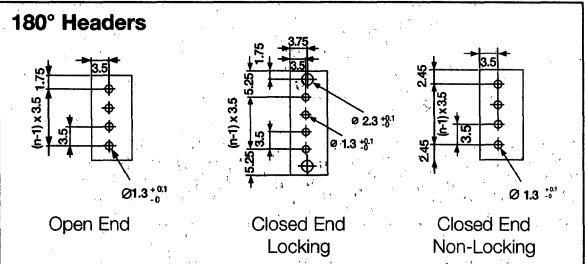
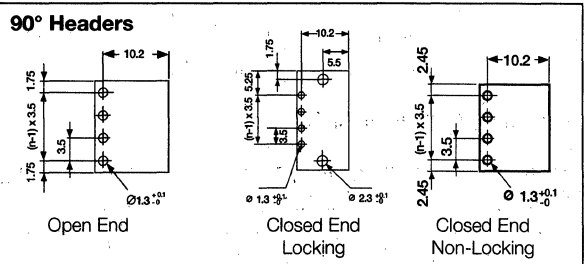
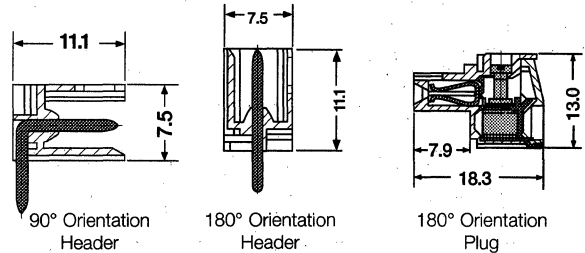
3.50/90° Headers

Open End Non-Locking Part No.	Closed End Non-Locking Part No.	Closed End Locking Part No.
161413	161416	161553
161530	161542	161554
161531	161543	161555
161532	161417	161556
161533	161544	161557
161534	161545	161558
161414	161418	161420
161535	161546	161559
161536	161547	161560
161537	161548	161561
161538	161549	161562
161539	161550	161563
161540	161551	161564
161541	161552	161565
161415	161419	161566

Technical Data	UL*	CSA*
Pitch	3.50 mm	3.50 mm
Ratings	300 V/10 A	300 V/10 A
Wire Size	22 . . .14 AWG	28 . . .14 AWG
Strip Length mm (in.)	7 (.24)	7 (.24)
Torque Nm (lb. in.)	.25 (2.25)	.25 (2.25)
Pin Length	4.5 mm (Standard)**	
Molding Material	PBT (Polyester)	
Connection	Screw Clamp	

*Standard UL 1059 • Standard CSA C22.2 No. 158
** Other lengths available upon request

- All BL/SL 3.50 mm Series plugs and headers are available to 24 poles.
- Plugs and headers are supplied with black moldings. Alternate colors are available upon request.
- This is a partial listing of the BL/SL 3.50 mm family of products.



Weidmüller 

1-800-849-9343

Weidmüller 

The Interface Partner



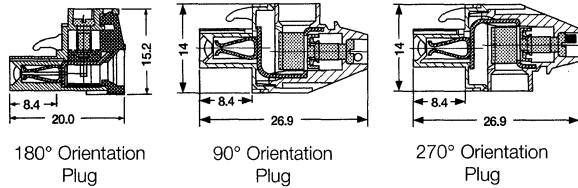
Connectors for
Printed Circuit Boards

BLZ/SL 5.00 mm Series

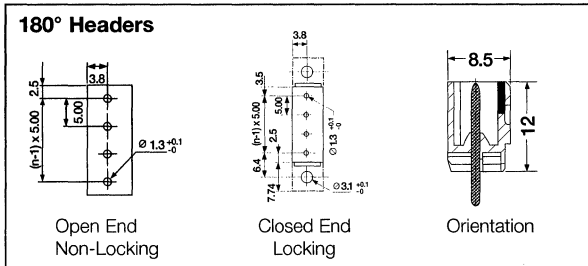
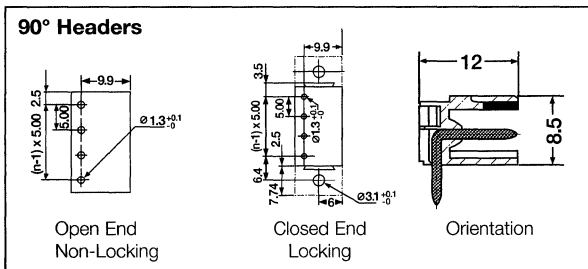
5.00/180° Plugs			5.00/90° Plugs		5.00/270° Plugs		5.00/180° Headers		5.00/90° Headers	
Poles	Locking Part No.	Non-Locking Part No.	Locking Part No.	Non-Locking Part No.	Locking Part No.	Non-Locking Part No.	Open End Non-Locking Part No.	Closed End Locking Part No.	Open End Non-Locking Part No.	Closed End Locking Part No.
2	162576	162561	163735	163689	163827	163781	162639	162662	162599	162621
3	162577	162562	163736	163690	163828	163782	162640	162663	162600	162622
4	162578	159608	163737	163691	163829	163783	162641	159613	162601	159615
5	162579	162563	163738	163692	163830	163784	162642	162664	162602	162623
6	162580	159609	163739	163693	163831	163785	162643	162665	159618	162624
7	162581	159610	163740	163694	163832	163786	162644	162666	162603	159616
8	162582	159611	163741	163695	163833	163787	162645	159614	162604	162625
9	162583	162564	163742	163696	163834	163788	162646	162667	162605	162626
10	162584	159612	163743	163697	163835	163789	162647	162668	162606	159617
11	162585	162565	163744	163698	163836	163790	162648	162669	162607	162627
12	162586	160299	163745	163699	163837	163791	162649	160331	162608	160332
13	162587	162566	163746	163700	163838	163792	162650	162670	162609	162628
14	162588	162567	163747	163701	163839	163793	162651	162671	162610	162629
15	162589	162568	163748	163702	163840	163794	162652	162672	162611	162630
16	162590	160330	163749	163703	163841	163795	162653	162673	162612	160333

Technical Data	UL*	CSA*
Pitch	5.00 mm	5.00 mm
Ratings	300 V/10 A	300 V/10 A
Wire Size	22...12 AWG	28...12 AWG
Strip Length mm (in.)	7 (.24)	7 (.24)
Torque Nm (lb. in.)	.50 (4.50)	.50 (4.50)
Pin Length	4.5 mm (Standard)**	
Molding Material	PBT (Polyester)	
Connection	Screw Clamp	

*Standard UL 1059 • Standard CSA C22.2 No. 158
** Other lengths available upon request



- All BLZ/SL 5.00 mm Series plugs and headers are available to 24 poles.
- Plugs and headers are supplied with black moldings. Alternate colors are available upon request.
- This is a partial listing of the BLZ/SL 5.00 mm family of products.



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Weidmüller

The Interface Partner



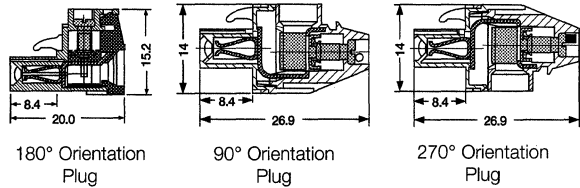
Connectors for
Printed Circuit Boards

BLZ/SL 5.08 mm Series

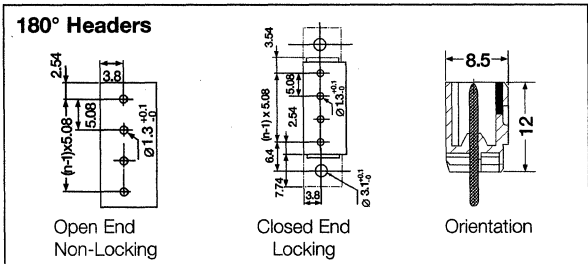
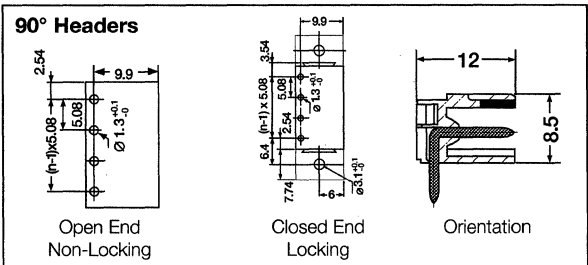
Poles	5.08/180° Plugs		5.08/90° Plugs		5.08/270° Plugs		5.08/180° Headers		5.08/90° Headers	
	Locking Part No.	Non-Locking Part No.	Locking Part No.	Non-Locking Part No.	Locking Part No.	Non-Locking Part No.	Open End Non-Locking Part No.	Closed End Locking Part No.	Open End Non-Locking Part No.	Closed End Locking Part No.
2	152876	152646	155506	155276	155966	155736	152186	152416	151266	151496
3	152886	152656	155516	155286	155976	155746	152196	152426	151276	151506
4	152896	152666	155526	155296	155986	155756	152206	152436	151286	151516
5	152906	152676	155536	155306	155996	155766	152216	152446	151296	151526
6	152916	152686	155546	155316	156006	155776	152226	152456	151306	151536
7	152926	152696	155556	155326	156016	155786	152236	152466	151316	151546
8	152936	152706	155566	155336	156026	155796	152246	152476	151326	151556
9	152946	152716	155576	155346	156036	155806	152256	152486	151336	151566
10	152956	152726	155586	155356	156046	155816	152266	152496	151346	151576
11	152966	152736	155596	155366	156056	155826	152276	152506	151356	151586
12	152976	152746	155606	155376	156066	155836	152286	152516	151366	151596
13	152986	152756	155616	155386	156076	155846	152296	152526	151376	151606
14	152996	152766	155626	155396	156086	155856	152306	152536	151386	151616
15	153006	152776	155636	155406	156096	155866	152316	152546	151396	151626
16	153016	152786	155646	155416	156106	155876	152326	152556	151406	151636

Technical Data	UL*	CSA*
Pitch	5.08 mm	5.08 mm
Ratings	300 V/10 A	300 V/10 A
Wire Size	22...12 AWG	28...12 AWG
Strip Length mm (in.)	7 (.24)	7 (.24)
Torque Nm (lb. in.)	.50 (4.50)	.50 (4.50)
Pin Length	4.5 mm (Standard)**	
Molding Material	PBT (Polyester)	
Connection	Screw Clamp	

*Standard UL 1059 • Standard CSA C22.2 No. 158
** Other lengths available upon request



- All BLZ/SL 5.08 mm Series plugs and headers are available to 24 poles.
- Plugs and headers are supplied with orange and black moldings. Only numbers for orange parts are listed on this page. Alternate colors are available upon request.
- This is a partial listing of the BLZ/SL 5.08 mm family of products.

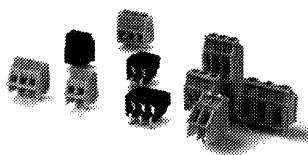


Weidmüller

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The Interface Partner



Terminal Blocks for
Printed Circuit Boards

LM 5.00/5.08 and LP 5.08 mm

Single-level

Double-level

Poles	LM 5.00	LM 5.00	LM 5.00	LM 5.08	LM 5.08	LM 5.08	Poles	LP 2N5.08/90°
	90° Orientation	135° Orientation	180° Orientation	90° Orientation	135° Orientation	180° Orientation		Low profile Offset left
	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.		Part No.
2	171525	171529	171527	171602	171606	171604	4	163515
3	171526	171530	171528	171603	171607	171605	6	162555
4	999330	999351	999372	999392	999434	999476	8	159647
5	999331	999352	999373	999393	999435	999477	10	159650
6	999332	999353	999374	999394	999436	999478	12	163256
7	999333	999354	999375	999395	999437	999479	14	163257
8	999334	999355	999376	999396	999438	999480	16	159652
9	999335	999356	999377	999397	999439	999481	18	163258
10	999336	999357	999378	999398	999440	999482	20	159656
11	999337	999358	999379	999399	999441	999483	22	163259
12	999338	999359	999380	999400	999442	999484	24	159660
13	999339	999360	999381	999401	999443	999485	26	163260
14	999340	999361	999382	999402	999444	999486	28	163261
15	999341	999362	999383	999403	999445	999487	30	159664
16	999342	999363	999384	999404	999446	999488	32	163262

Technical Data for LM 5.00/5.08

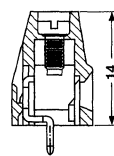
	UL*	CSA*	VDE
Ratings:	300 V/10 A	300 V/10 A	250 V/17.5 A
Wire Size:	24...14 AWG	24...12 AWG	1.5 mm ²
Strip Length mm (in.)	6 (.23)	6 (.23)	6 (.23)
Molding Material	Polyamide	Polyamide	Polyamide
Connection	Screw clamp	Screw clamp	Screw clamp

*Standard UL 1059 • Standard CSA C22.2 No. 158

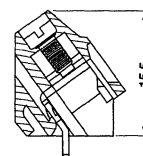
Technical Data for LP 5.08

	UL*	CSA*	VDE
Ratings:	300 V/10 A	300 V/10 A	250 V/24 A
Wire Size:	26...12 AWG	26...12 AWG	2.5 mm ²
Strip Length mm (in.)	7 (.24)	7 (.24)	7 (.24)
Molding Material	Polyamide	Polyamide	Polyamide
Connection	Screw clamp	Screw clamp	Screw clamp

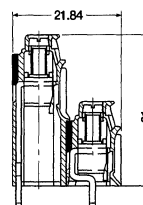
*Standard UL 1059 • Standard CSA C22.2 No. 158



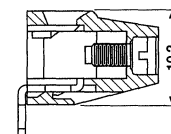
LM 5.00/5.08
Single-level
90° Orientation



LM 5.00/5.08
Single-level
135° Orientation



LP 2N5.08
Double-level
90° Orientation



LM 5.00/5.08
Single-level
180° Orientation

- All 5.00/5.08 mm PCB single-level terminal blocks are available to 24 poles (48 for double-level, 72 for triple-level).
- LM part numbers listed are for black moldings. LP part numbers listed are for orange moldings. Alternate colors are available upon request.
- This is a partial listing of the LM and LP series of products.

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Altech Corp.

Value. Selection. Availability.

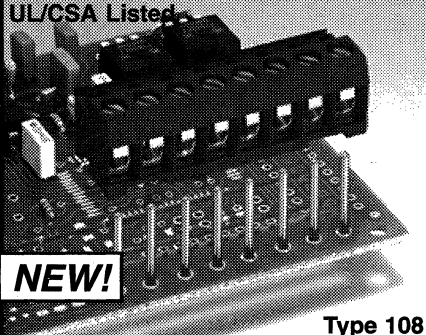
Circuit Breakers	<i>Vol. B Section 4300</i>
Foot Switches	<i>Vol. B Section 5100</i>
Inductive Proximity Sensors	<i>Vol. B Section 5500</i>
Safety Relays	<i>Vol. B Section 4500</i>
DIN Enclosures	<i>Vol. C Section 1400</i>
Electronic Enclosures	<i>Vol. C Section 1400</i>
Industrial Enclosures	<i>Vol. C Section 1400</i>
PIN and Sleeve Connectors	<i>Vol. C Section 2100</i>
Terminal Blocks	<i>Vol. C Section 2150</i>
Printed Circuit Terminal Blocks ..	<i>Vol. C Section 2150</i>
Interface and Electronic Modules ..	<i>Vol. C Section 2150</i>

35 Royal Road
Flemington NJ 08822-6000
908•806•9400 (phone)
908•806•9490 (fax)
www•altechcorp•com

TERMINALS, TERMINAL BOARDS, BLOCKS, ETC.

Manufacturer	Starting EEM Page No.	Barrier Blocks	Terminal Boards	Terminal Strips	Style		Mounting			Connections				
					Feed-thru	Plug-In	Thru-Panel	PCB	Rail	Panel/Chassis	Pin/Turret	Screw	Spring Clamp	Tab
Altech Corp.	C•1386			√	√	√		√	√	√				
Beau Interconnect	C•1396	√	√	√	√			√		√	√	√		
Blockmaster Electronics, Inc.	C•1397	√		√				√		√	√	√	√	
BTC Electronic Components	C•1398				√	√		√	√	√	√	√		
Curtis Industries	C•1404	√			√	√	√	√	√	√	√	√		

UL/CSA Listed



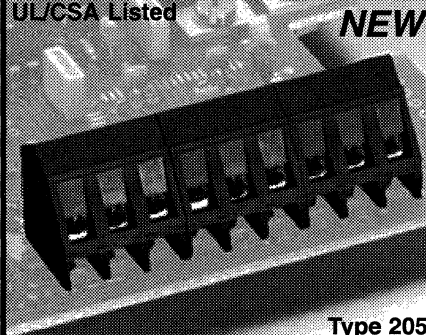
NEW!

RIA

Type 108

- 300V, 15A, 12-28 AWG
- Pins factory installed in terminal block
- 10K OEM - \$.15/pole

UL/CSA Listed



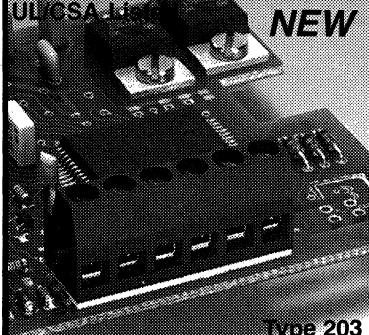
NEW

RIA

Type 205

- 300V, 15A, 14-28 AWG
- Low Cost, Lift System One Piece
- 10K OEM - \$.11/pole

UL/CSA Listed



NEW

RIA

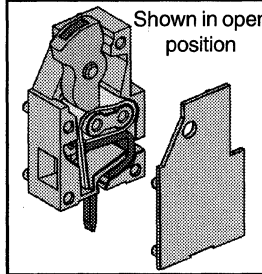
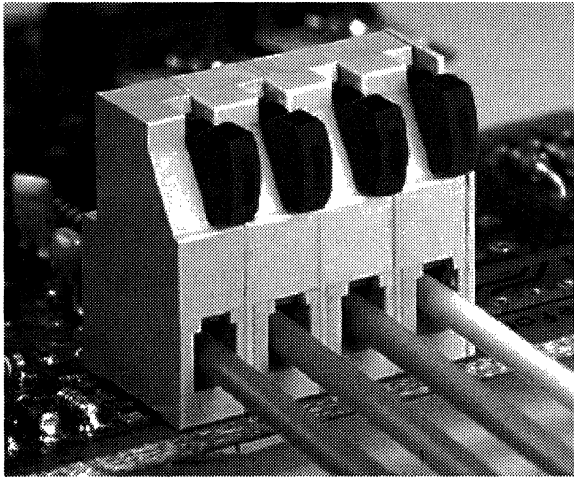
Type 203

- 300V, 12A, 12-28 AWG
- Low Cost, Lift System
- One Piece
- *10K OEM - \$.10/pole

New Springcon[®] Terminal Blocks

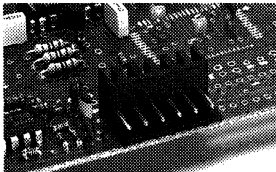
Advanced Spring Clamp Technology

Cuts Wiring Time In Half



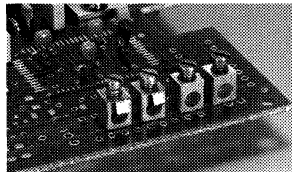
The unique cam lever design of SPRINGCON terminal blocks provides a wider, more flexible choice of secure, time and money saving spring clamp connectors. • Wire-ready • Cam-action connections require no special tools • Vibration proof, gas-tight

connectors for 14-28AWG • 2-24 positions • Constant contact resistance values • Automatic spring force adjustment at each wire size • No pressure on solder joints or PC board • 5.0mm centerline spacing • Available in a variety of colors and circuit sizes • Can be individually color coded. Write, call or fax for catalog.



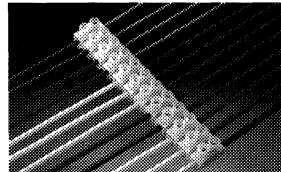
Type 225

Right angle headers allow mating connector (Type 166) parallel to PC board.



Type 360322

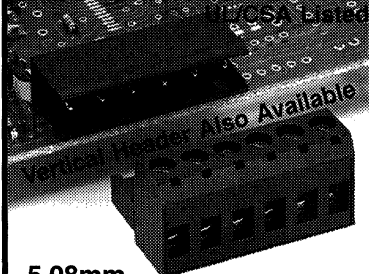
Designed with double solder pin, great where only one termination is required.



Type PA 8/PA 10

Barrier strips with 8mm, 10mm, 12mm & 14mm spacing w or w/o wire protection.

UL/CSA Listed



Vertical Header Also Available

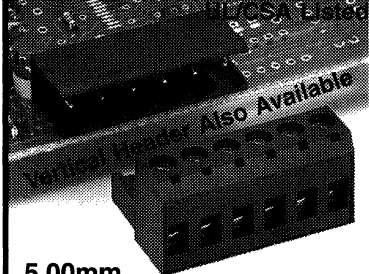
RIA

5.08mm

Type 249 Plug and 229 Header

- 300V, 12A, 12-28 AWG
- Low Cost, Plug/Header*
- Lift System
- *10K OEM - \$.26/pole

UL/CSA Listed



Vertical Header Also Available

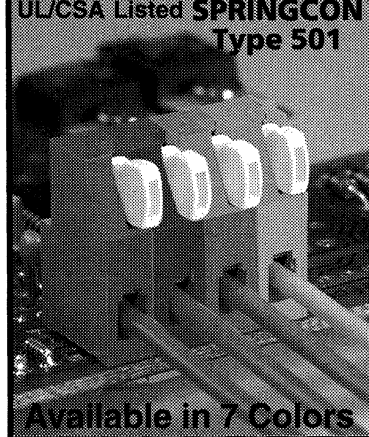
RIA

5.00mm

Type 349 Plug and 329 Header

- 300V, 12A, 12-28 AWG
- Low Cost, Plug/Header*
- Lift System
- *10K OEM - \$.26/pole

UL/CSA Listed **SPRINGCON**



Type 501

Available in 7 Colors



430 Industrial Way West
 Eatontown, NJ 07724
 Toll Free 1-888 PC Block
 (1-888-722-5625)
 Phone (732) 389-1300
 Fax (732) 389-9066



The quality management system of the manufacturer, RIA electronic, Blumberg, has been certified according to ISO 9001.

Web Site: <http://www.riaelectronic.com>
 e-mail: info@riaelectronic.com

TERMINALS, TERMINAL BOARDS, BLOCKS, ETC. (cont'd.)

Manufacturer	Starting EEM Page No.	Barrier Blocks	Terminal Boards	Terminal Strips	Style			Mounting			Connections			
					Feed-thru	Plug-In	Thru-Panel	PCB	Rail	Panel/Chassis	Pin/Turret	Screw	Spring Clamp	Tab
EBY Electro Inc.	C-1406	√		√	√			√		√	√	√		
Eurocomp, Inc.	C-1408			√	√			√		√	√	√	√	√
Excel Cell Electronic (USA) Corp.	C-1412	√						√			√	√		
PCD Inc.	C-1413	√	√	√	√	√		√	√	√	√	√		
RIA Electronic	C-1414				√	√		√			√	√		
Wago Corp.	C-1422				√			√	√		√	√	√	
Weco Electrical Connectors, Inc.	C-1430	√		√	√	√		√	√	√	√	√	√	√

Altech Corp.

35 Royal Road • Flemington, NJ 08822-6000
 Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

PRINTED CIRCUIT TERMINAL BLOCKS - PLUGGABLE

Two-piece, plug and header designs speed and simplify board and device replacement. Pluggable terminal blocks are offered in two versions, Industry Standard and Econo-Pluggables. Select from several wire entry options and choose from several header designs for optimum accessibility.

Industry Standard Pluggable - Plugs Screw - Cage Clamp Design

For industrial applications and/or applications where frequent wire terminations occur. Single mold offers maximum strength. Plugs mate with shrouded headers listed on facing page. UL, CSA, IEC/VDE, 15A, 300V; Standard Color: Green.

- | | |
|---------------------------------------|-----------------------------|
| Wire Entry | Headers |
| • Perpendicular to Plug-In | • Vertical, Horizontal, 45° |
| • Same Direction as Plug-In | • Open or Closed Ends |
| • Same Plane and Direction as Plug-In | • Single or Double Level |

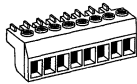
Quick Reference to Pluggable Terminal Blocks

Technical Data	Terminal Block Type						
	Pole Spacing US (inch)					Metric (mm)	
	AKZ1550*	AKZ950*	BU02*	BU04*	AKZ1200	AK130	AK132
Pole Spacing (mm)	3.81	5.08	5.08	5.08	5.08	5.0	5.0
Pole Spacing (in.)	.150	.200	.200	.200	.200	.197	.197
Voltage (UL)	300	300	300	300	300	300	300
Current (UL)	8	15	15	15	15	10	10
Max. Wire Size (AWG)	16	12	10	10	12	14	14
Clamp Design	SC	SC	SC	SC	SC	TS	TS
Max. No. of Poles	16	24	16	16	24	9	16

SC = Screw Cage TS = Tubular Screw

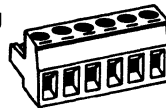
*These types are available in metric (mm) spacing

AKZ1550
Mini-Plug



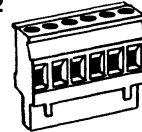
For use in applications where space is limited. Wire entry is in same direction as plug-in. AKZ1550, mates with STLZ1550, and with STLZ 1555 headers.

AKZ950
Plug

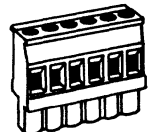


Wire entry in same direction as plug-in. AKZ950 mates with STLZ950, STLZ955, STLZ970, STLZ975, STLZ990 headers.

BU02
Plug



BU04
Plug



Vertical construction with grip top makes it easy to insert and remove plug. BU02 wire entry perpendicular to plug-in direction, on locking tab side. BU04 wire entry on scallop side. Mate with STLZ950, STLZ955, STLZ990 headers.

AKZ1550 Mini-Plug 3.81mm (.150 in.) pole spacing, 8A, 300V, 28-16 AWG

No. of Poles †	Type	Length mm (in.)
2	AKZ1550/2	8.41 (.33)
3	AKZ1550/3	12.22 (.48)
4	AKZ1550/4	16.03 (.63)
5	AKZ1550/5	19.84 (.78)
6	AKZ1550/6	23.65 (.93)
7	AKZ1550/7	27.46 (1.08)
8	AKZ1550/8	31.27 (1.23)
10	AKZ1550/10	38.89 (1.53)
12	AKZ1550/12	46.51 (1.83)
14	AKZ1550/14	54.13 (2.13)
16	AKZ1550/16	61.75 (2.43)

† Missing poles available.

AKZ950 Plug 5.08mm (.20 in.) pole spacing, 15A, 300V, 22-12 AWG

No. of Poles *	Type	Length mm (in.)
2	AKZ950/2	10.16 (.40)
3	AKZ950/3	15.24 (.60)
4	AKZ950/4	20.32 (.80)
5	AKZ950/5	25.40 (1.00)
6	AKZ950/6	30.48 (1.20)
7	AKZ950/7	35.56 (1.40)
8	AKZ950/8	40.64 (1.60)
10	AKZ950/10	50.80 (2.00)
12	AKZ950/12	60.96 (2.40)
14	AKZ950/14	71.14 (2.80)
16	AKZ950/16	81.28 (3.20)

* Available up to 24 poles.

BU02 and BU04** Plug 5.08mm (.20in) pole spacing, 15A, 300V, 22-10 AWG

No. of Poles †	Types		Length mm (in.)
2	BU02/2	BU04/2	10.16 (.40)
3	BU02/3	BU04/3	15.24 (.60)
4	BU02/4	BU04/4	20.32 (.80)
5	BU02/5	BU04/5	25.40 (1.00)
6	BU02/6	BU04/6	30.48 (1.20)
7	BU02/7	BU04/7	35.56 (1.40)
8	BU02/8	BU04/8	40.64 (1.60)
10	BU02/10	BU04/10	50.80 (2.00)
12	BU02/12	BU04/12	60.96 (2.40)
14	BU02/14	BU04/14	71.14 (2.80)
16	BU02/16	BU04/16	81.28 (3.20)

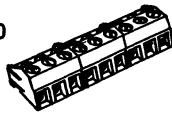
** BU04 has wire entry on scallop side.

† Missing poles available.

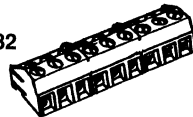
Econo-Pluggable Plugs

Tubular screw clamp design. For cost sensitive light duty applications where infrequent multiple wire-to-board connections will be made. Modular or single mold construction. Plugs mate with straight open pin headers on facing page. UL, CSA, IEC/VDE. 10A, 300V, 22-14 AWG. Standard Color: Gray.

AK130



AK132



Wire entry perpendicular to plug-in. AK130 mates with STL130 headers.

AK130 Plug 5.0mm (.197 in.) pole spacing. Modular construction. 10A, 300V, 22-14 AWG

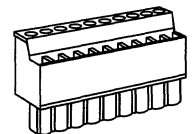
No. of Poles	Type	Length mm (in.)
2	AK130/2wp	10.0 (.39)
3	AK130/3wp	15.0 (.59)
4	AK130/4wp	20.0 (.79)
5	AK130/5wp	25.0 (.99)
6	AK130/6wp	30.0 (1.18)
7	AK130/7wp	35.0 (1.38)
8	AK130/8wp	40.0 (1.58)
9	AK130/9wp	45.0 (1.78)

Wire entry perpendicular to plug-in. AK132 mates with STL130 headers.

AK132 Plug, same as AK130 but single mold construction. 10A, 300V, 22-14 AWG

No. of Poles	Type	Length mm (in.)
2-8	Please consult Altech	
9	AK132/9wp	45.0 (1.77)
10	AK132/10wp	50.0 (1.97)
11	AK132/11wp	55.0 (2.17)
12	AK132/12wp	60.0 (2.36)
13	AK132/13wp	65.0 (2.56)
14	AK132/14wp	70.0 (2.96)
15	AK132/15wp	75.0 (3.06)
16	AK132/16wp	80.0 (3.15)

AKZ1200
Plug



For use where screwdriver access is restricted and can only be made from wire entry direction. Wire entry and screws on same plane and in same direction as plug-in. Mate with STLZ950, STLZ955, STLZ 970, STLZ975, STLZ990 headers.

AKZ1200 Plug 5.08mm (.20 in.) pole spacing, 15A, 300V, 22-12 AWG

No. of Poles *	Type	Length mm (in.)
2	AKZ1200/2	10.16 (.40)
3	AKZ1200/3	15.24 (.60)
4	AKZ1200/4	20.32 (.80)
5	AKZ1200/5	25.40 (1.00)
6	AKZ1200/6	30.48 (1.20)
7	AKZ1200/7	35.56 (1.40)
8	AKZ1200/8	40.64 (1.60)
10	AKZ1200/10	50.80 (2.00)
12	AKZ1200/12	60.98 (2.40)
14	AKZ1200/14	71.14 (2.80)
16	AKZ1200/16	81.28 (3.20)

* Available up to 24 poles.

We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples.
 SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

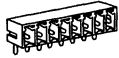
Altech Corp.

35 Royal Road • Flemington, NJ 08822-6000

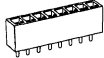
Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

Industry Standard Headers For Screw-Cage Clamp Plugs

STLZ1550, STLZ1555, Mini-Headers
Horizontal and Vertical Closed End



STLZ1550



STLZ1555

Single mold construction; color: green. STLZ1550 and STLZ1555 mate with AKZ1550 plugs. Square pins: 0.8 x 0.8mm (.032 x .032 in.)

STLZ1550 / STLZ1555 3.81mm (.150 in.) pin spacing

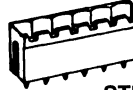
No. of Poles*	Types		Length mm (in.)
2	STLZ1550/2-w	STLZ1555/2-w	9.01 (.35)
3	STLZ1550/3-w	STLZ1555/3-w	12.82 (.50)
4	STLZ1550/4-w	STLZ1555/4-w	16.63 (.65)
5	STLZ1550/5-w	STLZ1555/5-w	20.44 (.80)
6	STLZ1550/6-w	STLZ1555/6-w	24.25 (.95)
7	STLZ1550/7-w	STLZ1555/7-w	28.06 (1.10)
8	STLZ1550/8-w	STLZ1555/8-w	31.87 (1.25)
10	STLZ1550/10-w	STLZ1555/10-w	39.49 (1.55)
12	STLZ1550/12-w	STLZ1555/12-w	47.11 (1.85)
14	STLZ1550/14-w	STLZ1555/14-w	54.73 (2.15)
16	STLZ1550/16-w	STLZ1555/16-w	62.23 (2.45)

-w indicates closed end *missing poles available

STLZ950, STLZ955 Headers
Horizontal and Vertical Closed End ***



STLZ950



STLZ955

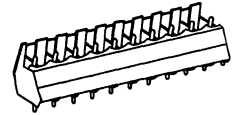
Single mold construction; color: green. STLZ950 mates with BU04 and BU02, AKZ950, AKZ1200 plugs. (Also available with open ends.) Square pins: 1 x 1mm (.039 x .039 in.)

STLZ950 / STLZ955 5.08mm (.20 in.) pin spacing

No. of Poles**	Types		Length mm (in.)
2	STLZ950/2-w	STLZ955/2-w	11.36 (.45)
3	STLZ950/3-w	STLZ955/3-w	16.44 (.65)
4	STLZ950/4-w	STLZ955/4-w	21.52 (.85)
5	STLZ950/5-w	STLZ955/5-w	26.60 (1.05)
6	STLZ950/6-w	STLZ955/6-w	31.68 (1.25)
7	STLZ950/7-w	STLZ955/7-w	36.76 (1.45)
8	STLZ950/8-w	STLZ955/8-w	41.84 (1.65)
10	STLZ950/10-w	STLZ955/10-w	52.00 (2.05)
12	STLZ950/12-w	STLZ955/12-w	62.16 (2.45)
14	STLZ950/14-w	STLZ955/14-w	72.32 (2.85)
16	STLZ950/16-w	STLZ955/16-w	82.48 (3.25)

** Available up to 24 poles *** Open end available
-w indicates closed end

STLZ990 Angled Headers
45° Closed End ***



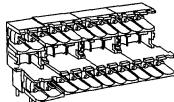
Single mold construction; color: green. STLZ990 mates with BU04, BU02, AKZ950, AKZ1200 Plugs. (Also available with open ends.) Square pins: 1 x 1mm (.039 x .039 in.)

STLZ990 5.08mm (.20 in.) pin spacing

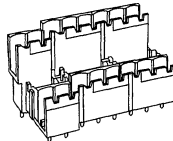
No. of Poles*	Type	Length mm (in.)
2	STLZ990/2-w	11.36 (.45)
3	STLZ990/3-w	16.44 (.65)
4	STLZ990/4-w	21.52 (.85)
5	STLZ990/5-w	26.60 (1.05)
6	STLZ990/6-w	31.68 (1.25)
7	STLZ990/7-w	36.76 (1.45)
8	STLZ990/8-w	41.84 (1.65)
10	STLZ990/10-w	52.00 (2.05)
12	STLZ990/12-w	62.16 (2.45)
14	STLZ990/14-w	72.32 (2.85)
16	STLZ990/16-w	82.48 (3.25)

* Available up to 24 poles *** Open end available
-w indicates closed end

STLZ970/STLZ975 Double Level Headers
Horizontal and Vertical Open End



STLZ970



STLZ975

Double level, modular construction; color: green. Mates with AKZ950, AKZ1200 Plugs. Square pins: 1 x 1mm (.039 x .039 in.). Front to rear pin spacing; STLZ970 - 10.16mm (0.40 in.); STLZ975 - 15.24mm (0.60 in.).

STLZ970 5.08mm (.20 in.) pin spacing, Horizontal

No. of Poles †	Type	Length mm (in.)
4	STLZ970/4-o	12.26 (.48)
6	STLZ970/6-o	17.34 (.68)

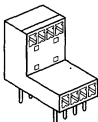
-o indicates open end

STLZ975 5.08mm (.20 in.) pin spacing, Vertical

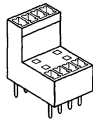
No. of Poles †	Type	Length mm (in.)
4	STLZ975/4-o	12.26 (.48)
6	STLZ975/6-o	17.34 (.68)

† Available up to 48 poles using double level modules, Please Consult Altech.

STLZ1570 / STLZ1575 Mini-Double Level Headers
Horizontal and Vertical Closed End



STLZ1570



STLZ1575

Single mold construction; color: green. Mates with AKZ1550 Mini-Plugs. Square pins: 0.8 x 0.8mm (.031 x .031 in.). Front to rear pin spacing; STLZ1570 - 13mm (0.512 in.); STLZ1575 - 15.24mm (0.60 in.).

STLZ1570 and STLZ1575 3.81mm (.150 in.) pin spacing

No. of Poles*	Types		Length mm (in.)
2	STLZ1570/2-w	STLZ1575/2-w	9.01 (.35)
3	STLZ1570/3-w	STLZ1575/3-w	12.82 (.50)
4	STLZ1570/4-w	STLZ1575/4-w	16.63 (.65)
5	STLZ1570/5-w	STLZ1575/5-w	20.44 (.80)
6	STLZ1570/6-w	STLZ1575/6-w	24.25 (.95)
7	STLZ1570/7-w	STLZ1575/7-w	28.06 (1.10)
8	STLZ1570/8-w	STLZ1575/8-w	31.87 (1.25)
10	STLZ1570/10-w	STLZ1575/10-w	39.49 (1.55)
12	STLZ1570/12-w	STLZ1575/12-w	47.11 (1.85)
14	STLZ1570/14-w	STLZ1575/14-w	54.73 (2.15)
16	STLZ1570/16-w	STLZ1575/16-w	62.23 (2.45)

-w indicates closed end *missing poles available

STLZ1590, Mini-Angled Headers
45° Closed End



STLZ1590

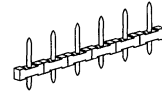
Single mold construction; color: green. Mates with AKZ1550 Mini-Plugs. Square pins: 0.8 x 0.8mm (.031 x .031 in.). Front to rear pin spacing.

STLZ1590 3.81mm (.150 in.) pin spacing

No. of Poles*	Type	Length mm (in.)
2	STLZ1590/2-w	9.01 (.35)
3	STLZ1590/3-w	12.82 (.50)
4	STLZ1590/4-w	16.63 (.65)
5	STLZ1590/5-w	20.44 (.80)
6	STLZ1590/6-w	24.25 (.95)
7	STLZ1590/7-w	28.06 (1.10)
8	STLZ1590/8-w	31.87 (1.25)
10	STLZ1590/10-w	39.49 (1.55)
12	STLZ1590/12-w	47.11 (1.85)
14	STLZ1590/14-w	54.73 (2.15)
16	STLZ1590/16-w	62.23 (2.45)

-w indicates closed end *missing poles available

Econo-Pluggable Headers



Breakaway construction supplied in strips up to 16 poles or in standard 24 pole lengths. Color: black. Mates with AK130 and AK132 plugs.

STL130, Straight Pin Header
5.0mm (.197 in.) pin spacing. Mate with AK130, AK132 plugs. Round pins: 1.3mm (.05 in.) dia. ††

No. of Poles	Type	Length mm (in.)
2	STL130/2	10.0 (.39)
3	STL130/3	15.0 (.59)
4	STL130/4	20.0 (.79)
5	STL130/5	25.0 (.99)
6	STL130/6	30.0 (1.18)
7	STL130/7	35.0 (1.38)
8	STL130/8	40.0 (1.58)
9	STL130/9	45.0 (1.77)
10	STL130/10	50.0 (1.97)
11	STL130/11	55.0 (2.17)
12	STL130/12	60.0 (2.36)
13	STL130/13	65.0 (2.56)
14	STL130/14	70.0 (2.76)
15	STL130/15	75.0 (2.95)
16	STL130/16	80.0 (3.15)
24	STL130/24*	120.0 (4.72)

* order 24 pole breakaway header to create alternate pole positions.

†† Also available with 1.0mm (.039 in.) dia. pins on soldering side.

We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples.
SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

Altech Corp.

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 Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

PRINTED CIRCUIT TERMINAL BLOCKS - FIXED

Conserve valuable board space with Altech's miniature terminal blocks. Fixed mount blocks are available in screw-cage clamp or tubular screw clamp designs. Also offered is a 45° wire entry spring clamp. All clamps provide rock solid, gas tight and vibration proof connections. Choose US (inch) or Metric pin spacing. Several wire entry options are offered. Available in modular and single mold designs.

Technical Data	Terminal Block Type AK																					
	US (inch) Pin Spacing										Metric Pin Spacing											
	Z120	Z125	Z500	Z250	Z300	Z350	Z700	Z750	Z840	Z841	550	555	100	101	300	350	370	505	500	501	3000/1 *	110
Pin Spacing (mm)	5.08	5.08	5.08	5.08	5.08	5.08	5.08	6.35	9.52	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	7.5
Pin Spacing (in.)	.200	.200	.200	.200	.200	.200	.200	.250	.375	.138	.138	.197	.197	.197	.197	.197	.197	.197	.197	.197	.197	.295
Voltage (UL/CSA)	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Current (UL/CSA)	15	15	15	15	15	15	15	15	30	6	6	15	15	15	15	15	15	15	15	15	10	15
Max. Wire Size (AWG)	14	14	14	14	12	12	12	12	10	16	16	14	14	12	12	12	14	14	14	14	14	14
Wire Entry	F	T	F	F	45°	F	F	F	F	F	T	F	F	45°	F	F	T	F	F	F	45°	F
Clamp Design	TS	TS	TS	SC	SC	SC	SC	SC	SC	TS	TS	TS	TS	SC	SC	SC	TS	TS	TS	TS	S	TS

F = Front; T = Top; 45 = 45° Degrees; SC = Screw-Cage; TS = Tubular Screw; S = Spring. * 5mm (.197 in.) nominal pin spacing can be adjusted to 5.08mm (.200 in.)

Screw-Cage Clamp Design

Ideal for industrial applications where frequent wire terminations occur.

• Front, Top, 45° Wire Entry • Single, Double Level • 15A, 300V, Up to 12 AWG • Modular Construction

45° Wire Entry

AK300, AKZ300

45° wire entry; 12.5mm (.49 in.) high x 12.5mm (.49 in.) deep; color: gray. Rectangular pins: .8 x 1mm (.032 x .039 in.)



AK300 5mm (.197 in.) pin spacing 15A, 300V, 22-12 AWG

No. of Poles *	Type	Length mm (in.)
2	AK300/2	10.0 (.39)
3	AK300/3	15.0 (.59)
4	AK300/4	20.0 (.79)
5	AK300/5	25.0 (.99)
6	AK300/6	30.0 (1.18)
7	AK300/7	35.0 (1.38)
8	AK300/8	40.0 (1.58)
9	AK300/9	45.0 (1.77)
10	AK300/10	50.0 (1.97)
12	AK300/12	60.0 (2.36)

AKZ300 5.08mm (.20 in.) pin spacing

No. of Poles *	Type	Length mm (in.)
2	AKZ300/2	10.16 (.40)
3	AKZ300/3	15.24 (.60)
4	AKZ300/4	20.32 (.80)
5	AKZ300/5	25.40 (1.00)
6	AKZ300/6	30.48 (1.20)
7	AKZ300/7	35.56 (1.40)
8	AKZ300/8	40.64 (1.60)
9	AKZ300/9	45.72 (1.80)
10	AKZ300/10	50.80 (2.00)
12	AKZ300/12	60.96 (2.40)

* Available up to 24 poles

AK350, AKZ350

Front wire entry; 13.5mm (.53 in.) high x 9.0mm (.35 in.) deep; color: green. Rectangular pins: .8 x 1mm (.032 x .039 in.)



AK350 5mm (.197 in.) pin spacing 15A, 300V, 22-12 AWG

No. of Poles *	Type	Length mm (in.)
2	AK350/2	10.0 (.39)
3	AK350/3	15.0 (.59)
4	AK350/4	20.0 (.79)
5	AK350/5	25.0 (.99)
6	AK350/6	30.0 (1.18)
7	AK350/7	35.0 (1.38)
8	AK350/8	40.0 (1.58)
9	AK350/9	45.0 (1.77)
10	AK350/10	50.0 (1.97)
12	AK350/12	60.0 (2.36)

AKZ350 5.08mm (.20 in.) pin spacing

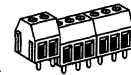
No. of Poles *	Type	Length mm (in.)
2	AKZ350/2	10.16 (.40)
3	AKZ350/3	15.24 (.60)
4	AKZ350/4	20.32 (.80)
5	AKZ350/5	25.40 (1.00)
6	AKZ350/6	30.48 (1.20)
7	AKZ350/7	35.56 (1.40)
8	AKZ350/8	40.64 (1.60)
9	AKZ350/9	45.72 (1.80)
10	AKZ350/10	50.80 (2.00)
12	AKZ350/12	60.96 (2.40)

* Available up to 24 poles

Front Wire Entry

AKZ250

Front wire entry; 10mm (0.394 in.) high x 8.1mm (.32 in.) deep; color green. Rectangular pins: 0.5 x 1mm (.020 x .039 in.)



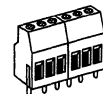
AKZ250 5.08mm (.20 in.) pin spacing 15A, 300V, 28-14 AWG

No. of Poles *	Type	Length mm (in.)
2	AKZ250/2	10.16 (.40)
3	AKZ250/3	15.24 (.60)
4	AKZ250/4	20.32 (.80)
5	AKZ250/5	25.40 (1.00)
6	AKZ250/6	30.48 (1.20)
7	AKZ250/7	35.56 (1.40)
8	AKZ250/8	40.64 (1.60)
9	AKZ250/9	45.72 (1.80)
10	AKZ250/10	50.80 (2.00)
12	AKZ250/12	60.96 (2.40)

* Available up to 24 poles

AKZ700

Front wire entry; 19.0mm (.75 in.) high x 10.5mm (.41 in.) deep; color: green. Square pins: .9 x .9mm (.035 x .035 in.)



AKZ700 5.08mm (.20 in.) pin spacing 15A, 300V, 22-12 AWG

No. of Poles *	Type	Length mm (in.)
2	AKZ700/2	10.16 (.40)
3	AKZ700/3	15.24 (.60)
4	AKZ700/4	20.32 (.80)
5	AKZ700/5	25.40 (1.00)
6	AKZ700/6	30.48 (1.20)
7	AKZ700/7	35.56 (1.40)
8	AKZ700/8	40.64 (1.60)
9	AKZ700/9	45.72 (1.80)
10	AKZ700/10	50.80 (2.00)
12	AKZ700/12	60.96 (2.40)

* Available up to 24 poles

AKZ750 5.08mm (.20 in.) pin spacing* 15A, 300V, 22-12 AWG

No. of Poles †	Type	Length mm (in.)
4	AKZ750/4	12.70 (.50)
6	AKZ750/6	17.78 (.70)
8	AKZ750/8	22.86 (.90)
10	AKZ750/10	27.94 (1.10)
12	AKZ750/12	33.02 (1.30)
14	AKZ750/14	38.10 (1.50)
16	AKZ750/16	43.18 (1.70)
18	AKZ750/18	48.26 (1.90)
20	AKZ750/20	53.34 (2.10)
22	AKZ750/22	58.42 (2.30)

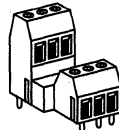
* Available in 5mm (.197 in.) pin spacing

† Available up to 50 poles

Front Wire Entry

AK370 Double Level

Reduced height version with 2nd level offset 2.5mm (.098 in.) left; 24.1mm (0.948 in.) high x 21mm (0.827 in.) deep; color: green. Square pins: 0.8 x 1mm (.031 x .039 in.); front to rear pin spacing; 15mm (0.591 in.).



AK370

AKZ750 Double Level

Standard height version 2nd level offset 2.54mm (.10 in.) left; 34.0mm (1.339 in.) high x 21.5mm (.845 in.) deep; color: green. Square pins: .9 x .9mm (.035 x .035 in.); front to rear pin spacing; 15mm (0.591 in.).



AKZ750

AK370 5mm (.197 in.) pin spacing 15A, 300V, 22-12 AWG

No. of Poles †	Type	Length mm (in.)
4	AK370/4	12.50 (.49)
6	AK370/6	17.50 (.69)
8	AK370/8	22.50 (.89)
10	AK370/10	27.50 (1.08)
12	AK370/12	32.50 (1.28)
14	AK370/14	37.50 (1.48)
16	AK370/16	42.50 (1.67)
18	AK370/18	47.50 (1.87)
20	AK370/20	52.50 (2.07)
22	AK370/22	57.50 (2.26)

† Available up to 50 poles

We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples. SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

Altech Corp.

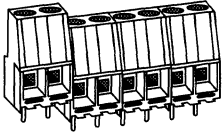
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PRINTED CIRCUIT TERMINAL BLOCKS - FIXED

High Current - Screw Cage Clamp Design

For wire-to-board connections in AC power applications where a high current connection (up to 30 Amps) is required and where frequent terminations occur. Popular 1/4 in. and 3/8 in. pin spacings provide replacements for outdated PC board barrier strips.

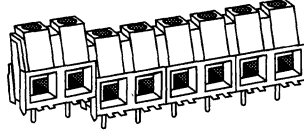
AKZ840



AKZ840 - Front Wire Entry

Front Wire Entry; 23.5mm (.93 in.) high x 12.5mm (.037 in.) deep; color: green. Rectangular pins 0.8mm x .95mm (.032 x .0375 in.).

AKZ841



AKZ841 - Front Wire Entry

Front Wire Entry; 22.3mm (.88 in.) high x 12.5 mm (.49 in.) deep; color green. Rectangular pins 0.8mm x .95mm (.032 x .0375 in.).

AKZ840 6.35mm (.250 in.) pin spacing. 30A, 300V, 22-10 AWG

No. of Poles*	Type	Length mm (in.)
2	AKZ840/2	12.70 (.50)
3	AKZ840/3	19.00 (.75)
4	AKZ840/4	25.40 (1.00)
5	AKZ840/5	31.70 (1.25)
6	AKZ840/6	38.00 (1.50)
7	AKZ840/7	44.40 (1.75)
8	AKZ840/8	50.70 (2.00)
9	AKZ840/9	57.00 (2.25)
10	AKZ840/10	63.40 (2.50)
11	AKZ840/11	69.70 (2.75)
12	AKZ840/12	76.00 (3.00)

* Available up to 16 poles

AKZ841 9.52mm (.375 in.) pin spacing. 30A, 300V, 22-10 AWG

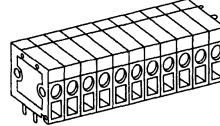
No. of Poles*	Type	Length mm (in.)
2	AKZ841/2	19.00 (.75)
3	AKZ841/3	28.45 (1.12)
4	AKZ841/4	38.00 (1.50)
5	AKZ841/5	47.45 (1.87)
6	AKZ841/6	56.90 (2.24)
7	AKZ841/7	66.45 (2.61)
8	AKZ841/8	75.90 (2.99)
9	AKZ841/9	85.35 (3.36)
10	AKZ841/10	94.90 (3.74)
11	AKZ841/11	104.35 (4.11)
12	AKZ841/12	113.80 (4.48)

* Available up to 16 poles

Special Feature - Screw Cam Clamp Design

For applications where screwdriver access and wire entry is limited to one side.

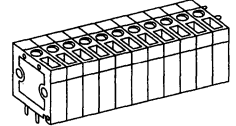
AKZ2200



AKZ2200

Front Wire Entry; 18.5mm (.728 in.) high x 19.5mm (.768 in.) deep; color green. Rectangular dual pins 0.8mm x 1.0 mm (.032 in. x .039 in.). Front to rear pin spacing 5.0mm (.197 in.).

AKZ2205



AKZ2205

Top Wire Entry; 19.5mm (.768 in.) high x 18.5mm (.728 in.) deep; color green. Rectangular dual pins 0.8mm x 1.0 mm (.032 in. x .039 in.). Front to rear pin spacing 5.0mm (.197 in.).

AKZ2200 / AKZ2205 5mm (.197 in.) pin spacing. 15A, 300V, 22-12 AWG

No. of Poles*	Types		Length mm (in.)
2	AKZ2200/2	AKZ2205/2	12.5 (.492)
3	AKZ2200/3	AKZ2205/3	17.5 (.689)
4	AKZ2200/4	AKZ2205/4	22.5 (.886)
5	AKZ2200/5	AKZ2205/5	27.5 (1.083)
6	AKZ2200/6	AKZ2205/6	32.5 (1.279)
7	AKZ2200/7	AKZ2205/7	37.5 (1.467)
8	AKZ2200/8	AKZ2205/8	42.5 (1.673)
9	AKZ2200/9	AKZ2205/9	47.5 (1.870)
10	AKZ2200/10	AKZ2205/10	52.5 (2.067)
11	AKZ2200/11	AKZ2205/11	57.5 (2.264)
12	AKZ2200/12	AKZ2205/12	62.5 (2.461)

* Additional poles available, please contact Altech.

PRINTED CIRCUIT TERMINAL BLOCKS Spring Clamp Design 45° Wire Entry

Ideal for industrial applications where frequent wire terminations occur. Spring Clamp is screwless, simplifying wire termination and saving time. Strip wire, open Spring Clamp, insert wire, close Clamp. Sectional design, order Multi-Pole Assemblies or break apart single Pole Assembly (50 poles) and add End Plate. 5mm (.197") nominal pin spacing, adjustable to 5.08 (.200"). Stainless Steel Spring.

Three methods of clamp actuation:

AK3000



AK3000 - Without Lever

Using a 3mm (.118 in.) wide screwdriver tip; 12.9mm (.508 in.) high x 14.2mm (.559 in.) deep; color: light gray. Square pins 0.7 x 0.7mm (.028 x .028 in.); Front to rear pin spacing 5mm (0.197 in.)

5.0mm (.197 in.) pin spacing. 10A, 300V, 22-14 AWG

No. of Poles†	Type	Length mm (in.)
1 *	AK3000/1	7.2 (.28)
2	AK3000/2	12.2 (.48)
3	AK3000/3	17.2 (.67)
4	AK3000/4	22.2 (.87)
5	AK3000/5	27.2 (1.07)
6	AK3000/6	32.2 (1.28)
7	AK3000/7	37.2 (1.46)
8	AK3000/8	42.2 (1.66)
9	AK3000/9	47.2 (1.85)
10	AK3000/10	52.2 (2.05)
11	AK3000/11	57.2 (2.25)
12	AK3000/12	62.2 (2.44)

AK3001KD



AK3001KD - With Actuator Lever

Push on Lever with screwdriver tip to open clamp; 18.7mm (.736 in.) high x 16.9mm (.665 in.) deep; color: light gray. Square pins 0.7 x 0.7mm (.028 x .028 in.); Front to rear pin spacing 5mm (0.197 in.)

5.0mm (.197 in.) pin spacing. 10A, 300V, 22-14 AWG

No. of Poles†	Type	Length mm (in.)
1 *	AK3001KD/1	7.9 (.31)
2	AK3001KD/2	12.9 (.50)
3	AK3001KD/3	17.9 (.70)
4	AK3001KD/4	22.9 (.90)
5	AK3001KD/5	27.9 (1.10)
6	AK3001KD/6	32.9 (1.30)
7	AK3001KD/7	37.9 (1.49)
8	AK3001KD/8	42.9 (1.69)
9	AK3001KD/9	47.9 (1.89)
10	AK3001KD/10	52.9 (2.08)
11	AK3001KD/11	57.9 (2.28)
12	AK3001KD/12	62.9 (2.48)

AK3001FD



AK3001FD - With Finger Operated Actuator Lever

Push on Lever with finger to open clamp; 22.3mm (.878 in.) high x 18.9mm (.744 in.) deep; color: light gray. Square pins 0.7 x 0.7mm (.028 x .028 in.); Front to rear pin spacing 5mm (0.197 in.)

5.0mm (.197 in.) pin spacing. 10A, 300V, 22-14 AWG

No. of Poles†	Type	Length mm (in.)
1 *	AK3001FD/1	7.9 (.31)
2	AK3001FD/2	12.9 (.50)
3	AK3001FD/3	17.9 (.70)
4	AK3001FD/4	22.9 (.90)
5	AK3001FD/5	27.9 (1.10)
6	AK3001FD/6	32.9 (1.30)
7	AK3001FD/7	37.9 (1.49)
8	AK3001FD/8	42.9 (1.69)
9	AK3001FD/9	47.9 (1.89)
10	AK3001FD/10	52.9 (2.08)
11	AK3001FD/11	57.9 (2.28)
12	AK3001FD/12	62.9 (2.48)

End Plate

—	AP3000	—
—	AP3001	—

† Available up to 50 poles

* One Pole Configurations include (1) end plate. Order additional end plates as required. Sold as 50 pole assembly.

We have shown a small sampling of our terminal block line here. Please request our full line catalog and free samples.
 SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

Altech Corp.

35 Royal Road • Flemington, NJ 08822-6000
 Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

PRINTED CIRCUIT TERMINAL BLOCKS - FIXED

Tubular Screw Clamp Design

Use for cost-sensitive applications where infrequent wire terminations are expected. UL, CSA, IEC/VDE.

- Front, Top Wire Entry
- Wire Protectors Standard
- Modular and Single Mold
- Up to 15A, 300V, 28-14 AWG

Top Wire Entry

AK555



Single mold, top wire entry; 6.5mm (.26 in.) high x 8.3mm (.33 in.) deep; color: black. Round pins: .9mm (.035 in.) dia.

AK555, 3.5mm (.138 in.) pin spacing
 6A, 300V, 28-16 AWG

No. of Poles**	Type	Length mm (in.)
2	AK555/2wp	7.0 (.28)
3	AK555/3wp	10.5 (.41)
4	AK555/4wp	14.0 (.55)
5	AK555/5wp	17.5 (.69)
6	AK555/6wp	21.0 (.83)
7	AK555/7wp	24.5 (.96)
8	AK555/8wp	28.0 (1.10)
9	AK555/9wp	31.5 (1.24)
10	AK555/10wp	35.0 (1.38)
12	AK555/12wp	42.0 (1.65)

** Available up to 16 poles.

Front Wire Entry

AK550



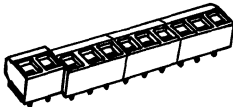
Single mold, front wire entry; 8.3mm (.33 in.) high x 6.5mm (.26 in.) deep; color: black. Round pins: .9mm (.035 in.) dia.

AK550, 3.5mm (.138 in.) pin spacing
 6A, 300V, 28-16 AWG

No. of Poles**	Type	Length mm (in.)
2	AK550/2wp	7.0 (.28)
3	AK550/3wp	10.5 (.41)
4	AK550/4wp	14.0 (.55)
5	AK550/5wp	17.5 (.69)
6	AK550/6wp	21.0 (.83)
7	AK550/7wp	24.5 (.96)
8	AK550/8wp	28.0 (1.10)
9	AK550/9wp	31.5 (1.24)
10	AK550/10wp	35.0 (1.38)
12	AK550/12wp	42.0 (1.65)

** Available up to 16 poles.

AK505



Modular top wire entry; 7.5mm high (.29 in.) x 10mm (.39 in.) deep; color: gray. Round pins: 1.0mm (.039 in.) dia.

AK505, 5mm (.197 in.) pin spacing
 15A, 300V, 22-14 AWG

No. of Poles*	Type	Length mm (in.)
2	AK505/2wp	10.0 (.39)
3	AK505/3wp	15.0 (.59)
4	AK505/4wp	20.0 (.79)
5	AK505/5wp	25.0 (.99)
6	AK505/6wp	30.0 (1.18)
7	AK505/7wp	35.0 (1.38)
8	AK505/8wp	40.0 (1.58)
9	AK505/9wp	45.0 (1.77)
10	AK505/10wp	50.0 (1.97)
12	AK505/12wp	60.0 (2.36)

AK500



Modular front wire entry; 10.0mm high (.39 in.) x 7.5mm (.29 in.) deep; color: gray. Round pins: 1.0mm (.039 in.) dia.

AK500, 5mm (.197 in.) pin spacing
 15A, 300V, 22-14 AWG

No. of Poles*	Type	Length mm (in.)
2	AK500/2wp	10.0 (.39)
3	AK500/3wp	15.0 (.59)
4	AK500/4wp	20.0 (.79)
5	AK500/5wp	25.0 (.99)
6	AK500/6wp	30.0 (1.18)
7	AK500/7wp	35.0 (1.38)
8	AK500/8wp	40.0 (1.58)
9	AK500/9wp	45.0 (1.77)
10	AK500/10wp	50.0 (1.97)
12	AK500/12wp	60.0 (2.36)

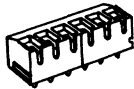
AKZ500 Same as AK500, but 5.08mm (.20 in.) pin spacing

2	AKZ500/2WP	10.16 (.40)
3	AKZ500/3WP	15.24 (.60)
4	AKZ500/4WP	20.32 (.80)
5	AKZ500/5WP	25.40 (1.00)
6	AKZ500/6WP	30.48 (1.20)
7	AKZ500/7WP	35.56 (1.40)
8	AKZ500/8WP	40.64 (1.60)
9	AKZ500/9WP	45.72 (1.80)
10	AKZ500/10WP	50.80 (2.00)
12	AKZ500/12WP	60.96 (2.40)

AK501 Same as AK500, but single mold construction

2	AK501/2WP	10.0 (.39)
3	AK501/3WP	15.0 (.59)
4	AK501/4WP	20.0 (.79)
5	AK501/5WP	25.0 (.99)
6	AK501/6WP	30.0 (1.18)
7	AK501/7WP	35.0 (1.38)
8	AK501/8WP	40.0 (1.58)
9	AK501/9WP	45.0 (1.77)
10	AK501/10WP	50.0 (1.97)
12	AK501/12WP	60.0 (2.36)

AKZ125



Modular top wire entry; 9.0mm (.35 in.) high x 13.0mm (.51 in.) deep; color: gray. Round pins: 1mm (.039 in.) dia.

AKZ125, 5.08mm (.20 in.) pin spacing
 15A, 300V, 22-14 AWG

No. of Poles*	Type	Length mm (in.)
2	AKZ125/2wp	10.16 (.40)
3	AKZ125/3wp	15.24 (.60)
4	AKZ125/4wp	20.32 (.80)
5	AKZ125/5wp	25.40 (1.00)
6	AKZ125/6wp	30.48 (1.20)
7	AKZ125/7wp	35.56 (1.40)
8	AKZ125/8wp	40.64 (1.60)
9	AKZ125/9wp	45.72 (1.80)
10	AKZ125/10wp	50.80 (2.00)
12	AKZ125/12wp	60.96 (2.40)

* Available up to 24 poles.

Front Wire Entry

AK100



Modular, front wire entry; 12.5mm (.49 in.) high x 9.0mm (.35 in.) deep; color: gray. Round pins: 1mm (.039 in.) dia.

AK100, 5mm (.197 in.) pin spacing
 15A, 300V, 22-14 AWG

No. of Poles*	Type	Length mm (in.)
2	AK100/2wp	10.0 (.39)
3	AK100/3wp	15.0 (.59)
4	AK100/4wp	20.0 (.788)
5	AK100/5wp	25.0 (.985)
6	AK100/6wp	30.0 (1.18)
7	AK100/7wp	35.0 (1.38)
8	AK100/8wp	40.0 (1.58)
9	AK100/9wp	45.0 (1.77)
10	AK100/10wp	50.0 (1.97)
12	AK100/12wp	60.0 (2.36)

AK101 Same as AK100, but single mold construction

2	AK101/2WP	10.0 (.39)
3	AK101/3WP	15.0 (.59)
4	AK101/4WP	20.0 (.788)
5	AK101/5WP	25.0 (.985)
6	AK101/6WP	30.0 (1.18)
7	AK101/7WP	35.0 (1.38)
8	AK101/8WP	40.0 (1.58)
9	AK101/9WP	45.0 (1.77)
10	AK101/10WP	50.0 (1.97)
12	AK101/12WP	60.0 (2.36)

AKZ120



Modular front wire entry; 13.0mm (.51 in.) high (including 0.5mm standoff feet) x 9.0mm (.35 in.) deep; color: gray. Round pins: 1mm (.039 in.) dia.

AKZ120, 5.08mm (.20 in.) pin spacing
 15A, 300V, 22-14 AWG

No. of Poles*	Type	Length mm (in.)
2	AKZ120/2wp	10.16 (.40)
3	AKZ120/3wp	15.24 (.60)
4	AKZ120/4wp	20.32 (.80)
5	AKZ120/5wp	25.40 (1.00)
6	AKZ120/6wp	30.48 (1.20)
7	AKZ120/7wp	35.56 (1.40)
8	AKZ120/8wp	40.64 (1.60)
9	AKZ120/9wp	45.72 (1.80)
10	AKZ120/10wp	50.80 (2.00)
12	AKZ120/12wp	60.96 (2.40)

AK110



Modular front wire entry; 12.5mm (.49 in.) high x 9mm (.35 in.) deep; color: gray. Round pins: .9mm (.035 in.) dia.

AK110, 7.5mm (.295 in.) pin spacing
 15A, 300V, 22-14 AWG

No. of Poles*	Type	Length mm (in.)
2	AK110/2wp	15.0 (.59)
3	AK110/3wp	22.5 (.89)
4	AK110/4wp	30.0 (1.18)
5	AK110/5wp	37.5 (1.48)
6	AK110/6wp	45.0 (1.77)
7	AK110/7wp	52.5 (2.08)
8	AK110/8wp	60.0 (2.36)
9	AK110/9wp	67.5 (2.66)
10	AK110/10wp	75.0 (2.95)
12	AK110/12wp	82.5 (3.54)

* Available up to 24 poles.

We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples.
 SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

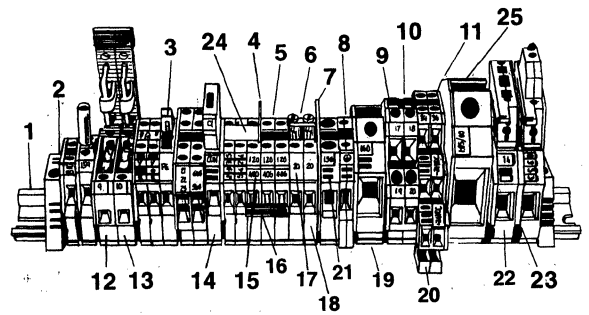
Altech Corp.

35 Royal Road • Flemington, NJ 08822-6000

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DIN RAIL TERMINAL BLOCKS

Standard Terminal Blocks feature a Universal Foot for mounting on 35mm and 32mm DIN Rail. Ground Blocks are designed for either 35mm or 32mm rail, as indicated by the suffix in the Mfr. Type. High density design features Screw-Cage Clamps for reliable connections. A compact mini-series that mounts onto 15mm DIN Rail is offered for applications where space is limited. Material: Polyamide 6.6. Ratings: 600V or 300V UL/CSA, IEC/VDE. Select the appropriate Terminal Block for your application from the ordering section (below) using the SELECTOR ILLUSTRATION (opposite).



- | | |
|----------------------------------|---|
| SI# | SI# |
| 1. DIN Rail, 35mm, Slotted | 13. STK2/LEDU Fuse Block ² with LED |
| 2. End Stop | 14. TRK1.5/DS Diode Plug Disconnect |
| 3. TRK1.5 Knife Disconnect | 15. SB Marking Tags |
| 4. Separator | 16. External Jumper |
| 5. RK2.5 Feed Through | 17. BR Marking Tag |
| 6. Internal Jumper | 18. RK2.5-4 Feed Through |
| 7. Isolation Partition | 19. RK16 Feed Through |
| 8. SL2.5/35 Ground | 20. RKT2.5 Triple Level |
| 9. RKD4 Double Level, 6mm | 21. RK6-10 Feed Through |
| 10. RKD2.5 Double Level, 5mm | 22. SIK10/Z Fuse Block ³ |
| 11. End Plate | 23. SIK10/Z/LEDGT Fuse Block ³ with LED Plug |
| 12. STK2 Fuse Block ² | 24. TM Jumper Cover* |
| | 25. RK35 Feed Through |

SELECTOR ILLUSTRATION (SI)

Terminal blocks and Accessories, by number as they are shown on this and the following page. Use with the Ordering Information. Definitions are listed below.

*Also serves as a Top Marking Strip.

ORDERING INFORMATION Terminal Blocks for 35 and 32mm DIN Rail

Type	Cat. No.	SI#	Function	Current/ Volts	Wire Size (AWG)	Height mm (in.)	Terminal Width mm (in.)	Suitable Marking Tags							
								SB5	SB6	BR5	BR6	TM1	TM2		
RK2.5	1296.2	5	Feed-Through	20A/600V	22-12	47 (1.85)	5.0 (.20)	X							
RK2.5-4	1001.2	18	Feed-Through	40A/600V	22-10	47 (1.85)	6.0 (.24)		X			X	X		
RK6-10	1005.2	21	Feed-Through	65A/600V	22-6	47 (1.85)	8.0 (.31)			X		X	X		
RK16	1050.2	19	Feed-Through	85A/600V	10-4	58 (2.28)	12.0 (.47)			X		X			
RK35	1052.2	25	Feed-Through	115A/600V	10-2	71 (2.80)	16.0 (.63)			X		X			
RKD4	1020.2	9	Double Level	30A/300V	22-10	60 (2.36)	6.0 (.24)			X		X			X
RKD2.5	1206.2	10	Double Level	20A/300V	22-12	60 (2.36)	5.0 (.20)	X			X				
RKT2.5	1261.2	20	Triple Level	20A/300V	22-12	58 (2.28)	5.0 (.20)	X			X				
TRK1.5/STB	1391.2	3	Knife Disconnect ¹	15A/600V	22-12	48 (1.89)	6.0 (.24)			X		X			
STK2	1078.2	12	Fuse ²	6.3A/600V	22-12	42 (1.65)	8.0 (.31)			X		X			
STK2/LEDU	1547.2	13	Fuse with LED ² 110V AC	6.3A/600V	22-12	42 (1.65)	8.0 (.31)			X		X			
STK2/LEDG	1539.2	13	Fuse with LED ² 24V DC	6.3A/600V	22-12	42 (1.65)	8.0 (.31)			X		X			
SIK10/Z	1102.2	22	Fuse ³	16A/600V	22-12	69 (2.72)	10.0 (.39)			X		X			
SIK10/Z/LED GT	1110.2	23	Fuse with LED ³ 24V DC	16A/600V	22-12	69 (2.72)	10.0 (.39)			X		X			
SIK10/Z/LED JU	1109.2	23	Fuse with LED ³ 110V AC	16A/600V	22-12	69 (2.72)	10.0 (.39)			X		X			
SL2.5/35	1056.2	8	Ground 35mm DIN Rail	Ground	22-12	47 (1.85)	6.0 (.24)			X		X	X		
SL4/35	1212.2	8	Ground 35mm DIN Rail	Ground	22-10	47 (1.85)	8.0 (.31)			X		X	X		
SL10/35	1213.2	8	Ground 35mm DIN Rail	Ground	20-6	47 (1.85)	10.0 (.39)			X		X	X		
SL2.5/32	1055.2	†	Ground 32mm DIN Rail	Ground	22-12	52 (2.05)	6.0 (.24)			X		X	X		
SL4/32	1065.2	†	Ground 32mm DIN Rail	Ground	22-10	52 (2.05)	8.0 (.31)			X		X	X		
SL10/32	1066.2	†	Ground 32mm DIN Rail	Ground	20-6	52 (2.05)	10.0 (.39)			X		X	X		

ORDERING INFORMATION Mini Terminal Blocks for 15mm DIN Rail

Type	Cat. No.	SI#	Function	Current/ Volts	Wire Size (AWG)	Height mm (in.)	Terminal Width mm (in.)	Suitable Marking Tags							
								SB5	SB6	BR5	BR6	TM1	TM2		
SRK2.5/15	1035.2	†	Feed-Through	20A/300V	22-14	30 (1.18)	5.0 (.20)	X			X				
RK1.5-4/15	1010.2	†	Feed-Through	30A/300V	22-10	35 (1.38)	6.0 (.24)			X		X			X
SL4/15	1064.2	†	Ground for 15mm DIN Rail	Ground	22-10	32 (1.26)	7.0 (.28)			X		X			
TRK1.5/15/STB	1393.2	†	Knife Disconnect ¹	15A/600V	22-12	39 (1.54)	6.0 (.24)			X		X			
STK2/15	1190.2	†	Fuse ²	6.3A/600V	22-12	34 (1.39)	8.0 (.31)			X		X			
STK2/15/LEDG	1553.2	†	Fuse ² 24V DC	6.3A/600V	22-12	34 (1.39)	8.0 (.31)			X		X			
STK2/15/LEDU	1554.2	†	Fuse ² 110V AC	6.3A/300V	22-12	34 (1.39)	8.0 (.31)			X		X			

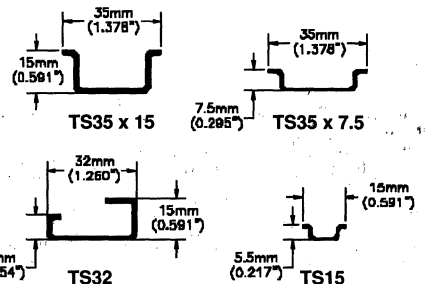
1) with 2 test sockets; 2) 5 x 20mm; 3) 1/4 x 1-1/4"; †) Not shown in Selector Illustration (SI)

DIN Rail

Altech's DIN Rail complies with DIN 50045, 50022 and 50035 Standards. The use of DIN Rail enhances design capabilities, saves space and reduces labor. Rails are offered in 35mm, 32mm (G-Type) and 15mm sizes. Rail is perforated for easy mounting.

Standard Length: 1.0m (3' 3"). Standard Material: Steel, Zinc Plated Yellow Chromated.

Type	Cat. No.	SI#	Size
TS35x7.5	2094.0/1m	1	35 x 7.5mm (1.38 x .29")
TS35x15	2095.0/1m	†	35 x 15mm (1.38 x .59")
TS32x15	2093.0/1m	†	32 x 15mm (1.26 x .59")
TS15x5.5	2092.0/1m	†	15 x 5.5mm (.59 x .22")



We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples. SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300



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DIN RAIL MOUNT TERMINAL BLOCKS

TABLE III — ACCESSORIES **

Description	SI #	For Terminal Block Type								
		RK 2.5 Cat. No.	RK 2.5-4 Cat. No.	RK 6-10 Cat. No.	RK 16 Cat. No.	RKD4 Cat. No.	RKD2.5 Cat. No.	TRK1.5 Cat. No.	STK1 Cat. No.	SIK10/Z Cat. No.
End Plate	11	2001.2	2001.2	2001.2	2104.2	2101.2	2101.2	—	2046.2	—
Isolation Partition	7	2002.2	2002.2	2105.2	2105.2	—	—	—	—	—
Separator	4	2566.2	2003.2	2003.2	2003.2	2566.2	2566.2	—	—	—
End Stop 35mm Rail	2	2005.2	2005.2	2005.2	2005.2	2005.2	2005.2	2005.2	2005.2	2005.2
End Stop 32mm Rail	2	2004.2	2004.2	2004.2	2004.2	2004.2	2004.2	2004.2	2004.2	2004.2
Internal Jumper (2 pole)	6	2567.0	2019.0	2060.0	2112.0	2087.0	2567.0	—	—	—
Internal Jumper (3 pole)	6	2568.0	2020.0	2061.0	2113.0	2088.0	2568.0	—	—	—
Internal Jumper (4 pole)	6	2569.0	2021.0	2062.0	2114.0	2089.0	2569.0	—	—	—
Internal Jumper (10 pole)	6	2570.0	2022.0	2063.0	2115.0	2090.0	2570.0	—	—	—
External Jumper (2 pole)	16	8879.0	2064.0	2067.0	—	2064.0	—	2064.0	2067.0	—
External Jumper (3 pole)	16	8880.0	2065.0	2068.0	—	2065.0	—	2065.0	2068.0	—
External Jumper (4 pole)	16	8881.0	2066.0	2069.0	—	2066.0	—	2066.0	2069.0	—
Jumper Cover	23	8884.0	8884.0	8884.0	—	8885.0	—	—	—	—

** For additional accessories and mini terminal block accessories, contact Altech.

PANEL MOUNT TERMINAL BLOCKS

Compact and convenient to use where space is a constraint. Cost-effective sectional design allows for changing requirements. Snap together individual components to create multi-pole assemblies. Order preassembled or assemble yourself.

- Screw-Cage Clamp Design
- Accepts Standard Marking System
- Standard or Custom Assemblies
- High Density - 38, 50, 60 Terminations Per Foot
- Jumpers Available

BAKA2.5 Assemblies †

5mm (.197 in.) pole spacing, (60) Term./Ft.
 22mm (.866 in.) wide x 23mm (.905 in.) high.
 20A, 300V, 22-12 AWG

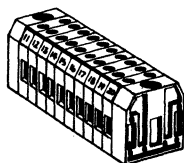
No. of Poles ††	Type	Assembly Width mm (in.)
2	BAKA2.5/2	24.5 (.96)
3	BAKA2.5/3	29.6 (1.17)
4	BAKA2.5/4	34.6 (1.36)
5	BAKA2.5/5	39.8 (1.57)
6	BAKA2.5/6	44.9 (1.77)
8	BAKA2.5/8	55.1 (2.17)
10	BAKA2.5/10	65.3 (2.58)
11	BAKA2.5/11	70.4 (2.77)
12	BAKA2.5/12	75.4 (2.97)
13	BAKA2.5/13	80.6 (3.17)
14	BAKA2.5/14	85.7 (3.37)
15	BAKA2.5/15	90.9 (3.57)
16	BAKA2.5/16	95.8 (3.75)
18	BAKA2.5/18	106.2 (4.18)
20	BAKA2.5/20	116.2 (4.57)

BAKA4 Assemblies †

6mm (.236 in.) pole spacing, (50) Term./Ft.
 22mm (.866 in.) wide x 23mm (.905 in.) high.
 30A, 300V, 22-10 AWG

No. of Poles ††	Type	Assembly Width mm (in.)
2	BAKA4/2	26.5 (1.04)
3	BAKA4/3	32.6 (1.28)
4	BAKA4/4	38.7 (1.52)
5	BAKA4/5	44.8 (1.76)
6	BAKA4/6	50.9 (2.00)
8	BAKA4/8	63.1 (2.48)
10	BAKA4/10	75.3 (2.96)
11	BAKA4/11	81.4 (3.20)
12	BAKA4/12	87.5 (3.44)
13	BAKA4/13	93.6 (3.69)
14	BAKA4/14	99.7 (3.93)
15	BAKA4/15	105.8 (4.17)
16	BAKA4/16	111.9 (4.41)
18	BAKA4/18	124.1 (4.89)
20	BAKA4/20	136.3 (5.37)

† A mounting section is installed at the ends of each assembly
 †† Available up to 24 poles



BAKA 2.5 / BKA 4 / BKA 10

BAKA10 Assemblies †

8mm (.315 in.) pole spacing, (38) Term./Ft.
 30mm (1.18 in.) wide x 31mm (1.22 in.) high.
 55A, 300V, 22-8 AWG

No. of Poles ††	Type	Assembly Width mm (in.)
2	BAKA10/2	32.2 (1.27)
3	BAKA10/3	40.3 (1.59)
4	BAKA10/4	48.4 (1.90)
5	BAKA10/5	56.5 (2.22)
6	BAKA10/6	64.6 (2.54)
7	BAKA10/7	72.7 (2.86)
8	BAKA10/8	80.8 (3.18)
9	BAKA10/9	88.9 (3.50)
10	BAKA10/10	97.0 (3.82)
11	BAKA10/11	105.1 (4.14)
12	BAKA10/12	113.2 (4.46)

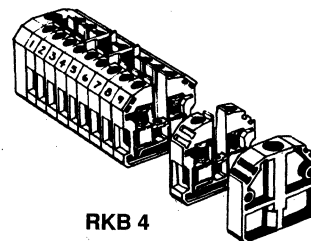
TERMINAL COMPONENTS*

No. of Poles	Type	Width mm (in.)
1	BAKA2.5/1 ¹	5.0 (1.97)
1	BAKA4/1 ¹	6.0 (.24)
1	RKA10/1 ²	8.0 (.315)
1	RKB4/1 ²	6.0 (.24)

MOUNTING SECTIONS*

Superscript	Type	Width mm (in.)
1	EH2	7.25 (.29)
2	EH1	7.25 (.29)
3	EH3	8.0 (.315)

* When ordering Mounting Sections match superscripts to Terminal Components



RKB 4

RKB4 Assemblies † with Internal Jumper Provision

6mm (.236 in.) pole spacing.
 27mm (1.06 in.) wide x 23mm (.905 in.) high.

No. of Poles ††	Type	Assembly Width mm (in.)
2	RKB4/2	26.5 (1.04)
3	RKB4/3	32.6 (1.28)
4	RKB4/4	38.7 (1.52)
5	RKB4/5	44.8 (1.76)
6	RKB4/6	50.9 (2.00)
7	RKB4/7	57.0 (2.24)
8	RKB4/8	63.1 (2.48)
9	RKB4/9	69.2 (2.72)
10	RKB4/10	75.3 (2.96)
11	RKB4/11	81.4 (3.20)
12	RKB4/12	87.5 (3.44)

Internal Jumpers (only for RKB)

No. of Poles ††	Type	Length mm (in.)
2	Q23	12 (.47)
3	Q33	18 (.71)
4	Q43	24 (.94)
10	Q103	60 (2.36)

† A mounting section is installed at the ends of each assembly
 †† Additional poles available, please contact Altech

We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples.
 SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

Altech Corp.

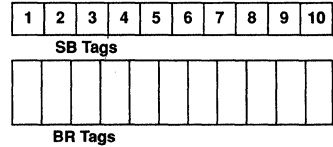
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 Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

MARKING TAGS

Give a professional look to every job. Marked terminal blocks increase wiring efficiency, save installation time and make wire hook-up, system modification and troubleshooting quick and easy. Push-On Marking Tags are available in two widths and fit most DIN rail and panel mount terminal blocks. They can be inserted individually or in strips of ten tags to speed installation. Available blank for hand marking or imprinted. Standard tags are white with horizontal black imprint.

SB Type	Sl#	I.D.	For Terminal Block Widths
SB5/10	15	Blank	5mm
SB5/10FW	15	1-10	5mm
SB5/10FW	15	11-20	5mm
SB5/10FW	15	21-30	5mm
SB5/10FW	15	31-40	5mm
SB5/10FW	15	41-50	5mm

SB Type	Sl#	I.D.	For Terminal Block Widths
SB6/10	15	Blank	6, 8, 12mm
SB6/10FW	15	1-10	6, 8, 12mm
SB6/10FW	15	11-20	6, 8, 12mm
SB6/10FW	15	21-30	6, 8, 12mm
SB6/10FW	15	31-40	6, 8, 12mm
SB6/10FW	15	41-50	6, 8, 12mm



BR Type	Sl#	I.D.	For Terminal Block Widths
BR10/5	17	Blank	5mm
BR12/6	17	Blank	6, 8, 12mm

For custom imprints, consult Altech.

A package contains 50 strips of 10 tags per strip. The strips are blank for hand marking; or consecutively numbered 1-10, or 11-20, or 21-30, or 31-40, or 41-50, designate after Type. Ordering Example: Type SB6/10FW/11-20 for tags numbered horizontally with consecutive digits 11-20.

FERRULES *

Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices. They prevent breaking and fraying of stranded wires and insure reliable and efficient electrical connections.

Insulated Ferrules prevent conductor breakage due to bending, wire stress or vibration while facilitating wire insertion into the terminal clamp.

Uninsulated Ferrules prevent wire strands from fraying and they are extremely cost effective. Their shorter lengths and uninsulated bodies offer advantages when making terminations in printed circuit board terminal blocks and in other terminal blocks with smaller clamps or narrow widths.

Dual Wire Ferrules have larger diameters and special shaped sleeves that accept two conductors of the same or different size. They provide an efficient connection of multiple wires in the same terminal clamp or simplify wire jumpering between terminal clamps. They are color coded with the same convention as the insulated as the Insulated DIN Standard Ferrules.

To ensure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire and use only professional crimping tools. (Please refer to the Crimper Selection Table below.)

Insulated, tin-plated copper

Type	Cat. No.	Wire AWG	Strip Length	Ferrule Length A
HI 0.25/10	2620.0	24	.24 in.	.39 in.
HI 0.34/10	2622.0	22	.24 in.	.39 in.
HI 0.5/14	2201.0	20	.31 in.	.55 in.
HI 0.75/14	2202.0	20	.31 in.	.55 in.
HI 1.0/14	2203.0	18	.31 in.	.55 in.
HI 1.5/14	2204.0	16	.31 in.	.55 in.
HI 2.5/15	2206.0	14	.31 in.	.55 in.
HI 4.0/18	2208.0	12	.39 in.	.67 in.
HI 6.0/20	2210.0	10	.47 in.	.79 in.

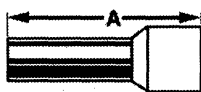
Uninsulated, tin-plated copper

Type	Cat. No.	Wire AWG	Strip Length	Ferrule Length A
HU 0.5/6	2216.0	20	.24 in.	.24 in.
HU 0.75/6	2217.0	20	.24 in.	.24 in.
HU 0.75/10	2218.0	20	.39 in.	.39 in.
HU 1.0/6	2219.0	18	.24 in.	.24 in.
HU 1.0/10	2220.0	18	.39 in.	.39 in.
HU 1.5/7	2221.0	16	.28 in.	.28 in.
HU 2.5/7	2223.0	14	.28 in.	.28 in.
HU 4.0/9	2225.0	12	.35 in.	.35 in.
HU 6.0/12	2227.0	10	.47 in.	.47 in.

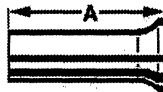
Dual Wire, Insulated, tin-plated copper

Type	Cat. No.	Wire AWG	Strip Length	Ferrule Length A
HH2x0.5/15	2794.0	2x22	.43 in.	.57 in.
HH2x0.75/15	2775.0	2x20	.43 in.	.57 in.
HH2x0.75/17	2795.0	2x20	.51 in.	.65 in.
HH2x1.0/15	2776.0	2x18	.43 in.	.62 in.
HH2x1.0/17	2796.0	2x18	.51 in.	.77 in.
HH2x1.5/16	2777.0	2x16	.32 in.	.62 in.
HH2x2.5/19	2778.0	2x14	.55 in.	.73 in.
HH2x4.0/23	2799.0	2x12	.63 in.	.87 in.
HH2x6.0/26	2800.0	2x10	.75 in.	.91 in.

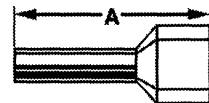
* For our complete selection of Ferrule sizes, please contact Altech.



Insulated



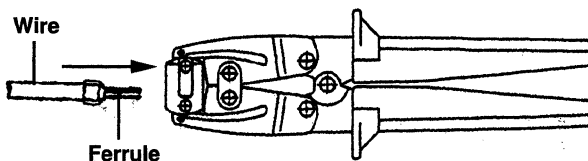
Uninsulated



Dual Wire, Insulated

Universal FERRULE crimpers

Crimp insulated or uninsulated ferrules onto a wide range of conductor sizes.



Crimper Selection Table

Type	Cat. No.	Wire AWG	Wire Entry	Ferrule Size mm ²	Length mm (in.)
PZU6	22.002	24-10	Front	25-6	228 (9.0)
PZU10	22.080	14-8	Front	2.5-10	228 (9.0)
PZU16	22.083	8-6	Front	10-16	228 (9.0)
PZU35	22.085	4-2	Side	25 & 35	225 (8.9)

We have only shown a small sampling of our terminal block line here. Please request our full line catalog and free samples. SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

Altech Corp.

35 Royal Road • Flemington, NJ 08822-6000
 Phone (908) 806-9400 • Fax (908) 806-9490 • www.altechcorp.com

EUROSTRIPS®

A cost-effective alternative to barrier strips for wire-to-wire connections in HVAC, appliance, equipment, power distribution and other applications with space requirements. Double row feed-through Eurostrips® are offered with or without wire protectors. Order as standard easy-to-cut 12 pole strips, or precut lengths. Choose flat base strips for minimum clearance applications (300V) or standoff feet types for maximum voltage isolation (600V).

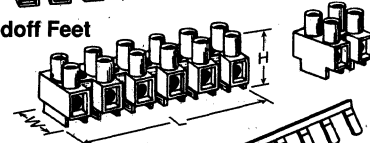
- **Housing:** White Polyamide 6.6
- **Typular Screw Clamps**
- **Captive Screws and Contacts**
- **With or Without Stainless Steel Wire Protectors**
- **Panel Mount or Free Float**
- **UL/CSA Recognized, IEC/VDE**

Ready for immediate wire hookup. Just strip the wire, insert and tighten the screw ... eliminates wire lugs!

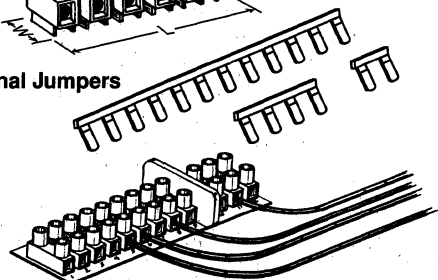
Flat Base



Standoff Feet



External Jumpers



Feed-Through Eurostrips®

Flat Base

TS1.5, pole spacing 8mm (.315 in.) Mounting hole diameter 2.8mm (.11 in.) Height 13.7mm (.54 in.) Width 18.2mm (.72 in.). 300V, 20A, 22-12 AWG.

No. of Poles	Type	Length mm (in.)
2	TS1.5/2wp	15.0 (.59)
3	TS1.5/3wp	23.0 (.91)
4	TS1.5/4wp	31.5 (1.24)
5	TS1.5/5wp	39.5 (1.56)
6	TS1.5/6wp	47.5 (1.87)
7	TS1.5/7wp	55.5 (2.19)
8	TS1.5/8wp	64.0 (2.52)
9	TS1.5/9wp	72.0 (2.84)
10	TS1.5/10wp	80.0 (3.15)
11	TS1.5/11wp	88.5 (3.48)
12	TS1.5/12wp	96.5 (3.80)

TS2.5, pole spacing 10mm (.394 in.) Mounting hole diameter 3.5mm (.14 in.) Height 15.5mm (.61 in.) Width 22mm (.89 in.). 300V, 30A, 22-10 AWG.

No. of Poles	Type	Length mm (in.)
2	TS2.5/2wp	17.0 (.67)
3	TS2.5/3wp	27.0 (1.06)
4	TS2.5/4wp	37.0 (1.46)
5	TS2.5/5wp	47.0 (1.85)
6	TS2.5/6wp	57.0 (2.24)
7	TS2.5/7wp	67.0 (2.64)
8	TS2.5/8wp	77.0 (3.03)
9	TS2.5/9wp	87.0 (3.43)
10	TS2.5/10wp	97.0 (3.82)
11	TS2.5/11wp	107.0 (4.21)
12	TS2.5/12wp	117.0 (4.61)

TS6, pole spacing 12mm (.472 in.) Mounting hole diameter 4.2mm (.17 in.) Height 17.7mm (.70 in.) Width 23.5mm (.93 in.). 300V, 40A, 20-8 AWG.

No. of Poles	Type	Length mm (in.)
2	TS6/2wp	20.0 (.79)
3	TS6/3wp	32.0 (1.26)
4	TS6/4wp	44.0 (1.73)
5	TS6/5wp	56.0 (2.21)
6	TS6/6wp	68.0 (2.68)
7	TS6/7wp	80.0 (3.15)
8	TS6/8wp	92.0 (3.62)
9	TS6/9wp	104.0 (4.09)
10	TS6/10wp	116.0 (4.51)
11	TS6/11wp	128.0 (5.04)
12	TS6/12wp	140.0 (5.51)

Standoff Feet

TSF1.5, pole spacing 8mm (.315 in.) Mounting hole diameter 2.8mm (.11 in.) Height 17.0mm (.67 in.) Width 18.2mm (.72 in.). 600V, 20A, 22-12 AWG.

No. of Poles	Type	Length mm (in.)
2	TSF1.5/2wp	15.0 (.59)
3	TSF1.5/3wp	23.0 (.91)
4	TSF1.5/4wp	31.5 (1.24)
5	TSF1.5/5wp	39.5 (1.56)
6	TSF1.5/6wp	47.5 (1.87)
7	TSF1.5/7wp	55.5 (2.19)
8	TSF1.5/8wp	64.0 (2.52)
9	TSF1.5/9wp	72.0 (2.84)
10	TSF1.5/10wp	80.0 (3.15)
11	TSF1.5/11wp	88.5 (3.48)
12	TSF1.5/12wp	96.5 (3.80)

TSF2.5, pole spacing 10mm (.394 in.) Mounting hole diameter 3.5mm (.14 in.) Height 19.4mm (.764 in.) Width 22mm (.89 in.). 300V, 30A, 22-10 AWG.

No. of Poles	Type	Length mm (in.)
2	TSF2.5/2wp	17.0 (.67)
3	TSF2.5/3wp	27.0 (1.06)
4	TSF2.5/4wp	37.0 (1.46)
5	TSF2.5/5wp	47.0 (1.85)
6	TSF2.5/6wp	57.0 (2.24)
7	TSF2.5/7wp	67.0 (2.64)
8	TSF2.5/8wp	77.0 (3.03)
9	TSF2.5/9wp	87.0 (3.43)
10	TSF2.5/10wp	97.0 (3.82)
11	TSF2.5/11wp	107.0 (4.21)
12	TSF2.5/12wp	117.0 (4.61)

TSF6, pole spacing 12mm (.472 in.) Mounting hole diameter 4.2mm (.17 in.) Height 20.9mm (.823 in.) Width 23.5mm (.93 in.). 600V, 40A, 20-8 AWG.

No. of Poles	Type	Length mm (in.)
2	TSF6/2wp	20.0 (.79)
3	TSF6/3wp	32.0 (1.26)
4	TSF6/4wp	44.0 (1.73)
5	TSF6/5wp	56.0 (2.21)
6	TSF6/6wp	68.0 (2.68)
7	TSF6/7wp	80.0 (3.15)
8	TSF6/8wp	92.0 (3.62)
9	TSF6/9wp	104.0 (4.09)
10	TSF6/10wp	116.0 (4.51)
11	TSF6/11wp	128.0 (5.04)
12	TSF6/12wp	140.0 (5.51)

External Jumpers

Bus potentials between poles on Eurostrip® Terminal Strips reducing wiring time and eliminating wire jumpers. Jumper Pole positions may be removed to provide selective jumpering. When using external jumpers, the terminal's rated cross section is usually reduced one wire size. For Jumper maximum current ratings, refer to the corresponding Eurostrip® IEC/VDE current rating. Material: Metal-Copper Alloy, Tin Plate; Insulation: Polyamide 6.6; Color: Black.

Eurostrip®	External Jumper Type*						
	2 Poles	3 Poles	4 Poles	5 Poles	6 Poles	10 Poles	12 Poles
TS1.5	EQ1.5/2	EQ1.5/2	EQ1.5/4	EQ1.5/5	EQ1.5/6	EQ1.5/10	EQ1.5/12
TS2.5	EQ2.5/2	EQ2.5/3	EQ2.5/4	EQ2.5/5	EQ2.5/6	EQ2.5/10	EQ2.5/12
TS6.0	EQ6/2	EQ6/3	EQ6/4	EQ6/5	EQ6/6	EQ6/10	EQ6/12
TSF1.5	EQ1.5/2	EQ1.5/3	EQ1.5/4	EQ1.5/5	EQ1.5/6	EQ1.5/10	EQ1.5/12
TSF2.5	EQ2.5/2	EQ2.5/3	EQ2.5/4	EQ2.5/5	EQ2.5/6	EQ2.5/10	EQ2.5/12
TSF6.0	EQ6/2	EQ6/3	EQ6/4	EQ6/5	EQ6/6	EQ6/10	EQ6/12
TSF16.0	EQ16/2	EQ16/3	EQ16/4	EQ16/5	EQ16/6	EQ16/10	EQ16/12

* Other pole positions available, consult Altech

TSF16, pole spacing 15mm (.591 in.) Mounting hole diameter 4mm (.16 in.) Height 25.8mm (1.0 in.) Width 26mm (1.02 in.). 600V, 63A, 14-6 AWG.

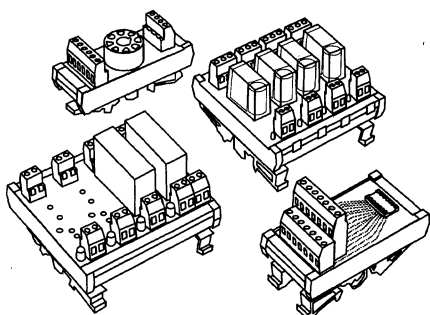
No. of Poles	Type	Length mm (in.)
2	TSF16/2wp	25.0 (.98)
3	TSF16/3wp	40.0 (1.58)
4	TSF16/4wp	55.0 (2.17)
5	TSF16/5wp	70.5 (2.78)
6	TSF16/6wp	86.0 (3.39)
7	TSF16/7wp	101.0 (3.98)
8	TSF16/8wp	116.0 (4.57)
9	TSF16/9wp	131.0 (5.16)
10	TSF16/10wp	146.0 (5.75)
11	TSF16/11wp	161.0 (6.34)
12	TSF16/12wp	176.0 (6.93)

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INTERFACE AND ELECTRONIC MODULES



Link incompatible systems, or expand the capabilities of your logic system with Altech interface and electronic modules and carriers. These DIN rail or panel mounted printed circuit board modules and carriers give design flexibility, simplify panel layouts and reduce maintenance and downtime.

Modules are supplied completely assembled, with ready to wire screw-cage clamp terminal blocks in an extruded track, and can be mounted on 35 or 32mm DIN rail or directly to panels. Order ready-made modules or mount your own printed circuit boards into Altech mounting tracks.

If your needs go beyond our comprehensive range of standard interface and electronic modules, Altech can custom design modules that meet even the most sophisticated requirements.

Interfaces

- Ribbon Cable
- Sub-D
- Diode
- Component Carriers
- Fuse
- Indicator (LED)
- Surge Suppressor

Electronic Modules

- Isolated Coil Circuit Relays
- Bussed Coil Circuit Relays (8A and 6A)
- High Current Relays (15A)
- Cradle Relay Carriers
- Octal and 11 Pin Socket Carriers
- I/O Opto Carriers
- DIP Socket Carriers
- Power Supply Modules

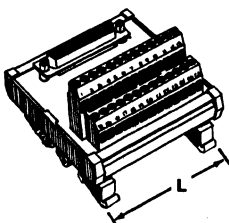
Mounting Tracks Custom Modules

Interfaces

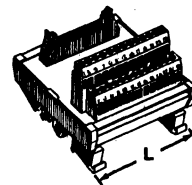
Provide a flexible, cost-effective transition between high density connectors, and high quality screw-cage clamp terminal blocks in communications, data processing, process control and other industrial applications. Equipped with component solder pads for easy insertion of circuit building components. DIN rail mount, panel mount available.

Sub D Modules

Interface between high density connectors with up to 50 poles and discrete wires. No special tools are required. Equipped with male or female connectors. All terminal blocks are individually marked to correspond to the numbers on the connector pins or sockets. 250V AC, 4A; 22-12 AWG.



No. of Poles	Female Type	Male Type	Module Length mm (in.)
9	SD-F9	SD-M9	45 (1.77)
15	SD-F15	SD-M15	48 (1.89)
25	SD-F25	SD-M25	81 (3.19)
37	SD-F37	SD-M37	114 (4.49)
50	SD-F50	SD-M50	137 (5.39)



Ribbon Cable to Discrete Wire Modules

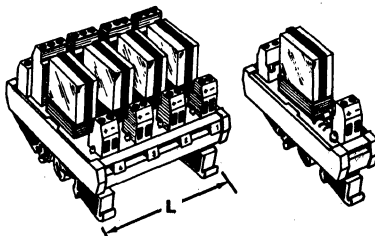
Interface between multi-wire flat cables with up to 64 conductors and discrete wires. No special tools are required. Supplied with short strain relief ejector latches (long latches are available). Terminal blocks are individually marked to correspond to the numbers on the header pins. 250V AC, 3A; 22-12 AWG.

No. of Poles	Type	Module Length mm (in.)
10	FBK10	47 (1.85)
14	FBK14	47 (1.85)
16	FBK16	69 (2.72)
20	FBK20	69 (2.72)
26	FBK26	80 (3.15)
34	FBK34	103 (4.06)
40	FBK40	114 (4.49)
50	FBK50	148 (5.83)
60	FBK60	170 (6.68)
64	FBK64	170 (6.68)

Electronic Modules

Miniature Relay Modules

Traditional relay interfaces in a high density package. Protect equipment, devices and components from feed-back and cross-system overvoltages by isolating electrical and electronic circuits. Bussed or isolated coil circuits. Supplied with relays or with sockets only. Indicator and DC protection diodes. Available up to 220VDC, 220VAC with coil circuits. Contact circuits rated 250V, 8A (SPDT) or 6A (DPDT) or 15A (SPDT isolated only); 22-12 AWG.

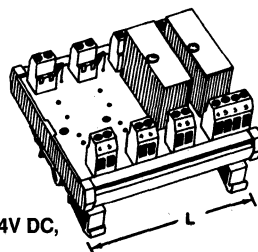


Module with Relays
Isolated, Coil Circuits, 24V DC

Channels	Type	Module Length mm (in.)
1	RM1G1	21 (.83)
2	RM1G2	40 (1.57)
4	RM1G4	79 (3.11)
8	RM1G8	157 (6.18)
16	RM1G16	311 (12.24)

I/O Opto Carriers

Mount standard optocoupler input/output (I/O) modules in a high density arrangement for logic output to field devices, or for input of field data to the controller. Altech I/O carriers can accept up to 16 industry standard .6 in. (15.24mm) I/O modules in any combination: Input, Output, AC or DC from most manufacturers. 1, 2 and 4 isolated position versions with 5, 15 and 24VDC logic; and 4, 8 and 16 bussed (logic power) versions with 5 to 24VDC.



Isolated, 24V DC,
Red LED

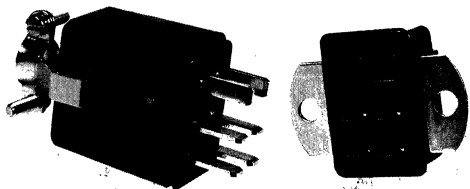
No. of Positions	Type	Module Length mm (in.)
1	I/OI-1G	34.5 (1.36)
2	I/OI-2G	57.8 (2.28)
4	I/OI-4G	114.0 (4.49)
Bussed, 5 to 24 VDC, Green LED		
4	I/OB-4	114 (4.49)
8	I/OB-8	183 (7.20)
16	I/OB-16	363 (14.3)

We have only shown a small sampling of our module line here. Please request our full line catalog.
SEE OUR ENCLOSURES IN SECTION C-1400 / SEE OUR CIRCUIT BREAKERS IN SECTION B-4300

BEAU

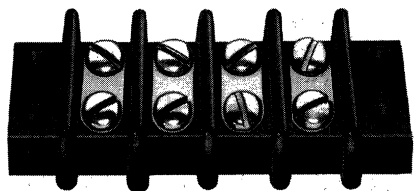
INTERCONNECT

Laconia, NH 03247-0010
 Phone (888) 232-8468
 Fax (603) 524-1627
 E mail info@beauint.com



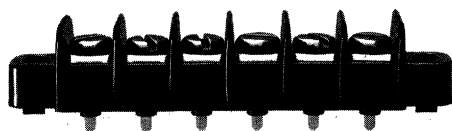
Wire to Wire Plug & Socket Connectors

- 10 or 15 Amp UL/CSA continuous ratings
- 250 Volt ratings
- Solder, quick connect & PCB terminations
- Wide variety of backshell and mounting brackets



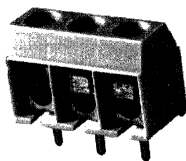
Wire to Wire Double Row Terminal Blocks

- 15, 20, 30 or 50 Amp UL/CSA ratings
- 150 and 300 Volt ratings
- .375" .438" .563" & .688 terminal spacings
- Broad range of quick connect and jumper hardware



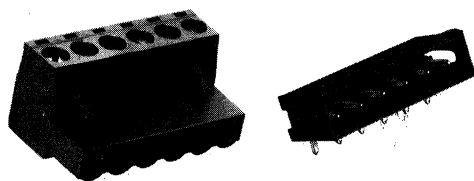
Wire to PCB Single Row Terminal Blocks

- 10, 20, 25, 30 or 45 Amp UL/CSA ratings
- 150, 250, 300 and 600 Volt ratings
- .250" .325" .375" .438" & .500" terminal spacings
- Wide variety of terminal and screw options



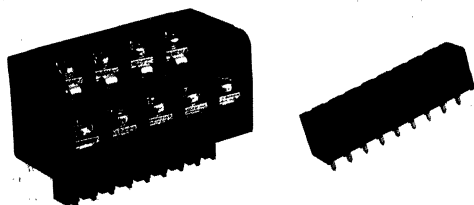
Wire to PCB Eurostyle® Terminal Blocks

- 6, 10, 15, & 20 Amp UL/CSA/VDE ratings
- 150, 250 and 300 Volt ratings
- 3.5mm 5.0mm 5.08mm 10.0mm & 10.16 terminal spacings



Wire to PCB Pluggable Eurostyle® Terminal Blocks

- 10 & 15 Amp UL/CSA/VDE ratings
- 125, 250 and 300 Volt ratings
- 3.81mm 5.0mm & 5.08mm terminal spacings



Wire to PCB Pluggable Barrier Terminal Blocks

- 12 & 15 Amp UL/CSA/VDE ratings
- 125, 250 and 300 Volt ratings
- 3.81mm & 5.08mm terminal spacings

for product selection assistance contact us toll free by phone,

(888)BEAUINT

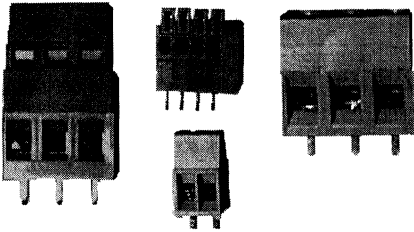
or on the World Wide Web,

WWW.BEAUINT.COM

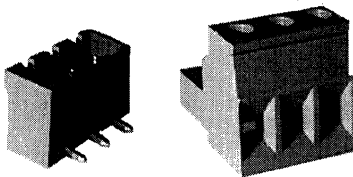


Terminal Blocks

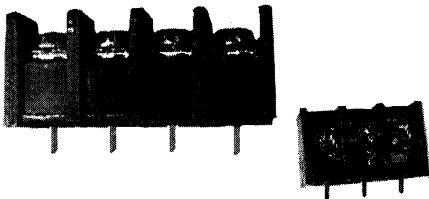
*One Source for All of Your
Barrier and European Style
Terminal Block Needs.*



- ◆ Complete line of **European styled terminal blocks**.
- ◆ Pin spacings of .100", 3.5mm, 5mm, .200", 7.5mm, and .300".
- ◆ Multiple color choices: green, black, and blue. Custom available.
- ◆ **UL, CSA, VDE, TUV, CE approvals** on most blocks.
- ◆ 2 tier blocks available in 3 different heights. **Screwless** blocks.
- ◆ Modular and single mold versions available.
- ◆ High quality cage clamp or economical wire guard versions.



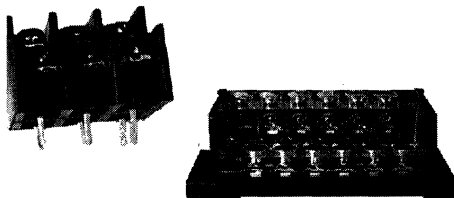
- ◆ Male and female **pluggable series**. All **brass** components.
- ◆ Pin spacings of 5mm, .200", 7.5mm, .300", 10mm, .400".
- ◆ 1mm x 1mm square pin. Cage clamp and captive screws.
- ◆ Vertical and horizontal, open or closed ended headers.
- ◆ UL, CSA, VDE, CE approvals. **2 to 25 positions**.
- ◆ *4 series to choose from* (CI, CO, CS, and 332 Series)
- ◆ Pin strips and plugs also available. **Vertical plugs** available!



- ◆ Quality **barrier style terminal blocks**. Multiple series to choose from for each pin spacing.
- ◆ 6.35mm, 7.62mm, 8.25mm, 9.5mm, 10mm, 11mm, 14mm spacings available. Several pin styles to choose from per spacing.
- ◆ PC mount, wire wrap, solder pins, quick connect, non-feed thru.
- ◆ UL recognized. CSA on many. Up to 30 amp ratings.
- ◆ **Tri-barrier** also available in same spacings and pin styles.



- ◆ **NEW** series of barrier blocks with clear protective snap on covers. Touch safe.
- ◆ New **MODULAR barrier style**. 2 and 3 position blocks snap together to form longer lengths. Available in blue or black. Snap on cover and individual mounting ends also available. T33 Series.
- ◆ UL recognized. 8.25mm spacing. 9.5 and 11 mm coming soon.
- ◆ Tri barrier versions also available with covers.



- ◆ Other **hard to find styles** available-
- ◆ Dual tier barrier with PC or solder pins, with or without cover.
- ◆ Dual row phenolic with sems. Depluggable barrier style.
- ◆ **Euro Terminal Strips**- 8mm, 10mm, 12mm spacing.
- ◆ Quick connect and top side terminal block hardware available for bulk purchase.
- ◆ **GOLD** plating and captive screws available on many models.

❖ Call **(800)595-8881** for the **NEW BlockMaster Terminal Block Catalog**.
Features over 45 new products including .200" (5.08mm) European style blocks, new CI pluggable series, barrier style blocks with covers and more!

BlockMaster Electronics 822 Eagle Dr., Bensenville, IL 60106 Ph(800)595-8881 Fax(630)595-4545



5809 DEPARTURE DRIVE, RALEIGH, NC 27616
 PHONE: 919-878-5200 FAX: 919-878-5222 TOLL FREE: 1-800-526-2828
 E-MAIL: btcelect@mindspring.com WEB: www.btcelect.com

electronic components

Relay Sockets

COMMON FEATURES

MATERIALS:

- Socket Body:** Thermoset plastic per MIL-M-14, SDG-F or polyetherimide per MIL-P-46184
- Grommet:** Silicone rubber per ZZ-R-765
- Hardware:** Stainless steel and steel-cadmium chromate finish
- Contact Retainers:** Beryllium copper
- Socket Contacts:** Copper alloy, hard gold plated per MIL-G-45204

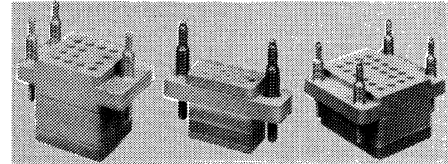
OPERATING RANGE:

- Temperature:** -70°C to 125°C
- Insulation Resistance:** 1000 megohms min.

Dielectric Withstanding Voltage:

- 500 VRMS at 80,000 ft. altitude and ...
- ... MIL-S-12883/40 & 41 1500 VRMS at sea level
- ... MIL-S-12883/44 & 45 1000 VRMS at sea level
- ... MIL-S-12883/46 & 47 & 48 1250 VRMS at sea level

- Vibration:** MIL-STD-202, Method 204, Test Condition G
- Shock:** MIL-STD-202, Method 213, Condition C



FEATURES:

- Top or Bottom Panel Mount
- Low Profile
- Low Profile and extended

MIL-S-12883/40 RELAY SOCKETS

- M6106/51, M83726, MS27400, MS27709, MS27745 Relays
- 4 Pole, 10 Amp

ITEM #	A	B	C MAX	D	E
1 thru 12	0.125	3.2	0.062	1.6	0.027
13 thru 24	0.187	4.8	0.093	2.4	0.031

MIL-S-12883/41 RELAY SOCKETS

- MS27401 Relays
- 2 Pole, 10 Amp

ITEM #	A	B	C MAX	D	E
1 thru 8	1.025	.140-.135	1.130	.601	1.136
9 thru 16	1.075	.093	.890	.573	1.123

MIL-S-12883/41 RELAY SOCKETS

- M6106/50, MS27744 Relays
- 2 Pole, 10 Amp

ITEM #	A	B	C MAX	D	E
1 & 2	1.025	.140-.135	1.130	.601	1.136
3 & 4	1.075	.093	.890	.573	1.123

MIL-S-12883/44 RELAY SOCKETS

- M6106/28 and /39 Relays
- 4 Pole, 5 Amp

MIL-S-12883/45 RELAY SOCKETS

- M6106/27 Relays
- 2 Pole, 5 Amp

MIL-S-12883/45 RELAY SOCKETS

- M6106/38 Relays
- 2 Pole, 5 Amp

MIL-S-12883/46 RELAY SOCKETS

- M6106/29 and /40 Relays
- 3 Pole, 10 Amp

MIL-S-12883/47 RELAY SOCKETS

- M6106/8 Relays
- 6 Pole, 10 Amp

ITEM #	A	B	C MAX	D	E
1 thru 4	1.075	.093	.890	.573	1.123
5 thru 8	1.025	.140-.135	1.250	.601	1.136

MIL-S-12883/48 RELAY SOCKETS

- MS27743 Relays
- 3 Pole, 25 Amp

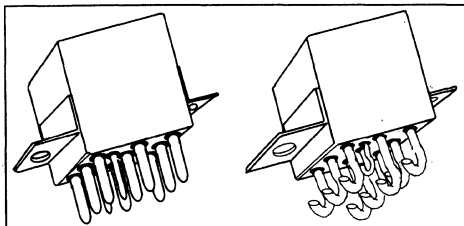
ITEM #	A	B	C MAX	D	E
1 thru 4	1.000	.093	.890	.290	1.123
5 thru 8	1.025	.140-.135	1.250	.318	1.136



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electronic components

MILITARY/AEROSPACE RELAYS
25 AMPERES, 3PDT
Series FCA-325



- HERMETICALLY SEALED
- ALL WELDED CONSTRUCTION
- BALANCED FORCE
- PERMANENT MAGNET DRIVE
- CONTACTS: SILVER CADMIUM OXIDE WITH GOLD PLATING
- COILS FOR DC, 50 TO 400Hz AND 400Hz AC
- WEIGHT 2.89 OUNCES MAX. (82 GRAMS)

COIL DATA

COIL CODE	NOMINAL VOLTAGES	FREQ. HZ	DC RES. AC AMPS (B)	OVER TEMPERATURE RANGE		
				PICKUP OR BELOW VOLTS	DROPOUT OR ABOVE VOLTS	MUST HOLD VOLTAGE (C)
1	6	DC	18	4.5	0.3	2.5
2	12	DC	70	9.0	0.75	4.5
3	28	DC	290	18.0	1.5	7.0
4(A)	28	DC	290	18.0	1.5	7.0
5	48	DC	865	32.0	2.5	14.0
6	28	400Hz	225 mA	22.0	1.25	10.0
7	28	50/400Hz	120 mA	22.0	1.25	10.0
8	115	400 Hz	40 mA	90.0	5.0	40.0
9	115	50/400Hz	30 mA	95.0	5.0	40.0

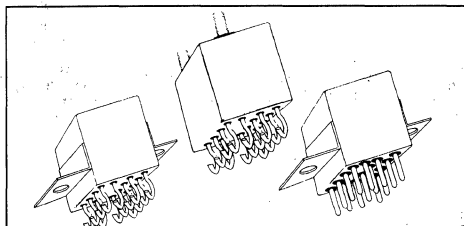
- A. Code 4 coils have back EMF suppression to 42 volts max.
- B. DC coil resistance $\pm 10\%$ at 25°C; AC coil max. current at nominal voltage.
- C. Relay will stay in picked-up state down to must hold voltages shown.
- D. Max. over-voltage: 6 & 12 VDC coils 120% of nominal; all others 110% of nominal.
- E. Coils available for other voltages and for AC 50/60Hz.

GENERAL SPECIFICATIONS

Temperature Rating:	-70°C to 125°C
Altitude:	300,000 Feet
Shock:*	Z, Y, & V Enclosures 200 g for 6 mS W, X & M Enclosures 100 g for 6 mS
Vibration, Sinusoidal:*	Z, Y, & V Enclosures 30 g 33-3000Hz W, X & M Enclosures 20 g 33-3000Hz
Vibration, Random:*	Z, Y, & V Enclosures 0.4 g ² /Hz 50-2000Hz W, X & M Enclosures 0.2 g ² /Hz 50-2000Hz
Dielectric Strength at Sea Level:	All circuits to ground and circuit to circuit. 1250 V rms Coil to ground 1000 V rms
Dielectric Strength at 80,000 feet:	350 V rms
Insulation Resistance:	Initial (500 VDC) 100 M Minimum After life or environmental tests 50 M Minimum
Operate Time at Nominal Voltage:	DC Relays 15 ms or less AC Relays 20 ms or less
Release Time at Nominal Voltage:	DC Relays 15 ms or less AC Relays 50 ms or less

* Max. contact opening under vibration or shock 10 microseconds

MILITARY/AEROSPACE RELAYS
10 AMPERES, 4PDT
Series FCA-410



- HERMETICALLY SEALED
- ALL WELDED CONSTRUCTION
- BALANCED FORCE
- PERMANENT MAGNET DRIVE
- 4PDT SWITCHING IN ONE INCH CUBE
- CONTACTS: SILVER CADMIUM OXIDE WITH GOLD PLATING
- COILS FOR DC AND AC, 50-400Hz OR 400Hz
- WEIGHT 2.72 OUNCES MAX. (77 GRAMS MAX.)

OPL APPROVED
MEETS MIL-R-83536

COIL DATA

COIL CODE	NOMINAL VOLTAGES	FREQ. HZ	DC RES. AC AMPS (B)	OVER TEMPERATURE RANGE		
				PICKUP OR BELOW VOLTS	DROPOUT OR ABOVE VOLTS	MUST HOLD VOLTAGE (C)
1	6	DC	18	4.5	0.3	2.5
2	12	DC	70	9.0	0.75	4.5
3	28	DC	290	18.0	1.5	7.0
4(A)	28	DC	290	18.0	1.5	7.0
5	48	DC	865	32.0	2.5	14.0
6	28	400Hz	225 mA	22.0	1.25	10.0
7	28	50/400Hz	120 mA	22.0	1.25	10.0
8	115	400 Hz	40 mA	90.0	5.0	40.0
9	115	50/400Hz	40 mA	95.0	5.0	40.0

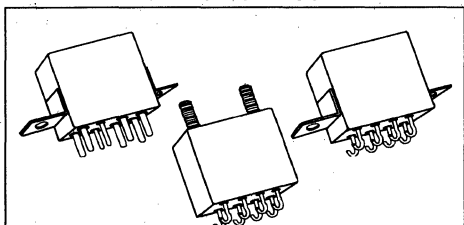
- A. Code 4 coils have back EMF suppression to 42 volts max.
- B. DC coil resistance $\pm 10\%$ at 25°C; AC coil max. current at nominal voltage.
- C. Relay will stay in picked-up state down to must hold voltages shown.
- D. Max. over-voltage: 6 & 12 VDC coils 120% of nominal; all others 110% of nominal.
- E. Coils available for other voltages and for AC 50/60Hz.

GENERAL SPECIFICATIONS

Temperature Rating:	-70°C to 125°C
Altitude:	300,000 Feet
Shock:*	Z, & Y Enclosures 200 g for 6 mS W, X & M Enclosures 100 g for 6 mS
Vibration, Sinusoidal:*	Z, & Y Enclosures 0.12 DA 10 to 70Hz 30 g 70 to 3000 Hz 0.12 DA 10 to 57 Hz 20 g 57 to 3000 Hz
Vibration, Random:*	Z, & Y Enclosures 0.4 g ² /Hz 50-2000Hz W, X & M Enclosures 0.2 g ² /Hz 50-2000Hz
Dielectric Strength at Sea Level:	All circuits to ground and circuit to circuit. 1250 V rms Coil to ground 1000 V rms
Dielectric Strength at 80,000 feet:	350 V rms
Insulation Resistance:	Initial (500 VDC) 100 M Minimum After life or environmental tests 50 M Minimum
Operate Time at Nominal Voltage:	DC Relays 15 ms or less AC Relays 20 ms or less
Release Time at Nominal Voltage:	DC Relays 15 ms or less AC Relays 50 ms or less

* Max. contact opening under vibration or shock 10 microseconds

MILITARY/AEROSPACE RELAYS
5 AMPERES, DPDT
Series FCB-205



- HERMETICALLY SEALED
- ALL WELDED CONSTRUCTION
- BALANCED FORCE
- PERMANENT MAGNET DRIVE
- CONTACTS RATED LOW LEVEL TO 5 AMPS 28 VDC AND 115/200 VAC 400 Hz, 3 PHASE.
- WEIGHT .54 OUNCES MAX. (15.4 GRAMS)

COIL DATA

COIL CODE	NOMINAL VOLTAGES	FREQ. HZ	DC RES. (B)	OVER TEMPERATURE RANGE		
				PICKUP OR BELOW VOLTS	DROPOUT OR ABOVE VOLTS	MUST HOLD VOLTAGE (C)
1	6	DC	20	4.5	0.3	2.5
2	12	DC	95	9.0	0.75	4.5
3	28	DC	500	18.0	1.5	7.0
4(A)	28	DC	500	18.0	1.5	7.0
5	48	DC	1600	36.0	2.5	14.0

- A. Code 4 coils have back EMF suppression to 42 volts max.
- B. DC coil resistance $\pm 10\%$ at 25°C
- C. Relay will stay in picked-up state down to must hold voltages shown.
- D. Max. over-voltage: 6 & 12 VDC coils 120% of nominal; all others 110% of nominal.

GENERAL SPECIFICATIONS

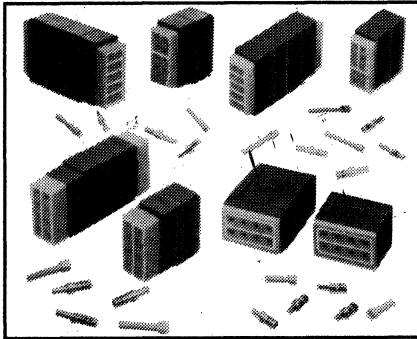
Temperature Rating:	-70°C to 125°C
Altitude:	300,000 Feet
Shock:*	Z, Y, & X Enclosures 200 g for 6 mS W & M Enclosures (stud mtg.) 100 g for 6 mS T Enclosure (socket mounted in track) 50 g for 11 mS
Vibration, Sinusoidal:*	Z, Y, & X Enclosures 0.12 DA 10 to 70Hz 30 g 70 to 3000 Hz 0.12 DA 10 to 57 Hz 20 g 57 to 3000 Hz 0.06 DA 10 to 57 Hz 10 g 57 to 500 Hz 20 g 500 to 3000 Hz
Vibration, Random:*	Z, Y, & X Enclosures 0.4 g ² /Hz 50-2000Hz T, W & M Enclosures 0.2 g ² /Hz 50-2000Hz
Dielectric Strength at Sea Level:	All circuits to ground and circuit to circuit. 1000 V rms Coil to ground 1000 V rms
Dielectric Strength at 80,000 feet:	250 V rms
Insulation Resistance:	Initial (500 VDC) 100 M Minimum After life or environmental tests 50 M Minimum
Operate Time at Nominal Voltage:	5 ms or less
Release Time at Nominal Voltage:	4 ms or less

* Max. contact opening under vibration or shock 10 microseconds



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electronic components



Terminal Junction Modules

COMMON FEATURES

- Replaces Classes A, B and C
- High Temperature
- High Fluid Resistance
- Feedback and Feedthru

MATERIALS:

Module Body: High temperature rigid plastic
Grommet: Silicone blend elastomer
Contact Retainers: Beryllium copper
Internal Pin Contacts & Socket Contacts: Copper alloy, gold plated in accordance with MIL-G-45204

OPERATING RANGE:

Temperature: -65°C to 200°C
Insulation Resistance: 5000 megohms @ 25°C
Dielectric Withstanding Voltage: 1500 VRMS at sea level and 200 VRMS at 100,000 ft. per MIL-T-81714, Paragraph 3.5.5 and 3.5.8
Vibration and Shock:

MIL-T-81714 SERIES I / Class D Size 22

• 5 Amps • Accepts 22, 24, 26 AWG

Size 22 Feedback Size 22 Feedthru

MIL-T-81714 SERIES I / Class D Size 16

• 13 Amps • Accepts 16, 18, 20 AWG

Size 16 Feedback Size 16 Feedthru

MIL-T-81714 SERIES I / Class D Size 20

• 7.5 Amps • Accepts 20, 22, 24 AWG

Size 20 Feedback Size 20 Feedthru

MIL-T-81714 SERIES I / Class D Size 12

• 23 Amps • Accepts 12, 14 AWG

Size 12 Feedback Size 12 Feedthru

FEEDBACK		FEEDTHRU		CONTACT		
Military P/N	PCD P/N	Military P/N	PCD P/N	Qty*	Size†	P/N M39029
MIL-T-81714 SERIES I / Class D Size 22						
M81714/1-DA1	TJM122701	M81714/6-DA1	TJM222701	10	16/22	/1-100
M81714/1-DB1	TJM122702	M81714/6-DB1	TJM222702	10	16/22	/1-100
M81714/1-DB2	TJM122703	M81714/6-DB2	TJM222703	10	16/22	/1-100
M81714/1-DB3	TJM122704	M81714/6-DB3	TJM222704	10	16/22	/1-100
M81714/1-DC1	TJM122705	M81714/6-DC1	TJM222705	10	16/22	/1-100
M81714/1-DC2	TJM122706	M81714/6-DC2	TJM222706	10	16/22	/1-100
M81714/1-DC3	TJM122710	M81714/6-DC3	TJM222710	10	16/22	/1-100
M81714/1-DC4	TJM122712	M81714/6-DC4	TJM222712	10	16/22	/1-100
M81714/1-DD1	TJM122707	M81714/6-DD1	TJM222707	10	16/22	/1-100
M81714/1-DD2	TJM122711	M81714/6-DD2	TJM222711	10	16/22	/1-100
M81714/1-DE1	TJM122708	M81714/6-DE1	TJM222708	10	16/22	/1-100
		M81714/6-DJ1	TJM222709	10	16/22	/1-100
MIL-T-81714 SERIES I / Class D Size 20						
M81714/2-DA1	TJM120701	M81714/7-DA1	TJM220701	10	16/20	/1-100
M81714/2-DB1	TJM120702	M81714/7-DB1	TJM220702	10	16/20	/1-100
M81714/2-DB2	TJM120703	M81714/7-DB2	TJM220703	10	16/20	/1-100
M81714/2-DB3	TJM120704	M81714/7-DB3	TJM220704	10	16/20	/1-100
M81714/2-DC1	TJM120705	M81714/7-DC1	TJM220705	10	16/20	/1-100
M81714/2-DC2	TJM120706	M81714/7-DC2	TJM220706	10	16/20	/1-100
M81714/2-DC3	TJM120710	M81714/7-DC3	TJM220710	10	16/20	/1-100
M81714/2-DC4	TJM120712	M81714/7-DC4	TJM220712	10	16/20	/1-100
M81714/2-DD1	TJM120707	M81714/7-DD1	TJM220707	10	16/20	/1-100
M81714/2-DD2	TJM120711	M81714/7-DD2	TJM220711	10	16/20	/1-100
M81714/2-DE1	TJM120708	M81714/7-DE1	TJM220708	10	16/20	/1-100
		M81714/7-DJ1	TJM220709	10	16/20	/1-100

FEEDBACK		FEEDTHRU		CONTACT		
Military P/N	PCD P/N	Military P/N	PCD P/N	Qty*	Size†	P/N M39029
MIL-T-81714 SERIES I / Class D Size 16						
M81714/3-DA1	TJM116701	M81714/8-DA1	TJM216701	8	14/16	/1-102
M81714/3-DB1	TJM116702	M81714/8-DB1	TJM216702	8	14/16	/1-102
M81714/3-DB2	TJM116703	M81714/8-DB2	TJM216703	8	14/16	/1-102
M81714/3-DC1	TJM116705	M81714/8-DC1	TJM216705	8	14/16	/1-102
M81714/3-DC2	TJM116706	M81714/8-DC2	TJM216706	8	14/16	/1-102
M8171431-DD1	TJM116707	M81714/8-DD1	TJM216707	8	14/16	/1-102
		M81714/8-DG1	TJM216708	8	14/16	/1-102
		M81714/8-DH1	TJM216709	8	14/16	/1-102
MIL-T-81714 SERIES I / Class D Size 12						
M81714/4-DA1	TJM112701	M81714/9-DA1	TJM212701	8	12/12	/1-103
M81714/4-DB1	TJM112702	M81714/9-DB1	TJM212702	8	12/12	/1-103
M81714/4-DB2	TJM112703	M81714/9-DB2	TJM212703	8	12/12	/1-103
M81714/4-DC1	TJM112705	M81714/9-DC1	TJM212705	8	12/12	/1-103
M81714/4-DC2	TJM112706	M81714/9-DC2	TJM212706	8	12/12	/1-103
M81714/4-DD1	TJM112707	M81714/9-DD1	TJM212707	8	12/12	/1-103
		M81714/9-DH1	TJM212709	8	12/12	/1-103

* Contact quantity for feedthru is double feedback. Quantity figure denotes number of contacts accommodated by module. Modules are supplied with one additional spare contact and sealing plugs.
 † Mating Pin/Wire Barrel

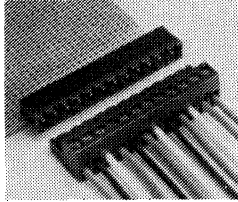


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electronic components

ELFP PLUGGABLE TERMINAL BLOCK

Right Angle Plug — .200"/5.0 mm



GENERAL INFORMATION

- Moving vise clamp wire termination
- Mates with PCD & other pin headers
- .200" and 5.0 mm centers
- 2 to 24 positions
- Design allows for wire termination while plugged or unplugged
- Trouble-free unplugging means no more contact damage

MATERIALS

Housing: Black, polyphenylene oxide
 Contact: Phosphor bronze
 Plating: Electrolytic tin
 Hardware: #4-40 steel screw, plated

INSTALLATION

Wire Strip Length: .250"
 Tightening Torque: 7 in-lbs.

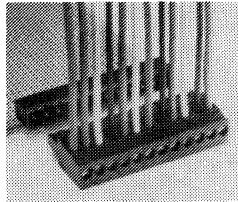
SPECIFICATIONS

Maximum Operating Temperature: 105° C
 Dielectric Withstanding: 3000 V
 Current Rating: 15 A/300 V
 Operating Voltage: 300 V
 Insulation Resistance: 10¹¹ ohms
 Wire Range: AWG #12 stranded, #14-26 stranded and solid
 Wire Pullout Force: Meets UL 486

POS	.200" CENTERS (A)		5.0 mm CENTERS (A)	
	CATALOG #	L INCHES	CATALOG #	L mm
2	ELFP02210	.40	ELFP02110	10.0
3	ELFP03210	.60	ELFP03110	15.0
4	ELFP04210	.80	ELFP04110	20.0
5	ELFP05210	1.00	ELFP05110	25.0
6	ELFP06210	1.20	ELFP06110	30.0
7	ELFP07210	1.40	ELFP07110	35.0
8	ELFP08210	1.60	ELFP08110	40.0
9	ELFP09210	1.80	ELFP09110	45.0
10	ELFP10210	2.00	ELFP10110	50.0
11	ELFP11210	2.20	ELFP11110	55.0
12	ELFP12210	2.40	ELFP12110	60.0
13	ELFP13210	2.60	ELFP13110	65.0
14	ELFP14210	2.80	ELFP14110	70.0
15	ELFP15210	3.00	ELFP15110	75.0
16	ELFP16210	3.20	ELFP16110	80.0
17	ELFP17210	3.40	ELFP17110	85.0
18	ELFP18210	3.60	ELFP18110	90.0
19	ELFP19210	3.80	ELFP19110	95.0
20	ELFP20210	4.00	ELFP20110	100.0
21	ELFP21210	4.20	ELFP21110	105.0
22	ELFP22210	4.40	ELFP22110	110.0
23	ELFP23210	4.60	ELFP23110	115.0
24	ELFP24210	4.80	ELFP24110	120.0

ELFT PLUGGABLE TERMINAL BLOCK

Straight Plug — Top/Bottom Entry — .200"/5.0 mm



GENERAL INFORMATION

- Moving vise clamp wire termination
- Mates with PCD & other pin headers
- .200" and 5.0 mm centers
- 2 to 24 positions
- Straight plug design allows for wire entry from top or bottom
- Design allows for wire termination while plugged or unplugged

MATERIALS

Housing: Black, polyphenylene oxide
 Contact: Phosphor bronze
 Plating: Electrolytic tin
 Hardware: #4-40 steel screw, plated

INSTALLATION

Wire Strip Length: .310"
 Tightening Torque: 7 in-lbs.

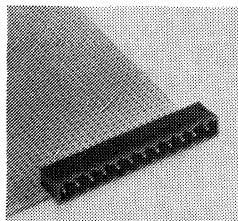
SPECIFICATIONS

Maximum Operating Temperature: 105° C
 Dielectric Withstanding: 3000 V
 Current Rating: 15 A/300 V
 Operating Voltage: 300 V
 Insulation Resistance: 10¹¹ ohms
 Wire Range: AWG #12 stranded, #14-26 stranded and solid
 Wire Pullout Force: Meets UL 486

POS	.200" CENTERS (A)		5.0 mm CENTERS (A)		.200" CENTERS (A)		5.0 mm CENTERS (A)	
	CATALOG #	L INCHES	CATALOG #	L mm	CATALOG #	L INCHES	CATALOG #	L mm
2	ELFT02250	.40	ELFT02150	10.0	ELFT02260	.40	ELFT02160	10.0
3	ELFT03250	.60	ELFT03150	15.0	ELFT03260	.60	ELFT03160	15.0
4	ELFT04250	.80	ELFT04150	20.0	ELFT04260	.80	ELFT04160	20.0
5	ELFT05250	1.00	ELFT05150	25.0	ELFT05260	1.00	ELFT05160	25.0
6	ELFT06250	1.20	ELFT06150	30.0	ELFT06260	1.20	ELFT06160	30.0
7	ELFT07250	1.40	ELFT07150	35.0	ELFT07260	1.40	ELFT07160	35.0
8	ELFT08250	1.60	ELFT08150	40.0	ELFT08260	1.60	ELFT08160	40.0
9	ELFT09250	1.80	ELFT09150	45.0	ELFT09260	1.80	ELFT09160	45.0
10	ELFT10250	2.00	ELFT10150	50.0	ELFT10260	2.00	ELFT10160	50.0
11	ELFT11250	2.20	ELFT11150	55.0	ELFT11260	2.20	ELFT11160	55.0
12	ELFT12250	2.40	ELFT12150	60.0	ELFT12260	2.40	ELFT12160	60.0
13	ELFT13250	2.60	ELFT13150	65.0	ELFT13260	2.60	ELFT13160	65.0
14	ELFT14250	2.80	ELFT14150	70.0	ELFT14260	2.80	ELFT14160	70.0
15	ELFT15250	3.00	ELFT15150	75.0	ELFT15260	3.00	ELFT15160	75.0
16	ELFT16250	3.20	ELFT16150	80.0	ELFT16260	3.20	ELFT16160	80.0
17	ELFT17250	3.40	ELFT17150	85.0	ELFT17260	3.40	ELFT17160	85.0
18	ELFT18250	3.60	ELFT18150	90.0	ELFT18260	3.60	ELFT18160	90.0
19	ELFT19250	3.80	ELFT19150	95.0	ELFT19260	3.80	ELFT19160	95.0
20	ELFT20250	4.00	ELFT20150	100.0	ELFT20260	4.00	ELFT20160	100.0
21	ELFT21250	4.20	ELFT21150	105.0	ELFT21260	4.20	ELFT21160	105.0
22	ELFT22250	4.40	ELFT22150	110.0	ELFT22260	4.40	ELFT22160	110.0
23	ELFT23250	4.60	ELFT23150	115.0	ELFT23260	4.60	ELFT23160	115.0
24	ELFT24250	4.80	ELFT24150	120.0	ELFT24260	4.80	ELFT24160	120.0

ELFH HORIZONTAL HEADER

Closed / Open — .200"/5.0 mm



GENERAL INFORMATION

- High temperature polyester
- Screwdriver slot eases unplugging
- Mates with PCD and other plugs
- End-to-end stackable • 2 to 24 positions
- Trouble-free unplugging means no more contact damage
- Provides much higher operating temperature capability than similar connectors
- Design protects pins, prevents cocking

MATERIALS

Housing: Black polyester
 Contact: Copper alloy
 Plating: Electrolytic tin

INSTALLATION:

Hole Diameter: .055"

SPECIFICATIONS

Maximum Operating Temperature: 105° C
 Dielectric Withstanding: 3000 V
 Current Rating: 15 A/300 V
 Operating Voltage: 300 V
 Insulation Resistance: 10¹¹ ohms

POS	.200" CENTERS (A)		5.0 mm CENTERS (A)		.200" CENTERS (A)		5.0 mm CENTERS (A)	
	CATALOG #	L INCHES	CATALOG #	L mm	CATALOG #	L INCHES	CATALOG #	L mm
2	ELFH02210	.47	ELFH02110	11.75	ELFH02220	.40	ELFH02120	10.0
3	ELFH03210	.67	ELFH03110	16.75	ELFH03220	.60	ELFH03120	15.0
4	ELFH04210	.87	ELFH04110	21.75	ELFH04220	.80	ELFH04120	20.0
5	ELFH05210	1.07	ELFH05110	26.75	ELFH05220	1.00	ELFH05120	25.0
6	ELFH06210	1.27	ELFH06110	31.75	ELFH06220	1.20	ELFH06120	30.0
7	ELFH07210	1.47	ELFH07110	36.75	ELFH07220	1.40	ELFH07120	35.0
8	ELFH08210	1.67	ELFH08110	41.75	ELFH08220	1.60	ELFH08120	40.0
9	ELFH09210	1.87	ELFH09110	46.75	ELFH09220	1.80	ELFH09120	45.0
10	ELFH10210	2.07	ELFH10110	51.75	ELFH10220	2.00	ELFH10120	50.0
11	ELFH11210	2.27	ELFH11110	56.75	ELFH11220	2.20	ELFH11120	55.0
12	ELFH12210	2.47	ELFH12110	61.75	ELFH12220	2.40	ELFH12120	60.0
13	ELFH13210	2.67	ELFH13110	66.75	ELFH13220	2.60	ELFH13120	65.0
14	ELFH14210	2.87	ELFH14110	71.75	ELFH14220	2.80	ELFH14120	70.0
15	ELFH15210	3.07	ELFH15110	76.75	ELFH15220	3.00	ELFH15120	75.0
16	ELFH16210	3.27	ELFH16110	81.75	ELFH16220	3.20	ELFH16120	80.0
17	ELFH17210	3.47	ELFH17110	86.75	ELFH17220	3.40	ELFH17120	85.0
18	ELFH18210	3.67	ELFH18110	91.75	ELFH18220	3.60	ELFH18120	90.0
19	ELFH19210	3.87	ELFH19110	96.75	ELFH19220	3.80	ELFH19120	95.0
20	ELFH20210	4.07	ELFH20110	101.75	ELFH20220	4.00	ELFH20120	100.0
21	ELFH21210	4.27	ELFH21110	106.75	ELFH21220	4.20	ELFH21120	105.0
22	ELFH22210	4.47	ELFH22110	111.75	ELFH22220	4.40	ELFH22120	110.0
23	ELFH23210	4.67	ELFH23110	116.75	ELFH23220	4.60	ELFH23120	115.0
24	ELFH24210	4.87	ELFH24110	121.75	ELFH24220	4.80	ELFH24120	120.0



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Multi-Tier Terminal Blocks

The new multi-tier terminal blocks give you more I/O capability where you need it most. Today's industrial interface applications demand tighter wire density and a broader current range. Multi-tier terminal blocks deliver with the EL1M, EL2M, and EL3M Series and are available in one, two and three tiers on .200" spacing, rated for up to 28 amps. Transition boards, I/O boards, embedded devices, operator interfaces—these are the systems that demand what the multi-tier wire-to-board connectors deliver.

The EL1M, EL2M, and EM3M terminal block families consist of precision-molded 2- and 3-position (per level) screw termination

modules with interlocking side ribs. Wire entry is horizontal to the plane of the board. Modules can be readily and firmly joined together and assembled to length without loss of pin spacing. The high reliability floating vise clamp screw termination assures direct high-pressure interconnection between contact and wire. Two-piece construction of the floating clamp prevents screw torque from being transmitted to the pin and damaging the solder joint. High temperature polyester compound provides for dimensional stability during solder operation and is UL flame rated.

Materials:

- Housing: Black polyester [UL94V-0]
- Contact: Copper alloy
- Plating: Electrolytic tin
- Hardware: M3 Copper alloy, Nickel plated

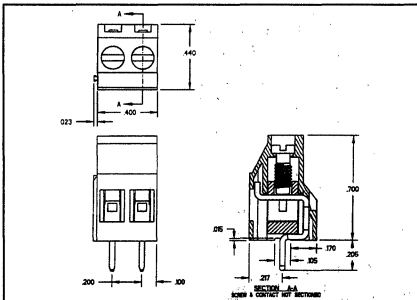
Installation:

- Wire Strip Length: .310"
- Tightening Torque: 7 in-lbs
- PCB Hole Diameter: .051"

Approvals: UL and CSA approvals pending

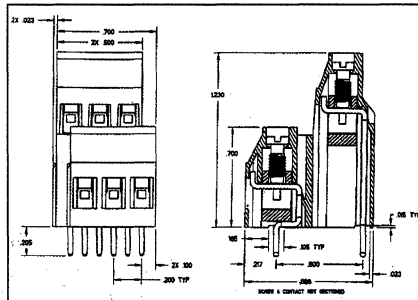
Specifications:

- Maximum Operating Temperature: 105 °C
- Dielectric Withstanding: 3000V
- Current Rating: 28A
- Operating Voltage: 300V
- Insulation Resistance: 10⁹ ohms
- Wire Range: #12-30AWG
- Wire Pullout Force: Per UL486E



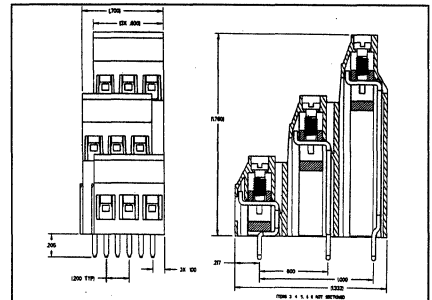
Module		
POS	Catalog #	L In.
2	EL1M022B00	.40
3	EL1M032B00	.60

Assembly		
4	EL1M042B00	.80
5	EL1M052B00	1.00
6	EL1M062B00	1.20
7	EL1M072B00	1.40
8	EL1M082B00	1.60
9	EL1M092B00	1.80
10	EL1M102B00	2.00
11	EL1M112B00	2.20
12	EL1M122B00	2.40
13	EL1M132B00	2.60
14	EL1M142B00	2.80
15	EL1M152B00	3.00
16	EL1M162B00	3.20
17	EL1M172B00	3.40
18	EL1M182B00	3.60
19	EL1M192B00	3.80
20	EL1M202B00	4.00
21	EL1M212B00	4.20
22	EL1M222B00	4.40
23	EL1M232B00	4.60
24	EL1M242B00	4.80
25	EL1M252B00	5.00
26	EL1M262B00	5.20
27	EL1M272B00	5.40
28	EL1M282B00	5.60
29	EL1M292B00	5.80
30	EL1M302B00	6.00
31	EL1M312B00	6.20
32	EL1M322B00	6.40



Module		
POS	Catalog #	L In.
4	EL2M042B00	.50
6	EL2M062B00	.70

Assembly		
8	EL2M082B00	.90
10	EL2M102B00	1.10
12	EL2M122B00	1.30
14	EL2M142B00	1.50
16	EL2M162B00	1.70
18	EL2M182B00	1.90
20	EL2M202B00	2.10
22	EL2M222B00	2.30
24	EL2M242B00	2.50
26	EL2M262B00	2.70
28	EL2M282B00	2.90
30	EL2M302B00	3.10
32	EL2M322B00	3.30
34	EL2M342B00	3.50
36	EL2M362B00	3.70
38	EL2M382B00	3.90
40	EL2M402B00	4.10
42	EL2M422B00	4.30
44	EL2M442B00	4.50
46	EL2M462B00	4.70
48	EL2M482B00	4.90
50	EL2M502B00	5.10
52	EL2M522B00	5.30
54	EL2M542B00	5.50
56	EL2M562B00	5.70
58	EL2M582B00	5.90
60	EL2M602B00	6.10
62	EL2M622B00	6.30
64	EL2M642B00	6.50



Module		
POS	Catalog #	L In.
6	EL3M062B00	.50
9	EL3M092B00	.70

Assembly		
12	EL3M122B00	.90
15	EL3M152B00	1.10
18	EL3M182B00	1.30
21	EL3M212B00	1.50
24	EL3M242B00	1.70
27	EL3M272B00	1.90
30	EL3M302B00	2.10
33	EL3M332B00	2.30
36	EL3M362B00	2.50
39	EL3M392B00	2.70
42	EL3M422B00	2.90
45	EL3M452B00	3.10
48	EL3M482B00	3.30
51	EL3M512B00	3.50
54	EL3M542B00	3.70
57	EL3M572B00	3.90
60	EL3M602B00	4.10
63	EL3M632B00	4.30
66	EL3M662B00	4.50
69	EL3M692B00	4.70
72	EL3M722B00	4.90
75	EL3M752B00	5.10
78	EL3M782B00	5.30
81	EL3M812B00	5.50
84	EL3M842B00	5.70
87	EL3M872B00	5.90
90	EL3M902B00	6.10
93	EL3M932B00	6.30
96	EL3M962B00	6.50



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Bourns
Clarostat
MEC
Ohmite
Surge

SOLENOIDS

Deltrol
Dormeyer
Guardian

TERMINAL BLOCKS

Augat / RDI
T&B / Buchanan
Curtis
Kulka / Marathon
Magnum / USD
Marco
Riacon / RIA
Siemens Energy & Automation
USD
Veritron-Beau
Weidmuller
Wieland

RELAYS

Aleph International
Allied Controls
American Zettler
Aromat / NIAS
AT&T
C.P. Clare
Communications Inst. (CII)
Coto
Crydom Controls
Deltrol
Elec-Trol
Fuji
Genicom
Gentron
Gordos
Guardian
Hamlin
Idec
Line Electric
Magnecraft / MSD

Master Electronics
MEC
Midtex
Omron
Siemens / Potter & Brumfield
Schrack
Siemens Energy & Automation
Sigma
Solid State Optronics
Struthers-Dunn
Takamisawa
Teledyne
Theta-J
Triridge
Wieland

TEST EQUIPMENT

Biddle
Fluke
Simpson Electric
Triplet
Tektronix

TIMERS

Agastat
Amperite
Aromat / NIAS
ATC
Bourns
Crouzet
Curtis Instruments
Guardian
Idec
Industrial Timer
Magnecraft / MSD
Master Electronics
Midtex
Omron
Siemens / Potter & Brumfield
Syrelec

SWITCHES

Apem
Aromat / NIAS
Augat/Alco
Bourns
C&K
Cherry
Cutler-Hammer / Eaton
EECO / Transico
Electro-Mech
Fuji
Idec
McGill
Microswitch
Omron
Oslo
RAFI / C&K
Siemens Energy & Automation
Switchcraft
Tschudin & Heid
Unimax / C&K

TRANSFORMERS & POWER SUPPLIES

ACME
Deltron
Dormeyer
Idec
Magnetek
Microtran
Omron
Power One
Siemens Energy & Automation
SL Waber
Sola
Stancor
Superior
Tamura
Topaz
Triad
Tripp Lite

WIRE, WIRING DEVICES & HARDWARE

Alpha
Arrow Hart / Cooper
Belden
Bircher
Buchanan
Commscope
Crouse-Hinds
Harvey Hubbell
H.H. Smith
Insultab
Manhattan
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Thomas & Betts
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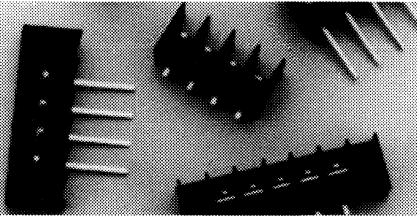
For All Your Terminal Block And Relay Socket Needs

Curtis offers a broad selection of quality European style blocks, DIN mountable blocks and relay sockets to meet all your needs. And if you don't see exactly what you're looking for here, we'll gladly design you a custom.

Standard sockets come in a wide variety of styles, sizes, capacities, with outstanding features like closed-back thermoplastic construction that resists breakage and eliminates panel insulation. Designed to provide maximum relay retention and electrical continuity. Curtis sockets are rated up to 15 amps/300 volts. Most are UL recognized and CSA certified.

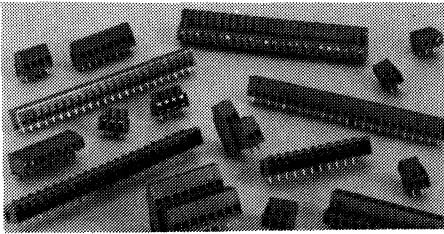
RELAY SOCKETS AND TERMINAL BLOCKS

SERIES 32500



- .325" spacing
- Complete line of offset blocks including, P.C. Pin, Wire Wrap, Turret and Right Angle Terminals.
- Both open Back and Tri-Barrier designs.
- 300 Volts, 15-20 Amps.
- 22 AWG to 14 AWG wire.
- 2-28 positions.
- Competitive prices & delivery.
- UL/CSA Recognized.

EUROPEAN-STYLE BLOCKS



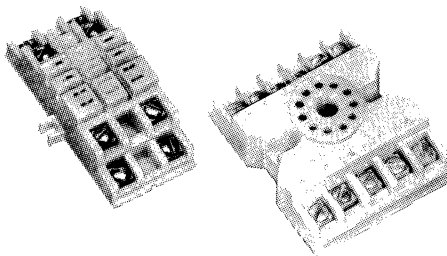
- Exceptional versatility.
- P.C. mount/disconnect, vertical, horizontal and 45° wire insertion variations.
- Blocks up to 24 positions.
- Many center spacings to choose from.
- Break-resistant, flame retardant material.
- Rated 300V and 15A with AWG 22-12 wire.
- UL, CSA and VDE 0110.

SERIES 43000



- 7/16" center to center spacing.
- 600 Volts, 30 AMPS.
- 22 AWG to 12 AWG wire.
- Cost-competitive with high durability and quality.
- Base mount and feed thru styles.
- P.C. Pins, Flush Mount, Turret Type, Quick Connect, Wire Wrap, and Right Angle Terminals available.
- UL/CSA Recognized.

CUS SERIES SOCKETS



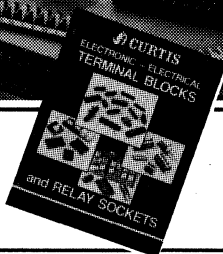
- New, unitized thermoplastic sockets with closed-back design which eliminates panel insulation, resists breakage.
- Barrier-type terminals with 6-32 nickel-plated screws and captivated nut for fast, easy connection.
- Octal and square-base assemblies.
- 5, 8, 11, 14, and 15-pin unitized relay-type sockets.
- Permanent-numbered terminals for easy identification.
- Surface-mount or snap-in track modular assembly. 48" track holds up to 42 sockets.
- Ratings to 15 amps/250 volts.
- Accommodates up to No. 12 AWG wire.

CUSTOM TERMINAL BLOCKS AND ASSEMBLIES



- Custom design and development
- Efficient, cost effective assembly and designs.
- In house thermal set and thermal plastic injection molding.
- Insert molding.
- Dual manufacturing facilities in USA and Mexico.
- Over 65 years of experience.
- Quality, service and flexibility.

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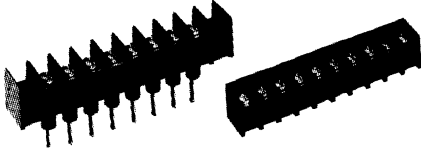
CURTIS

Number One For Electronic/Electrical Terminal Blocks

Wide selection, better features, aggressive prices make Curtis your Number One source for high quality, economical electronic and electrical terminal blocks. Curtis offers everything from printed-circuit mount electronic blocks to heavy-load, high-current electrical blocks rated at 250 amps, 600 volts. Most are UL recognized, CSA certified.

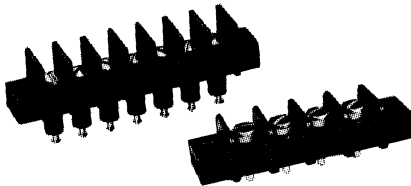
If you don't see what you need here, remember, we do customs, too! With more than 60 years experience to build on, it makes good sense to come to Curtis FIRST for all your terminal block needs.

SERIES 37000/38000



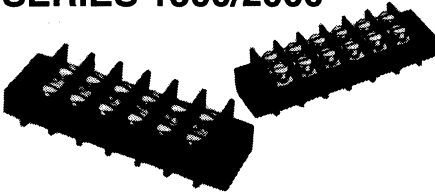
- Complete line of 3/8" centerline electronic terminal blocks in surface-mount, PC-mount, panel-mount, and feed-thru styles with a wide variety of top and bottom terminations.
- Compliant contact design virtually eliminates solder joint fractures due to pin twist.
- Molded-in stand-offs aid board cleaning by preventing trapped solder flux.
- Broad wire range — 22 to 12 AWG.
- All Curtis terminal blocks for electronic applications are made from self-extinguishing material rated 94V-0 by Underwriters Laboratories Inc.

SERIES CB/CFT, GB/GFT



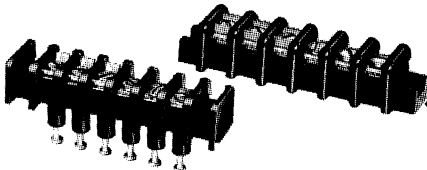
- Strong one-piece design featuring machined terminals molded into solid housing.
- Ideal for sub-chassis or thru-panel application. Requires no costly insulation or mounting set-up since feed-thru insulators are integral to the mouldings.
- Feed-thru, fully insulated feed-thru, disconnect, printed-circuit or surface-mount types.
- One thru 26 terminals on 3/8" (CB/CFT) or 7/16" (GB/GFT) center-to-center spacings: 20 amps/300 volts electrical rating.
- Broad wire range — 22 to 12 AWG.
- Durable base material — Black thermo-set phenolic or high-impact, break-resistant thermoplastic.

SERIES 1500/2000



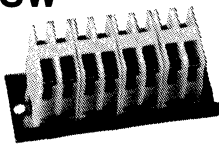
- High-temp, self-extinguishing thermoplastic blocks resist breakage and other damage.
- Terminal flexibility — ideal for surface-mount, sub-panel or chassis connections in electronic/electrical circuit applications.
- One thru 22 terminals, 3/8" (1500) or 7/16" (2000) center-to-center spacings.
- Economical closed-back design eliminates need for costly insulation strip.
- Broad wire range — 22 to 10 AWG; rated up to 30 amps/300 volts.

SERIES E/SE/SEI



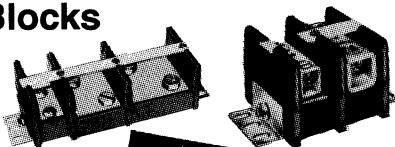
- Compact design especially suited for electronic control and low-power circuit applications up to 15 amps/300 volts.
- Feed-thru, printed circuit, or surface connection ... One thru 22 terminals on 3/8" center-to-center spacing (Series E), one thru 26 terminals on 1/4" center-to-center spacing (SE/SEI).
- Barrier-type construction. Blocks are made of high-impact, break-resistant thermoplastic.
- Wire sizes: 22 to 16 AWG.

SERIES SW

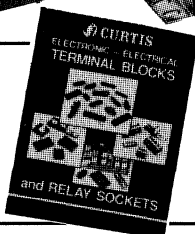


- Two and three-pole break-resistant nylon modules easily snap into track for fast assembly. Modules pop out for fast removal.
- 3/8" center-to-center terminals for dense circuitry.
- 32 poles per foot. Wire ranges from 22 to 8 AWG.
- Ratings up to 50 amps/600 volts.
- UL recognized, CSA certified.

Electrical Terminal Blocks



- Broad selection of high quality, economical industrial terminal blocks with current ratings to 250 amps, voltages to 600 volts.
- Will accommodate wire sizes from 22 AWG to 250 MCM.
- Surface mount or snap-in track modular assembly.
- Housing materials: Phenolic (150°C, 302°F), Polyphenylene Oxide (110°C, 230°F), Thermoplastic Polyester (140°C, 285°F), Polyamide (125°C, 257°F).
- Most are UL recognized, CSA certified.



Send for **NEW**
42-page terminal block
and relay socket
engineering manual.

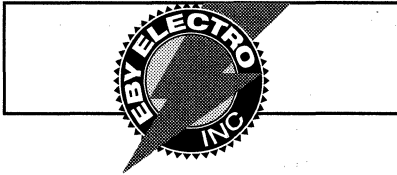
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TERMINAL BLOCKS



EBY ELECTRO INC.

140 Adams Boulevard
Farmingdale, New York 11735

TEL: 516-694-8989

FAX: 516-694-1155

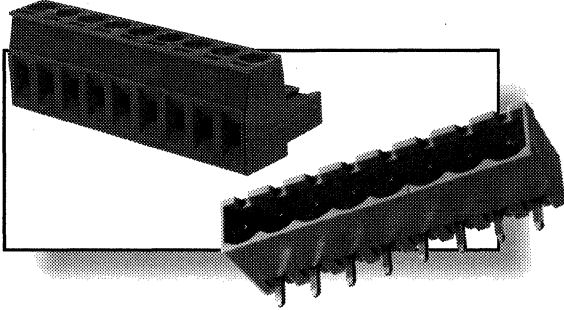
<http://www.ebynet.com>

EBY Electro has been providing high quality Electro Mechanical Components since 1945. Throughout this time we have built our reputation by providing the highest level of service at the most competitive of prices.

Our mission is to provide our customers with unlimited choices, complete and unconditional satisfaction, state-of-the-art products at world class prices, while maintaining total flexibility to meet the most exacting of expectations.

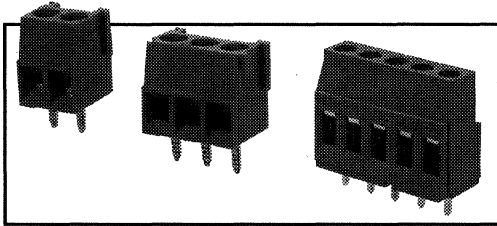
EBY Electro fully subscribes to the very essence of Total Quality Management. To your partners at EBY, TQM is much more than "Zero Defects", it is the absolute guarantee of total customer satisfaction.

DEPLUGGABLE MINI-BLOCKS



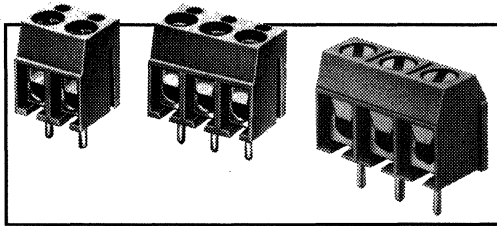
- High Density Depluggable Terminal Blocks that help make your products more user friendly and field serviceable.
- Pin spacing from 3.5mm to 15mm available.
- Wire range acceptance from 24 AWG to 12 AWG
- UL/CSA/VDE

CAGE CLAMP MINI-BLOCKS



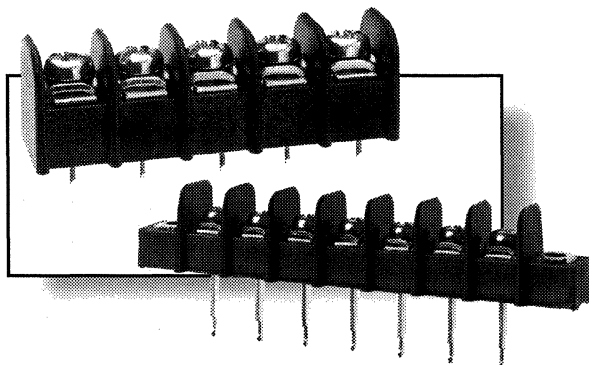
- A full range of styles and sizes that are ideal for use in industrial applications where wire termination occurs frequently.
- Pin spacings from 3.5mm to 15mm available.
- Wire range acceptance from 24 AWG to 12 AWG
- UL/CSA/VDE

TUBULAR SCREW MINI-BLOCKS



- A full range of highly cost effective mini blocks for terminating wires in virtually any application.
- Wire range acceptance from 24 AWG to 12 AWG
- UL/CSA/VDE

SINGLE ROW BARRIER BLOCKS



- The most complete range of break-resistant, flame retardant (UL94V-0) barrier blocks available.
- Pins spacings from .250" to .4375"
- Unlimited screw, terminal styles, mounting, quick connect and printing options.
- Available with the industry's finest captive screw features.
- Broad wire range 24 to 10 AWG, 10-30 AMPS
- UL/CSA



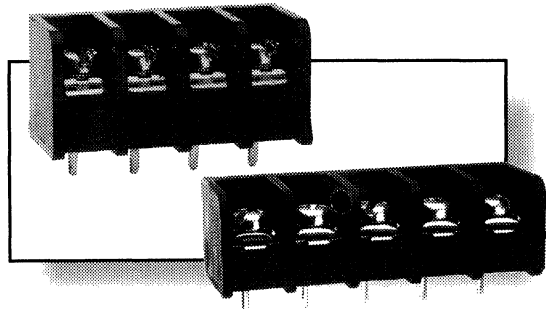
EBY ELECTRO INC.

140 Adams Boulevard • Farmingdale, New York 11735

TEL: 516-694-8989 • FAX: 516-694-1155

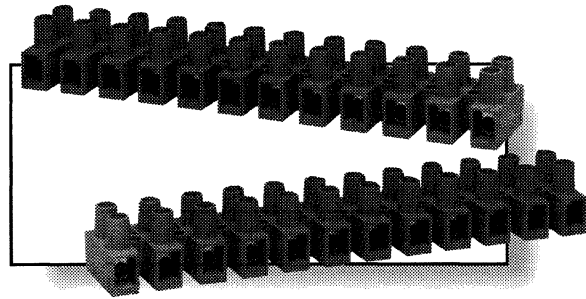
<http://www.ebynet.com>

TRI BARRIER BLOCKS



- The most complete range of break-resistant, flame retardant (UL94V-0) tri-barrier blocks available.
- Pins spacings from .250" to .4375"
- Unlimited screw, terminal styles, mounting, quick connect and painting options.
- Available with the industries finest captive screw features.
- Broad wire range 24 to 10 AWG, 10-30 AMP
- UL/CSA

EUROPA BLOCKS



- These highly flexible terminal blocks offer extremely reliable gas-tight connections.
- Ideal for wire to wire applications where space and costs are critical.
- Available with wire ranges of 24 AWG to 6 AWG, 25-70 AMPS.
- UL/CSA/VDE

CUSTOM CAPABILITIES

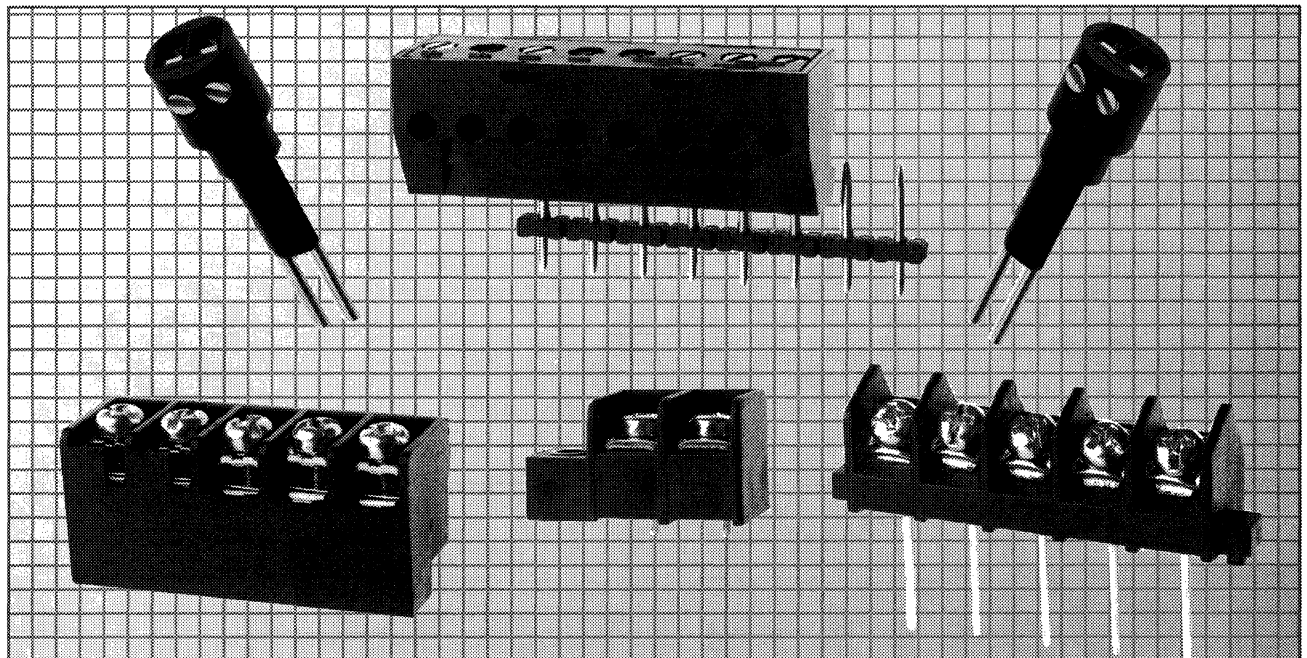
Custom product designs begin with a complete understanding of our customers expectations. At **EBY** we feel that a Terminal Block is more than just another component. Often times the Terminal Block becomes the only interface your customer has to your actual product. This philosophy insures that joint design efforts with

our customers produce the most user friendly, field tested and reliable Terminal Blocks for any application.

Truly successful products begin with a thorough understanding of a customers needs. Through our vast experience with CAD/CAE, Solid Modeling and Rapid Prototype Techniques, our engineers can

bring your concepts to life in as little as one week. Imagine the Marketing impact of collecting customer feedback without first cutting hard tooling.

We invite you to join our growing list of customers who have gone from concept to production with the **EBY** Fast-Track Design Team.



CAMDEN
ELECTRONICS LTD

Terminal Blocks



CAMDEN
ELECTRONICS LTD

EuroComp

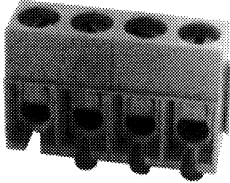
COMPANY PROFILE

EuroComp, Inc. is the sole stocking Import Agent for Camden products. EuroComp is responsible for the distribution and representation of Camden throughout the United States. Camden and EuroComp have formed an alliance bound by the

knowledge that success will be determined by customer satisfaction i.e.; Quality, Service, Delivery, Price, and Technical Assistance. It is with this understanding we will endeavor to earn the respect necessary for success.

***CTB1000**

PC TERMINAL BLOCKS



Features

- Standard 5mm Pitch • Wire range 26-14 AWG

Common Features

- Flame Retardant Material • 2.5mm² Wire Acceptance • Color: Light Gray

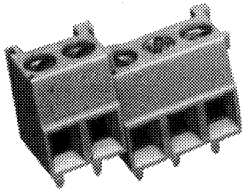
Applications

- Alarm Panels • Fire Alarms • Color: Light Gray • Power Supplies • Inverters • Emergency Lighting
- Vending Machines • Data & Telecoms • Car Alarms • Heating Controls & Energy Management

***CTB0305**

PC TERMINAL BLOCKS

***CTB0308**



Common Features

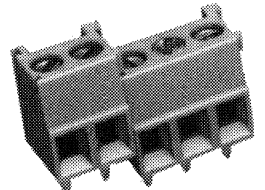
- Interlock 2 & 3 Poles
- Low Profile

Applications

- Alarms
- Emergency Lighting

- High Density
- Color: Green (Black Available)

- Security Indicators
- Telecoms



Features: Pitch 3.5mm / .138" • Wire range 26-16 AWG

Features: Pitch 3.81mm / .150" • Wire range 26-16 AWG

***CTB5000**

PC TERMINAL BLOCKS



Features

- Pitch 5mm • Wire range 26-16 AWG

Common Features

- Low Profile • 2-24 Pole Interlocking • Flame Retardant Material • Test Probe Facility
- 1.5mm² Wire Acceptance • Solid body available 4-24 poles (use suffix-SB) • Color: Light Gray

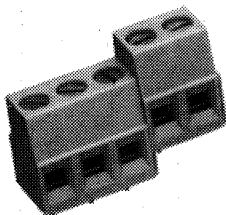
Applications

- Alarm Panels • Car / Fire Alarms • Emergency Lighting • Heating Controls • Vending Machines

***CTB0100**

PC TERMINAL BLOCKS

***CTB0108**



Common Features

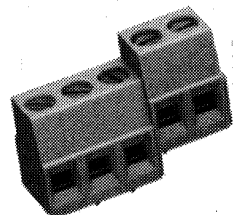
- Interlock 2 & 3 Poles
- Printing Available

Applications

- Alarm Panels
- Vending Machines
- Heating Controllers

- ø1.3mm Recommended PCB Hole
- Color: Green (Black Available)

- Security Indicators
- Transformers
- Emergency Lighting, Lighting Products & Low Voltage Lighting



Features: Pitch 5mm / .197" • Wire range 24-12 AWG

Features: Pitch 5.08mm / .200" • Wire range 24-12 AWG

* = These Products are also available in a 90° Angle

EuroComp, Inc.

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CAMDEN

ELECTRONICS LTD

Terminal Blocks

CAMDEN

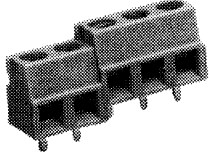
ELECTRONICS LTD



*CTB0500

PC TERMINAL BLOCKS

*CTB0508



Common Features

- Low Profile
- Interlock 2 and 3 Poles

Applications

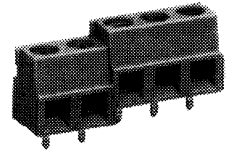
- Security Panels
- Lighting Controls

Features: Pitch 5mm / .197" • Wire range 24-14 AWG

- $\phi 1.3\text{mm}^2$ Wire Acceptance
- Color: Green (Black Available)

- HVAC Controls
- Industrial Controls

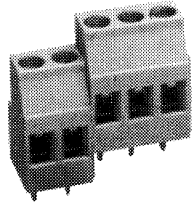
Features: Pitch 5.08mm / .200" • Wire range 24-14 AWG



*CTB0700

PC TERMINAL BLOCKS

*CTB0708



Common Features

- Printing Available
- Interlock 2 and 3 Poles

Applications

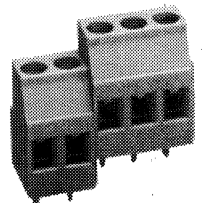
- Alarms
- Security Indicators

Features: Pitch 5mm / .197" • Wire range 22-12 AWG

- $\phi 1.3\text{mm}^2$ Recommended PCB Hole
- Color: Green (Black Available)

- Emergency Lighting
- Telecoms

Features: Pitch 5.08mm / .200" • Wire range 22-12 AWG

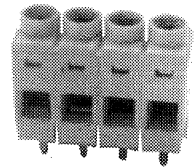


* = These Products are also available in a 90° Angle

CTB7000

PC TERMINAL BLOCKS

CTB7050



Common Features

- Flame Retardant Material
- Professional Series
- Rising Clamp

Applications

- Alarm Panels • Power Supplies • Fire Alarms • Telecoms • Inverters
- Economical alternative to CTB9000 or up market CTB1000 & 5000

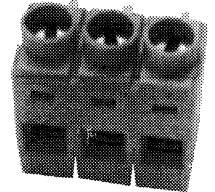
Features:

- Pitch 5mm 36 Pole • Wire range 22-12 AWG
- Easily cut to required size or pre-cut 1-35 pole

- 3.5mm^2 Wire Acceptance
- Can be cut to desired number of poles
- Color: Light Gray

Features:

- Pitch 5mm 36 Pole
- Wire range 22-12 AWG
- 90° Mounting
- Cuts easily to size or pre-cut



CTBDD90

DOUBLE LEVEL TERMINAL BLOCKS



Common Features • Solderability: in accordance with IEC 68-2-20 • End Stackable to desired number of poles • High Termination Density • Staggered Wire Entry • Color: Light Gray

Applications • Electronic assembly needing more board space • Variable speed controls & drives

Features • Pitch 5mm • Wire range 22-12 AWG

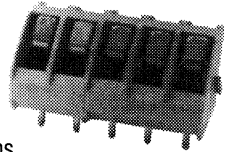
PC TERMINAL BLOCKS

CTB3000

Common Features • Flame Retardant Material • Professional Series Rising Clamp • 3.5mm^2 Wire Acceptance • Color: Light Gray

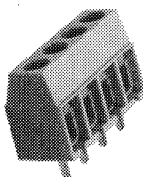
Applications • Alarm Panels & Fire Alarms • Bell Boxes • Emergency Lighting • Heating Controls • Energy Management Specifications

Features • Pitch 5 mm • Wire Range 22-12 AWG • 45° Wire Entry



CTB1500

BOX TERMINAL BLOCKS



Common Features • Solid Body • End Stackable • Economical • Color: Light Gray

Applications • Alarm Panels / Fire Alarms / Car Alarms • Emergency Lighting • Heating Controls • Vending Machines

Features • Pitch 5mm Standard Profile • 26-12 AWG • Box Clamp • 2-24 Pole

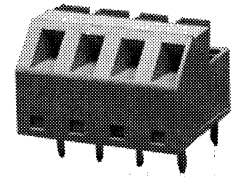
SPRING TERMINAL BLOCKS

CSTB/02-07

Common Features • 2-7 Pole End Stackable • Flame Retardant • Test Probe Facility • Color: Light Gray

Applications • Alarm Panels / Car Alarms / Fire Alarms • Emergency Lighting • Heating Controls • Vending Machines

Features • Pitch 5.08mm 45° Face • Wire Range 22-14 AWG • Spring Clamp



EuroComp, Inc.

Eurocomp, Inc., The Sole Stocking Import Agent for Camden Products in the United States
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Common Features

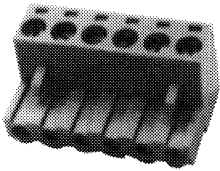
- Flame Retardant Material
- Professional Rising Clamp
- 3.00mm Wire Acceptance
- Captive Screws
- Applicable on .2" Pitch to 10 Poles
- Color: Green (Black Available)

Applications

- Electronic Drives
- Electronic Systems (Custom and Standard)
- Fire Alarm Panels
- Energy Management

CTB9200 PLUG

PLUGGABLE PC TERMINAL BLOCKS

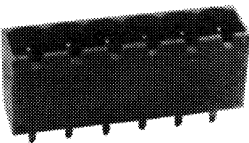


Features

- Pitch 5mm 2-24 Pole
- Wire range 22-12 AWG
- Female Connector

CTB9300 CLOSED

PLUGGABLE PC TERMINAL BLOCKS

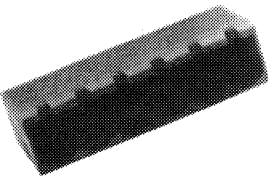


Features

- Pitch 5mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male

CTB9350 CLOSED

PLUGGABLE PC TERMINAL BLOCKS

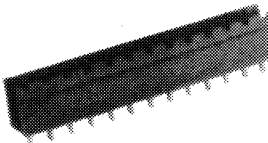


Features

- Pitch 5mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male
- 90° Mounting

CTB9300 OPEN

PLUGGABLE PC TERMINAL BLOCKS

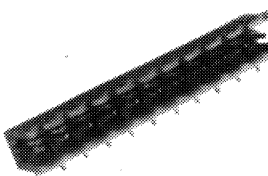


Features

- Pitch 5mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male

CTB9350 OPEN

PLUGGABLE PC TERMINAL BLOCKS



Features

- Pitch 5mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male
- 90° Mounting

Common Features

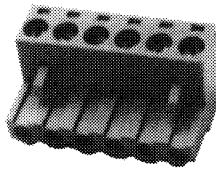
- Flame Retardant Material
- Professional Rising Clamp
- 3.00²mm Wire Acceptance
- ø1.4mm Recommended PCB Hole
- Color: Green (Black Available)

Applications

- Electronic Drives
- Electronic Systems (Custom and Standard)
- Fire Alarm Panels
- Energy Management

CTB9208 PLUG

PLUGGABLE PC TERMINAL BLOCKS

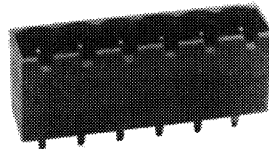


Features

- Pitch 5.08mm / .200"
- Wire range 22-12 AWG
- Female Connector

CTB9308 CLOSED

PLUGGABLE PC TERMINAL BLOCKS

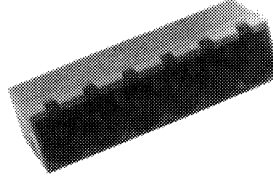


Features

- Pitch 5.08mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male

CTB9358 CLOSED

PLUGGABLE PC TERMINAL BLOCKS

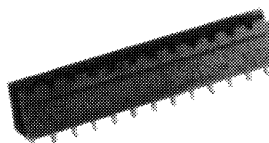


Features

- Pitch 5.08mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male
- 90° Mounting

CTB9308 OPEN

PLUGGABLE PC TERMINAL BLOCKS

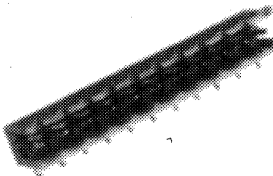


Features

- Pitch 5.08mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male

CTB9358 OPEN

PLUGGABLE PC TERMINAL BLOCKS



Features

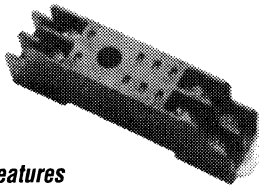
- Pitch 5.08mm 2-24 Pole
- Wire range 22-12 AWG
- PCB Mounting Male
- 90° Mounting



Relay Sockets • Fused Terminal Blocks • Terminal Strips



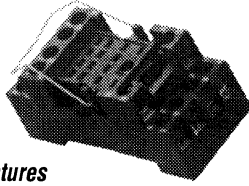
**C2S08P
RELAY SOCKETS**



- Features**
- Wire range 22-12 AWG
 - 10A / 250V

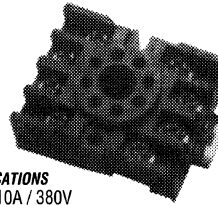
Common Features • Available in 2 to 4 poles • Higher density width on rail of only 27mm • Marking tabs available for all four levels of termination • Accepts both metal spring latch and thermoplastic lever/ejector latch • High profile double level termination allows easy wire access • Smaller circuit protection module with 11 circuits available • Available in logical wiring type with triple deck, 12 terminations on output side of socket. Input side has 2 terminations.

**CYS14C
RELAY SOCKETS**



- Features**
- Wire range 22-12 AWG
 - With retaining clip & marker tab
 - 10A / 250V

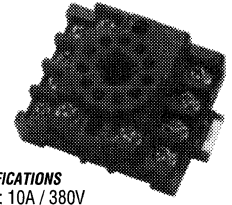
**CS083
DIN&PANEL MOUNT
RELAY SOCKETS**



- SPECIFICATIONS**
- Rating: 10A / 380V
 - Dielectric Strength: >2KV
 - Molding: UL94-V1 Self Extinguishing Glass Filled Noryl
 - Contacts: Tin Plated Brass
 - Screws: Zinc Plated Steel (Pozi driv or slotted screwdriver)
 - Wire Size: 22-12 AWG

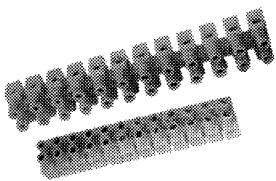
Common Features • Compact 8 and 11 Pin Versions • Din Rail EN50 022 or Base Mount • Screwdriver Din Release Tab • Rising Clamps, Captive Screws • Retaining Clips • Color: Black

**CS113
DIN&PANEL MOUNT
RELAY SOCKETS**



- SPECIFICATIONS**
- Rating: 10A / 380V
 - Dielectric Strength: >2KV
 - Molding: UL94-V1 Self Extinguishing Glass Filled Noryl
 - Contacts: Tin Plated Brass
 - Screws: Zinc Plated Steel (Pozi driv or slotted screwdriver)
 - Wire Size: 22-12 AWG

CTBS • EURO TERMINAL STRIPS



- SPECIFICATIONS**
- Voltage (max): 380VAC
 - Current (Max): 24A
 - Wire Range: 20-14 AWG
- DIMENSIONS**
- Length: 94.9mm
 - Width: 16.4mm
 - Height: 14.5mm
 - Fixing Holes: 2.5mm
 - Bush Diameter: 2.9mm
 - Fixing Hole Pitch: 8.0mm
- 431 • 8mm Pitch**

- SPECIFICATIONS**
- Voltage (max): 380VAC
 - Current (Max): 32A
 - Wire Range: 18-12 AWG
- DIMENSIONS**
- Length: 117.3mm
 - Width: 20.1mm
 - Height: 17.6mm
 - Fixing Holes: 3.2mm
 - Bush Diameter: 3.2mm
 - Fixing Hole Pitch: 10.0mm
- 433 • 10mm Pitch**

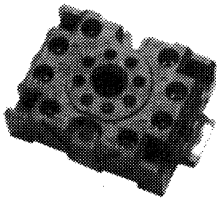
- SPECIFICATIONS**
- Voltage (max): 450VAC
 - Current (Max): 57A
 - Wire Range: 14-8 AWG
- DIMENSIONS**
- Length: 139.8mm
 - Width: 23.1mm
 - Height: 20.1mm
 - Fixing Holes: 3.1mm
 - Bush Diameter: 4.3mm
 - Fixing Hole Pitch: 12.0mm
- 434 • 12mm Pitch**

- SPECIFICATIONS**
- Voltage (max): 450VAC
 - Current (Max): 76A
 - Wire Range: 14-6 AWG
- DIMENSIONS**
- Length: 170.4mm
 - Width: 31.6mm
 - Height: 24.6mm
 - Fixing Holes: 4.2mm
 - Bush Diameter: 5.8mm
 - Fixing Hole Pitch: 14.5mm
- 435 • 14.5mm Pitch**

- SPECIFICATIONS**
- Voltage (max): 450VAC
 - Current (Max): 101A
 - Wire Range: 14-4 AWG
- DIMENSIONS**
- Length: 209.0mm
 - Width: 37.2mm
 - Height: 33.6mm
 - Fixing Holes: 4.5mm
 - Bush Diameter: 7.4mm
 - Fixing Hole Pitch: 19.5mm
- 438 • 19.5mm Pitch**

Common Features • Molded from PA66 • Easily Cut to Required Size or Available Pre-Cut • Self Extinguishing • Color: Natural
Applications • Emergency Lighting / Lighting Products / Low Voltage Lighting • Alarm Panels / Car Alarms • Transformers / Heating Controls • Washing Machines / Dishwashers • Energy Management

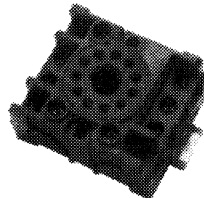
**CS083N
DIN&PANEL MOUNT
RELAY SOCKETS**



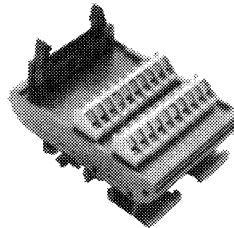
- SPECIFICATIONS**
- Rating: 10A / 380V
 - Dielectric Strength: >2KV
 - Molding: UL94-V1 Self Extinguishing Glass Filled Noryl
 - Contacts: Tin Plated Brass
 - Screws: Zinc Plated Steel M4 (Pozi driv or slotted screwdriver)
 - Wire Size: 22-12 AWG

Common Features • Compact 8 and 11 Pin Versions • Finger Proof to IP20 • Din Rail EN50 022 or Base Mount • Screwdriver Din Release Tab • Rising Clamps, Captive Screws • Retaining Clips • Color: Black

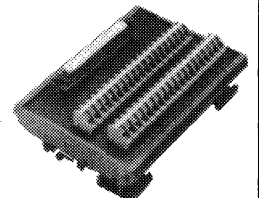
**CS113N
DIN&PANEL MOUNT
RELAY SOCKETS**



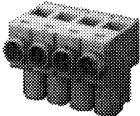
**I.D.C.
INTERFACE MODULES**



**SUBMINIATURE
'D' CONNECTORS
INTERFACE MODULES**



**CTB7300F • PLUGGABLE PC
TERMINAL BLOCKS**



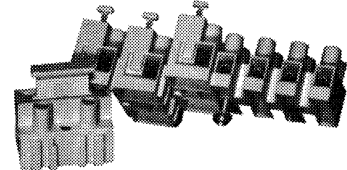
- Features**
- Pitch 5mm
 - Plug-In 36 Pole
 - Wire range 22-12 AWG

**CTB7300M • PLUGGABLE PC
TERMINAL BLOCKS**

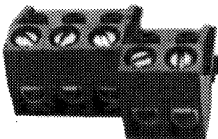


- Features**
- Pitch 5mm
 - Plug-In 36 Pole
 - Wire range 22-12 AWG

CFTBN • FUSED TERMINAL BLOCKS



CTB1300A & 1300PS • PLUGGABLE PC TERMINAL BLOCKS



- Features**
- Pitch 5mm Plug-In 12 Pole
 - Wire range 22-12 AWG

Common Features • Terminal Strip with Fuse Holder • Interlocking Fuse Holder • 1-5 Poles • Internal Earth Screw on 2nd Pole • Anti-Rotation Spigot • IP20 Finger Protection • Fuse Holder to IEC 257 • Wire Protectors • 22-10 AWG • Color: Light Gray
Applications • Lighting Controls • Alarm Panels • Fire Panels • Transformers • Power Supplies • Domestic and Office Equipment



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TERMINAL BLOCKS/MACHINE PIN SOCKETS

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EUROSTYLE TERMINAL BLOCKS

HOUSING: Polyamide 66 resin (UL-94V-0)

TERMINAL: Brass, tin plated, or zin die casting, Ni plated

SCREW: Zinc-plated steel, yellow chromated

WIRE RANGE: 14WAG to 24WAG

TEMPERATURE RATING: -55°C to +125°C

WIRE PROTECTOR:

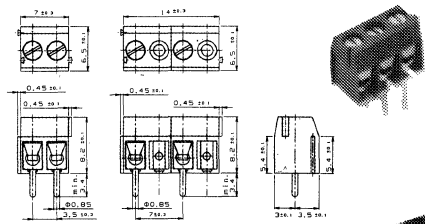
Phosphor Brone Ni Plated or Stainless Steel

DIELECTRIC STRENGTH: 2000VAC min. for 1 minute

INSULATION RESISTANCE: 500MΩ min. @ 500VDC

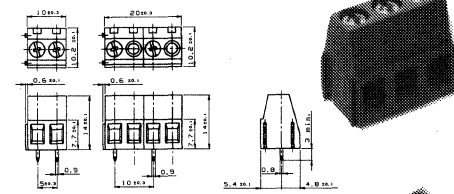
ETB08 SERIES: 10AMP, 300VAC, 3.5mm, Side Entry Wire

Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N
2	ETB0802	7	ETB0807	12	ETB0812	17	ETB0817	22	ETB0822
3	ETB0803	8	ETB0808	13	ETB0813	18	ETB0818	23	ETB0823
4	ETB0804	9	ETB0809	14	ETB0814	19	ETB0819	24	ETB0824
5	ETB0805	10	ETB0810	15	ETB0815	20	ETB0820	25	ETB0825
6	ETB0806	11	ETB0811	16	ETB0816	21	ETB0821	26	ETB0826



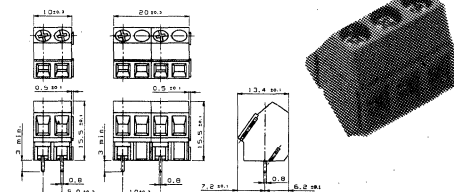
ETB13 SERIES: 10AMP, 300VAC, 5.0mm, Side Entry Wire

Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N
2	ETB1302	7	ETB1307	12	ETB1312	17	ETB1317	22	ETB1322
3	ETB1303	8	ETB1308	13	ETB1313	18	ETB1318	23	ETB1323
4	ETB1304	9	ETB1309	14	ETB1314	19	ETB1319	24	ETB1324
5	ETB1305	10	ETB1310	15	ETB1315	20	ETB1320	25	ETB1325
6	ETB1306	11	ETB1311	16	ETB1316	21	ETB1321	26	ETB1326



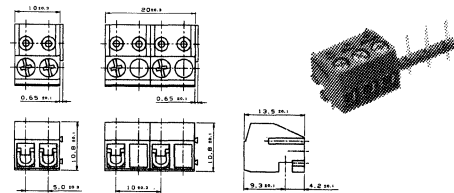
ETB15 SERIES: 10AMP, 300VAC, 5.0mm, 45° Entry Wire

Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N
2	ETB1502	7	ETB1507	12	ETB1512	17	ETB1517	22	ETB1522
3	ETB1503	8	ETB1508	13	ETB1513	18	ETB1518	23	ETB1523
4	ETB1504	9	ETB1509	14	ETB1514	19	ETB1519	24	ETB1524
5	ETB1505	10	ETB1510	15	ETB1515	20	ETB1520	25	ETB1525
6	ETB1506	11	ETB1511	16	ETB1516	21	ETB1521	26	ETB1526



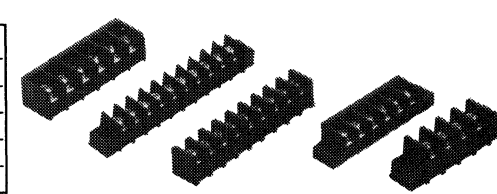
ETB16 SERIES: 10AMP, 300VAC, 5.0mm, Side Entry Wire, Plug-In

Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N	Poles	P/N
2	ETB1602	7	ETB1607	12	ETB1612	17	ETB1617	22	ETB1622
3	ETB1603	8	ETB1608	13	ETB1613	18	ETB1618	23	ETB1623
4	ETB1604	9	ETB1609	14	ETB1614	19	ETB1619	24	ETB1624
5	ETB1605	10	ETB1610	15	ETB1615	20	ETB1620	25	ETB1625
6	ETB1606	11	ETB1611	16	ETB1616	21	ETB1621	26	ETB1626



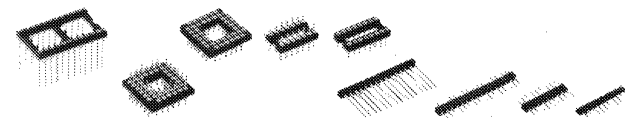
TWO-BARRIER & TRI-BARRIER TERMINAL BLOCKS

Model	Pitch	Type	Rating	Poles
ETB50 Series:	9.5 mm	Barrier/Mount	15Amp 300VAC	02 to 32
ETB51 Series:	8.25 mm	Barrier/Mount	15Amp 300VAC	02 to 32
ETB52 Series:	8.25 mm	Barrier/Mount	15Amp 300VAC	02 to 32
ETB53 Series:	10 mm	Barrier/Mount	20Amp 300VAC	02 to 32
ETB54 Series:	7.62 mm	Barrier/Mount	10Amp 300VAC	02 to 32



MACHINE PIN SOCKETS

Type	Pins	# of Pins
PGA	Standard, Straight	44 to 177
DIP	Standard, Straight, Wire-Wrap, Solder Fork, Carrier	6 to 64
SIP	Standard, Straight, Wire-Wrap, Solder Fork, Carrier	1 to 40



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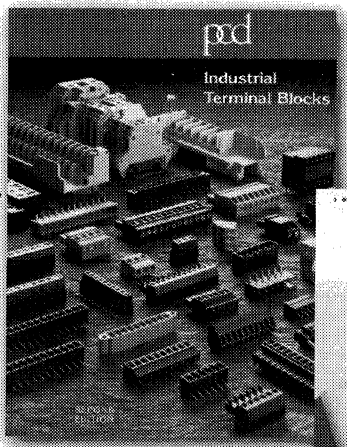
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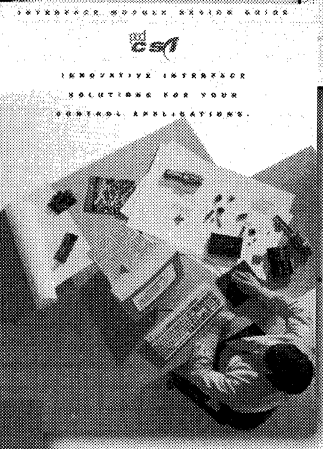
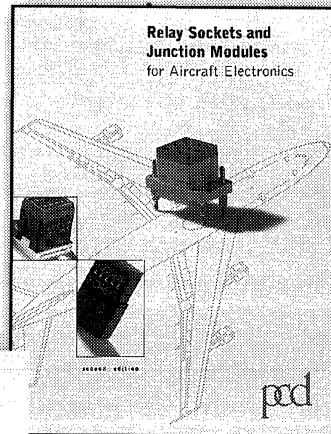


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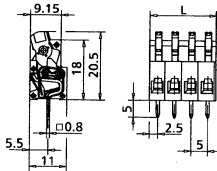
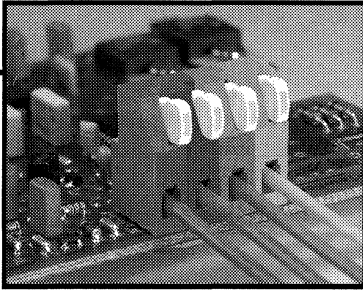
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CSA, Designed to VDE 0110



Type 501 **SPRINGCON**[®]

Description

Springclamp system provides constant contact resistance and gas tight connection. 5mm spacing and is available in seven different colors.

Electrical/Technical Data

(according to UL/CSA)

Voltage: 250V - 5mm
 Current: 13A
 Wire range: 14-28 AWG
 Pin Diameter: .8 mm x 1.0 mm
 PCB hole diameter: 1.4 mm
 Wire strip length: 6 mm
 Housing: UL 94V-0
 -40°F to 257°F
 (-40°C to 125°C)
 stainless chrome molybdenum steel
 Spring clamp:
 Contact pin:
 Pole size: 2 - 24

Circuits	Type 501	Circuits	Type 501	Circuits	Type 501
2	31 501 102	10	31 501 110	18	31 501 118
3	31 501 103	11	31 501 111	19	31 501 119
4	31 501 104	12	31 501 112	20	31 501 120
5	31 501 105	13	31 501 113	21	31 501 121
6	31 501 106	14	31 501 114	22	31 501 122
7	31 501 107	15	31 501 115	23	31 501 123
8	31 501 108	16	31 501 116	24	31 501 124
9	31 501 109	17	31 501 117		

SPRINGCON[®] Type 502

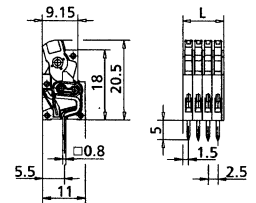
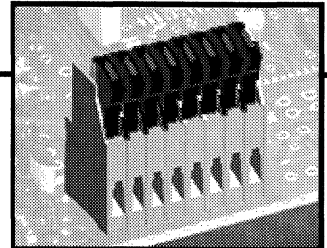
Description

Springclamp system provides constant contact resistance and gas tight connection. 2.5mm spacing and is available in seven different colors.

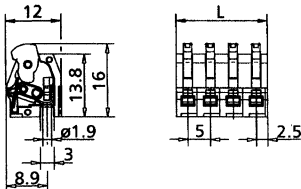
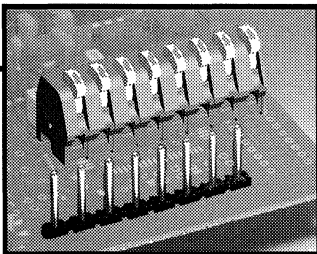
Electrical/Technical Data

(according to UL/CSA)

Voltage: 125V - 2.5mm
 Current: 4A
 Wire range: 20-28 AWG
 Pin Diameter: .8 mm square
 PCB hole diameter: 1.4 mm
 Wire strip length: 6 mm
 Housing: UL 94V-0
 -40°F to 257°F
 (-40°C to 125°C)
 stainless chrome molybdenum steel
 Spring clamp:
 Contact pin:
 Pole size: 2 - 24



Circuits	Type 502	Circuits	Type 502	Circuits	Type 502
2	31 502 102	10	31 502 110	18	31 502 118
3	31 502 103	11	31 502 111	19	31 502 119
4	31 502 104	12	31 502 112	20	31 502 120
5	31 502 105	13	31 502 113	21	31 502 121
6	31 502 106	14	31 502 114	22	31 502 122
7	31 502 107	15	31 502 115	23	31 502 123
8	31 502 108	16	31 502 116	24	31 502 124
9	31 502 109	17	31 502 117		



Type 507 **SPRINGCON**[®]

Description

Pluggable springclamp system provides constant contact resistance and gas tight connection. 5mm spacing and is available in seven different colors.

Electrical/Technical Data

(according to UL/CSA)

Voltage: 250V - 5mm
 Current: 10A
 Contact resistance: <5m per circuit
 Withdrawal force: .17 - .79 lbs.
 Wire range: 18-28 AWG
 Wire strip length: 6 mm
 Housing: UL 94V-0
 -40°F to 257°F
 (-40°C to 125°C)
 stainless chrome molybdenum steel
 Spring clamp:
 Contact pin:
 Pole size: 2 - 24

Circuits	Type 507	Circuits	Type 507	Circuits	Type 507
2	31 507 102	10	31 507 110	18	31 507 118
3	31 507 103	11	31 507 111	19	31 507 119
4	31 507 104	12	31 507 112	20	31 507 120
5	31 507 105	13	31 507 113	21	31 507 121
6	31 507 106	14	31 507 114	22	31 507 122
7	31 507 107	15	31 507 115	23	31 507 123
8	31 507 108	16	31 507 116	24	31 507 124
9	31 507 109				



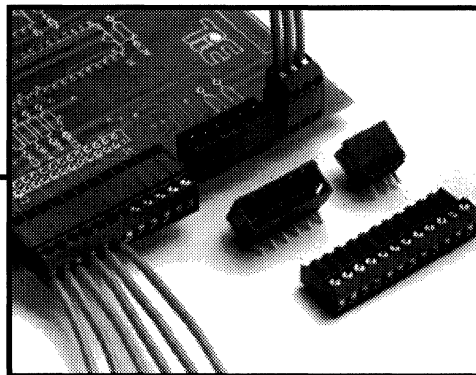
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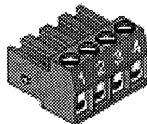


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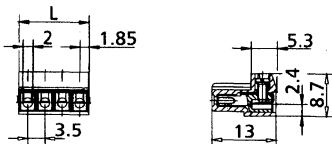
CSA, Designed to VDE 0110



3.5mm High Density Pluggable Terminal Block



Type 169
with wire protection



Description

High density, low profile connector provides reliable electrical and mechanical connection. Integral coding feature prevents loss of a circuit. Screws are captive in the molding.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range
-40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, nickel plated
Contact: CuNi18 Zn20, gold plating of the contact area available
Screw: M2, steel, nickel over copper plating optional: brass, nickel plated - consult factory

Technical Data

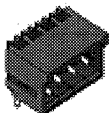
(according to UL/CSA)
Voltage:
Pin spacing 3.5mm: 250V
Pin spacing 7mm: 300V
Maximum current: 10A
Wire range: 28-16AWG
Recommended tightening torque: 3 lb-in
Wire strip length: 5mm

Part Numbers Standard Style

Pin Spacing 3.5mm

Circuits	Type 169	Circuits	Type 169	Circuits	Type 169
2	31 169 102	10	31 169 110	18	31 169 118
3	31 169 103	11	31 169 111	19	31 169 119
4	31 169 104	12	31 169 112	20	31 169 120
5	31 169 105	13	31 169 113	21	31 169 121
6	31 169 106	14	31 169 114	22	31 169 122
7	31 169 107	15	31 169 115	23	31 169 123
8	31 169 108	16	31 169 116	24	31 169 124
9	31 169 109	17	31 169 117		

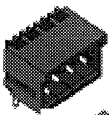
3.5mm High Density Headers (Mates with above Terminal Block)



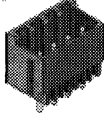
Type 180
horizontal mounting
round contact pins \varnothing 1mm



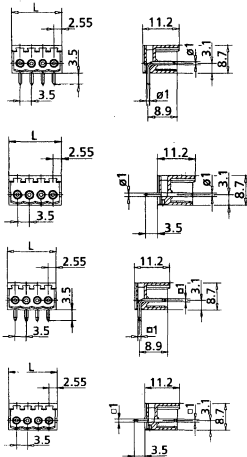
Type 181
vertical mounting
round contact pins \varnothing 1mm



Type 182
horizontal mounting
square contact pins \square 1mm



Type 183
vertical mounting
square contact pins \square 1mm



Description

High density centerline header. Headers available in vertical or horizontal mounting for type 169.

The **round** contact pins of **type 180** and **type 181** are pressed in a plastic housing. The **square** contact pins of **type 182** and **type 183** are pressed in a plastic housing. Pin spacing of soldering pins 3.5mm and 7mm.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range
-40 °F (-40 °C) to + 257 °F (125 °C)
short time up to 365 °F (185 °C)
Contact pin: Brass, 5um silver plating over 2um nickel plating; tin plating and other gold plating options are available

Technical Data

(according to UL/CSA)
Voltage:
Pin spacing 3.5mm: 300V
Pin spacing 7mm: 300V
Maximum current: 10A
Pin diameter: \varnothing 1.0 mm(round pins)
(mating position) \square 1.0 mm(square pins)
Pc pin diameter: \varnothing 1.0 mm(round pins)
 \square 1.0 mm(square pins)
Recommended pc hole diameter: 1.3 mm(round pins)
1.5 mm(square pins)
Pc pin length: 3.5mm

Part Numbers Standard Style

Pin Spacing 3.5mm

Circuits	Type 180	Circuits	Type 180	Circuits	Type 180
2	31 180 102	10	31 180 110	18	31 180 118
3	31 180 103	11	31 180 111	19	31 180 119
4	31 180 104	12	31 180 112	20	31 180 120
5	31 180 105	13	31 180 113	21	31 180 121
6	31 180 106	14	31 180 114	22	31 180 122
7	31 180 107	15	31 180 115	23	31 180 123
8	31 180 108	16	31 180 116	24	31 180 124
9	31 180 109	17	31 180 117		

Circuits	Type 181	Circuits	Type 181	Circuits	Type 181
2	31 181 102	10	31 181 110	18	31 181 118
3	31 181 103	11	31 181 111	19	31 181 119
4	31 181 104	12	31 181 112	20	31 181 120
5	31 181 105	13	31 181 113	21	31 181 121
6	31 181 106	14	31 181 114	22	31 181 122
7	31 181 107	15	31 181 115	23	31 181 123
8	31 181 108	16	31 181 116	24	31 181 124
9	31 181 109	17	31 181 117		

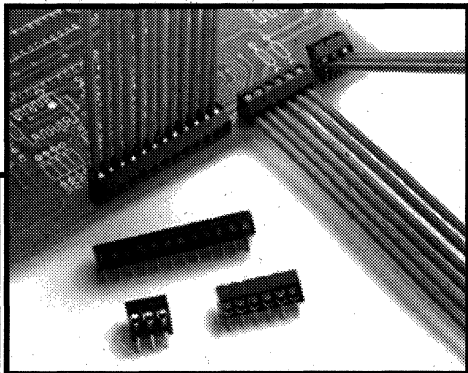
Circuits	Type 182	Circuits	Type 182	Circuits	Type 182
2	31 182 102	10	31 182 110	18	31 182 118
3	31 182 103	11	31 182 111	19	31 182 119
4	31 182 104	12	31 182 112	20	31 182 120
5	31 182 105	13	31 182 113	21	31 182 121
6	31 182 106	14	31 182 114	22	31 182 122
7	31 182 107	15	31 182 115	23	31 182 123
8	31 182 108	16	31 182 116	24	31 182 124
9	31 182 109	17	31 182 117		

Circuits	Type 183	Circuits	Type 183	Circuits	Type 183
2	31 183 102	10	31 183 110	18	31 183 118
3	31 183 103	11	31 183 111	19	31 183 119
4	31 183 104	12	31 183 112	20	31 183 120
5	31 183 105	13	31 183 113	21	31 183 121
6	31 183 106	14	31 183 114	22	31 183 122
7	31 183 107	15	31 183 115	23	31 183 123
8	31 183 108	16	31 183 116	24	31 183 124
9	31 183 109	17	31 183 117		

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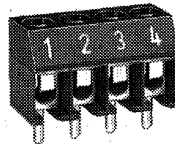
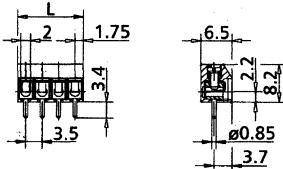


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CSA, Designed to VDE 0110

3.5mm High Density Pluggable Terminal Block

Type 59
with wire protection



Description

The miniature terminal block is the smallest terminal block available on the market.

Screws have anti-vibration feature.

Pin spacing of the solder pins is 3.5mm and 7mm.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, tin over nickel plating
Screw: M2, steel, nickel over copper plating optional: brass, nickel plated - consult factory
Wire protector: Phosphor bronze, tin plated

Part Numbers Standard Style Pin Spacing 3.5mm

Circuits	Type 59	Circuits	Type 59
2	31 059 102	10	31 059 110
3	31 059 103	11	31 059 111
4	31 059 104	12	31 059 112
5	31 059 105	13	31 059 113
6	31 059 106	14	31 059 114
7	31 059 107	15	31 059 115
8	31 059 108	16	31 059 116
9	31 059 109		

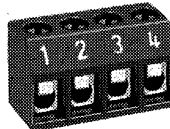
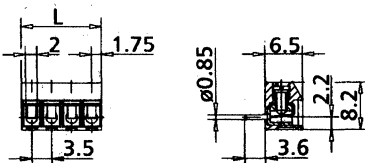
Technical Data

(according to UL/CSA)

Voltage: 125V
Pin spacing 3.5mm: 300V
Pin spacing 7mm: 10A
Maximum current: 28-18AWG
Wire range: 28-18AWG
Recommended tightening torque: 3 lb-in
Pin diameter: .85 mm
Recommended pc hole diam: 1.2mm
Wire strip length: 5mm

Wire Entry Vertical to PC board

- High Density
- Side Stackable



Type 61
with wire protection

Description

The miniature terminal block is the smallest terminal block available on the market.

Screws have anti-vibration feature.

Pin spacing of the solder pins is 3.5mm and 7mm.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, tin over nickel plating
Screw: M2, steel, nickel over copper plating optional: brass, nickel plated - consult factory
Wire protector: Phosphor bronze, tin plated

Part Numbers Standard Style Pin Spacing 3.5mm

Circuits	Type 61	Circuits	Type 61
2	31 061 102	10	31 061 110
3	31 061 103	11	31 061 111
4	31 061 104	12	31 061 112
5	31 061 105	13	31 061 113
6	31 061 106	14	31 061 114
7	31 061 107	15	31 061 115
8	31 061 108	16	31 061 116
9	31 061 109		

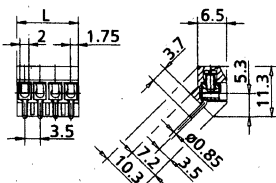
Technical Data

(according to UL/CSA)

Voltage: 125V
Pin spacing 3.5mm: 300V
Pin spacing 7mm: 10A
Maximum current: 10A
Wire range: 28-18AWG
Recommended tightening torque: 1.5 lb-in
Pin diameter: .85 mm
Recommended pc hole diam: 1.2mm
Wire strip length: 5mm

Wire Entry 45° to PC board

- High Density
- Side Stackable



Type 105
with wire protection

Description

The 45° miniature terminal block is the smallest terminal block available on the market.

Screws have anti-vibration feature.

Pin spacing of the solder pins is 3.5mm and 7mm.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, tin over nickel plating
Screw: M2, steel, nickel over copper plating optional: brass, nickel plated - consult factory
Wire protector: Phosphor bronze, tin plated

Part Numbers Standard Style Pin Spacing 3.5mm

Circuits	Type 105	Circuits	Type 105
2	31 105 102	10	31 105 110
3	31 105 103	11	31 105 111
4	31 105 104	12	31 105 112
5	31 105 105	13	31 105 113
6	31 105 106	14	31 105 114
7	31 105 107	15	31 105 115
8	31 105 108	16	31 105 116
9	31 105 109		

Technical Data

(according to UL/CSA)

Voltage: 125V
Pin spacing 3.5mm: 300V
Pin spacing 7mm: 10A
Maximum current: 10A
Wire range: 22-18AWG
Recommended tightening torque: 3 lb-in
Pin diameter: .85mm
Recommended pc hole diam: 1.2mm
Wire strip length: 5mm



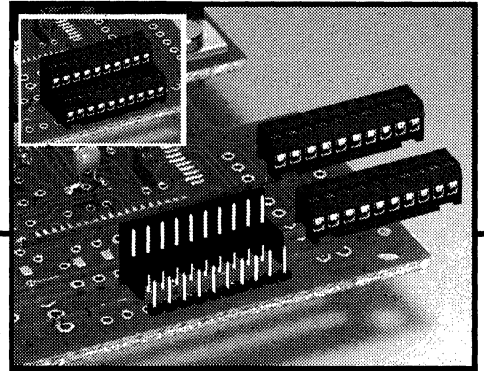
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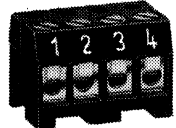


CSA, Designed to VDE 0110

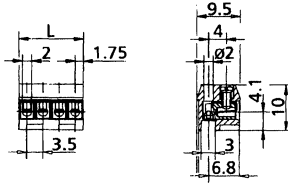
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3.5mm High Density Pluggable Terminal Block



Type 166
with wire protection



$L = (\text{number of circuits} - 1 \times \text{pin spacing} + 3.5 \text{ mm})$

Technical Data
(according to UL/CSA)

Voltage:
Pin spacing 3.5 mm: 125V
Pin spacing 7 mm: 250V
Maximum current: 8A
Wire range: 26-18AWG
Recommended tightening torque: 3 lb-in
Contact resistance: $R < 10m\Omega$
 $I = 500mA$
after 100 cycles
Wire strip length: 5mm

• **Pluggable**

Part Numbers Standard Style
Pin Spacing 3.5mm

Circuits	Type 166	Circuits	Type 166	Circuits	Type 166
2	31 166 102	10	31 166 110	18	31 166 118
3	31 166 103	11	31 166 111	19	31 166 119
4	31 166 104	12	31 166 112	20	31 166 120
5	31 166 105	13	31 166 113	21	31 166 121
6	31 166 106	14	31 166 114	22	31 166 122
7	31 166 107	15	31 166 115	23	31 166 123
8	31 166 108	16	31 166 116	24	31 166 124
9	31 166 109	17	31 166 117		

Description

High density terminal block. Low cost. Low contact resistance. Captive screws.

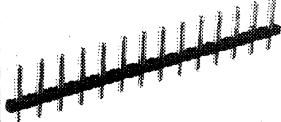
Accessories:

Header type 224 for vertical mounting.
Header type 225 with right angle pin
Mounting flanges no. 72015801 and no. 72015802
Coding pin no. 72015901 and no. 72015902

Materials

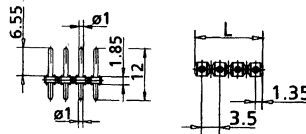
Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, 4 um nickel plated
Contact: New silver (CuNi 18 Zn20)
Screw: M2, steel, nickel over copper plating optional: brass, nickel plated - consult factory
Wire protector: New silver (CuNi 18 Zn20)

3.5mm High Density Pluggable Headers (Mates with above Terminal Block)



Type 224
for vertical mounting

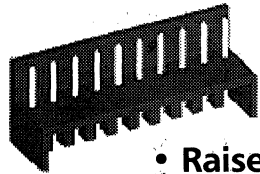
$L = (\text{number of circuits} - 1 \times \text{pin spacing} + 3.5 \text{ mm})$



Part Numbers Standard Style
Pin Spacing 3.5mm

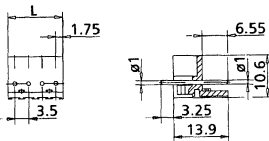
Circuits	Part No.
2	31224102
3	31224103
4	31224104
•	•
•	•
•	•
•	•
23	31224123
24	31224124

• **Vertical Pin Strip (Type 224)**



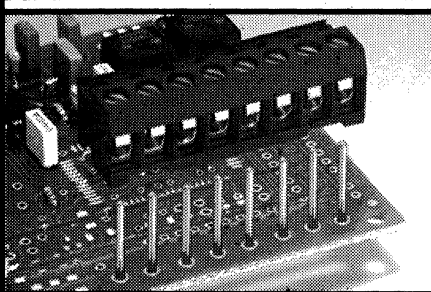
Type 226

• **Raised Base Header**



Part Numbers Standard Style
Pin Spacing 3.5mm

Circuits	Part No.
2	31226102
3	31226103
4	31226104
•	•
•	•
•	•
•	•
23	31226123
24	31226124



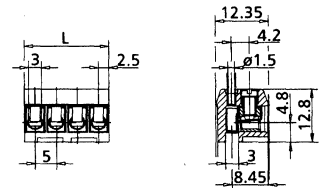
Type 108

Description

Low cost terminal block with mating square pins pre-assembled in terminal block.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, 4 um nickel plated
Contact: Tin bronze, tin plated
Standard terminal screw: M3, steel, chromate over zinc plating optional: stainless steel
Wire protector: Tin bronze, tin plated



Circuits	Type 108	Circuits	Type 108	Circuits	Type 108
2	31 108 102	10	31 108 110	18	31 108 118
3	31 108 103	11	31 108 111	19	31 108 119
4	31 108 104	12	31 108 112	20	31 108 120
5	31 108 105	13	31 108 113	21	31 108 121
6	31 108 106	14	31 108 114	22	31 108 122
7	31 108 107	15	31 108 115	23	31 108 123
8	31 108 108	16	31 108 116	24	31 108 124
9	31 108 109	17	31 108 117		

5 mm Pluggable Terminal Block with pins factory installed

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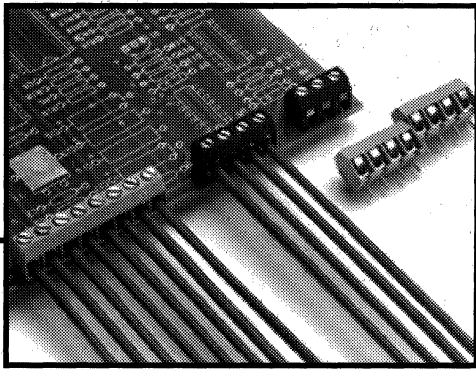
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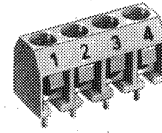
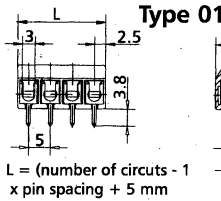


GP **ENet**
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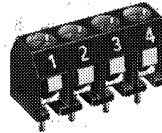
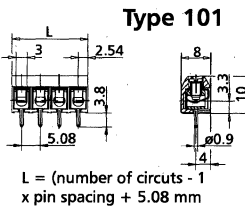
CSA, **RI** Designed to VDE 0110



One Piece Terminal Blocks



Type 01
 with wire protection
 5 mm



Type 101
 with wire protection
 5.08 mm

Part Numbers Standard Style
 Pin Spacing 5mm

Circuits	Type 01	Circuits	Type 01	Circuits	Type 01
2	31 001 102	10	31 001 110	18	31 001 118
3	31 001 103	11	31 001 111	19	31 001 119
4	31 001 104	12	31 001 112	20	31 001 120
5	31 001 105	13	31 001 113	21	31 001 121
6	31 001 106	14	31 001 114	22	31 001 122
7	31 001 107	15	31 001 115	23	31 001 123
8	31 001 108	16	31 001 116	24	31 001 124
9	31 001 109	17	31 001 117		

Circuits	Type 101	Circuits	Type 101	Circuits	Type 101
2	31 101 102	10	31 101 110	18	31 101 118
3	31 101 103	11	31 101 111	19	31 101 119
4	31 101 104	12	31 101 112	20	31 101 120
5	31 101 105	13	31 101 113	21	31 101 121
6	31 101 106	14	31 101 114	22	31 101 122
7	31 101 107	15	31 101 115	23	31 101 123
8	31 101 108	16	31 101 116	24	31 101 124
9	31 101 109	17	31 101 117		

Description

Screws have anti-vibration feature. Pin spacing of the solder pins of **Type 01** is 5 mm and 10 mm. Terminal strips with up to 5 pins may also be used for pin spacing 5.08 mm, since the terminals are mounted "floating". Pin spacing of the solder pins of **Type 101** is 5.08 mm and 10.16 mm.

Materials

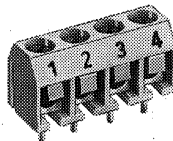
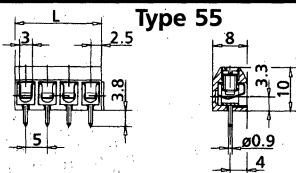
Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
 Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, tin over nickel plating
Screw: M3, steel, chromate over zinc plating
Wire protector: Phosphor bronze, tin plated

Technical Data

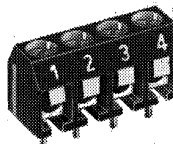
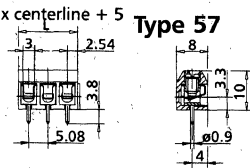
(according to UL/CSA)

Voltage:
 Pin spacing 5mm/5.08mm: 300V
 Pin spacing 10mm/10.16mm: 600V
Maximum current: 15A
Wire range: 28-14AWG
Recommended tightening torque: 7 lb-in
Pin diameter: .9mm
Recommended pc hole dia. 1.3mm
Wire strip length: 6mm

Modular Terminal Blocks with Dovetail Design
(Build any size you desire)



Type 55
 with wire protection
 5 mm



Type 57
 with wire protection
 5.08 mm

- Low Cost
- Reduce Inventory

Description

Dovetail construction for neat, secure assembly. Screws have anti-vibration feature. Pin spacing of the solder pins of **Type 55** is 5 mm and 10 mm. Pin spacing of the solder pins of **Type 57** is 5.08 mm and 10.16 mm.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
 Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, tin over nickel plating
Screw: M3, steel, chromate over zinc plating
 optional: brass nickel plated - consult factory
Wire protector: Phosphor bronze, tin plated

Part Numbers Standard Style
 Pin Spacing 5mm

Circuits	Type 055
2	31 055 102
3	31 055 103
4	31 055 104

Pin Spacing 5.08 mm

Circuits	Type 057
2	31 057 102
3	31 057 103

Technical Data
 (according to UL/CSA)

Voltage:
 Pin spacing 5mm/5.08mm: 300V
 Pin spacing 10mm/10.16mm: 600V
Maximum current: 15A
Wire range: 28-14AWG
Recommended tightening torque: 7 lb-in
Pin diameter: .9mm
Recommended pc hole dia. 1.3mm
Wire strip length: 6mm



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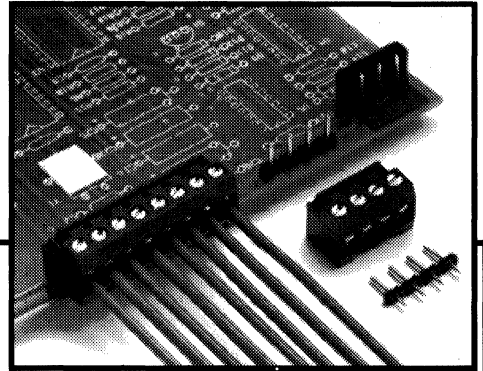
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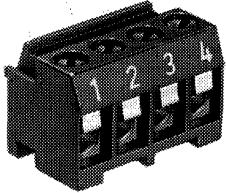
CSA, Designed to VDE 0110



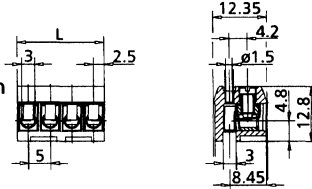
The quality management system of the manufacture, RIA electronic, Blumberg has been certified according to ISO 9001



5 mm Pluggable Terminal Block



Type 07
with wire protection



Description

Low cost. Low contact resistance. Captive screws.

Mates with:

Header Type 17 and Type 41 for vertical mounting

Accessories:

Latching flange no. 710084 and no. 710085 to mount the terminal strip on the printed circuit board. Coding pins no. 710121, 710122 and 716846 to ensure proper alignment

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, nickel plated
Contact Socket: Berylliumcopper, silver over nickel plating optional: tin/gold plating - consult factory
Screw: M3, Steel, zinc plated and chromated, stainless steel or brass upon request
Wire protector: Phosphor bronze, tin plated

$$L = (\text{number of circuits} - 1) \times \text{pin spacing} + 5 \text{ mm}$$

• **Pluggable**
(Quick Field Service)

Technical Data

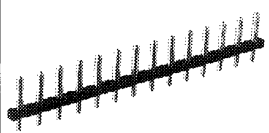
(according to UL/CSA)

Voltage:
 Pin spacing 5mm: 300V
 Pin spacing 10mm: 600V
Maximum current: 15A
Wire range: 28-12AWG
Recommended tightening torque: 7 lb-in
Contact resistance: R < 5mΩ
Wire strip length: 6mm

Part Numbers Standard Style

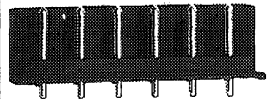
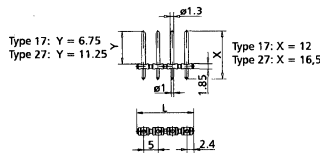
Pin Spacing 5mm

Circuits	Type 07	Circuits	Type 07	Circuits	Type 07
2	31 007 102	10	31 007 110	18	31 007 118
3	31 007 103	11	31 007 111	19	31 007 119
4	31 007 104	12	31 007 112	20	31 007 120
5	31 007 105	13	31 007 113	21	31 007 121
6	31 007 106	14	31 007 114	22	31 007 122
7	31 007 107	15	31 007 115	23	31 007 123
8	31 007 108	16	31 007 116	24	31 007 124
9	31 007 109	17	31 007 117		

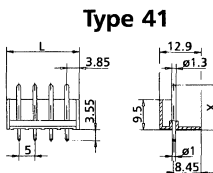


Type 17
pin length 12 mm

$$L = (\text{number of circuits} - 1) \times \text{pin spacing} + 5 \text{ mm}$$



Type 41
pin length 13 mm



Description

Type 17 is a low cost header for quick connect/disconnect of terminal blocks. Contact pins are available in various lengths and plating options. Shrouded header **Type 41** prevents misalignment of terminal block. Tri-barrier designs allows vertical disengagement of terminal block type 07. Pin spacing of the pins are 5 mm and 10 mm.

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Contact pin: Brass, silver over nickel plating

Technical Data

(according to UL/CSA)

Voltage:
 Pin spacing 5mm: 300V
 Pin spacing 10mm: 600V
Maximum current: 15A
Pin diameter: 1.3mm (mating position)
PC pin diameter: 1mm
Recommended pc hole dia. 1.3mm
Pc pin length (Type 17): 3.4mm
Pc pin length (Type 41): 2.3mm

5 mm Headers

(Mates with above Terminal Block)

Part Numbers Standard Style

Pin Spacing 5mm

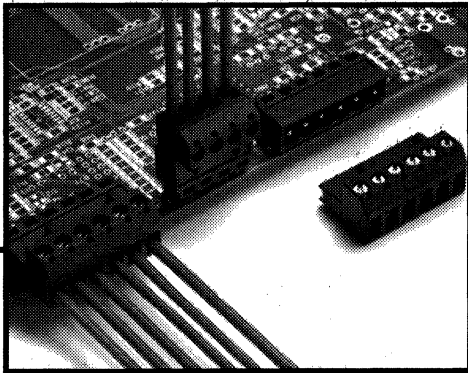
Circuits	Type 17	Circuits	Type 17	Circuits	Type 17
2	31 017 102	10	31 017 110	18	31 017 118
3	31 017 103	11	31 017 111	19	31 017 119
4	31 017 104	12	31 017 112	20	31 017 120
5	31 017 105	13	31 017 113	21	31 017 121
6	31 017 106	14	31 017 114	22	31 017 122
7	31 017 107	15	31 017 115	23	31 017 123
8	31 017 108	16	31 017 116	24	31 017 124
9	31 017 109	17	31 017 117		

Circuits	Type 41	Circuits	Type 41	Circuits	Type 41
2	31 041 102	10	31 041 110	18	31 041 118
3	31 041 103	11	31 041 111	19	31 041 119
4	31 041 104	12	31 041 112	20	31 041 120
5	31 041 105	13	31 041 113	21	31 041 121
6	31 041 106	14	31 041 114	22	31 041 122
7	31 041 107	15	31 041 115	23	31 041 123
8	31 041 108	16	31 041 116	24	31 041 124
9	31 041 109	17	31 041 117		

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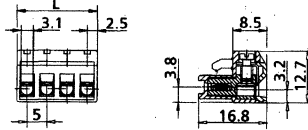


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CSA, Designed to VDE 0110

5 mm Pluggable Terminal Block



Type 49
with rising wire protector

• Low Profile • Pluggable Description

Rising wire protectors for improved wire termination. Low profile pluggable terminal fits a variety of headers. Low contact resistance. Captive screws. Coding pin no. 716906

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Terminal: Brass, nickel plated
Contact Socket: Berylliumcopper, silver over nickel plating optional: tin/gold plating - consult factory
Screw: M3 steel, chromate over zinc plating

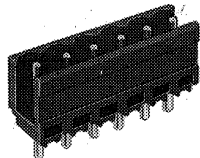
Technical Data (according to UL/CSA)

Voltage: 300V
Pin spacing 5mm: 300V
Pin spacing 10mm: 600V
Maximum current: 15A
Wire range: 26-14AWG
Recommended tightening torque: 8 lb-in
Contact resistance: R < 5mΩ = 500mA after 100 cycles
Wire strip length: 6mm

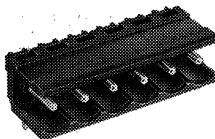
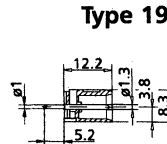
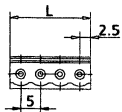
Part Numbers Standard Style Pin Spacing 5mm

Circuits	Type 49	Circuits	Type 49	Circuits	Type 49
2	31 049 102	10	31 049 110	18	31 049 118
3	31 049 103	11	31 049 111	19	31 049 119
4	31 049 104	12	31 049 112	20	31 049 120
5	31 049 105	13	31 049 113	21	31 049 121
6	31 049 106	14	31 049 114	22	31 049 122
7	31 049 107	15	31 049 115	23	31 049 123
8	31 049 108	16	31 049 116	24	31 049 124
9	31 049 109	17	31 049 117		

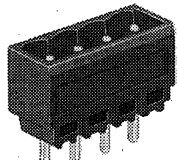
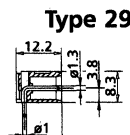
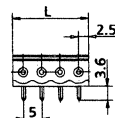
5 mm High Density Headers (Mates with above Terminal Block)



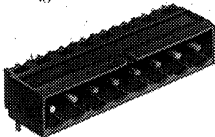
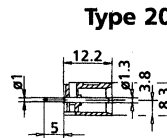
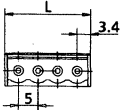
Type 19
for vertical mounting
pin length 5 mm



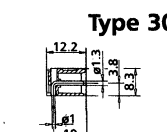
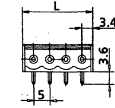
Type 29
for horizontal mounting
pin length 3.8 mm
L = (number of circuits - 1 x pin spacing + 5 mm)



Type 20
for vertical mounting
pin length 5 mm



Type 30
for horizontal mounting
pin length 3.8 mm
L = (number of circuits - 1 x pin spacing + 6.6 mm)



Technical Data (according to UL/CSA)

Voltage: 300V
Pin spacing 5mm: 300V
Pin spacing 10mm: 600V
Maximum current: 15A
Pin diameter: 1.3mm
(mating position)
Pc pin diameter: 1mm
Recommended pc hole diameter: 1.3mm

Part Numbers Standard Style Pin Spacing 5mm

Circuits	Type 19	Circuits	Type 19	Circuits	Type 19
2	31 019 102	10	31 019 110	18	31 019 219
3	31 019 103	11	31 019 111	19	31 019 219
4	31 019 104	12	31 019 112	20	31 019 219
5	31 019 105	13	31 019 113	21	31 019 219
6	31 019 106	14	31 019 114	22	31 019 219
7	31 019 107	15	31 019 115	23	31 019 219
8	31 019 108	16	31 019 116	24	31 019 219
9	31 019 109	17	31 019 117		

Circuits	Type 29	Circuits	Type 29	Circuits	Type 29
2	31 029 102	10	31 029 110	18	31 029 118
3	31 029 103	11	31 029 111	19	31 029 119
4	31 029 104	12	31 029 112	20	31 029 120
5	31 029 105	13	31 029 113	21	31 029 121
6	31 029 106	14	31 029 114	22	31 029 122
7	31 029 107	15	31 029 115	23	31 029 123
8	31 029 108	16	31 029 116	24	31 029 124
9	31 029 109	17	31 029 117		

Circuits	Type 20	Circuits	Type 20	Circuits	Type 20
2	31 020 102	10	31 020 110	18	31 020 118
3	31 020 103	11	31 020 111	19	31 020 119
4	31 020 104	12	31 020 112	20	31 020 120
5	31 020 105	13	31 020 113	21	31 020 121
6	31 020 106	14	31 020 114	22	31 020 122
7	31 020 107	15	31 020 115	23	31 020 123
8	31 020 108	16	31 020 116	24	31 020 124
9	31 020 109	17	31 020 117		

Circuits	Type 30	Circuits	Type 30	Circuits	Type 30
2	31 030 102	10	31 030 110	18	31 030 118
3	31 030 103	11	31 030 111	19	31 030 119
4	31 030 104	12	31 030 112	20	31 030 120
5	31 030 105	13	31 030 113	21	31 030 121
6	31 030 106	14	31 030 114	22	31 030 122
7	31 030 107	15	31 030 115	23	31 030 123
8	31 030 108	16	31 030 116	24	31 030 124
9	31 030 109	17	31 030 117		

Materials

Body: Polyamide 66, flame resistant and self-extinguishing according to UL 94V-0
Temperature range -40 °F (-40 °C) to + 257 °F (125 °C)
Contact pin: Brass, silver over nickel plating optional: gold plating - consult factory

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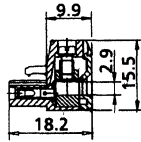
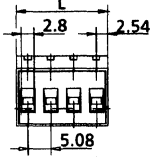
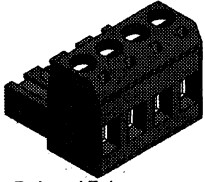




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CSA, Designed to VDE 0110

TYPE 249 Pluggable 5.08mm



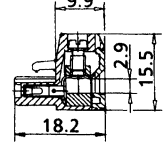
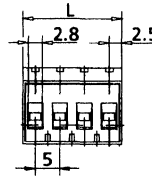
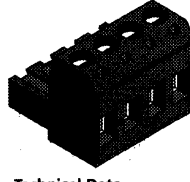
Technical Data

Voltage: 300V
 5.08mm spacing: 600V
 10.16mm spacing: 12A
 Max. Current: 14-26AVG
 Wire Range: 4.5 lb-in
 Screw Torque:

Material
 Body: Polyamide 66
 UL 94V-0
 Terminal: Brass, 4um
 nickel plated
 Screw: M3, steel,
 zinc plated

Circuits	Part No.
2	31249102
3	31249103
4	31249104
.	.
.	.
.	.
23	31249123
24	31249124

TYPE 349 Pluggable 5.00mm



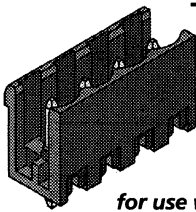
Technical Data

Voltage: 300V
 5.00mm spacing: 600V
 10.00mm spacing: 12A
 Max. Current: 14-26AVG
 Wire Range: 4.5 lb-in
 Screw Torque:

Material
 Body: Polyamide 66
 UL 94V-0
 Terminal: Brass,
 nickel plated
 Screw: M3, steel,
 zinc plated

Circuits	Part No.
2	31349102
3	31349103
4	31349104
.	.
.	.
.	.
23	31349123
24	31349124

TYPE 219(5.08mm) Type319(5.00mm) Open End Headers

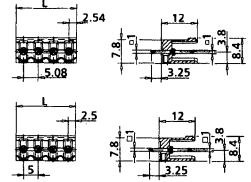


for use with
above plugs

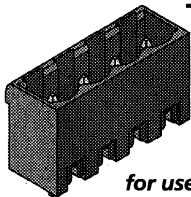
Technical Data

Voltage: 300V
 5.08/5.00mm spacing: 600V
 10.16/10.00mm spacing: 1.0mm-mating
 Square pin: 1.0mm-solder
 Solder pin length: 3.25mm
 PCB hole dia: 1.5mm

Circuits	Part No.	Part No.
2	31219102	31319102
3	31219103	31319103
4	31219104	31319104
.	.	.
.	.	.
.	.	.
23	31219123	31319123
24	31219124	31319124



TYPE 220(5.08mm) Type320(5.00mm) Closed End Headers

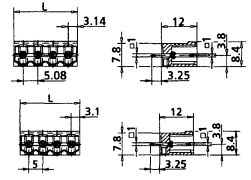


for use with
above plugs

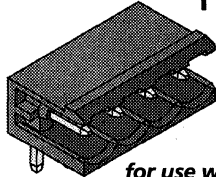
Technical Data

Voltage: 300V
 5.08/5.00mm spacing: 600V
 10.16/10.00mm spacing: 1.0mm-mating
 Square pin: 1.0mm-solder
 Solder pin length: 3.25mm
 PCB hole dia: 1.5mm

Circuits	Part No.	Part No.
2	31220102	31320102
3	31220103	31320103
4	31220104	31320104
.	.	.
.	.	.
.	.	.
23	31220123	31320123
24	31220124	31320124



TYPE 229(5.08mm) Type329(5.00mm) Open End Headers

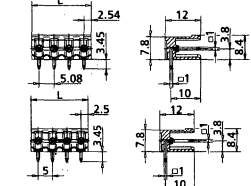


for use with
above plugs

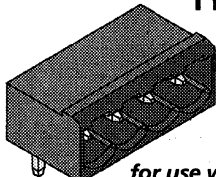
Technical Data

Voltage: 300V
 5.08/5.00mm spacing: 600V
 10.16/10.00mm spacing: 1.0mm-mating
 Square pin: 1.0mm-solder
 Solder pin length: 3.25mm
 PCB hole dia: 1.5mm

Circuits	Part No.	Part No.
2	31229102	31329102
3	31229103	31329103
4	31229104	31329104
.	.	.
.	.	.
.	.	.
23	31229123	31329123
24	31229124	31329124



TYPE 230(5.08mm) Type330(5.00mm) Closed End Headers

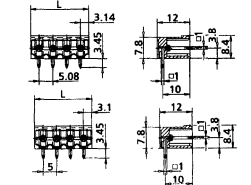


for use with
above plugs

Technical Data

Voltage: 300V
 5.08/5.00mm spacing: 600V
 10.16/10.00mm spacing: 1.0mm-mating
 Square pin: 1.0mm-solder
 Solder pin length: 3.25mm
 PCB hole dia: 1.5mm

Circuits	Part No.	Part No.
2	31230102	31330102
3	31230103	31330103
4	31230104	31330104
.	.	.
.	.	.
.	.	.
23	31230123	31330123
24	31230124	31330124



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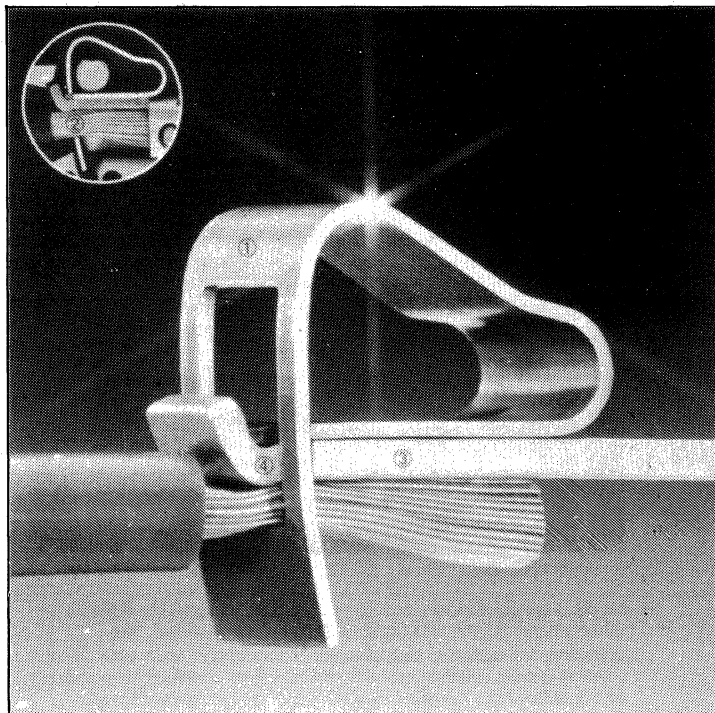
WORLD LEADER IN SPRING PRESSURE TERMINATION TECHNOLOGY

Over the years, WAGO has been responsible for a number of important technical innovations based on its unique spring pressure clamping systems. Today, while its primary concern is to meet the present needs of its customers, the company is also working actively to develop the products of the future.

Successful new products are not created overnight, but rather as a result of a sustained commitment to innovation. This is central to WAGO's philosophy and stems from a genuine understanding of market needs and of the modern industrial technology.

Although research and development is a full-time occupation for part of the WAGO team, it is accepted that there is no monopoly on good ideas. New concepts in product design and application techniques are welcomed from all parts of the organization. In personnel training - and throughout the corporate culture as a whole - it is stressed that the company's future depends upon its ability to innovate and to predict with reasonable accuracy the future needs of its customers.

CAGE CLAMP



CAGE CLAMP is suitable for direct connection of **solid, stranded or fine-stranded** machine tool wire as well as with crimped ferrules, pin terminals or tip bonded wire from 0.08 mm² / AWG 30 to 35 mm² / AWG 2. It is used extensively in electrical and electronic applications in a wide range of industries. System features of CAGE CLAMP include:

1 Apart from the wire stripper, the only tool required is a flat-bladed screwdriver. Once the conductor is inserted, the stainless steel CAGE CLAMP automati-

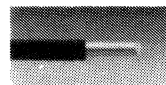
cally provides the correct clamping force for a totally secure connection.

2 The flat clamping face of the CAGE CLAMP presses the wire against the current bar, without risk of damage to the conductor.

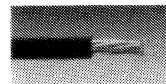
3 The current-carrying part is made from electrolytic copper with soft tinlead plating (Sn 60 Pb 40) ensuring gastight seating of the conductor.

4 Concentration of the high clamping force (N) over the small cross sectional area (mm²) results in a high specific contact pressure (N / mm²).

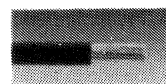
CAGE CLAMP* clamps the following copper conductors:



solid wire



stranded wire



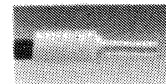
fine-stranded wire



fine-stranded wire - tip bonded



fine-stranded wire with crimped ferrule







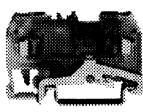





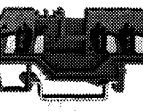








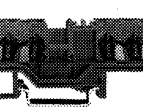


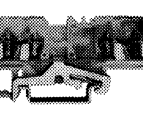





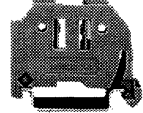


fine-stranded wire with crimped pin terminal

*CAGE CLAMP™

Cage clamp spring - a technical innovation from WAGO.

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INNOVATIVE CONNECTIONS

WAGO CORPORATION 9085 N. DEERBROOK TRAIL BROWN DEER, WI 53223 TEL: (414) 354-5511 FAX: (414) 354-2368

 <p>WAGO Corporation: With over 40 years as the world leader in screwless connection technology and with billions of CAGE CLAMP connections in service, WAGO has a long history of providing wire terminations which are fast, secure, vibration and corrosion resistant.</p>		
<p>AWG 28-12 600 V, 20 A UL 600 V, 25 A CSA</p>	<p>AWG 28-14 300 V, 15 A UL 300/600 V, 20/5 A CSA</p>	<p>AWG 28-12 600 V, 20 A UL 600 V, 25 A CSA</p>
 <p>Through terminal block, for 2 conductors 280-901 grey 280-902 orange 280-903 red 280-904 blue 280-905 black 280-906 yellow</p>	 <p>Double deck terminal block 280-519 grey/grey 280-529 blue/blue Pack.-unit 50 pcs</p>	 <p>Through terminal block, for 3 conductors 280-641 grey 280-651 blue 280-654 orange Pack.-unit 100 pcs</p>
 <p>Ground (earth) conductor terminal block, for 2 conductors 280-907 green-yellow Pack.-unit 100 pcs</p>	 <p>Double deck terminal block 280-523 blue/blue Pack.-unit 50 pcs</p>	 <p>Ground (earth) conductor terminal block, for 3 conductors 280-637 green-yellow Pack.-unit 100 pcs</p>
 <p>End plate 2.5 mm/0.098 in. thick 280-309 orange Pack.-unit 25 pcs</p>	 <p>Ground (earth) conductor double deck terminal block 280-527 grn-yellow/grey 280-537 grn-yellow/blue Pack.-unit 50 pcs</p>	 <p>Through terminal block, for 4 conductors 280-646 grey 280-656 blue 280-946 orange Pack.-unit 100 pcs</p>
 <p>Through terminal block for 3 conductors 280-681 grey 280-684 blue 280-650 orange 280-653 red 280-671 black 280-672 yellow</p>	 <p>End plate, 2.5 mm/0/098 in. thick 280-341 orange Pack.-unit 25 pcs</p>	 <p>End plate, 2.5 mm / 0/098 in. thick 280-313 orange Pack.-unit 25 pcs</p>
 <p>Ground (earth) conductor terminal block, for 3 conductors 280-687 green-yellow Pack.-unit 100 pcs</p>	 <p>Vertical jumper, I_N 24 A 281-421 grey Pack.-unit 200 (8x25) pcs</p>	 <p>Carrier rail 35 x 7.5 mm, 1 mm / 0.039 in. thick slotted, 2 m / 6'6" long 210-112 Pack.-unit 1 pcs</p>
 <p>End plate, 2.5 mm/0.098 in. thick 280-326 orange Pack.-unit 25 pcs</p>	 <p>Adjacent jumper, I_N 24 A 280-402 grey 280-422 olive green Pack.-unit 200 (8x25) pcs</p>	 <p>Carrier rail 35 x 15 mm, 1.5 mm / 0.059 in. thick unslotted, 2 m / 6'6" long 210-114 Pack.-unit 1 pcs</p>
 <p>Through terminal block, for 4 conductors 280-633 grey 280-634 blue 280-603 orange 280-830 red 280-831 black 280-832 yellow</p>	 <p>Alternate jumper, I_N 24A 280-409 grey Pack.-unit 100 (4x25) pcs</p>	 <p>Carrier rail 35 x 15 mm, 2.3 mm / 0.091 in. thick unslotted, 2 m / 6'6" long 210-118 Pack.-unit 1 pcs</p>
 <p>Ground (earth) conductor terminal block, for 4 conductors 280-677 green-yellow Pack.-unit 100 pcs</p>	 <p>Test plug adapter, 8 mm/0.315 in. wide, for test plug 4 mm/0.157 in. ø 209-170 Pack.-unit 50 (2x25) pcs</p>	 <p>Carrier rail, Copper 35 x 15 mm, 2.3 mm / 0.091 in. thick, 2 m / 6'6" long 210-198 Pack.-unit 1 pcs</p>
 <p>End plate, 2.5 mm/0.098 in. thick 280-315 orange Pack.-unit 25 pcs</p>	 <p>Test plug, 6 mm / 0.236 in. wide, with CAGE CLAMP connection 281-407 Pack.-unit 100 (4x25) pcs</p>	 <p>Staggered jumper, grey I_N 24 A 780-452 from 1 to 2 780-453 from 1 to 3 780-454 from 1 to 4 Pack.-unit 100 (4x25) pcs 780-455 from 1 to 5 780-456 from 1 to 6 780-458 from 1 to 8 Pack.-unit 100 pcs</p>
 <p>Screwless end stop, 249-117 10 mm/0.394 in. Pack.-unit 50 (2 x 25) pcs 249-116 6 mm/0.236 in. Pack.-unit 100 (4 x 25) pcs</p>	 <p>Protective warning marker for 5 terminal blocks 280-415 Pack.-unit 100 (4x25) pcs</p>	<p>ISO 9001  No. 74 100 5536 WAGO-USA CAGE CLAMP™</p>

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AWG 28-12 600 V, 20 A UL 600 V, 25 A CSA		AWG 24-10 600 V, 25 A UL 600 V, 40 A CSA		AWG 24-6 600 V, 50 A UL 600 V, 80 A CSA	
	Through terminal block, for 2 conductors 281-901 grey 281-902 orange 281-903 red 281-904 blue 281-905 black 281-906 yellow		Through terminal block, for 2 conductors 282-601 grey 282-604 blue		Through terminal block, for 2 conductors 283-601 grey 283-604 blue
	Ground (earth) conductor terminal block, for 2 conductors 281-907 green-yellow Pack.-unit 100 pcs		Ground (earth) conductor terminal block, for 2 conductors 282-607 green-yellow Pack.-unit 50 pcs		Ground (earth) conductor terminal block, for 2 conductors 283-607 green-yellow Pack.-unit 25 pcs
	End plate 2.5 mm/0.098 in. thick 281-309 orange Pack.-unit 25 pcs		End plate 2.5 mm/0.098 in. thick 282-317 orange Pack.-unit 25 pcs		End plate 2.5 mm/0.098 in. thick 283-317 orange Pack.-unit 25 pcs
	Through terminal block for 3 conductors 281-681 grey 281-684 blue 281-650 orange 281-653 red 281-671 black 281-672 yellow		Adjacent jumper, I _N 35 A 282-402 grey 282-422 olive green Pack.-unit 100 (4x25) pcs		Adjacent jumper, I _N 63 A 283-402 grey 283-422 olive green Pack.-unit 50 (2x25) pcs
	Ground (earth) conductor terminal block, for 3 conductors 281-687 green-yellow Pack.-unit 100 pcs		Alternate jumper, I _N 35A 282-409 grey Pack.-unit 100 (4x25) pcs		Alternate jumper, I _N 63A 283-409 grey Pack.-unit 50 (2x25) pcs
	End plate, 2.5 mm/0.098 in. thick 281-326 orange Pack.-unit 25 pcs	AWG 24-8 600 V, 35 A UL 600 V, 65 A CSA		AWG 28-14 300 V, 15 A UL 300 V, 15 A CSA	
	Through terminal block, for 2 conductors 284-601 grey 284-604 blue		Through terminal block, for 2 conductors 284-601 grey 284-604 blue		Disconnect terminal block, for 2 conductors 280-912 grey Pack.-unit 50 pcs
	Ground (earth) conductor terminal block, for 2 conductors 284-607 green-yellow Pack.-unit 25 pcs		End plate 2.5 mm/0.098 in. thick 284-317 orange Pack.-unit 25 pcs		Disconnect terminal block, for 3 conductors 280-683 grey Pack.-unit 50 pcs
	Adjacent jumper, I _N 32 A 281-402 grey 281-422 olive green Pack.-unit 200 (8x25) pcs		Adjacent jumper, I _N 46 A 284-402 grey 284-422 olive green Pack.-unit 100 (4x25) pcs		End plate 2.5 mm/0.098 in. thick 280-326 orange Pack.-unit 25 pcs
	Alternate jumper, I _N 24A 281-409 grey Pack.-unit 100 (4x25) pcs		Disconnect terminal block, for 4 conductors 280-685 grey Pack.-unit 50 pcs		End plate 2.5 mm/0.098 in. thick 280-315 orange Pack.-unit 25 pcs
	Test plug adapter, 8 mm/0.315 in. wide, for test plug 4 mm/0.157 in. ø 209-170 Pack.-unit 50 (2x25) pcs		Alternate jumper, I _N 46A 284-409 grey Pack.-unit 50 (2x25) pcs		
	Test plug, 6 mm / 0.236 in. wide, with CAGE CLAMP connection 281-407 Pack.-unit 100 (4x25) pcs				

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CAGE CLAMP™



<p>0.08 - 4.0 mm² 800 V/8 kV/3 32 A AWG 28-12</p>		<p>Screwdrivers, for optimum handling of CAGE CLAMP in terminal blocks and connectors</p>																																																						
	<p>Fused disconnect terminal blocks for G-type cartridges, 5 x 20 mm / 281-611 281-611/281-541 281-611/281-417</p>		<p>Type 1, 210-119 blade 2.5 x 0.4 mm / 0.098 x 0.016 in. suitable for series 233, 234, 279</p>		<p>Interface module for flat connector 289-505, 26 pole 289-506, 34 pole Pack.-unit 1 pc</p>																																																			
	<p>5 x 25 mm / 281-612 281-612/281-541 281-612/281-417 Pack.-unit 50 pcs.</p>		<p>Type 2, 210-120 blade 3.5 x 0.5 mm / 0.138 x 0.019 in. suitable for series 231, 232, 236, 736, 737, 255-257</p>		<p>Interface module for subminiature D-pin connector: for mating connector w/ solder connection 289-547, 25 pole 289-548, 37 pole Pack.-unit 1 pc.</p>																																																			
	<p>5 x 30 mm / 281-622 281-622/281-541 281-622/281-417 Pack.-unit 50 pcs.</p>		<p>Type 3, 210-121 blade 5.5 x 0.8 mm / 0.216 x 0.031 in. suitable for series 282, 283, 284, 285</p>		<p>for mating connector with IDC 289-542, 25 pole 289-543, 37 pole Pack.-unit 1 pc.</p>																																																			
	<p>0.25" x 1", width 10 mm / 0.394" 281-613 281-613/281-541 281-613/281-417 Pack.-unit 50 pcs.</p>		<p>Type "short", 210-257 blade 3.5 x 0.5 mm / 0.138 x 0.019 in. suitable for same series as type 2</p>		<p>Interface module for subminiature D-socket connector: for mating connector w/ solder connection 289-557, 25 pole 289-558, 37 pole Pack.-unit 1 pc.</p>																																																			
	<p>0.25" x 1.25", width 10 mm / 0.394" 281-623 281-623/281-541 281-623/281-417 Pack.-unit 50 pcs.</p>		<p>Type "short angled", 210-258 specially suitable for sensor and actuator terminal blocks</p>		<p>for mating connector with IDC 289-552, 25 pole 289-553, 37 pole Pack.-unit 1 pc.</p>																																																			
	<p>Disconnect terminal block with "knife" disconnect 281-624 Pack.-unit 50 pcs.</p>	<p>WSB-Quick marking system for rail mounted terminal blocks. 10 stretchable strips with 10 markers each per card. Basic PS: 5 mm / 0.197 in. stretchable to 8 mm. 0.315 in. For larger block widths individual markers can be separated from the strip.</p>			<p>Relay module 24 V ac/dc 1 relay, 1 make contact 288-564 Pack.-unit 1 pc.</p>																																																			
	<p>End and intermediate plate 2.5 mm / 0.098 in. thick 281-309 orange Pack.-unit 25 pcs.</p>				<p>Relay module 24 V ac/dc 1 relay 1 changeover contact 288-504 Pack.-unit 1 pc.</p>																																																			
	<p>Locking bar for ganging several fuse holders, 1 m / length 3'3" 210-254 orange Pack.-unit 1 pc.</p>	<table border="0"> <tr> <td>plain</td> <td>209-701</td> <td>209-501</td> </tr> <tr> <td>1 ... 10 (10x)</td> <td>209-702</td> <td>209-502</td> </tr> <tr> <td>11 ... 20 (10x)</td> <td>209-703</td> <td>209-503</td> </tr> <tr> <td>21 ... 30 (10x)</td> <td>209-704</td> <td>209-504</td> </tr> <tr> <td>31 ... 40 (10x)</td> <td>209-705</td> <td>209-505</td> </tr> <tr> <td>41 ... 50 (10x)</td> <td>209-706</td> <td>209-506</td> </tr> <tr> <td>1 ... 9 (10x)</td> <td>209-765</td> <td>209-565</td> </tr> <tr> <td>10, 10, ... 50, 50*</td> <td>209-753</td> <td>209-553</td> </tr> <tr> <td>(*2x, red printing)</td> <td></td> <td></td> </tr> <tr> <td>1 ... 50 (2x)</td> <td>209-766</td> <td>209-566</td> </tr> <tr> <td>51 ... 100 (2x)</td> <td>209-707</td> <td>209-507</td> </tr> <tr> <td>101 ... 10 (2x)</td> <td>209-708</td> <td>209-508</td> </tr> <tr> <td>151 ... 10 (2x)</td> <td>209-709</td> <td>209-509</td> </tr> <tr> <td>R, S, T, U, V, W, X, Y, Z, MP</td> <td></td> <td></td> </tr> <tr> <td>A, B, P, N, PE</td> <td></td> <td></td> </tr> <tr> <td>PEN, L1, L2, L3</td> <td>209-744</td> <td>209-544</td> </tr> <tr> <td>(in strips with 10 identical letters)</td> <td></td> <td></td> </tr> </table>		plain	209-701	209-501	1 ... 10 (10x)	209-702	209-502	11 ... 20 (10x)	209-703	209-503	21 ... 30 (10x)	209-704	209-504	31 ... 40 (10x)	209-705	209-505	41 ... 50 (10x)	209-706	209-506	1 ... 9 (10x)	209-765	209-565	10, 10, ... 50, 50*	209-753	209-553	(*2x, red printing)			1 ... 50 (2x)	209-766	209-566	51 ... 100 (2x)	209-707	209-507	101 ... 10 (2x)	209-708	209-508	151 ... 10 (2x)	209-709	209-509	R, S, T, U, V, W, X, Y, Z, MP			A, B, P, N, PE			PEN, L1, L2, L3	209-744	209-544	(in strips with 10 identical letters)				<p>Relay module 24 V ac/dc 2 relays, 1 changeover contact each 288-758 Pack.-unit 1 pc.</p>
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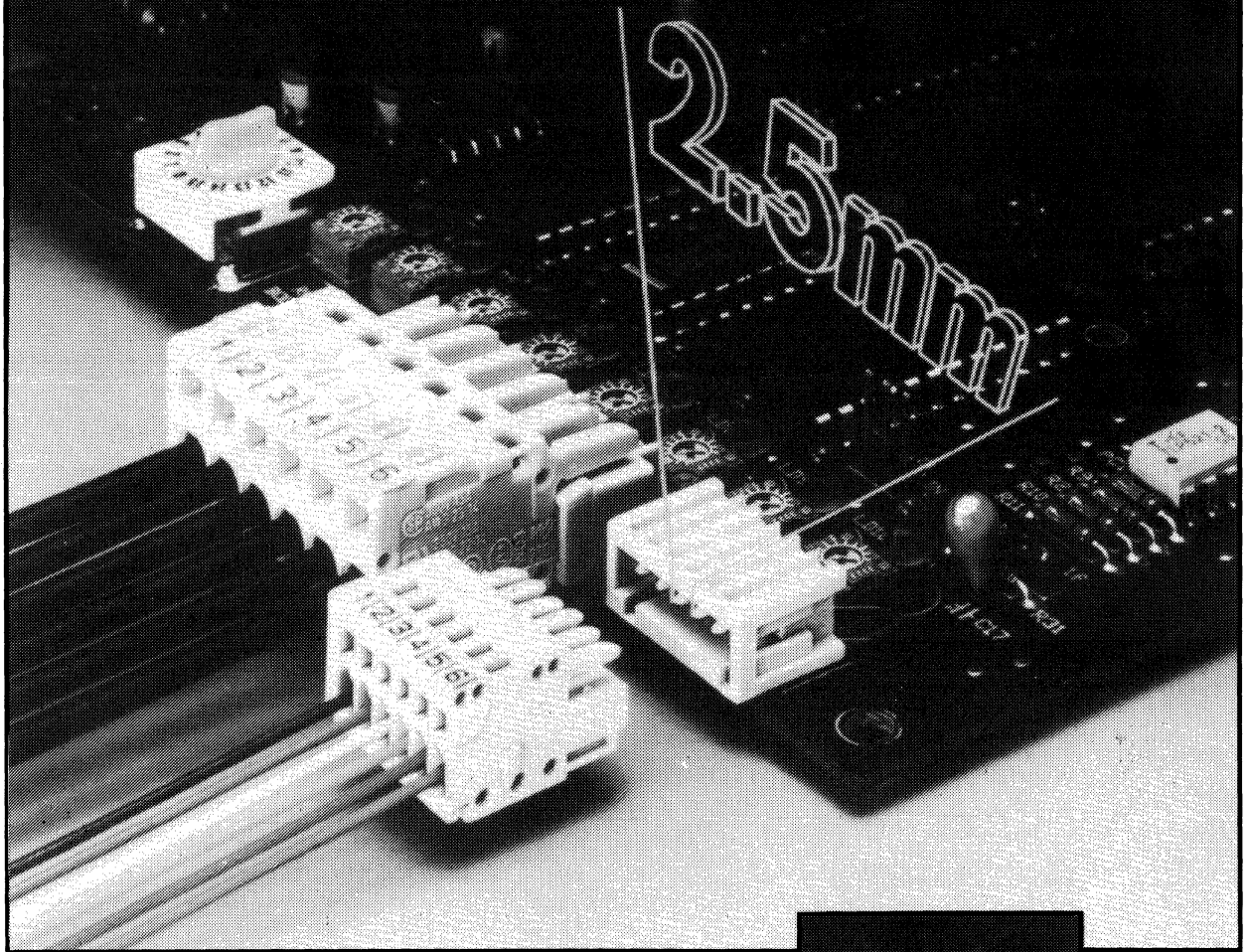
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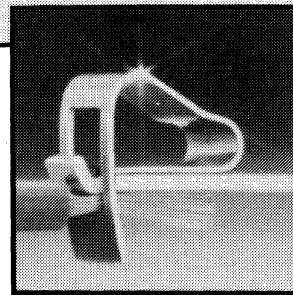
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small \ 'SMOL\ adj. 1. little in size, especially when compared with others of the same kind;



WAGO's definition: *The New 2.5 mm. Micro Connector.*

The **WAGO MULTI CONNECTION SYSTEM (MCS)** now offers a 2.5 mm (.098 in.) version to solve your high density wiring needs. Product range includes: straight and angled plugs and options such as snap-on coding keys and self-adhesive marker strips or direct marking. Utilizing the original, patented Cage-Clamp, the Micro Connector accommodates a wide wire range of AWG 28-20 (solid or stranded wire). The Micro Connector is 100% protected against mis-mating and is molded in UL 94 V0 material which is ideal for telecommunication and transportation applications.



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ZONEPRO²

Provides Professional Surge PROtection For ALL Industrial Applications

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The ZonePRO² line of PROfessional Surge PROtection devices utilizes a unique ZONEd approach to surge protection. Zones' 0, 1, 2, etc. refer to defined surge areas within an industrial facility and its equipment. By separating the physical plant into distinct zones, WAGO has designed

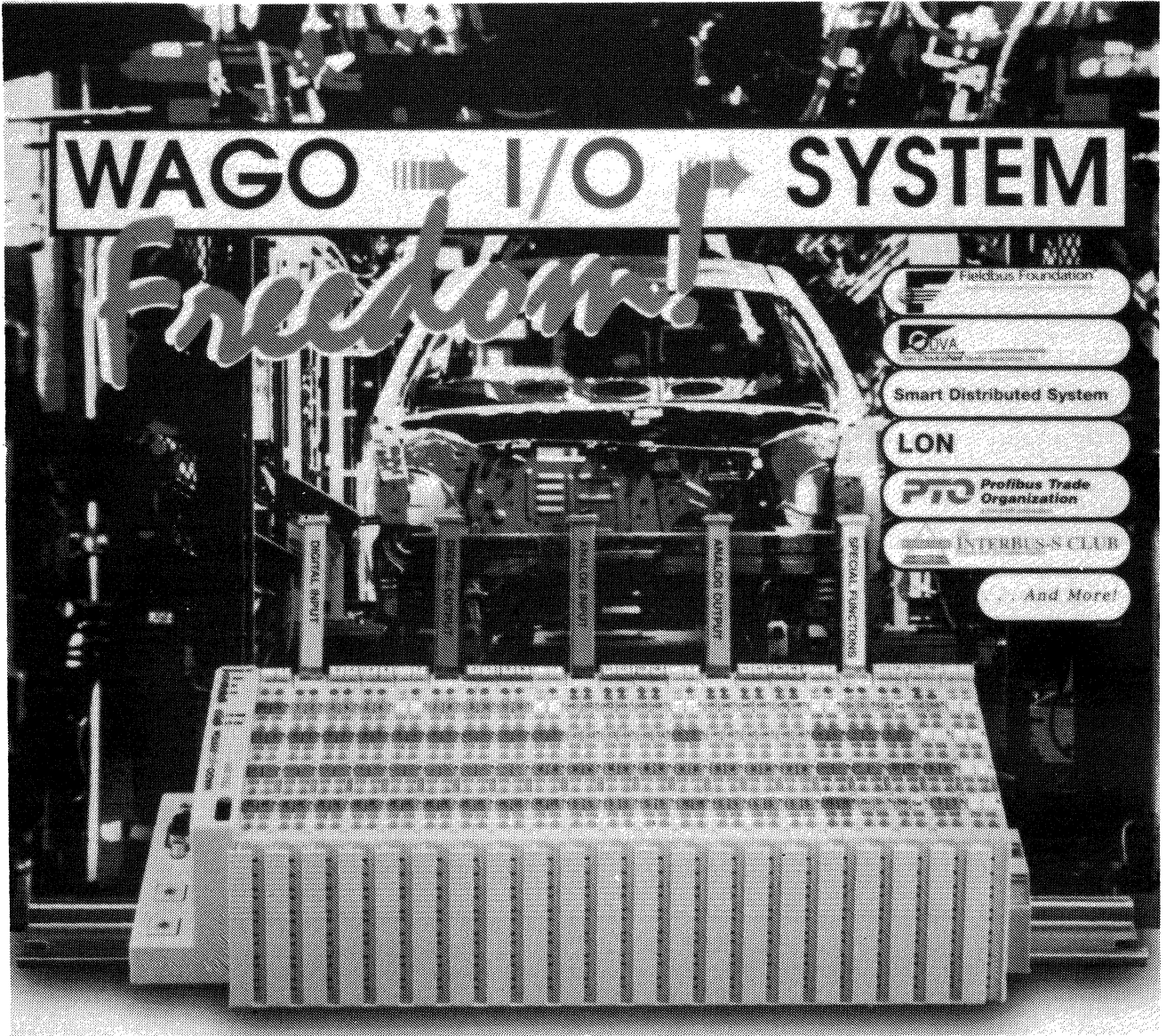
ZonePRO² products to meet the specific needs of each zone.

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Free! to choose between a wide and growing range of currently available fieldbus system options: Fieldbus Foundation, DeviceNet, SDS, LON, Profibus, Interbus-S, etc. and free to intermingle these in a typical process or manufacturing environment.

Free! to make more efficient use of financial and physical resources. By offering a comprehensive program that is highly modular (2 or 4 channels

per module) the WAGO I/O system reduces wasted I/O's thus saving costs and reducing space.

Free! to mix digital and analog, inputs and outputs, different voltages, supply terminals, special functions, power and measuring signals, with and without fuse, with optional diagnostics; all on one system with no physical addressing of the terminals necessary.

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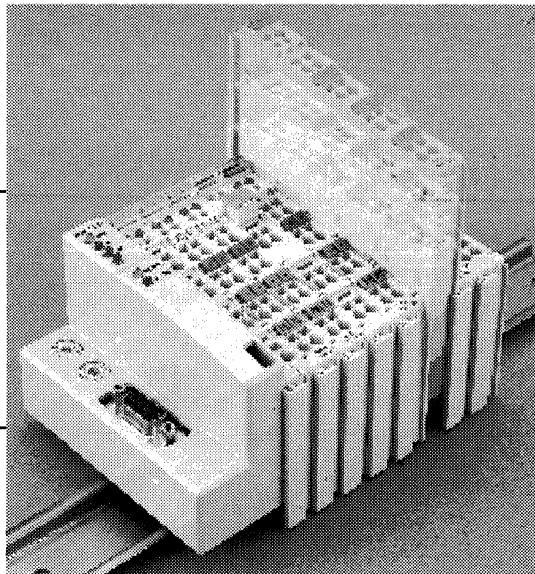
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- Open!** to make more efficient use of financial and physical resources. By offering a comprehensive program that is highly modular (2 or 4 channels per module) the WAGO I/O system reduces wasted I/O's thus saving costs and reducing space.
- Open!** to mix digital and analog, inputs and outputs, different voltages, supply terminals, special functions, power and measuring signals, with and with-out fuse, with optional diagnostics; all on one system with no physical addressing of the terminals necessary.

Buscouplers	Standard	Description
750-301	Standard	Profibus
750-303	Standard	12 Mbaud Profibus
750-304	Standard	Interbus-S
750-306	Standard	DeviceNet
750-312	Bus Adapter	Modbus
751-600		LON
Digital Input Modules		
750-400		2 CH Input 24 V dc, 3.0 mS
750-401		2 CH Input 24 V dc, 0.2 mS
750-402		4 CH Input 24 V dc, 3.0 mS
750-403		4 CH Input 24 V dc, 0.2 mS
750-404		1 CH U/D Counter 100 kHz
750-405		2 CH Input 230 V dc
750-406		2 CH Input 120 V dc
750-408		4 CH Input 24 V dc, 3.0 mS, neg. switched
750-409		4 CH Input 24 V dc, 0.2 mS, neg. switched
750-600		Bus End Terminal (required)
751-610		Bus Power Feed w/fuse W/D 24V dc
Digital Output Modules		
750-501		2 Ch Output 24 V dc, 0.5 A (sourcing)
750-502		2 Ch Output 24 V dc, 2.0 A (sourcing)
750-504		4 Ch Output 24 V dc, 0.5 A (sourcing)
750-506		2 Ch Output 24 V dc, 0.5 A W/D
750-509		2 Ch Output 240 V ac, 0.3 A SS
750-511		2 Ch Output Pulse Width Mod 0.1 A
750-512		2 Ch Output Relay 2.0 A 240 V
750-513		2 Ch Output Relay N.O. Isolated
750-514		2 Ch Output Relay SPDT
751-615		LON 4 Ch Output 24 V dc, 0.5 A (sourcing)
Analog Input Modules		
750-454		2 Ch Input Analog 4-20 mA
750-462		2 Ch Input Analog Type K
750-462/000-002		2 Ch Input Analog Type T
750-462/000-006		2 Ch Input Analog Type J
750-466		2 Ch Input Analog 4-20 mA source
750-467		2 Ch Input Analog 0-10 V source
750-468		4 Ch Input Analog 0-10 V source
Analog Output Modules		
750-550		2 Ch Output Analog 0-10 V dc
750-554		2 Ch Output Analog 4-20 mA
750-555		4 Ch Output Analog 4-20 mA
750-556		2 Ch Output Analog +/-10 V dc
Motion Control Modules		
750-404		1 Ch U/D Counter 100kHz
750-511		2 Ch Output Pulse Width Mod. 0.1 A
750-630		SSI Sensor Interface
750-631		Encoder Interface
750-650		1 Ch RS232C Interface



ISO 9001



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C-1429



MINI SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 93 3.5MM CENTER TO CENTER SPACING

Description

Series 93 screw connectors for printed circuit boards are some of the smallest available on the market. These "space savers" on PC boards are available from 2 to 24 poles and 2 and 3 pole dovetail versions. Both types have a center to center spacing of 3.5mm/138in. Types with 7mm/276in. center to center spacing are also available. All types with pins at right angles relative to the wire entrance have standoffs at the base. This encourages the flow of flux and solvents during the soldering operation. The dovetail interlocking system provides excellent flexibility for the tailoring of connectors to a specific size. This also results in reduced delivery intervals and inventory.

The wire protector prevents the clamping screw from damaging the wire. Captive screws are used throughout. All blocks will be shipped without markings as standard. Consecutive numbering, special marking and gold or silver plating are some of the options available.

International Approvals:

UL File No. E69841			Rating	Current	Voltage	AWG
CSA File No. LR24322						
UL	7A	300V	26-16			
CSA	7A	150V	26-16			

DIN/VDE Related Information:
 VDE 6A, 600V at 30°C/86°F, ambient temp.
 Acc. to DIN VDE 0110, pollution degree 1.
Breakdown Voltage: 2500V

Technical Data

Center to Center Spacing: 3.5mm/138in.
Nominal Cross Section: 1.0mm²/1550 mils²
Clamping Range: 26-16 AWG solid Cu wire
 26-18 AWG stranded Cu wire
Wire stripping Length: 6.0mm/0.25in.
Recommended Hole Ø in PC Board: 1.2mm/0.05in.

Material

Molding: Polyamide, self-extinguishing to UL94 V-0, grey color.

Temperature Limits:
 short-time: 140°C/284°F
 continuous: 80°C/176°F
 cold-resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Terminal Body: Tin plated brass

Wire Protector: nickel silver

Screw:

M2, zinc plated steel, yellow chromated

Tightening Torque: max: 0.2Nm/2lb/in

Solder pin: Ø .9mm/.035in tin plated brass

Options:

Please mark in "How to Order" box

CN: Consecutive numbering

SM: Special marking (please provide sketch)

G05: Gold plating (5 micro inches)

G30: Gold plating (30 micro inches)

S30: Silver plating (30 micro inches)

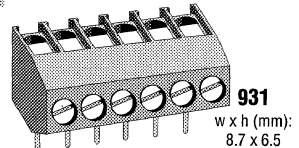
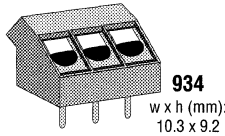
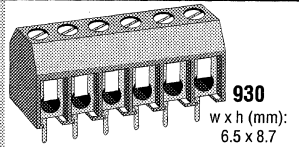
NOTE: If more than one option is required, please separate each option with a dash (-)

Accessories

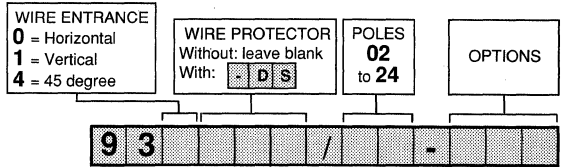
Self Adhesive Marker Strips:

Type	Center to center Spacing	Marked
BST-3.50/24	3.5mm/138in	1-24

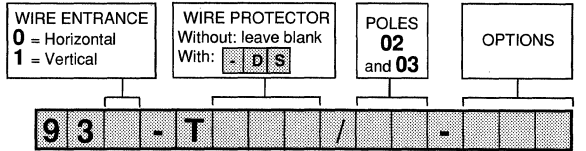
Marker strips are UL recognized in the category of marking and labelling systems materials.



How To ORDER



Dovetail Version: How To ORDER



SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 94 (.2IN. SPACING) AND SERIES 95 (5MM SPACING)

Description

Series 94 and 95 are some of the smallest available connectors and are designed to save precious space on the printed circuit board.

These strips are available in solid 2-32 pole lengths and can be installed end to end to provide the needed number of poles while maintaining the center to center distance.

They can also be ordered in the Dovetail version (-T) with 2 and 3 poles per block; the dovetail system allows them to be assembled together in the needed combination to provide the designer with the needed number of positions. The dovetail system greatly reduces inventory and speeds up delivery.

The copper alloy tin plated Wire Protector (-DS) option is recommended as it provides protection to stranded wires from the clamping screw. The Series 94 and 95 screws resist loosening due to vibration.

International Approvals:

UL File No. E69841			Rating	Current	Voltage	AWG
CSA File No. LR24322						
UL	15A	300V	26-14			
CSA	15A	300V	26-12			

DS versions
 UL 15A 300V 26-14
 CSA 15A 300V 26-14

DIN/VDE Related Information:
 VDE 15A, 600V at 30°C/86°F, ambient temp.
 Acc. to DIN VDE 0110, pollution degree 1.
Breakdown Voltage: 2500V

Technical Data

Center to Center Spacing: Series 94: 5.08mm/200in.
 Series 95: 5mm/197in.

Nominal Cross Section: 1.5mm²/2325 mils²

Wire stripping Length: 6.0mm/0.25in.

Recommended Hole Ø in PC Board: 1.3mm/0.05in.

Material

Molding: Polyamide, self-extinguishing to UL94 V-0, grey color.

Temperature Limits:
 short-time: 140°C/284°F
 continuous: 80°C/176°F
 cold-resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Terminal Body: Tin plated brass

Wire Protector: Tin plated copper alloy

Screw:

M2.6, zinc plated steel, yellow chromated

Tightening Torque: max: 0.4Nm/3.5lb/in

Solder Pin: diameter 1.0mm/0.04in. tin plated brass or tin plated copper.

Options:

Please mark in "How to Order" box

CN: Consecutive numbering

SM: Special marking (please provide sketch)

BS: Brass screws

PS: Passivated steel screws

G05: Gold plating (5 micro inches)

G30: Gold plating (30 micro inches)

S30: Silver plating (30 micro inches)

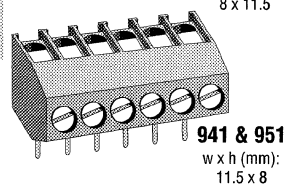
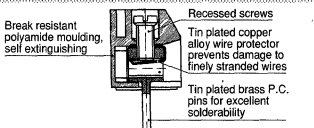
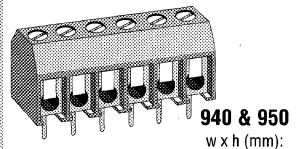
NOTE: If more than one option is required, please separate each option with a dash (-)

Accessories

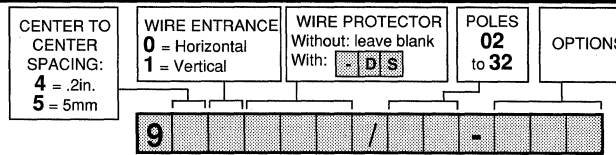
Self Adhesive Marker Strips:

Type	Center to center Spacing	Marked
BST-5.00/12	5mm/197in.	1-12
BST-5.00/32	5mm/197in.	1-32
BST-5.08/12	5.08mm/200in.	1-12
BST-5.08/32	5.08mm/200in.	1-32

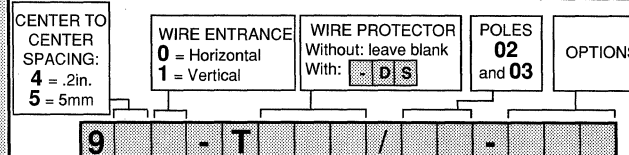
Marker strips are UL recognized in the category of marking and labelling systems materials.



How To ORDER



Dovetail Version: How To ORDER



U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfe, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

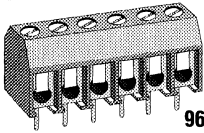
1-800-724-2928

Internet: www.weco.ca

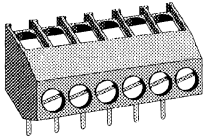
E-Mail: weco@weco.ca

SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

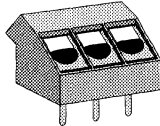
SERIES 96 (.2 IN. SPACING) AND SERIES 97 (5MM SPACING)



960 and 970
w x h (mm):
9 x 13.5



961 and 971
w x h (mm):
13.5 x 9



964 and 974
w x h (mm):
12.5 x 12

Description

Series 96 and 97 blocks have a higher profile than Series 94 and 95. They provide larger clearance and creepage distances and higher breakdown voltages. These strips are available in solid 2-32 positions and can also be ordered in the

dovetail version (-T) with 2 and 3 poles per block; the dovetail system allows them to be assembled in the necessary combination to provide the designer with the required number of positions while maintaining center to center pin spacing. The dovetail system greatly reduces inventory and speeds up delivery.

The copper alloy tin plated wire protector (-DS) option is recommended as it provides protection to stranded wires from the turning screw. Series 96 and 97 screws resist loosening due to vibration.

Material

Molding: Polyamide, self-extinguishing to UL94 V-0, grey color.

Temperature Limits:
short-time: 140°C/284°F
continuous: 80°C/176°F
cold-resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Terminal Body: Tin plated brass

Wire Protector: Tin plated copper alloy

Screw: M3, zinc plated steel, yellow chromated

Tightening Torque: max. 0.5Nm/4.5lb/in

Solder pin: Ø 1.0mm/0.04in tin plated brass or tin plated copper.

Options:

Please mark in "How to Order" box

CN: Consecutive numbering

SM: Special marking

(please provide sketch)

BS: Brass screws

PS: Passivated steel screws

G05: Gold plating (5 micro inches)

G30: Gold plating (30 micro inches)

S30: Silver plating (30 micro inches)

NOTE: If more than one option is required, please separate each option with a dash (-)

International Approvals:

UL File No. E69841

CSA File No. LR24322



Rating Current Voltage AWG

Non DS versions:
UL 20A 300V 26-12
CSA 15A 300V 22-10

DS versions:
UL 20A 300V 26-12
CSA 15A 300V 26-10

DIN/VDE Related Information:

VDE 15A, 600V at 30°C/86°F, ambient temp.

Acc. to DIN VDE 0110, pollution degree 1.

Breakdown Voltage: 2500V

Technical Data

Center to Center Spacing:

Series 96: 5.08mm/.200in.

Series 97: 5mm/.197in.

Nominal Cross Section:

2.5mm²/3875 mils²

Wire stripping Length: 6.0mm/0.25in.

Recommended Hole Ø in PC Board:

1.3mm/0.05in.

How To ORDER

CENTER TO CENTER SPACING: 6 = .2in. 7 = 5mm	WIRE ENTRANCE 0 = Horizontal 1 = Vertical 4 = 45 degree*	WIRE PROTECTOR Without: leave blank With: <input type="checkbox"/> DS	POLES 02 to 32	OPTIONS
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*Types 964 & 964-DS do not exist

9 - / -

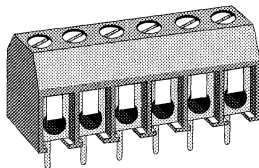
Dovetail Version: How To ORDER

CENTER TO CENTER SPACING: 6 = .2in. 7 = 5mm	WIRE ENTRANCE 0 = Horizontal 1 = Vertical 4 = 45 degree	WIRE PROTECTOR Without: leave blank With: <input type="checkbox"/> DS	POLES 02 and 03	OPTIONS
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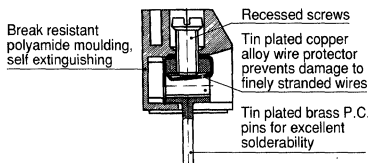
9 - T - / -

HIGH CURRENT CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 91 10MM CENTER TO CENTER SPACING



w x h (mm)
9 x 14



Description

Series 91 blocks have a higher profile than Series 93 to 97. They provide larger clearance and creepage distances and higher breakdown voltages. The horizontal wire entry blocks have a raised base to allow the flow of flux and solvents during the soldering operation.

These strips are available in solid 2 - 12 positions and are UL and CSA rated for 25 amps, which makes them suitable for high current PCB applications.

The copper alloy tin plated wire protector (-DS) option is recommended as it provides protection to stranded wires from the turning screw. Series 91 screws resist loosening due to vibration.

Material

Molding: Polyamide, self-extinguishing to UL94 V-0, grey color.

Temperature Limits:
short-time: 140°C/284°F
continuous: 80°C/176°F
cold-resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Terminal Body: Tin plated brass

Wire Protector: Tin plated copper alloy

Screw: M3.5, zinc plated steel, yellow chromated

Tightening Torque: max. 0.8Nm/7lb/in

Solder pin: Ø1.0mm/0.04in tin plated brass or tin plated copper.

NOTE: If more than one option is required, please separate each option with a dash (-)

International Approvals:

UL File No. E69841

CSA File No. LR24322



910:
Rating Current Voltage AWG
UL 25A 300V 18-10
CSA 25A 300V 22-10

910-DS:
UL 25A 300V 18-10
CSA 25A 300V 26-10

DIN/VDE Related Information:

VDE 15A, 500V at 30°C/86°F, ambient temp.

Acc. to DIN VDE 0110, pollution degree 3.

Breakdown Voltage: 5000V

Technical Data

Center to Center Spacing: 10mm/.394in.

Nominal Cross Section:

4mm²/6200 mils²

Wire stripping Length: 6.0mm/0.25in.

Recommended Hole Ø in PC Board:

1.3mm/0.05in.

How To ORDER

SPECIAL SOLDER PIN DIAMETER OF 1.5mm Without: leave blank With: <input type="checkbox"/> B	WIRE PROTECTOR Without: leave blank With: <input type="checkbox"/> DS	POLES 02 to 12	OPTIONS
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9 1 0 - / -

U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938

CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca



SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 140 5MM CENTER TO CENTER SPACING

Description

Low profile series 140 terminal blocks feature an elevator style clamping mechanism which provides high contact pressure, great resistance to loosening due to vibration, and allows an almost unlimited number of disconnections. All products are equipped with captive screws and a dovetail interlocking feature which allows all pole versions to be assembled to the required pole configurations while maintaining 5 mm center to center pin spacing. Single, double and triple level horizontal wire entry versions, as well as vertical wire entry versions, are available.

International Approvals

UL File No. E69841
 CSA File No. LR24322

UL **CSA**

Rating	Current	Voltage	AWG
UL	15A	300V	30-14
CSA	15A	300V	30-14

in accordance with VDE 0110, pollution degree 1

Technical Data

Center to center spacing: 5mm/.197in
Nominal Cross Section: 1.5mm²/2325mils²
Wire Stripping Length: 6mm/.24in
Recommended Hole Ø in P.C. Board: 1.30mm/0.05in

Material

Molding: Polyamide, self extinguishing, to UL94, V-O, grey color

Temperature Limits:
 short time: 140°C/284°F
 continuous: 80°C/176°F
 cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI-600
Oxygen Index Rating: 33%

Terminal Body: nickel plated brass

Pressure Plate/Solder Pin:
 Tin plated brass

Screw: M3, zinc-plated steel, yellow chromated
 Tightening Torque: max. 0.5Nm/4.5lb-in

Solder Pin: 0.9mm x 0.5mm/0.04in x 0.03in
Screw: M3 zinc-plated steel, yellow

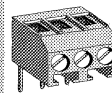
Options

Please mark in "How to Order" box
CN: Consecutive Numbering
SM: Special Marking (please provide sketch)
G05: Gold plating (5 micro inches)
G30: Gold plating (30 micro inches)

Accessories

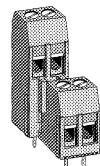
Self Adhesive Marker Strips

Type	Center to center Spacing	Marked
BST5.00/12	5.00mm/.197in	1 to 12
BST5.00/32	5.00mm/.197in	1 to 32
BST10.00/16	10.00mm/.394in	1 to 16



Center to Center Spacing
 140-A-121 5mm/0.197in
 140-A-122 10mm/0.394in

Dimensions
 Height: 8.2mm/0.32in
 Width: 10mm/0.39in



Center to Center Spacing
 140-B-151 5mm/0.197in
 140-B-152 10mm/0.394in
 NOTE: Other configurations available on request

Dimensions
 Height: 19mm/0.75in
 Width: 18.3mm/0.72in



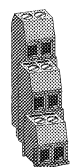
Center to Center Spacing
 140-B-153 5mm/0.197in
 140-B-154 10mm/0.394in

Dimensions
 Height: 19mm/0.75in
 Width: 18.3mm/0.572in



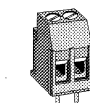
Center to Center Spacing
 140-E-271 5mm/0.197in
 140-E-272 10mm/0.394in
 NOTE: Other configurations available on request

Dimensions
 Height: 28mm/1.10in
 Width: 26.4mm/1.12in



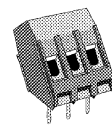
Center to Center Spacing
 140-E-273 5mm/0.197in
 149-E-274 10mm/0.394in
 NOTE: Other configurations available on request

Dimensions
 Height: 28mm/1.10in
 Width: 28.4mm/1.12in



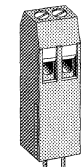
Center to Center Spacing
 140-A-111 5mm/0.197in
 140-A-112 10mm/0.394in

Dimensions
 Height: 10mm/0.39in
 Width: 8.2mm/0.32in



Center to Center Spacing
 140-C-111 5mm/0.197in
 140-C-112 10mm/0.394in

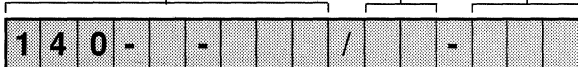
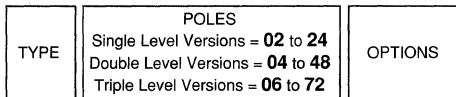
Dimensions
 Height: 14.2mm/0.56in
 Width: 10.5mm/0.41in



Center to Center Spacing
 140-E-111 5mm/0.197in
 140-E-112 10mm/0.394in

Dimensions
 Height: 28mm/1.10in
 Width: 9mm/0.35in

How To ORDER



SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 150 MULTILIFT 5MM CENTER TO CENTER SPACING

Description

These connectors with extra large clamping area have an elevator style terminal which guarantees a high pressure fitting and a fatigue strength wire protection even after countless disconnections.

All types have captive screws and a dovetail interlocking system with 2 or 3 poles per strip. Blocks can be assembled to form required pole configurations.

Center to center spacing is 5mm/0.197in and 10mm/0.394in. All types have a test hole for test plug with a diameter of 2.3mm/0.09in. All blocks are shipped unmarked as standard.

International Approvals

UL File No. E69841
 CSA File No. LR24322

UL **CSA**

Rating	Current	Voltage	AWG
UL	20A	300V	26-12
CSA	20A	300V	26-10

in accordance with VDE 0110, pollution degree 1

Breakdown Voltage: 2500V

Technical Data

Center to center spacing: 5.00mm/0.197in and 10.00mm/0.394in
Nominal Cross Section: 4.0mm²/6199mils²
Wire Stripping Length: 8.00mm/0.31in
Recommended Hole Ø in P.C. Board: 1.30mm/0.05in

Material

Molding: Break Resistant polyamide, self extinguishing, to UL9, 4V-O, grey color

Temperature Limits:
 short time: 140°C/284°F
 continuous: 80°C/176°F
 cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI-600

Terminal Body: nickel-plated brass

P.C. Pin/Wire Protector: tin-plated brass

P.C. Pin Profile: 1 x 0.8mm/0.04 x 0.03in

Screw: M3 zinc-plated steel, yellow chromated,
 Tightening Torque: 4.5lb/in

Options

CN: Consecutive Numbering
SM: Special Marking (please provide sketch)
G05: Gold plating (5 micro inches)
G30: Gold plating (30 micro inches)
S30: Silver plating (30 micro inches)

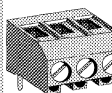
NOTE: If more than one option is required, please separate each option by a dash (-).

Accessories

Self Adhesive Marker Strips

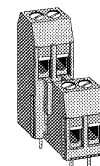
Type	Center to center Spacing	Marked
BST5.00/12	5.00mm/.197in	1 to 12
BST5.00/32	5.00mm/.197in	1 to 32
BST10.00/16	10.00mm/.394in	1 to 16

Marker strips are UL recognized in the category of marking and labeling systems materials.



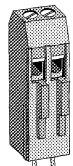
Center to Center Spacing
 150-A-121 5mm/0.197in
 150-A-122 10mm/0.394in
 152-A-221 7.5mm/0.295in

Dimensions
 Height: 12.3mm/0.48in
 Width: 19.6mm/0.77in



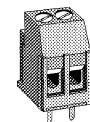
Center to Center Spacing
 150-B-151 5mm/0.197in
 150-B-152 10mm/0.394in

Dimensions
 Height: 34mm/1.34in
 Width: 22.6mm/0.89in



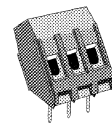
Center to Center Spacing
 150-B-111 5mm/0.197in
 150-B-112 10mm/0.394in

Dimensions
 Height: 34mm/1.34in
 Width: 13.85mm/0.54in



Center to Center Spacing
 150-A-111 5mm/0.197in
 150-A-112 10mm/0.394in
 152-A-211 7.5mm/0.295in

Dimensions
 Height: 19.6mm/0.77in
 Width: 12.3mm/0.48in



Center to Center Spacing
 150-C-111 5mm/0.197in
 150-C-112 10mm/0.394in

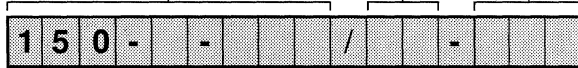
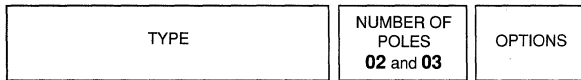
Dimensions
 Height: 16.5mm/0.65in
 Width: 19.3mm/0.76in



Center to Center Spacing
 150-B-153 5mm/0.197in
 150-B-154 10mm/0.394in
 NOTE: Other configurations available on request

Dimensions
 Height: 34mm/1.34in
 Width: 22.6mm/0.89in

How To ORDER



U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfe, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

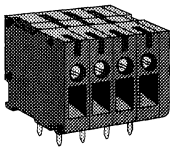
1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca

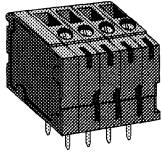
SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 180 AND 182



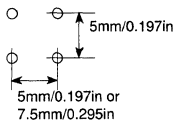
Wire entrance and set screw are in line with circuit board.

Type Center to center spacing
 180-A-111 5mm/0.197in
 182-A-111 7.5mm/0.295in
Dimensions
 Height: 19.5mm/0.77in
 Width: 18.5mm/0.73in



Wire entrance and set screw are at right angle to circuit board.

Type Center to center spacing
 180-A-121 5mm/0.197in
 182-A-121 7.5mm/0.295in
Dimensions
 Height: 18.5mm/0.73in
 Width: 19.5mm/0.77in



P.C. Board Hole Layout

Description

This design provides accessibility in tight spots, by arranging wire entrances in line with screw driver access. It does so in the horizontal or vertical direction, depending on the type. Reliable torque absorption of screw clamps is achieved by providing two exit pins per pole with center distances of 5.0 or 7.5 mm, and by the mechanical interlock features of the assembly. Connectors can be assembled in any desired length, preferably not exceeding 12 poles.

Beyond providing ease of systems service, the feed-through in-line feature provides designers with a component for dust protected systems by effectively reducing leakage to the environment.

The increasing importance of susceptibility to extraneous electro-magnetic interference (EMI), inter-stage coupling, or conversely, electromagnetic radiation, is also addressed by this connector design. Connections to the inner chassis or cabinet can be made through small holes in the openings in the enclosure, thereby maintaining its properties to the greatest extent, while permitting connecting service from the outside.

Technical Data

Center to center spacing:
 Series 180: 5.00mm/0.197in
 Series 182: 7.50mm/0.295in

Center to center spacing may be modified by inserting spacers of 2.5mm/0.098 in between individual connectors, thereby increasing the center to center pin distance to 7.5mm/0.295in. Special versions, or customer-assembled blocks may employ the spacer in any desired position to vary the pin spacing. The last individual connector in a block is closed by an end section.

Nominal Cross Section:
 2.5mm²/3874mils²

Wire Stripping Length: 9.00mm/0.37in
Recommended Hole Ø in P.C. Board:
 1.30mm/0.05in

International Approvals

UL File No: E69841
 CSA File No: LR24322



Rating	Current	Voltage	AWG
UL	20A	300V	26-12
CSA	20A	300V	26-12

In accordance with VDE D110: pollution degree 2 or 3

Breakdown Voltage: 2500V

Material

Molding: Polyamide, break resistant self extinguishing to UL94, V-O, grey color.

Temperature Limits:
 short time: 140°C/284°F
 continuous: 80°C/176°F
 cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI-600

Clamp and Pressure Pad: zinc-plated steel, chromated

Internal Bus with Solder Pins: tin-plated copper, pin 1 x 0.8 mm

Screw:
 M2.5 steel, zinc-plated, chromated.
 Tightening Torque: 0.4 Nm/3.5 lb/in

Options

- CN:** Consecutive Numbering
- SM:** Special Marking (please provide sketch)
- G05:** Gold plating (5 micro inches)
- G30:** Gold plating (30 micro inches)
- S30:** Silver plating (30 micro inches)

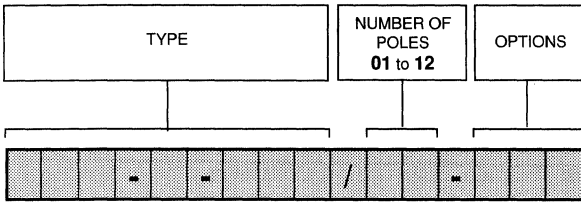
NOTE: If more than one option is required, please separate each option by a dash (-).

Accessories

Self Adhesive Marker Strips

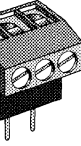
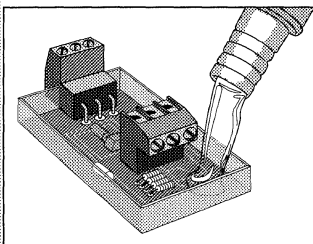
Type	Center to center Spacing	Marked
BST-5.00/12	5.00mm/.197in	1 to 12
BST-5.00/32	5.00mm/.197in	1 to 32
BST-7.50/19	7.50mm/.295in	1 to 19

How To Order



SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 95-LH & 97-LH 5MM CENTER TO CENTER SPACING



w x h (mm):
 95-LH: 10 x 10.8
 97-LH: 13 x 15.5

Description

Series 95-LH and 97-LH screw connectors for printed circuit boards are specially designed to allow effective potting of PCB boards, while allowing access to the terminal block to connect external wiring. The molding design prevents seepage of the potting material into the wire clamping area. Vertical or horizontal wire entry versions as well as low or high profile versions are available.

Optional wire protectors prevent damage to stranded wires. Consecutive numbering, special marking and gold or silver plating are offered as standard options.

Material

Molding: Polyamide, self extinguishing to UL94 V-O, grey color.

Temperature Limits:
 short time: 140°C/284°F
 continuous: 80°C/176°F
 cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI-600

Oxygen Index Rating: 33%

Terminal Body: tin plated brass

Wire Protector: tin plated copper alloy

Screw (Series 95): M2.5 zinc plated steel, yellow chromated
 Tightening Torque: max: 0.4Nm/3.5lb-in

Screw (Series 97): M3 zinc plated steel, yellow chromated
 Tightening Torque: max: 0.5Nm/4.5lb-in

Solder Pin: 1.0mm/0.04in, tin plated copper

Options

- CN:** Consecutive Numbering
- SM:** Special Marking (please provide sketch)
- BS:** Brass screws
- PS:** Passivated steel screws
- WG:** Wire guide (Series 97 only)
- G05:** Gold plating (5 micro inches)
- G30:** Gold plating (30 micro inches)

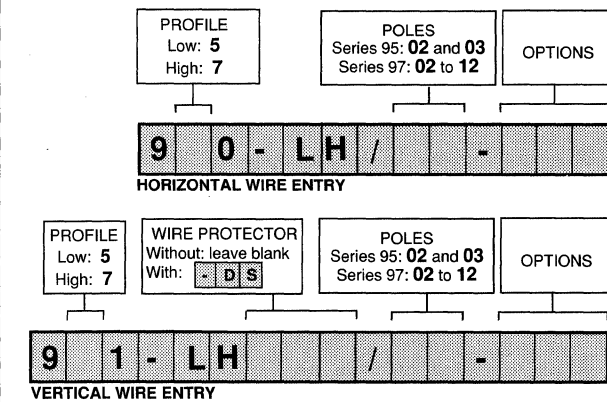
NOTE: If more than one option is required, please separate each option with a dash (-).

Accessories

Self Adhesive Marker Strips

Type	Center to center Spacing	Marked
BST-5.00/12	5.00mm/.197in	1 to 12
BST-5.00/32	5.00mm/.197in	1 to 32

How To Order



Technical Data

Center to center spacing: 5mm/.197in.

Nominal Cross Section:
 Series 95: 1.5mm²/2325 mils²
 Series 97: 2.5mm²/3874 mils²

Wire Stripping Length: 5mm/.20in

Recommended Hole Ø in PC Board:
 1.3mm/.05in

International Approvals

UL File No: E69841
 CSA File No: LR24322



Rating	Current	Voltage	AWG
950-LH & 951-LH:			
UL	15A	300V	26-14
CSA	15A	300V	26-14

Rating	Current	Voltage	AWG
970-LH-DS & 971-LH-DS:			
UL	20A	300V	26-12
CSA	15A	300V	26-10

Breakdown Voltage: 2500V

U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfe, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca



HIGH VOLTAGE SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

TYPES 983-US, 983-UD AND 983-UW, 10MM SPACING

Description

983-U blocks provide the necessary clearance distances to provide the capacity to handle 600 volts when a design requires more than the usual 300 volts. However, these blocks require slots to be cut through the printed circuit board to allow for the extended barriers designed into the base. The insulation material has been designed to withstand wave soldering temperatures.

Technical Data

Center to center spacing:
10mm/0.394in

Nominal Cross Section:
2.5mm²/3874mils²

Wire Stripping Length: 8.5mm/.33in

Recommended Hole Ø in P.C. Board: 1.3mm/.05in

International Approvals

UL: File No: E69841

CSA: File No: LR24322



Rating	Current	Voltage	AWG
UL	20A	600V	20-12
CSA	20A	600V	22-10

Breakdown Voltage: 2500V

Material

Molding: Polyamide, self extinguishing to UL94, V-O, grey color.

Temperature Limits:
short time: 270°C/520°F
continuous: 150°C/300°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI-250

Oxygen Index Rating: 37%

Terminal Body: tin plated brass

Screw & Pressure Plate:

M4, zinc plated steel
Screw Tightening Torque:
max. 1.2Nm/10lb-in.

Options

Please mark in "How to Order" box

CN: Consecutive Numbering

(hot stamped white numbers)

SM: Special Marking

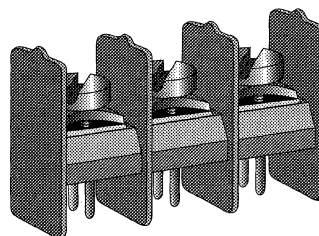
(please provide sketch)

G05: Gold plating (5 micro inches)

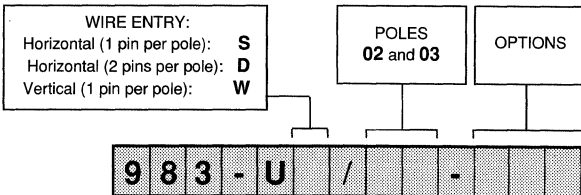
G30: Gold plating (30 micro inches)

10: Solder pin length of 10mm (.39in).

NOTE: If more than one option is required, please separate each option with a dash (-).



How To ORDER



SURFACE MOUNT CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 93-SMD (3.5MM SPACING) & SERIES 95-SMD (5MM SPACING)

Description

SMD series screw connectors are designed for surface mounting by means of reflow methods. The special gull wing shaped contact leads assure flexibility and self-alignment to offset circuit board distortions. This in turn reduces stress in the solder joints and enhances reliability and life. The leads are an integral part of the wire protector, which provides a minimum of contact resistance. Spring tension ensures good mechanical contact with the target area prior to soldering.

The connector molding consists of a heat resistant and self-extinguishing thermoplastic material. Mounting flanges are provided at both ends to ensure mechanical integrity with the circuit board.

Technical Data

Center to center spacing:
Series 93-SMD: 3.5mm/0.138in
Series 95-SMD: 5mm/0.197in

Nominal Cross Section:
Series 93-SMD: .75mm²/1162mils²
Series 95-SMD: 1.5mm²/2325mils²

Wire Stripping Length: 6mm/.24in

International Approvals

UL: File No: E69841

CSA: File No: LR24322



Rating	Current	Voltage	AWG
Series 93-SMD			
UL	7A	150V	22-18
CSA	7A	150V	22-18

Rating	Current	Voltage	AWG
Series 95-SMD			
UL	15A	300V	22-14
CSA	6A	300V	22-14

Breakdown Voltage: 2500V

Material

Molding: Polyamide, 30% GF, self extinguishing to UL94, V-O, black color.

Temperature Limits:
short time: 270°C/520°F
continuous: 150°C/300°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI-250

Oxygen Index Rating: 37%

Terminal Body: tin plated brass

Wire Protector/Contact Leads:

tin plated copper alloy

Screw:

Series 93-SMD:
M2, zinc plated steel, yellow chromated
Tightening Torque: max: 0.2N m/2lb-in

Series 95-SMD:
M2.6, zinc plated steel, yellow chromated
Tightening Torque: max: 0.2N m/2lb-in

Options

Please mark in "How to Order" box

CN: Consecutive Numbering

SM: Special Marking

(please provide sketch)

G05: Gold plating (5 micro inches)

G30: Gold plating (30 micro inches)

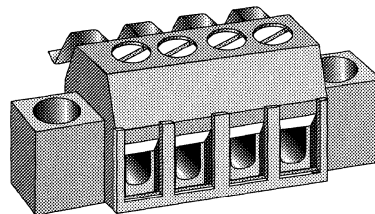
NOTE: If more than one option is required, please separate each option with a dash (-)

Accessories

Self Adhesive Marker Strips

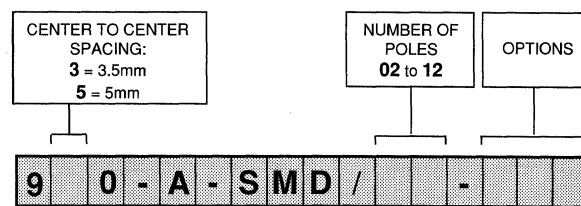
Type	Center to center Spacing	Marked
BST-3.50/24	3.5mm/.138in	1 to 24
BST-5.00/12	5.00mm/.197in	1 to 12
BST-5.00/32	5.00mm/.197in	1 to 32

Marker strips are UL recognized in the category of marking and labeling systems materials.



w x h (mm):
Series 95-SMD: 14 x 10
Series 93-SMD: 11.3 x 8.7

How To ORDER



U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

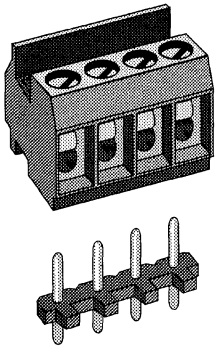
CAGE Code Number 0AW35

1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca

MINI PLUG-IN SCREW CONNECTOR SYSTEM FOR PRINTED CIRCUIT BOARDS
SERIES 93-FL 3.5MM CENTER TO CENTER SPACING



Description

The Series 93-FL plug-in screw connector system represents a cost effective and high quality means to connect to circuit boards. Single pins (Type LST-1.3x6.5) in addition to type 931-SLS pinstrips are offered for maximum flexibility of design. The 3.5mm/0.138in pin spacing corresponds to existing industrial standards, which makes this product an excellent candidate for cost effective substitutions. Types with 7mm/0.276in center to center spacing are also available.

The plug moulding is made of polyamide, a self extinguishing material. The tin plated brass screw connector with optional wire protector ensures secure, low resistance connections under the most adverse operating conditions.

A specially shaped contact spring ensures an excellent electrical connection with relatively small insertion and removal forces. The plug inserts flush with the circuit board to a low silhouette.

Although a generally applicable device, this type of plug-pin combination is used in computer-machine interfaces where low level signal processing meets power levels under industrial conditions.

It helps the service technician to exchange a board with minimum down time, and provides the ruggedness and reliability for an industrial environment.

Technical Data:

Center to center spacing: 3.5mm/0.138in

Clamping range: 30-18AWG, up to 0.75mm² (1mm² without DS)

Wire stripping length: 5mm/0.20in

Recommended Hole Ø in PC Board: 1.3mm/0.05in

International Approvals:

UL File No. E69841
 CSA File No. LR24322



Rating	Current	Voltage	AWG
UL	6A	300V	30-18
CSA	6A	300V	28-20

In accordance with VDE 0110, pollution degree 1.

Material

Molding: Polyamide, self extinguishing to UL94 V-0, grey color.

Temperature Limits:

short time: 140°C/284°F
 continuous: 80°C/176°F
 cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI -600

Terminal Body: Nickel plated brass

Wire Protector: Nickel silver

Contact Spring:

Tin plated copper alloy

Screw:

M2 zinc plated steel, yellow chromated.
 Tightening Torque: max. 0.2Nm/2.0 lb.in.

Pinstrip 931-SLS:

Molding:

PBTP: GF to UL94 V-0, black color.

Temperature Limits:

short time: 200°C/392°F
 continuous: 100°C/212°F
 cold resistant: -40°C/-40°F

Pin: Ø1mm/0.04in. Tin plated brass

Options:

Please mark in the "How to Order" Box:

CN: Consecutive numbering

SM: Special marking (please provide sketch)

G05: Gold plating (5 micro inches)

G30: Gold plating (30 micro inches)

S30: Silver plating (30 micro inches)

Type 930-FL may be supplied with solder pins. Because type 931-SLS pinstrip can be inserted from the top, the interconnection of two PC boards is possible (please specify type 930-GFL)

Accessories:

Self Adhesive Marker Strips

Type	Center to center Spacing	Marked
BST-3.50/24	3.5mm/ .138in	1 to 24

Marker strips are UL recognized in the category of marking and labelling systems materials.

How To ORDER

PLUG

WIRE PROTECTOR
 Without: leave blank
 With: **DS**

POLES
02
 to **24**

OPTIONS

9 3 0 - FL / / - / / / / /

How To ORDER

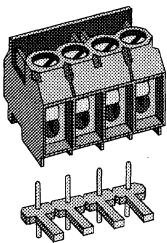
PINSTRIP

POLES
02
 to **16**

OPTIONS

9 3 1 - SLS / / - / / / / /

PLUG-IN SCREW CONNECTOR SYSTEM FOR PRINTED CIRCUIT BOARDS
SERIES 95-FL 5MM CENTER TO CENTER SPACING



Description

950-FL-DS plugs are available from 2 to 24 poles per strip. The male mating pins are offered in pinstrips up to 64 poles or individually soldered (type LST-1.3 x 6.5).

Pinstrip and connector base design provide directional orientation when mating the two parts. A specially shaped contact spring with integral wire protector ensures a secure contact with relatively small insertion and removal forces.

Type 950-FL-DS features captive screws.

Technical Data

Center to Center Spacing: 5mm/0.197in

Nominal Cross Section: 1.5mm²/2325 mils²

Wire Stripping Length: 6mm/0.24in

Recommended Hole Ø in P.C. Board: 1.3mm/0.05in

International Approvals

UL File No. E69841
 CSA File No. LR24322



Rating	Current	Voltage	AWG
UL	10A	300V	26-14
CSA	10A	300V	26-14

In accordance with VDE 0110, pollution degree 2.

Breakdown Voltage: 2500V

Material

Plug Molding: Break resistant polyamide, self extinguishing UL94 V-0, grey color.

Temperature Limits:

short time: 160°C/320°F
 continuous: 100°C/212°F
 cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI > 600

Terminal Body: nickel plated brass

Contact Spring/Wire Protector: copper alloy, tin plated

Pin Strip 971-SLW: Ø1mm/0.04in

Pin Strip Molding: PBTP GF (fiberglass reinforced), self-extinguishing UL94 V-0, black color

Pin: Tin plated brass

Screw: M 2.6 zinc plated steel.
 Tightening Torque: max. 0.4Nm/3.5 lb.in.

Options

Please mark in the "How to Order" Box:

CN: Consecutive Numbering

SM: Special Marking (please provide sketch)

BS: Brass screws

PS: Passivated steel screws

G05: Gold plating (5 micro inches)

G30: Gold plating (30 micro inches)

S30: Silver plating (30 micro inches)

Type 950-FL may be supplied with solder pins. Because type 971-SLS pinstrip can be inserted from the top, the interconnection of two PC boards is possible (please specify type 950-GFL)

Accessories

Self Adhesive Marker Strips:

Type	Center to center Spacing	Marked
BST-5.00/12	5.00mm/ .197in	1 to 12
BST-5.00/32	5.00mm/ .197in	1 to 32

Marker strips are UL recognized in the category of marking and labelling systems materials.

How To ORDER

PLUG

POLES
02
 to **24**

OPTIONS

9 5 0 - FL - DS / / - / / / / /

How To ORDER

PINSTRIP

POLES
02
 to **64**

OPTIONS

9 7 1 - SLW / / - / / / / /

U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938



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CAGE Code Number 0AW35

1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca



PLUG-IN SCREW CONNECTORS FOR PRINTED CIRCUIT BOARDS

SERIES 120 AND 121 CONECTA®

Description

This plug-in screw connector system is available in various possible combinations. A reliable connection is provided at the screw side with an elevator style terminal and at the plug-in side with a locked contact. The elevator system ensures a high pressure fitting and a fatigue strength wire protection even after countless disconnections.

Plugs are equipped with captive screws and are available up to 24 poles per strip. Double level headers are available up to 48 poles. All blocks are shipped unmarked as standard.

Technical Data

Center to center spacing:

Series 120: 5.00mm/0.197in
Series 121: 5.08mm/0.200in
(10.00mm/0.394in and 10.16mm/0.400in available on request)

Nominal Cross Section:

2.5mm² /3874mils²

Wire Stripping Length:

7.00mm/0.28in

Recommended Hole Ø in P.C. Board:

1.40mm/0.06in

International Approvals

UL File No. E69841

CSA File No. LR24322

Rating	Current	Voltage	AWG
UL	10A	300V	26-12
CSA	10A	300V	26-12

In accordance with VDE 0110

Breakdown Voltage: 2500V

Material

Molding: Break Resistant polyamide 6.6, self extinguishing, to UL94 V-0 grey color

Temperature Limits:

short time: 160°C/320°F
continuous: 100°C/212°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Terminal Body: nickel-plated brass

Contact Spring: tin-plated bronze

P.C. Pin: Ø 1mm/0.04in tin-plated brass

Screw:

M3 zinc-plated steel, yellow chromated.
Tightening Torque 4.5lb/in.

Options

Please mark in the "How to Order" Box:

CN: Consecutive Numbering
SM: Special Marking
(please provide sketch)

G05: Gold plating (5 microinches)

G30: Gold plating (30 microinches)

S30: Silver plating (30 microinches)

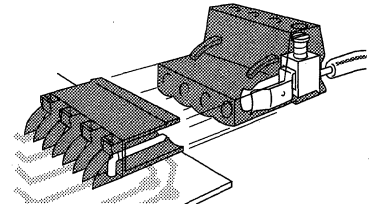
NOTE: If more than one option is required, please separate each option by a dash (—).

Accessories

Self Adhesive Marker Strips

Type	Center to center Spacing	Marked
BST5.00/12	5.00mm/0.197in	1 to 12
BST5.00/32	5.00mm/0.197in	1 to 32
BST5.08/12	5.08mm/0.200in	1 to 12
BST5.08/32	5.08mm/0.200in	1 to 32

Marker strips are UL recognized in the category of marking and labelling system materials.



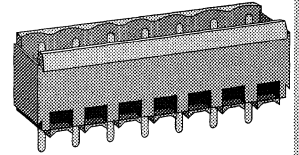
Series 120 and 121 Headers

Available 2 to 24 poles
Double level versions available 4 to 48 poles

Type	Center to center spacing
120-M-121	5.00mm/0.197in
120-M-221	5.00mm/0.197in (sidewalls)
121-M-121	5.08mm/0.200in
121-M-221	5.08mm/0.200in (sidewalls)

Dimensions

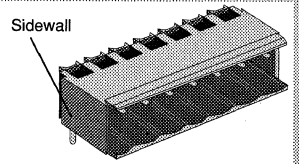
Height: 12mm/0.47in
Width: 8.4mm/0.33in



Type	Center to center spacing
120-M-111	5.00mm/0.197in
120-M-211	5.00mm/0.197in (sidewalls)
121-M-111	5.08mm/0.200in
121-M-211	5.08mm/0.200in (sidewalls)

Dimensions

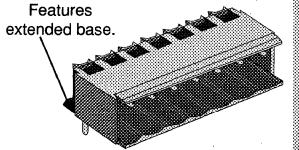
Height: 8.4mm/0.33in
Width: 12mm/0.47in



Type	Center to center spacing
120-M-311	5.00mm/0.197in
120-M-411	5.00mm/0.197in (sidewalls)

Dimensions

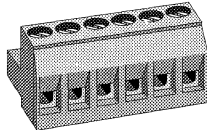
Height: 8.4mm/0.3in
Width: 14.8mm/0.58in



Type	Center to center spacing
120-A-111	5.00mm/0.197in
121-A-111	5.08mm/0.200in

Dimensions

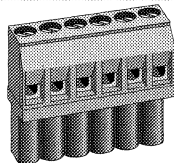
Height: 15mm/0.59in
Width: 18.4mm/0.72in



Type	Center to center spacing
120-D-111	5.00mm/0.197in

Dimensions

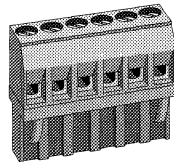
Height: 26mm/1.02in
Width: 12.5mm/0.49in



Type	Center to center spacing
120-D-121	5.00mm/0.197in

Dimensions

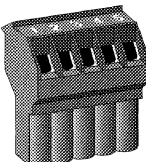
Height: 26mm/1.02in
Width: 12.5mm/0.49in



Type	Center to center spacing
121-C-111	5.08mm/0.200in

Dimensions

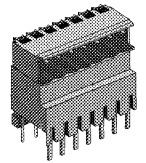
Height: 25.6mm/1.01in
Width: 15.9mm/0.62in



Type	Center to center spacing
120-M-181	5.00mm/0.197in
120-M-281	5.00mm/0.197in (sidewalls)
121-M-181	5.08mm/0.200in
121-M-281	5.08mm/0.200in (sidewalls)

Dimensions

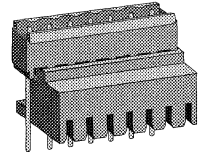
Height: 23.4mm/0.92in
Width: 12mm/0.47in



Type	Center to center spacing
120-M-191	5.00mm/0.197in
120-M-291	5.00mm/0.197in (sidewalls)
121-M-191	5.08mm/0.200in
121-M-291	5.08mm/0.200in (sidewalls)

Dimensions

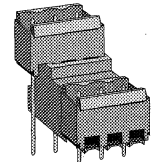
Height: 22.8mm/0.89in
Width: 15mm/0.59in



Type	Center to center spacing
120-M-161	5.00mm/0.197in
120-M-261	5.00mm/0.197in (sidewalls)
121-M-161	5.08mm/0.200in
121-M-261	5.08mm/0.200in (sidewalls)

Dimensions

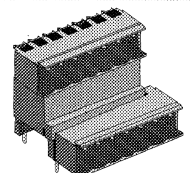
Height: 22.8mm/0.89in
Width: 23.4mm/0.92in



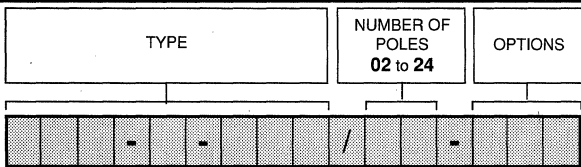
Type	Center to center spacing
120-M-151	5.00mm/0.197in
120-M-251	5.00mm/0.197in (sidewalls)
121-M-151	5.08mm/0.200in
121-M-251	5.08mm/0.200in (sidewalls)

Dimensions

Height: 23.4mm/0.92in
Width: 22mm/0.87in



How To ORDER



U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

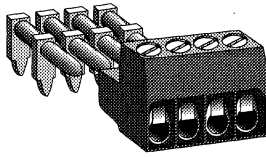
1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca

PLUG-IN SCREW CONNECTOR SYSTEM FOR PRINTED CIRCUIT BOARDS

SERIES 37



How To Order

SPEAKER CONNECTOR

WIRE PROTECTOR Without: leave blank With: <input type="checkbox"/> D <input type="checkbox"/> S	POLES 04 and 05	OPTIONS
---	--------------------	---------

PLUG

3	7	4	-	S	T	F	B	/		-									
---	---	---	---	---	---	---	---	---	--	---	--	--	--	--	--	--	--	--	--

OPTIONS

MATING POST

3	7	4	-	S	T	G	-												
---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--

How To Order

POWER CONNECTOR

WIRE PROTECTOR Without: leave blank With: <input type="checkbox"/> D <input type="checkbox"/> S	POLES	OPTIONS
---	-------	---------

PLUG

3	7	7	-	S	T	F	B	/	0	2	-								
---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--

OPTIONS

MATING POST

3	7	7	-	S	T	G	-												
---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--

Description

This connector originated from WECO's first custom design specifically for car audio power amplifiers. Since 1991, we have customized the design for many of the major suppliers in the automotive audio industry. These products allow wiring to be connected externally and plugged to mating posts which are soldered to an internal printed circuit board. Type 374 is a speaker connector, type 377 a power plug. Wire protectors are offered to prevent damage to stranded wires.

Technical Data

Center to Center Spacing:
Type 374-STFB: 6.73mm/.264in
Type 377-STFB: 10mm/.394in

Nominal Cross Section:
Type 374-STFB: 6mm²/9299 mils²
Type 377-STFB: 16mm²/24796 mils²

Wire Stripping Length:
Type 374-STFB: 7mm/.28in
Type 377-STFB: 9mm/.35in

Recommended Hole Ø in P.C. Board:
3.2mm/.126in

International Approvals

UL File No. E69841
CSA File No. LR24322



Rating	Current	Voltage	AWG
374-STFB:			
UL	25A	300V	18-10
CSA	20A	300V	26-10
377-STFB:			
UL	50A	300V	14-6
CSA	50A	300V	14-6

Breakdown Voltage: 5000V

Material

Molding: Polyamide, self extinguishing UL94 V-2, black color

Temperature Limits:
short time: 200°C/390°F
continuous: 100°C/212°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI > 600

Oxygen Index Rating: 31%

Terminal Body: nickel plated brass

Wire Protector: tin plated copper alloy

Spring Sleeve: zinc plated steel

Screw:

Type 374-STFB
M3.5, zinc plated steel, yellow chromated
Tightening Torque: max. 0.8Nm/7.0lb-in

Type 377-STFB

M5, zinc plated steel, yellow chromated
Tightening Torque: max. 2.0Nm/16.0lb-in

PCB Mating Pin:

Type 374-STG: Ø4.2mm/.16in
Type 377-STG: Ø6.0mm/.24in
Tin plated zinc alloy

Options

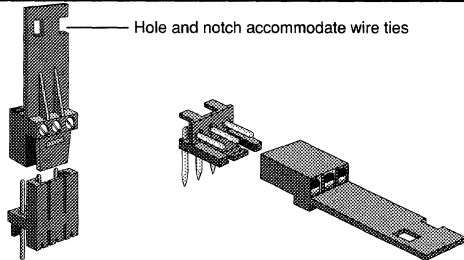
Please mark in the "How to Order" Box:

- CN: Consecutive Numbering
- SM: Special Marking (please provide sketch)
- G05: Gold plating (5 microinches)
- G30: Gold plating (30 microinches)
- S30: Silver plating (30 microinches)
- B05: Shiny brass plating (5 microinches)
- WE: White molding instead of black
- NZ: Customer logo on molding (please provide artwork)

NOTE: If more than one option is required, please separate each option with a dash (-)

MINI PLUG-IN SCREW CONNECTOR SYSTEM FOR PRINTED CIRCUIT BOARDS

SERIES 93-HFL 3.5MM CENTER TO CENTER SPACING



Hole and notch accommodate wire ties

How To Order

PLUG

WIRE PROTECTOR Without: leave blank With: <input type="checkbox"/> D <input type="checkbox"/> S	POLES	OPTIONS
---	-------	---------

PLUG-IN DIRECTION:

0 = horizontal
1 = vertical

9	3	0	-	H	F	L	/	0	3	-									
---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--

POLES

OPTIONS

HEADER

9	3	-	H	S	L	/	0	3	-										
---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--

Description

This product was created for the broadcasting and video production industries but can be used in all applications where a small wire gauge is needed. Series 930-HFL features a handle to simplify vertical in-line insertion and removal and is designed to provide strain relief for the terminated wires.

Horizontal and vertical plug-in versions are available and both versions feature 3 poles and 3.5mm center to center spacing.

Technical Data

Center to Center Spacing: 3.5mm/.138in

Nominal Cross Section:
75mm²/1162 mils²

Wire Stripping Length: 5mm/.20in

Recommended Hole Ø in P.C. Board:
1.3mm/.05in

International Approvals

UL File No. E69841
CSA File No. LR24322



Rating	Current	Voltage	AWG
930-HFL			
UL	6A	300V	30-18
CSA	6A	300V	28-18
930-HFL-DS			
UL	6A	300V	30-18
CSA	6A	300V	28-20

Breakdown Voltage: 2500V

Material

Molding: Polyamide, self extinguishing to UL94 V-0, grey color

Temperature Limits:
short time: 200°C/390°F
continuous: 100°C/212°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI > 600

Terminal Body: nickel plated brass

Wire Protector: nickel silver

Spring/Contact: tin plated copper alloy

Screw:

M2, zinc plated steel, yellow chromated
Tightening torque: max. 0.2Nm/2lb-in

Solder Pin: Ø1mm/.04in tin plated brass

Options

Please mark in the "How to Order" Box:

- CN: Consecutive Numbering (hot stamped white numbers)
- SM: Special Marking (please provide sketch)
- G05: Gold plating (5 microinches)
- G30: Gold plating (30 microinches)
- S30: Silver plating (30 microinches)

NOTE: If more than one option is required, please separate each option with a dash (-)

U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938

CAGE Code Number 0AW35

1-800-724-2928



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

Internet: www.weco.ca

E-Mail: weco@weco.ca



MULTI-POINT TAB CONNECTORS FOR PRINTED CIRCUIT BOARDS TYPES 983-FS AND 983-FD

Description

Multi-point tab connectors are equipped with tab terminals of various sizes and combined assemblies on one strip or even on one contact. Tab connectors provide an immediate solution to most connection problems thanks to the countless possible combinations.

Technical Data

Center to Center Spacing:
10mm/0.394in

Nominal Cross Section:
2.5 - 6mm²/3974 to 9300 mils²

Wire Stripping Length:
8.5mm/0.33in

Recommended Hole Ø in P.C. Board:
1.3mm/0.05in

International Approvals

UL File No. E69841
CSA File No. LR24322

Rating	Current	Voltage	AWG
UL	15A	250V	20-12
CSA	20A	300V	18-14

In accordance with VDE 0110

Breakdown Voltage: 5000V

Material

Molding: Polyamide, self extinguishing UL94 V-2, color grey

Temperature Limits:
short time: 140°C/284°F
continuous: 80°C/176°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI > 600

Tab: Nickel plated brass

Rivet: Tin plated copper

Options

Please mark in the "How to Order" Box:

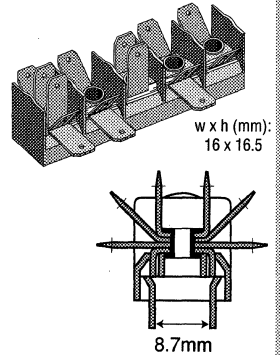
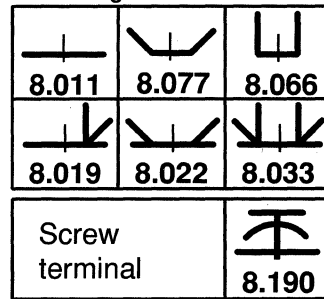
- CN:** Consecutive Numbering
- SM:** Special Marking (please provide sketch)
- G05:** Gold plating (5 micro inches)
- G30:** Gold plating (30 micro inches)
- S30:** Silver plating (30 micro inches)

Accessories

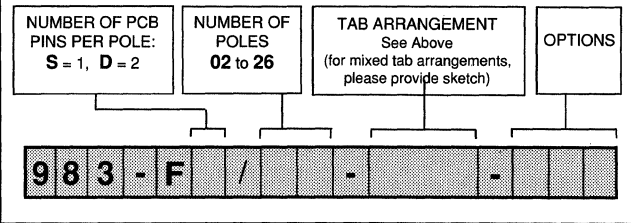
Marker Strips:

Type	Center to center Spacing	Marked
BST-983	10mm/.394in	2 to 26

Tab Arrangements



How To ORDER



TAB CONNECTORS FOR PRINTED CIRCUIT BOARDS SERIES 900

Description

Series 900 tab type connectors offer the advantage of using receptacle equipped conductors for quick connecting and disconnecting to printed circuit boards. Instead of individually inserting the quick connect blades onto the printed circuit board, the 900 Series combines the required number of tabs into a strip. This eases the handling and cuts down on assembly time and cost. The quick connect blades come in various styles and types to meet your required plug-in direction. All quick connect blades feature double pin soldering and are tightly interlocked to the polyamide insulation housing. This ensures a reliable relief for the solder points when fitting and removing receptables.

Technical Data

Center to center spacing: No. of Poles
5mm/0.197in 2 - 25
7.5mm/0.295in 2 - 17
10mm/0.394in 2 - 13

Other (please provide sketch)

Recommended Hole Ø in P.C. Board:
1.3mm/0.05in

International Approvals

UL:
5mm versions: 125V, 15A
7.5mm and 10mm versions: 250V, 15A
File No. E69841

CSA:
5mm and 7.5mm versions:
300V, 15A/50V, 15A
10mm versions: 300V, 10A/150V, 15A
File No. LR24322

In accordance with VDE 0110, pollution degree 3.

Material

Molding: Polyamide self extinguishing UL94 V-2, grey colour

Temperature Limits:
short time: 140°C/284°F
continuous: 80°C/176°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI > 600

Tab: tin plated brass

P.C. Pin: Ø1 x 0.8mm/0.04 x 0.03in

Options

Please mark in the "How to Order" Box:

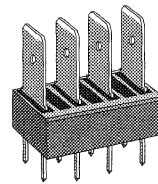
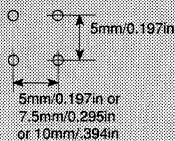
- CN:** Consecutive Numbering
- SM:** Special Marking (please provide sketch)
- G05:** Gold plating (5 micro inches)
- G30:** Gold plating (30 micro inches)
- S30:** Silver plating (30 micro inches)

Accessories

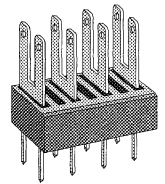
Self Adhesive Marker Strips:

Type	Center to center Spacing	Marked
BST-5.00/12	5mm/.197in	1 to 12
BST-5.00/32	5mm/.197in	1 to 32
BST-7.50/19	7.5mm/.295in	1 to 19
BST-10.00/16	10mm/.394in	1 to 16

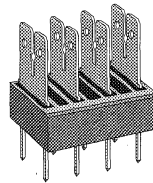
Marker strips are UL recognized in the category of marking and labelling systems materials.



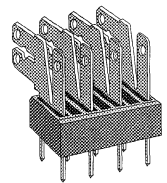
Type 900-SUN
(with 6.3mm/0.25in tabs)



Type 900-SH
(with 2.8mm/0.11in tabs)

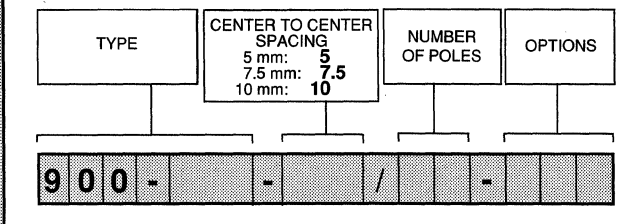


Type 900-S
(with 6.3mm/0.25in or 2.8mm/0.11in tabs)



Type 900-W
(with 6.3mm/0.25in or 2.8mm/0.11in tabs)

How To ORDER



U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

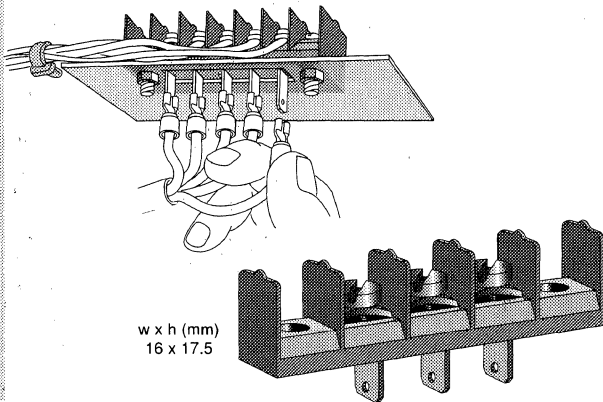
1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca

PANEL FEED-THROUGH SCREW AND TAB CONNECTORS

SERIES 982-M AND 983-M .375 IN. AND 10MM CENTER TO CENTER SPACING



w x h (mm)
16 x 17.5

Description

Series 982-M and 983-M panel feed-through connectors combine a barrier style screw connection with a quick-connect tab for internal wiring. The flexible polyamide molding provides greater resistance to breakage than barrier strips made from more rigid and brittle materials. The screw and washer combinations are fixed together to allow easier wire insertion.

A choice of two male tab sizes is available to accommodate either 2.8mm (.110in) or 4.8mm (.187in) female receptacles. Flanges are provided at each end for screw or rivet mounting. The base of the connector has a 1mm (.04in) flange which provides a secure mounting to the cutout in the panel.

Consecutive numbering, special marking and gold or silver plating are offered as standard options.

Technical Data

Center to center spacing:
Series 982-M: 9.52mm/0.375in
Series 983-M: 10mm/0.394in

Nominal Cross Section:
2.5mm²/3874mil²

Wire Stripping Length (for screw connectors): 8.5mm/.33in

Recommended Hole Ø in P.C. Board:
1.30mm/0.05in

International Approvals

UL: File No: E69841
CSA: File No: LR24322



Rating	Current	Voltage	AWG
UL	20A	250V	20-12
CSA	20A	300V	22-10

Material

Molding: Polyamide, self extinguishing, to UL94, V-O, grey color

Temperature Limits:
short time: 140°C/284°F
continuous: 80°C/176°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Oxygen Index Rating: 25%

Terminal Body: zinc plated brass

Tab: 983-FS, -FD: nickel plated brass

Tubular Rivet: 983-FS, -FD: tin plated brass

Screw and Pressure Plate: zinc-plated steel, chromated

Options

Please mark in "How to Order" box

- CN:** Consecutive Numbering
 - SM:** Special Marking (please provide sketch)
 - G05:** Gold plating (5 microinches)
 - G30:** Gold plating (30 microinches)
 - S30:** Silver plating (30 microinches)
- Note:** If more than one option is required, please separate each option by a dash (-).

Accessories

Covers to protect against accidental shock.

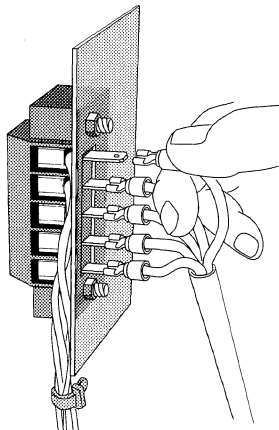
How To ORDER

CENTER TO CENTER SPACING	TAB SIZE (MM)	NUMBER OF POLES	OPTIONS
.375 in. 2 10mm 3	2.8 4.8	02 to 24	

9	8	-	M	F	-	.	/	-											
---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--

PANEL FEED-THROUGH SCREW AND TAB CONNECTORS

SERIES 96-B-2.8 AND 97-B-2.8 .2IN. AND 5MM CENTER TO CENTER SPACING



w x h (mm)
960: 9 x 13.5
970: 9 x 13

Description

Series B-2.8 panel feed-through connectors provide a European style screw connection for external wiring and .110 in. (2.8mm) male tabs for quick connect internal wiring. With 5mm and .2in. center to center spacing, these low profile connectors are suitable for high density applications.

Quick connect terminals are commonly used in automotive, appliance and machine control assembly line wiring applications. Series B-2.8 is suitable for both harness and non-harness applications. Tabs are tin plated to provide excellent resistance to corrosion.

The flexible polyamide molding provides greater resistance to breakage than connectors made from more rigid and brittle materials. Mounting holes are provided on both ends of the connector for nut and bolt securing.

Technical Data

Center to Center Spacing: 5mm/.197in
5.08mm/.200in

Nominal Cross Section:
2.5mm²/3874mil²

Wire Stripping Length: 6mm/.25in

International Approvals

UL: File No: E69841
CSA: File No: LR24322



Rating	Current	Voltage	AWG
960-B-2.8 and 970-B-2.8	8A	300V	26-12
	8A	300V	22-10

DS Versions:

UL	8A	300V	26-12
CSA	8A	300V	22-10

Breakdown Voltage: 2500V

Material

Molding: Polyamide, self extinguishing, to UL94, V-O, grey color

2 to 8 Poles:

Temperature Limits:
short time: 140°C/284°F
continuous: 80°C/176°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Oxygen Index Rating: 32%

9 to 30 Poles:

Temperature Limits:
short time: 200°C/392°F
continuous: 100°C/212°F
cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI>175

Oxygen Index Rating: 33%

Terminal Body and Tab: zinc plated brass

Wire Protector: nickel plated copper alloy

Screw:
M3, zinc plated steel, yellow chromated
Tightening Torque: max. 0.5Nm/4.5lb-in

Options

Please mark in "How to Order" box

- CN:** Consecutive Numbering
- SM:** Special Marking (please provide sketch)
- BS:** Brass screws
- PS:** Passivated steel screws
- WG:** Wire guide
- G05:** Gold plating (5 microinches)
- G30:** Gold plating (30 microinches)
- S30:** Silver plating (30 microinches)

Other center to center spacings are available. Please consult factory

NOTE: If more than one option is required, please separate each option by a dash (-).

Accessories

Self Adhesive Marker Strips:

Type	Center to Center Spacing	Marked
BST-5.00/12	5mm/.197in	1-12
BST-5.00/32	5mm/.197in	1-32
BST-5.08/12	5.08mm/.200in	1-12
BST-5.08/32	5.08mm/.200in	1-32

Marker strips are UL recognized in the category of marking and labeling systems materials.

How To ORDER

CENTER TO CENTER SPACING	WIRE PROTECTOR	NUMBER OF POLES	OPTIONS
.2in: 6 5mm: 7	Without: leave blank With: -DS	02 to 30	

9	0	-	B	-	2	.	8	/											
---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--

U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

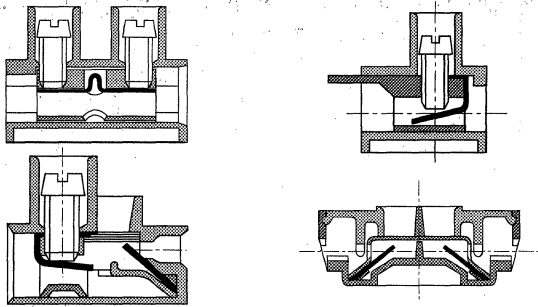
1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca



TERMINAL STRIPS FOR PANEL / CHASSIS MOUNTING



Description

All types are available from 1 to 12 poles. A mounting hole is provided between every circuit. The screws are captive and are backed-out and ready for wiring. Each circuit of the terminal strips has a wire protector to prevent damage to the wire from the turning screw. The wire protector is a thin steel or copper alloy plate placed between screw and wire. All metal parts of this terminal are completely recessed in the flexible polyamide moulding. This dead-front design ensures safety and prevents short circuiting. Its flexible construction allows use on uneven surfaces.

Technical Data

Type Center to Center

Spacing:

- 302, 302-N 8mm/315in
- 322, 323 10mm/394in
- 810, 820 10mm/394in
- 324 11.5mm/453in
- 326, 327 14.5mm/571in

Type Nominal Cross Section:

- 302, 323 2.5mm²/3874mils²
- 322 4mm²/6199mils²
- 324 6mm²/9298mils²
- 326 10mm²/15500mils²
- 327 16mm²/24800mils²
- 810 1.5mm²/2325mils²
- 820 1.5mm²/2325mils²

Breakdown Voltage: 4000V

Type Wire Stripping Length

- 302 5mm/197in
- 322, 323 6.5mm/25in
- 324 7mm/27in
- 810, 820 7.5mm/295in
- 326, 327 9mm/35in

International Approvals

UL File No. E69841

CSA File No. LR 24322



Material

Type 810

Molding: Polyamide, self-extinguishing to UL94 V-2, white and red color

Terminal Body: Tin plated brass

Spring: Stainless steel

Type 820

Molding: Polyamide, self-extinguishing to UL94 V-2, white color

Terminal Body: Tin plated brass

Spring: Stainless steel

Wire Protector: Copper alloy, tin plated

Screw: zinc plated steel, yellow chromated

Types 302, 322, 323, 324

Molding: Polyamide, self-extinguishing to UL94 V-2, white color

Terminal Body: Nickel plated brass

Wire Protector: Stainless steel

Screw: Zinc plated steel, yellow chromated

Types 326, 327

Molding: Polyamide, self-extinguishing to UL94 V-0, white color

Terminal Body: Nickel plated brass

Wire Protector: Stainless steel

Screw: Zinc plated steel, yellow color

Temperature Limits:

- (for all types):
- short time: 140°C/284°F
- continuous: 80°C/176°F
- cold resistant: -40°C/-40°F

Comparative Tracking Index: CTI>600

Options

Please mark in the "How to Order" Box:

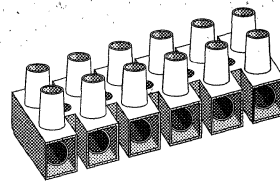
- BS:** Brass Screws
- Marking:** (Hot stamped black numbers)
- VB:** Marked 1 2 3 4 5 etc.
- VT:** Marked 1 2 3 4 5 etc.
- LH:** Marked 1 2 3 4 5 etc.
- RH:** Marked 1 2 3 4 5 etc.
- VBR:** Marked 1 2 3 4 5 etc.
- VTR:** Marked 1 2 3 4 5 etc.
- LHR:** Marked 1 2 3 4 5 etc.
- RHR:** Marked 1 2 3 4 5 etc.
- SM:** Special Marking (please provide sketch)

Accessories

Marker Strips

Type	No. of Poles	Center to Center Spacing	For Types
BST-302	1 to 12	8mm	302
BST-322	1 to 12	10mm	322
BST-323	1 to 12	10mm	323
BST-324	1 to 12	11.5mm	324
BST-326	1 to 12	14.5mm	326, 327

BST marker strips may be supplied with markings which appear in the "Options" section. Please indicate appropriate suffix.

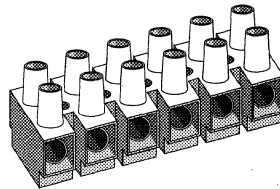


Series 300

These screw terminal strips are used for connecting stripped, unterminated, stranded or solid copper wires, ranging from 26-6 AWG depending on product type selected. Each strip has 12 circuits and can easily be field cut to the required number of poles. They can also be ordered factory-cut in any requested pole number.

Type	UL			CSA			Height	Width	Screw Size
	Amps	Volts	AWG	Amps	Volts	AWG			
302-NHDS	10	300	20-12	20	300	26-14	12mm/47in	16mm/63in	M2.6
302-HDS	20	250	20-12	20	300	26-14	15mm/59in	16mm/63in	M2.6
323-HDS	30	600	22-10	20	600	26-10	16mm/63in	21mm/83in	M3
323-V-HDS*	30	600	22-10	20	600	26-10	16mm/63in	21mm/83in	M3
324-HDS	35	600	26-8	35	600	26-10	18.5mm/73in	22mm/87in	M3.5
326-HDS	50	600	14-8	50	600	14-8	22.5mm/89in	30mm/1.18in	M4
327-HDS	65	600	14-6	80	600	14-6	25mm/98in	30mm/1.18in	M5

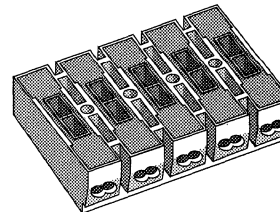
*With wire stop.



FU Versions

FU type terminal strips feature a raised base to increase creepage distance from the mounting surface. All other dimensions and components are identical to the standard versions

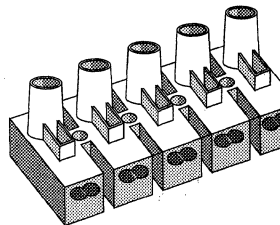
Type	UL			CSA			Height	Width	Screw Size
	Amps	Volts	AWG	Amps	Volts	AWG			
323-FU16.5-HDS	30	600	22-10	30	600	26-10	16.5mm/65in	21mm/83in	M3
323-FU18.5-HDS	30	600	22-10	30	600	26-10	18.5mm/73in	21mm/83in	M3
324-FU-HDS	35	600	26-8	35	600	26-10	21.3mm/84in	22mm/87in	M3.5
327-FU-HDS	65	600	14-6	80	600	14-6	28.5mm/1.12in	30mm/1.18in	M5



Type 810

These quick connect strips have 4 terminal points per pole which can be operated independently. The stripped conductor is inserted and clamped by the steel spring. To release the conductor from the clamp, insert a screwdriver through the appropriate opening and depress the spring clip.

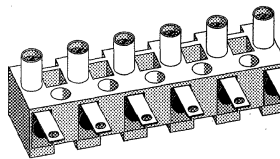
Type	UL			CSA			Height	Width
	Amps	Volts	AWG	Amps	Volts	AWG		
810	10	300	10 max.	10	300	18-16	10.5mm/41in	26.5mm/1.04in



Type 820-DS

Terminal strip Type 820-DS is provided with a double push-in connection similar to Type 810. The opposite side is equipped with a sturdy screw-type connection. A wire protector (DS-Types) prevents damage to the wire from the turning screw.

Type	UL			CSA			Height	Width	Screw Size
	Amps	Volts	AWG	Amps	Volts	AWG			
820-DS	10	250	10 max.	30	300	20-10	16mm/63in	19.2mm/76in	M3.5



Types 302 LF-DS and 322 LFS-DS

These screw-solder terminal strips offer solder tabs on one side and screw terminations on the other.

Type	UL			CSA			Height	Width	Screw Size
	Amps	Volts	AWG	Amps	Volts	AWG			
302-LF-DS	6	250	20-14	10	300	26-14	15mm/59in	22.5mm/89in	M2.6
322-LFS-DS	10	300	20-12	20	300	26-12	15.5mm/61in	21mm/83in	M3

How To ORDER

TYPE	NUMBER OF POLES 01 to 12	OPTIONS

U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfe, QC H9X 3R6
Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

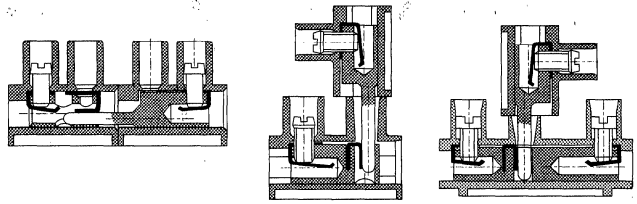
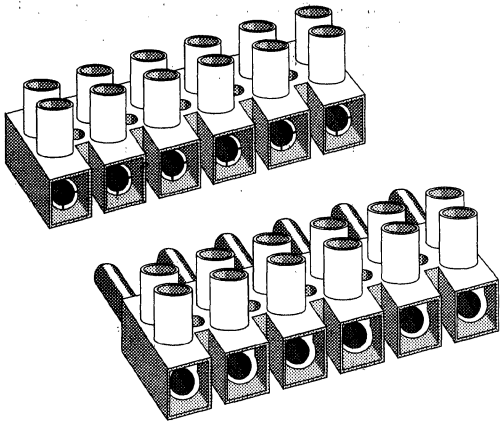
1-800-724-2928

Internet: www.weco.ca

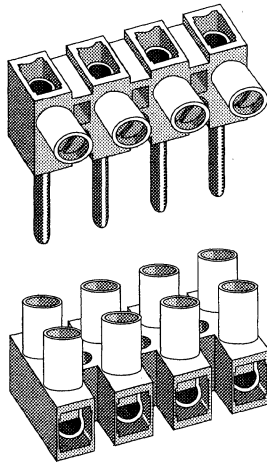
E-Mail: weco@weco.ca

PLUG-IN TERMINAL STRIPS FOR PANEL / CHASSIS MOUNTING

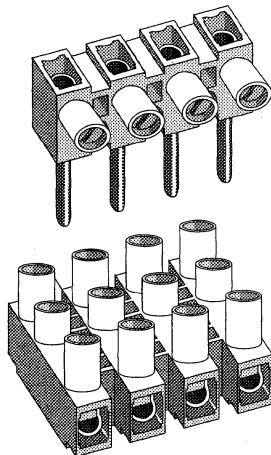
SERIES 300-S



Type	Female	Center to Center Spacing
Male		
302-SV-DS	302-FB-DS	8mm/.315in
322-SV-DS	323-FB-HDS	10mm/.3949in
324-STFS-DS	324-STFB-DS	11.5mm/.450in



Type	Female	Center to Center Spacing
Male		
322-SVW-DS	323-FBW-DS	10mm/.394in



Type	Female	Center to Center Spacing
Male		
322-SVW-DS	323-PHFBW-DS	10mm/.394in

Description

Plug and socket connectors are particularly suitable for installations where simple circuit connection and disconnection is required. By pre-wiring various equipment sections, it is possible to use plug and socket connectors to provide a quick and reliable connection at final assembly.

The screws are captive; each screw connection is equipped with a wire protector which avoids damage to the conductor from the turning screw.

Standard strips have 12 poles and can easily be field cut to required number of poles or ordered as required. A mounting hole is provided between each circuit. The terminal screws are backed out and ready for wiring. The dead front design is for safety and avoids short circuiting.

Technical data

Center to Center Spacing:

- Series 302: 8mm/.315in
- Series 322: 10mm/.394in
- Series 323: 10mm/.394in
- Series 324: 11.5mm/.453in

Nominal Cross-Section:

- Series 302: 2.5mm²/3874mils²
- Series 322: 4mm²/6199mils²
- Series 323: 4mm²/6199mils²
- Series 324: 6mm²/9298mils²

Breakdown Voltage: 4000V

Wire Stripping Length:

- Series 302: 5mm/0.2in
- Series 322: 7mm/0.275in
- Series 323: 7mm/0.275in
- Series 324: 7mm/0.275in

International Approvals

UL CSA
 File No. E69841 File No. LR24322
 In accordance with VDE 0110; pollution degree 2 or 3.

Material

Molding: Polyamide, self-extinguishing to UL 94, V-2, white color

Temperature Limits:

- short-time 140°C/284°F
- continuous 90°C/176°F
- cold-resistant -40°C/-40°F

Comparative Tracking Index: CTI > 600

Terminal Body: Nickel plated brass

Spring Clip: Stainless steel strip

Wire Protector: Copper alloy, tin plated

Screw: Zinc plated steel, yellow chromated

Options

*All versions are available without wire protectors (delete DS or HDS from type description)

BS: Brass Screws

Marking (hot stamped black numbers):

- VB:** Marked etc.
- VT:** Marked etc.
- LH:** Marked 1 2 3 4 5 etc.
- RH:** Marked 12 11 10 9 8 etc.
- VBR:** Marked etc.
- VTR:** Marked etc.
- LHR:** Marked etc.
- RHR:** Marked etc.
- SM:** Special Marking (please provide sketch)

Accessories

Marker Strips

Type	No. of Poles	Center to Center Spacing	For Type
BST-302	1 to 12	8mm/.315in	302
BST-322	1 to 12	10mm/.394in	322
BST-323	1 to 12	10mm/.394in	323
BST-324	1 to 12	11.5mm/.450in	324

BST marker strips may be supplied with markings which appear in the "Options" section. Please indicate appropriate suffix.

Connector Designation		Length (with 12 poles)	UL			CSA			Screw Tightening Torque		
Male	Female		No. of poles	mm	in	Volts	Amps	AWG			
302-SV-DS	302-FB-DS	1-12	95	3.87	300	6	26-14	300	6	26-14	3.5
322-SV-DS	323-FB-HDS	1-12	117	4.61	300	20	18-12	300	15	26-12	4.5
322-SVW-DS	323-FBW-DS	1-12	117	4.61	300	20	18-12	300	15	26-12	4.5
322-SVW-DS	323-PHFBW-DS	1-12	117	4.61	300	-	-	300	20	26-12	4.5
324-STFS-DS	324-STFB-DS	1-12	135	5.31	600	25	18-10	300	30	26-10	7

How To ORDER

TYPE	NUMBER OF POLES 01 to 12	OPTIONS

U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938

CAGE Code Number 0AW35

1-800-724-2928



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfe, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

Internet: www.weco.ca

E-Mail: weco@weco.ca



ELECTRONIC MODULES FOR MOUNTING RAILS TO DIN EN 50022, 50035 AND 50045

Low Profile D-Subminiature Interface Modules, Type MTDA

Description

Type MTDA interface modules were originally designed by WECO for use in motor control machinery, electronic assembly machinery and multi-axis systems, etc. Their particular advantage is that they provide a low profile interface between discrete wiring and a D-Subminiature connector.

Type MTDA modules are offered with a choice of male and female D-Subminiature connectors, as well as a choice of male

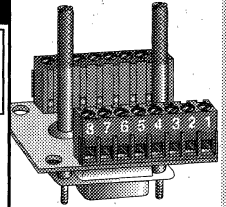
jackscrews or female screw locks. Industry standard 9, 15, 25, 37 and 50 pole versions are available.

Technical Data

Nominal Rated Voltage: 125 VAC
Nominal Rated Current: 3.5A
Wire Stripping Length: 6mm / 0.24 in.
Recommended Wire Size: 30-14 AWG
Screw Tightening Torque, max: 0.4 Nm / 3.5 lb-in.
 D-Sub and mounting options may be chosen according to the 'How to Order' box.

How To ORDER

NUMBER OF POLES 009, 015, 025, 037, 050	D-SUB CONNECTOR: Male: M Female: F	Male Jackscrews: M (cable mounting) Female screw locks: F (panel mounting)
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Ribbon Cable Interface Modules MTB, 10 – 64 poles

Description

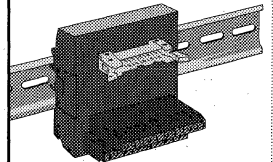
MTB interface modules make it easy to change from ribbon cable systems to screw connectors. Standard models are available from 10 to 64 poles with DIN 41 651 plug strips and ejectors for spring strips with strain relief clamps; there are also modules with two flat cable connections for 22x16, 2x20 or 2x26 poles. When plugged, the ejectors lock the plug in place. The flat cable connection is made with DIN 41651 female connector strips with strain relief. Single wire connection is made via a sturdy screw connector accepting up to 12 AWG discrete wires.

Technical Data

Dielectric strength: >500V DC
Rated voltage: 60 VAC to DIN VDE 0110, pollution degree 2
Rated current: 1A
Dimensions:
 Height: 54mm/2.56in
 Length:
 with 10, 14 poles: 47mm/1.85in
 with 16, 20 poles: 69mm/2.72in
 with 28, 2x16 poles: 92mm/3.63in
 with 34, 40, 2x20 poles: 114mm/4.49in
 with 50 poles: 137mm/5.40in
 with 2x26 poles: 159mm/6.26in
 with 60, 64 poles: 182mm/7.17in
 Width: 76mm/3.00in

How To ORDER

TYPE	NUMBER OF POLES		
	10 = 010	34 = 034	2x16 = 216
	14 = 014	40 = 040	2x20 = 220
	16 = 016	50 = 050	2x26 = 226
	20 = 020	60 = 060	
	26 = 026	64 = 064	



D-Subminiature Interface Modules MTD, 9 – 50 poles

Description

Benefits

- Easy connections between the process/field equipment and the computer system.
- Interface D plug or receptacle equipped cable with up to 12 AWG discrete wires.
- Quick snap-on to DIN mounting rails.
- Saves time on system design.

Typical Applications:

- Computer communication links from measurement sensors/transmitters to industrial process controls, including programmable controllers, racks and panels.
- Flight and process simulators.

- CAD/CAM, Robotics and Machine Vision.
- Commercial and industrial heating environmental and security control systems.
- Power generation and distribution control circuits.

Technical Data

Rated voltage: 125V
Rated current: 1.5A
Dimensions:
 Height: 32mm/1.26in
 Length:
 with 9 poles: 47mm/1.85in
 with 15 poles: 57.5mm/2.26in
 with 25 poles: 80mm/3.15in
 with 37 poles: 114mm/4.49in
 with 50 poles: 147.5mm/5.81in
 Width: 76mm/3.00in

How To ORDER

TYPE	NUMBER OF POLES 009, 015, 025, 037, 050	Terminals D-Sub: Ordering information at right 1 – 8
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Option Code 1: Male connector

Option Code 2: Female connector

Option Code 3: Male (90° version)

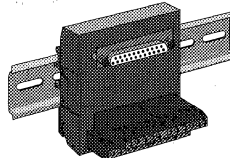
Option Code 4: Female (90° version)

Option Code 5: Male/male

Option Code 6: Female/female

Option Code 7: Male/female

Option Code 8: Female/male



Relay Modules MRPA, one change-over contact – SPDT – per relay

Description

The relay modules MRPA are equipped with one, four or eight relays having a single change-over contact each. The relays can be supplied either soldered or as plug-in versions.

In order to prevent incorrect triggering, a reverse polarity protection diode is installed at the common minus terminal (plus terminal). An LED indicates the control status while one recovery diode per coil protects the circuitry against reverse voltage. For + switching relay modules, connect a positive control voltage to the input terminals. All relay coils are connected to the - coil via the input terminals. For the - switching versions, the coils have a common positive terminal. The relay is triggered by a negative signal. To obtain optimum switching characteristics, the relay modules should be mounted with the input side either down or in a horizontal direction.

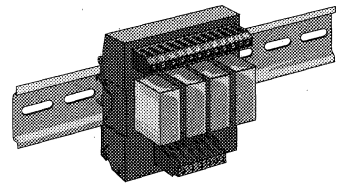
* Other relay versions are available on request

Technical Data

Control Circuit:
Input voltage: optional, see HOW TO ORDER Box
Rated power: 0.7W
Contact Circuit:
 Contact material: AgCdO
 Switching voltage: 250 VAC
 Switching/continuous current: 8A/6A
 Switching Capacity: 2000 VA
 Contact life electrical: AC 1/3A: >7x10⁶
 Contact life mechanical: >10⁷
 Pick-up/Release time: <7ms/<9ms
Rated Voltage: 240V to DIN VDE 0110, pollution degree 3
Breakdown Voltage contact-contact 1000V
Ambient temperature: -25°C to +40°C/-13°F to +104°F
Dimensions:
 Height: above the housing edge (total height depends on the mounting rail used)
 with plug-in relay: 36mm/1.42in
 with soldered-in relay: 23mm/0.91in
 Length: with 1 relay: 24mm/0.95in
 with 4 relays: 69mm/2.72in
 with 8 relays: 137mm/5.40in
 Width: 76mm/3.00in

How To ORDER

TYPE	With SPDT Relays A	Relay Mount: soldered = L plugged-in = S	Input Voltage: AC = A DC+ = P DC- = M	Number of relays: 1, 4, 8	Input Voltage: 024 (DC or AC) 048 (DC only) 060 (DC only) 060 (DC only) 110 (AC only) 220 (AC only)
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U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfe, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

1-800-724-2928

Internet: www.weco.ca

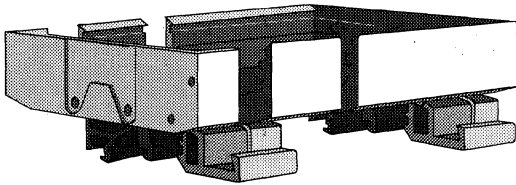
E-Mail: weco@weco.ca

MODULE HOUSINGS AND ACCESSORIES

M-512 AND M-513



Empty Module Housing M-512



Description

Series 512 is a complete system of module housings for an extremely wide variety of P.C. Board sizes. Many accessories are available to satisfy special design requirements.

Side Elements and Intermediate Elements

These elements are available in four widths:

- 01: 76mm/3.00in
- 02: 90mm/3.55in
- 03: 104mm/4.10in
- 04: 118mm/4.65in

The P.C. board width must be 4mm/0.16in less than the width of the module housing. The smallest usable P.C. board length is 20mm/0.79in. The length of the board is extendable in step with dimensions of the intermediate elements.

Or simply: P.C. board length = total module length minus 3mm/0.12in.

Mounting Feet

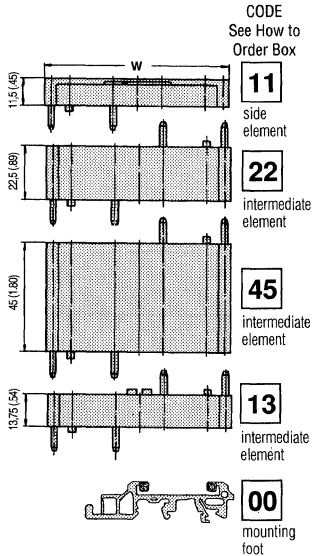
The mounting feet slide into the housing of module elements and can be snapped onto all mounting rails according to DIN EN 50 022/035/045. All individual elements interlock and provide a mechanical integrity which can withstand vibrational stress.

Material

Molding: Polyamide, self-extinguishing to UL94 V-2, grey color.

Upper Temperature Limits:

- Short time 140°C/284°F
- Continuous 80°C/176°F
- Cold resistant -40°C/-40°F



CODE
See How to
Order Box

Mounting the module onto the mounting rail:

Push in the left side of the mounting foot (see diagram) onto the mounting rail, then push down the module on the right hand side.

as above, but in addition lever with a screwdriver to the left (see diagram). With two mounting feet close together, use two screwdrivers simultaneously.

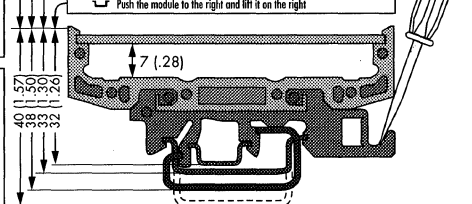
Removing the module from the mounting rail:

Lever with the screwdriver to the left (see diagram). In the process the right hand side of the module will lift up. With two mounting feet close together, use two screwdrivers simultaneously.

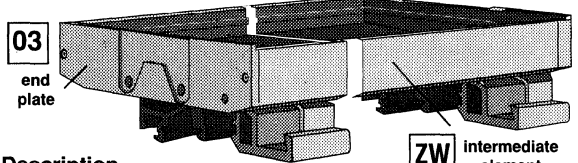
Push the module to the left and lift it on the right.

Remove in the same way as

Push the module to the right and lift it on the right



Empty Module Housing M-513



03 end plate

ZW intermediate element

Description

Series M-513 module housings feature single unit construction as opposed to the modular design of Series M-512. The housing width is 76mm (3in) and will accommodate a P.C. board width of 72mm (2.83in). The standard extrusion length is 1 meter (39.4in) which can be cut to desired lengths. End plates are secured to either end of the intermediate element with mounting screws.

Two screws are required per endplate. M-513 housings are designed for use with M-512 accessories and mounting feet, and will mount to all DIN EN 50022, 50035 and 50045 mounting rails.

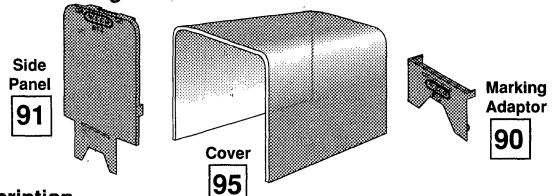
Material

Molding: Hard PVC, grey color.

How To ORDER

Module Housing Series M-513	WIDTH 76mm 01	SC = Endplate mounting screw 03 = Endplate ZW = Intermediate element (1M)
M - 5 1 3 - 0 1		
Mounting Foot		
M - 5 1 2 - 0 1 0 0		

Module Housing Accessories



Description

Marking Adaptors (Option code 90) (for modules without cover and side panels). These adaptors are clipped into the side elements which otherwise could hold the side panels. They provide a name plate area of 25 x 6mm / 0.98in x 0.24in. Marking tags are not provided.

Side Panels and Covers (Option codes 91 and 95)

The side panels provide a name plate area of 18 x 8mm / 0.71 x 0.32in. This area is placed at the top of the side panels and later protected by the cover.

Two side panels and one cover are required for one complete module unit. Covers and side panels code-width should preferably be assigned to the same code-width of the module housings. It is, however, possible to employ less wide or wider panels and covers

if necessary, provided that neither exceeds the module housing-width minus 8mm (0.32in). The inner height of both cover and side panel is always 50mm (0.197in) above the printed circuit board.

Material

Side Panels and Marking Adaptors: Polyamide, self-extinguishing to UL94 V-2, grey color

Upper Temperature Limits:
Short time: 140°C/284°F
Continuous: 80°C/175°F
Cold resistant: -50°C/-40°F

Covers: PVC, transparent

Temperature Limits:
Continuous: -20°C to 70°C/-4°F to 158°F.

How To ORDER

Module Housing Series M-512	Width Size		Housing Elements:	
	76mm	01	Side element	11
	90mm	02	Element 22.5mm	22
	104mm	03	Element 45mm	45
	118mm	04	Element 13.75mm	13
			Mounting foot	00

M - 5 1 2 -

How To ORDER

Module Housing Accessories Series M-512	Width Size		Accessories	Only for ordering covers: Cover lengths (mm) 018.0mm / 0.71in 040.5mm / 1.59in 063.0mm / 2.48in 085.5mm / 3.37in 108.0mm / 4.25in 158.0mm / 6.22in 999.9mm / 39.37in
	45mm	01		
	59mm	02		
	73mm	03		
	87mm	04		
Marking Adaptor: for all widths	00	Side Panel	91	
		Cover	95	
		Marking Adaptor	90	

M - 5 1 2 -

U.S.A.: WECO Electrical Connectors Inc.
2330 State Route 11, Mooers, NY 12958-4306
Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

1-800-724-2928

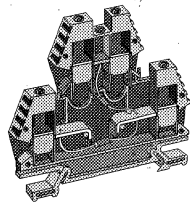
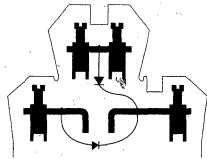
Internet: www.weco.ca

E-Mail: weco@weco.ca



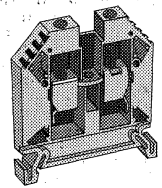
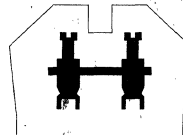
RAIL MOUNTED TERMINAL BLOCKS

FOR DIN EN 50022, 50035 AND 50045 MOUNTING RAILS



Diode

Please contact WECO for a list of available versions.
 Note: May also be supplied without diodes for special component requirements
Colours: Grey, blue, yellow/green



Feed-Through

For DIN EN 50022 or 50035 Mounting Rails:

Type	Width	Height	Length	Amps	Volts	AWG	Colours
Euro-2.5	5mm/.197in	36mm/1.42in	44mm/1.73in	20	Pending	Grey, blue, yellow/green	
Euro-4	6mm/.24in	36mm/.42in	44mm/1.73in	20	600	18-12	Grey, blue, yellow/green
Euro-6	7mm/.28in	36mm/1.42in	50mm/1.97in	20	600	18-8	Grey, blue, yellow/green
Euro-10	9mm/.35in	44mm/1.73in	50mm/1.97in	65	600	18-6	Grey, blue, yellow/green
Euro-25	12mm/.47in	49mm/1.93in	56mm/2.20in	85	600	14-4	Grey, blue, yellow/green
Euro-50	16mm/.63in	61mm/2.40in	62mm/2.44in	140	600	14-1/0	Grey, blue, yellow/green
Euro-70	26mm/1.02in	75mm/2.95in	74mm/2.91in	175	600	14-3/0	Grey, blue, yellow/green

For DIN EN 50045 Mini Rail:

Type	Width	Height	Length	Amps	Volts	AWG	Colours
Euro-4	6mm/.24in	28mm/1.10in	32mm/1.26in	20	300	18-12	Grey, blue, yellow/green

Description

WECO offers a line of modular rail mounted terminal blocks designed for DIN standard mounting rails. These space saving terminals feature captive screws and polyamide 6.6 UL94 V-2 mouldings.

In addition to the standard feed-through blocks, the line also includes two stage, ground, fuse and diode blocks. Jumper combs, covers and marker tags are also available. These terminal blocks may also be used in conjunction with our rail mounted electronic modules for specific interface or component requirements.

Material

Molding: Polyamide 6.6 UL94 V-2

Tracking Resistance:
 IEC Publication 112: CTI-600
 VDE 0303: KB-600

Clamp: Hardened steel, electroplated with zinc, chromated

Internal bus: High grade copper alloy, electro-plated with nickel

Screws: steel, zinc plated and chromated

Jumper comb: Electrolytic copper

International Approvals

UL File No. E155961

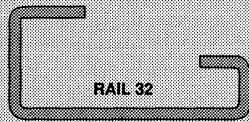
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VDE File No. 13464-1440-1001

SEV File No. ASEV 87.1 03010U

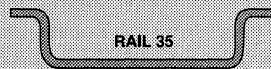


Mounting Rails:



DIN EN 50035

"G Rail" - Unperforated - 2 meter length
 Article No. 51.W03.200
 "G Rail" - Perforated - 2 meter length
 Article No. 63.W03.200



DIN EN 50022

"C Rail" - Unperforated - 2 meter length
 Article No. 51.W02.200
 "C Rail" - Perforated - 2 meter length
 Article No. 63.W02.200

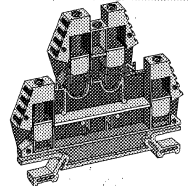
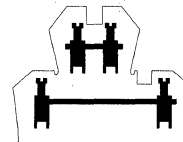


DIN EN 50045

"Mini Rail" - Unperforated - 2 meter length
 Article No. 51.W01.200
 "Mini Rail" - Perforated - 2 meter length
 Article No. 63.W01.200

Marker Tags

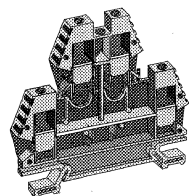
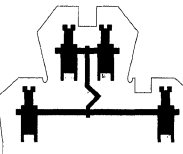
Please contact WECO for a list of available versions



Two Stage

For DIN EN 50022 or 50035 Mounting Rails

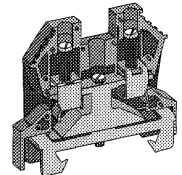
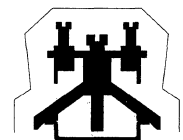
Type	Width	Height	Length	Amps	Volts	AWG	Colours
Euro-D4	6mm/.24in	55mm/2.17in	66mm/2.60in	20	600	18-12	Grey, blue, yellow/green



Two Stage Cross Connect

For DIN EN 50022 or 50035 Mounting Rails

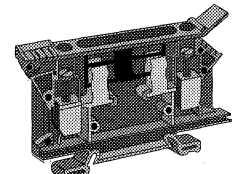
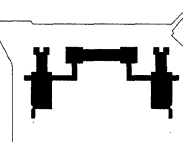
Type	Width	Height	Length	Amps	Volts	AWG	Colours
Euro-D4/1	6mm/.24in	55mm/2.17in	66mm/2.60in	20	600	18-12	Grey, blue, yellow/green



Ground

For DIN EN 50022 or 50035 Mounting Rails

Type	Width	Height	Length	Amps	Volts	AWG	Colours
Euro-E4	7mm/.28in	36mm/1.42in	44mm/1.73in	-	-	18-12	yellow/green
Euro-E6	8mm/.31in	44mm/1.73in	50mm/1.97in	-	-	18-8	yellow/green
Euro-E10	10mm/.39in	49mm/1.93in	58mm/2.28in	-	-	18-6	yellow/green
Euro-E25	12mm/.47in	49mm/1.93in	58mm/2.28in	-	-	14-4	yellow/green
Euro-E50	16mm/.63in	60mm/2.36in	62mm/2.44in	-	-	14-1/0	yellow/green



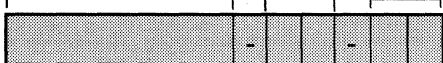
Fuse

For DIN EN 50022 or 50035 Mounting Rails - Colour: grey

Type	Fuse Holder	Width	Height	Length	Amps	Volts	AWG	Fuse Size
Euro-S4	Lever operated	8mm/.31in	36mm/1.42in	66mm/2.60in	8	600	18-12	5x20, 5x25
Euro-S10	Lever operated	10mm/.39in	50mm/1.97in	82mm/3.23in	15	600	18-6	.25in x 1.25in
Euro-S10-5	Lever operated	10mm/.39in	50mm/1.97in	82mm/3.23in	15	600	18-6	5x20, 5x25

How To ORDER

TYPE	COLOUR:	SUITABLE FOR RAIL:
	GR = grey	15 = 50045
	BL = blue	32 = 50035
	YG = yellow/green	35 = 50022



Accessories

NOTE:
 Cover and end brackets are the only available options for Type Euro-70

TYPE:
4, 6, 10, 16, 50, 70, 2.5, D4, D4/1

- ES = End Section
- SE = Separator
- PR = Protector
- CO = Cover
- EBG = End Bracket /32
- EBH = End Bracket /35
- J2 = 2 pole Jumper
- J3 = 3 pole Jumper
- JS = Jumper strip-1/2 meter

U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 293-5938



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfe, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

1-800-724-2928

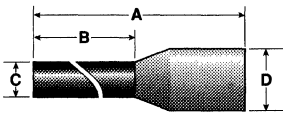
Internet: www.weco.ca

E-Mail: weco@weco.ca

INSULATED FERRULES



SINGLE WIRE VERSIONS



TYPE	COLOR	DIMENSIONS: MM (IN.)			
		A	B	C	D
ZAF-GR26-ME	GREY	10(.39)	6(.24)	.60(.02)	1.5(.06)
ZAF-GR26-XL	GREY	12(.47)	8(.31)	.60(.02)	1.5(.06)
ZAF-LB24-ME	LIGHT BLUE	10(.39)	6(.24)	.85(.03)	1.8(.07)
ZAF-LB24-XL	LIGHT BLUE	12(.47)	8(.31)	.85(.03)	1.8(.07)
ZAF-TU22-ME	TURQUOISE	10(.39)	6(.24)	.85(.03)	2.0(.08)
ZAF-TU22-XL	TURQUOISE	12(.47)	8(.31)	.85(.03)	2.0(.08)
ZAF-OR20-SM	ORANGE	12(.47)	6(.24)	1.04	2.6(.10)
ZAF-OR20-ME	ORANGE	14(.55)	8(.31)	1.04	2.6(.10)
ZAF-OR20-LO	ORANGE	16(.63)	10(.39)	1.04	2.6(.10)
ZAF-WE18-SM	WHITE	12(.47)	6(.24)	1.2(.05)	2.8(.11)
ZAF-WE18-ME	WHITE	14(.55)	8(.31)	1.2(.05)	2.8(.11)
ZAF-WE18-LO	WHITE	16(.63)	10(.39)	1.2(.05)	2.8(.11)
ZAF-WE18-XL	WHITE	18(.71)	12(.47)	1.2(.05)	2.8(.11)
ZAF-YE18-SM	YELLOW	12(.47)	6(.24)	1.4(.06)	3.0(.12)
ZAF-YE18-ME	YELLOW	14(.55)	8(.31)	1.4(.06)	3.0(.12)
ZAF-YE18-LO	YELLOW	16(.63)	10(.39)	1.4(.06)	3.0(.12)
ZAF-YE18-XL	YELLOW	18(.71)	12(.47)	1.4(.06)	3.0(.12)
ZAF-RD16-SM	RED	14(.55)	8(.31)	1.7(.07)	3.5(.14)
ZAF-RD16-ME	RED	16(.63)	10(.39)	1.7(.07)	3.5(.14)
ZAF-RD16-LO	RED	18(.71)	12(.47)	1.7(.07)	3.5(.14)
ZAF-RD16-XL	RED	24(.94)	18(.71)	1.7(.07)	3.5(.14)
ZAF-BL14-ME	BLUE	14(.55)	8(.31)	2.2(.09)	4.2(.17)
ZAF-BL14-LO	BLUE	18(.71)	12(.47)	2.2(.09)	4.2(.17)
ZAF-BL14-XL	BLUE	24(.94)	18(.71)	2.2(.09)	4.2(.17)
ZAF-GR12-ME	GREY	18(.71)	10(.39)	2.8(.11)	4.8(.19)
ZAF-GR12-LO	GREY	20(.79)	12(.47)	2.8(.11)	4.8(.19)
ZAF-GR12-XL	GREY	26(1.02)	18(.71)	2.8(.11)	4.8(.19)
ZAF-BA10-ME	BLACK	20(.79)	12(.47)	3.5(.14)	6.3(.25)
ZAF-BA10-XL	BLACK	26(1.02)	18(.71)	3.5(.14)	6.3(.25)
ZAF-IV8-ME	IVORY	22(.87)	12(.47)	4.5(.18)	7.6(.30)
ZAF-IV8-XL	IVORY	28(1.10)	18(.71)	4.5(.18)	7.6(.30)
ZAF-GN6-ME	GREEN	22(.87)	12(.47)	5.8(.23)	8.8(.35)
ZAF-GN6-XL	GREEN	28(1.10)	18(.71)	5.8(.23)	8.8(.35)
ZAF-BR4-ME	BROWN	30(1.18)	16(.63)	7.3(.29)	11.2(.44)
ZAF-BR4-LO	BROWN	32(1.26)	18(.71)	7.3(.29)	11.2(.44)
ZAF-BR4-XL	BROWN	36(1.42)	22(.87)	7.3(.29)	11.2(.44)
ZAF-BE2-ME	BEIGE	30(1.18)	16(.63)	8.3(.33)	12.7(.50)
ZAF-BE2-LO	BEIGE	32(1.26)	18(.71)	8.3(.33)	12.7(.50)
ZAF-BE2-XL	BEIGE	39(1.54)	25(.98)	8.3(.33)	12.7(.50)
ZAF-OL1-ME	OLIVE	36(1.42)	20(.79)	10.3(.41)	15.0(.59)
ZAF-OL1-LO	OLIVE	41(1.61)	25(.98)	10.3(.41)	15.0(.59)
ZAF-OL1-XL	OLIVE	46(1.81)	30(1.18)	10.3(.41)	15.0(.59)
ZAF-YE20-ME	YELLOW	37(1.46)	20(.79)	12.7(.50)	16.0(.63)
ZAF-RD30-ME	RED	44(1.73)	25(.98)	14.7(.58)	18.0(.71)

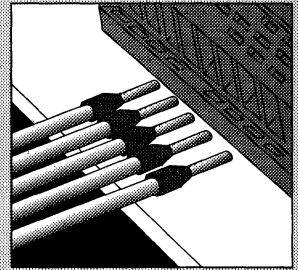
STANDARD COLOR CODING

COLOR CODING TO DIN 46228 PART 4

DIN-GR26-ME	GREY	10(.39)	6(.24)	.60(.02)	1.5(.06)
DIN-GR26-XL	GREY	12(.47)	8(.31)	.60(.02)	1.5(.06)
DIN-LB24-ME	LIGHT BLUE	10(.39)	6(.24)	.85(.03)	1.8(.07)
DIN-LB24-XL	LIGHT BLUE	12(.47)	8(.31)	.85(.03)	1.8(.07)
DIN-TU22-ME	TURQUOISE	10(.39)	6(.24)	.85(.03)	2.0(.08)
DIN-TU22-XL	TURQUOISE	12(.47)	8(.31)	.85(.03)	2.0(.08)
DIN-WE20-SM	WHITE	12(.47)	6(.24)	1.04	2.6(.10)
DIN-WE20-ME	WHITE	14(.55)	8(.31)	1.04	2.6(.10)
DIN-WE20-LO	WHITE	16(.63)	10(.39)	1.04	2.6(.10)
DIN-GR18-SM	GREY	12(.47)	6(.24)	1.2(.05)	2.8(.11)
DIN-GR18-ME	GREY	14(.55)	8(.31)	1.2(.05)	2.8(.11)
DIN-GR18-LO	GREY	16(.63)	10(.39)	1.2(.05)	2.8(.11)
DIN-GR18-XL	GREY	18(.71)	12(.47)	1.2(.05)	2.8(.11)
DIN-RD18-SM	RED	12(.47)	6(.24)	1.4(.06)	3.0(.12)
DIN-RD18-ME	RED	14(.55)	8(.31)	1.4(.06)	3.0(.12)
DIN-RD18-LO	RED	16(.63)	10(.39)	1.4(.06)	3.0(.12)
DIN-RD18-XL	RED	18(.71)	12(.47)	1.4(.06)	3.0(.12)
DIN-BA16-SM	BLACK	14(.55)	8(.31)	1.7(.07)	3.5(.14)
DIN-BA16-ME	BLACK	16(.63)	10(.39)	1.7(.07)	3.5(.14)
DIN-BA16-LO	BLACK	18(.71)	12(.47)	1.7(.07)	3.5(.14)
DIN-BA16-XL	BLACK	24(.94)	18(.71)	1.7(.07)	3.5(.14)
DIN-BL14-ME	BLUE	14(.55)	8(.31)	2.2(.09)	4.2(.17)
DIN-BL14-LO	BLUE	18(.71)	12(.47)	2.2(.09)	4.2(.17)
DIN-BL14-XL	BLUE	24(.94)	18(.71)	2.2(.09)	4.2(.17)
DIN-GR12-ME	GREY	18(.71)	10(.39)	2.8(.11)	4.8(.19)
DIN-GR12-LO	GREY	20(.79)	12(.47)	2.8(.11)	4.8(.19)
DIN-GR12-XL	GREY	26(1.02)	18(.71)	2.8(.11)	4.8(.19)
DIN-YE10-ME	YELLOW	20(.79)	12(.47)	3.5(.14)	6.3(.25)
DIN-YE10-LO	YELLOW	26(1.02)	18(.71)	3.5(.14)	6.3(.25)
DIN-RD8-ME	RED	22(.87)	12(.47)	4.5(.18)	7.6(.30)
DIN-RD8-XL	RED	28(1.10)	18(.71)	4.5(.18)	7.6(.30)
DIN-BL6-ME	BLUE	22(.87)	12(.47)	5.8(.23)	8.8(.35)
DIN-BL6-XL	BLUE	28(1.10)	18(.71)	5.8(.23)	8.8(.35)
DIN-YE4-ME	YELLOW	30(1.18)	16(.63)	7.3(.29)	11.2(.44)
DIN-YE4-LO	YELLOW	32(1.26)	18(.71)	7.3(.29)	11.2(.44)
DIN-YE4-XL	YELLOW	36(1.42)	22(.87)	7.3(.29)	11.2(.44)
DIN-RD2-ME	RED	30(1.18)	16(.63)	8.3(.33)	12.7(.50)
DIN-RD2-LO	RED	32(1.26)	18(.71)	8.3(.33)	12.7(.50)
DIN-RD2-XL	RED	39(1.54)	25(.98)	8.3(.33)	12.7(.50)
DIN-BL1-ME	BLUE	36(1.42)	20(.79)	10.3(.41)	15.0(.59)
DIN-BL1-LO	BLUE	41(1.61)	25(.98)	10.3(.41)	15.0(.59)
DIN-BL1-XL	BLUE	46(1.81)	30(1.18)	10.3(.41)	15.0(.59)
DIN-YE20-ME	YELLOW	37(1.46)	20(.79)	12.7(.50)	16.0(.63)
DIN-RD30-ME	RED	44(1.73)	25(.98)	14.7(.58)	18.0(.71)

Description

Insulated ferrules provide protection and ensure reliable connection of stranded wires for termination in terminal blocks. Ferrules are mechanically crimped to the stripped copper wire. WECO also offers wire stripping and crimping tools. Ferrule sizes range from 26 to 3/0 AWG and are available in single or double wire versions. Uninsulated ferrules are also available.



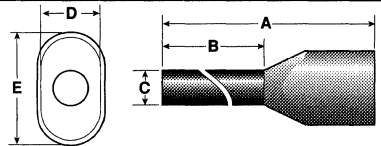
Technical Data

Wire range: 26 to 3/0 AWG (depending on product chosen)
 Wire stripping length: refer to dimension B
 Standard package:
 26 to 14 AWG versions: 500 pieces
 12 AWG ME LO versions: 500 pieces
 12 AWG XL to 6 AWG versions: 100 pieces
 4 to 3/0 AWG versions: 50 pieces

Material

Metal sleeve: electrolytic copper, tin plated
 Insulation collar: Polypropylene
 Maximum temperature limit: 110°C / 230°F

DOUBLE WIRE VERSIONS



TYPE	COLOR	DIMENSIONS: MM (IN.)				
		A	B	C	D	E
ZAF2-OR20-ME	ORANGE	14(.55)	8(.31)	1.4(.06)	3.0(.12)	5.0(.20)
ZAF2-OR20-LO	ORANGE	16(.63)	10(.39)	1.4(.06)	3.0(.12)	5.0(.20)
ZAF2-OR20-XL	ORANGE	18(.71)	12(.47)	1.4(.06)	3.0(.12)	5.0(.20)
ZAF2-WE18-ME	WHITE	14(.55)	8(.31)	1.7(.07)	3.0(.12)	5.5(.22)
ZAF2-WE18-LO	WHITE	16(.63)	10(.39)	1.7(.07)	3.0(.12)	5.5(.22)
ZAF2-WE18-XL	WHITE	24(.94)	18(.71)	1.7(.07)	3.0(.12)	5.5(.22)
ZAF2-YE18-ME	YELLOW	16(.63)	8(.31)	2.2(.09)	3.6(.14)	6.5(.26)
ZAF2-YE18-LO	YELLOW	20(.79)	12(.47)	2.2(.09)	3.6(.14)	6.5(.26)
ZAF2-YE18-XL	YELLOW	26(1.02)	18(.71)	2.2(.09)	3.6(.14)	6.5(.26)
ZAF2-RD16-ME	RED	16(.63)	8(.31)	2.2(.09)	3.6(.14)	6.5(.26)
ZAF2-RD16-LO	RED	20(.79)	12(.47)	2.2(.09)	3.6(.14)	6.5(.26)
ZAF2-RD16-XL	RED	26(1.02)	18(.71)	2.2(.09)	3.6(.14)	6.5(.26)
ZAF2-BL14-ME	BLUE	19(.75)	10(.39)	2.8(.11)	4.5(.18)	8.0(.31)
ZAF2-BL14-LO	BLUE	21(.83)	12(.47)	2.8(.11)	4.5(.18)	8.0(.31)
ZAF2-BL14-XL	BLUE	27(1.06)	18(.71)	2.8(.11)	4.5(.18)	8.0(.31)
ZAF2-GR12-ME	GREY	22(.87)	12(.47)	3.5(.14)	5.2(.20)	9.0(.35)
ZAF2-GR12-XL	GREY	28(1.10)	18(.71)	3.5(.14)	5.2(.20)	9.0(.35)
ZAF2-BA10-ME	BLACK	23(.91)	12(.47)	4.5(.18)	6.2(.24)	11.4(.45)
ZAF2-BA10-XL	BLACK	29(1.14)	18(.71)	4.5(.18)	6.2(.24)	11.4(.45)
ZAF2-IV8-ME	IVORY	24(.94)	12(.47)	5.8(.23)	7.6(.30)	13.4(.53)
ZAF2-IV8-XL	IVORY	30(1.18)	18(.71)	5.8(.23)	7.6(.30)	13.4(.53)
ZAF2-GN6-ME	GREEN	29(1.14)	16(.63)	8.3(.33)	9.5(.37)	17.2(.68)
ZAF2-GN6-XL	GREEN	38(1.50)	25(.98)	8.3(.33)	9.5(.37)	17.2(.68)

STANDARD COLOR CODING

COLOR CODING TO DIN 46228 PART 4

DIN2-WE20-ME	WHITE	14(.55)	8(.31)	1.4(.06)	3.0(.12)	5.0(.20)
DIN2-WE20-LO	WHITE	16(.63)	10(.39)	1.4(.06)	3.0(.12)	5.0(.20)
DIN2-WE20-XL	WHITE	18(.71)	12(.47)	1.4(.06)	3.0(.12)	5.0(.20)
DIN2-GR18-ME	GREY	14(.55)	8(.31)	1.7(.07)	3.0(.12)	5.5(.22)
DIN2-GR18-LO	GREY	16(.63)	10(.39)	1.7(.07)	3.0(.12)	5.5(.22)
DIN2-GR18-XL	GREY	24(.94)	18(.71)	1.7(.07)	3.0(.12)	5.5(.22)
DIN2-RD18-ME	RED	16(.63)	8(.31)	2.2(.09)	3.6(.14)	6.5(.26)
DIN2-RD18-LO	RED	20(.79)	12(.47)	2.2(.09)	3.6(.14)	6.5(.26)
DIN2-RD18-XL	RED	26(1.02)	18(.71)	2.2(.09)	3.6(.14)	6.5(.26)
DIN2-BA16-ME	BLACK	16(.63)	8(.31)	2.2(.09)	3.6(.14)	6.5(.26)
DIN2-BA16-LO	BLACK	20(.79)	12(.47)	2.2(.09)	3.6(.14)	6.5(.26)
DIN2-BA16-XL	BLACK	26(1.02)	18(.71)	2.2(.09)	3.6(.14)	6.5(.26)
DIN2-BL14-ME	BLUE	19(.75)	10(.39)	2.8(.11)	4.5(.18)	8.0(.31)
DIN2-BL14-LO	BLUE	21(.83)	12(.47)	2.8(.11)	4.5(.18)	8.0(.31)
DIN2-BL14-XL	BLUE	27(1.06)	18(.71)	2.8(.11)	4.5(.18)	8.0(.31)
DIN2-GR12-ME	GREY	22(.87)	12(.47)	3.5(.14)	5.2(.20)	9.0(.35)
DIN2-GR12-XL	GREY	28(1.10)	18(.71)	3.5(.14)	5.2(.20)	9.0(.35)
DIN2-YE10-ME	YELLOW	23(.91)	12(.47)	4.5(.18)	6.2(.24)	11.4(.45)
DIN2-YE10-LO	YELLOW	29(1.14)	18(.71)	4.5(.18)	6.2(.24)	11.4(.45)
DIN2-RD8-ME	RED	24(.94)	12(.47)	5.8(.23)	7.6(.30)	13.4(.53)
DIN2-RD8-XL	RED	30(1.18)	18(.71)	5.8(.23)	7.6(.30)	13.4(.53)
DIN2-BL6-ME	BLUE	29(1.14)	16(.63)	8.3(.33)	9.5(.37)	17.2(.68)
DIN2-BL6-XL	BLUE	38(1.50)	25(.98)	8.3(.33)	9.5(.37)	17.2(.68)

ORDERING EXAMPLE

INSULATION COLOR:
 GR: Grey YE: Yellow BE: Beige
 LB: Light Blue BL: Blue BR: Brown
 TU: Turquoise BA: Black VI: Violet
 WE: White IV: Ivory PI: Pink
 RD: Red OL: Olive GN: Green

COPPER SLEEVE LENGTH: (Dim. B)
 SH: Short
 ME: Medium
 LO: Long
 XL: Extra Long

WIRE SIZE (AWG)

COLOR CODING TYPE:
 ZAF: Standard
 DIN: to DIN 46228 Part 4

ZAF-GR26-ME

U.S.A.: WECO Electrical Connectors Inc.
 2330 State Route 11, Mooers, NY 12958-4306
 Tel: (518) 298-4810 Fax: (518) 298-5938



CANADA: WECO Electrical Connectors Inc.
 19900 Clark Graham, Baie d'Urfé, QC H9X 3R8
 Tel: (514) 694-9136 Fax: (514) 694-0956

CAGE Code Number 0AW35

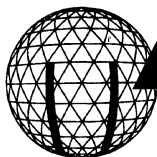
1-800-724-2928

Internet: www.weco.ca

E-Mail: weco@weco.ca

PANEL HARDWARE

Manufacturer	Starting EEM Page No.	Bezels	Dials, Instrument	Pointers, Dial	Handles	Knob Types					Panel Markings	Plates, Escutcheon	Drives & Drive Mechanisms	Shaft Couplings	Shaft Locks	Speed Reducers
						Cast, Molded & Machined	Control-Shaft Locking	Limit Stop	Slip Clutch	Ratio Drive Torque						
APEM Components, Inc.	C•1447					√										
Electronic Hardware Corp.	C•1448					√	√	√	√	√					√	
Elma Electronic Inc.	C•1453	√	√	√	√	√										
JMJ Technical Products	C•1454	√														
RMF Products, Inc.	C•1455	√														
SELCO Products Company	C•1456			√		√										

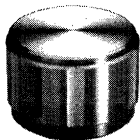


APEM[®]
APEM COMPONENTS, INC.

CONTROL KNOBS

The listings below show some popular models. Consult factory for more extensive offerings and giant catalog. Photos show a representative selection for each Series. Also see our **WORLD OF SWITCHING CAPABILITIES** in Volume B.

World wide web: <http://www.apem.com> E mail: info@apem.com



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420011A1/8	.500	.630
420011A1/4	.500	.630
420013A1/4	.748	.630
420015A1/4	.941	.630

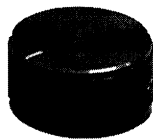
NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420031A1/8	.500	.634
420031A1/4	.500	.634
420033A1/4	.748	.634
420035A1/4	.940	.634
420037A1/4	1.252	.748

NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420041A1/8	.500	.638
420041A1/4	.500	.638
420043A1/4	.748	.638
420045A1/4	.929	.638

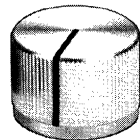
NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with arrowhead indicator

MODEL NUMBER	KNOB DIA.	HT.
420051A1/8	.500	.638
420051A1/4	.500	.638
420053A1/4	.748	.638
420055A1/4	.929	.638

NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420061A1/8	.500	.638
420061A1/4	.500	.638
420063A1/4	.748	.638
420065A1/4	.940	.638
420067A1/4	1.248	.638

NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with dot indicator

MODEL NUMBER	KNOB DIA.	HT.
420071A1/8	.370	.300
420072A1/8	.370	.449
420073A1/8	.492	.598
420073A1/4	.492	.598
420074A1/4	.748	.598

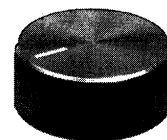
NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420081A1/8	.500	.630
420081A1/4	.500	.630
420083A1/4	.748	.630
420085A1/4	.940	.630
420087A1/4	1.248	.748

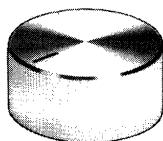
NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420091B1/8	.732	.472
420091B1/4	.732	.472
420092B1/4	.898	.512
420093B1/4	1.280	.551
420094B1/4	1.512	.630

NOTE: Above units are available with black finish only.



Machined aluminum - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
420121A1/8	.732	.472
420121A1/4	.732	.472
420122A1/4	.898	.512
420123A1/4	1.280	.551
420124A1/4	1.512	.630

NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Molded ABS - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
410121B1/8	.520	.640
410121B1/4	.520	.640
410122B1/8	.720	.740
410122B1/4	.720	.740
410123B1/8	.920	.860
410123B1/4	.920	.860

NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Molded ABS - Round with pointer and line indicator

MODEL NUMBER	KNOB DIA.	HT.
430211B1/8	.504	.480
430211B1/4	.504	.480
430212B1/4	.712	.579
430213B1/4	.906	.642

NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Molded phenolic - Round with skirt and square top indicator

MODEL NUMBER	KNOB DIA.	SKIRT DIA.	HT.
410041B1/8	.500	.606	.567
410041B1/4	.500	.606	.567
410042B1/4	.630	.799	.618
410043B1/4	.811	.941	.795
410044B1/4	1.130	1.370	.707

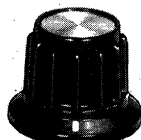
NOTE: Above units are natural color. For black finish, substitute **B** for **A**



Molded phenolic - Round with skirt and dot indicator

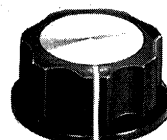
MODEL NUMBER	KNOB DIA.	SKIRT DIA.	HT.
MPK50B1/8	.571	.750	.550
MPK50B1/4	.571	.750	.550
MPK70B1/4	.740	1.000	.590
MPK90B1/4	.988	1.250	.590

Machined aluminum knobs have highly cosmetic anodized natural or black gloss finish. Molded ABS and phenolic have highly cosmetic black gloss finish. Shaft size is last 3 digits of model number (1/8" or 1/4" dia.). Knobs have 1 or 2 (depending on model specified) heat treated high alloy steel sets screws with cup point. Some models have spun aluminum top insert.



Molded phenolic - Round with skirt and line indicator

MODEL NUMBER	KNOB DIA.	SKIRT DIA.	HT.
MPKA50B1/8	.580	.790	.590
MPKA50B1/4	.580	.790	.590
MPKA70B1/4	.580	.980	.680
MPKA90B1/4	.960	1.360	.850



Molded phenolic - Round with skirt and line indicator

MODEL NUMBER	KNOB DIA.	SKIRT DIA.	HT.
MPKE50B1/8	.620	.750	.470
MPKE50B1/4	.620	.750	.470
MPKE70B1/4	.750	.850	.540
MPKE90B1/4	.890	1.000	.570
MPKE120B1/4	1.160	1.300	.630



Molded phenolic - Round with line indicator

MODEL NUMBER	KNOB DIA.	HT.
MPKG40B1/8	.440	.470
MPKG50B1/8	.550	.520
MPKG50B1/4	.550	.520
MPKG60B1/4	.660	.550
MPKG70B1/4	.740	.550
MPKG90B1/4	.860	.550
MPKG100B1/8	1.050	.550
MPKG125B1/4	1.250	.580

REGENT SERIES



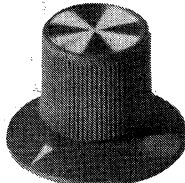

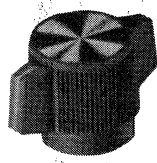
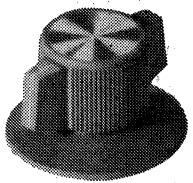



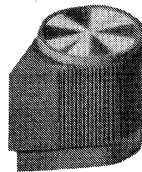




ELECTRONIC HARDWARE CORPORATION

320 Broad Hollow Road, Farmingdale, NY 11735

Call: 1.516.752.1950 • FAX 516.752.1971 • Email: nyknob1@aol.com

Website: <http://www.ehcknobs.com>

<p>ROUND</p>  <p>STYLE NOS. DIA. HGT.</p> <p><i>Plain</i></p> <p>EH 71-0N* 500 .510 EH 71-1N 700 .610 EH 71-2N 900 .790 EH 71-3N 1.250 .700 EH 71-4N 1.750 .850</p> <p><i>W/Indicator Line</i></p> <p>EH 71-0C 500 .510 EH 71-1C 700 .610 EH 71-2C 900 .790 EH 71-3C 1.250 .700 EH 71-4C 1.750 .850</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>SKIRTED ROUND</p>  <p>STYLE NOS. DIA. HGT.</p> <p><i>Plain</i></p> <p>EH 71-0D* 500 .660 EH 71-1D 700 .780 EH 71-2D 900 1.010 EH 71-3D 1.250 .850 EH 71-4D 1.750 1.070</p> <p><i>W/Indicator Line</i></p> <p>EH 71-0E 500 .660 EH 71-1E 700 .780 EH 71-2E 900 1.010 EH 71-3E 1.250 .850 EH 71-4E 1.750 1.070</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>ROUND WITH DIAL</p>  <p>STYLE NOS. KNOB DIA. HGT. DIA. DIA.</p> <p><i>Plain</i></p> <p>EH 71-0G* ... 500 .900 .660 EH 71-1G ... 700 1.150 .780 EH 71-2G ... 900 1.525 1.010 EH 71-3G ... 1.250 1.837 .850</p> <p><i>With Arrow</i></p> <p>EH 71-0F ... 500 .900 .660 EH 71-1F ... 700 1.150 .780 EH 71-2F ... 900 1.525 1.010 EH 71-3F ... 1.250 1.837 .850</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>DOUBLE BAR</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-1GG* 700 .610 EH 71-2GG 900 .790</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>SKIRTED DOUBLE BAR</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-1HH* 700 .660 EH 71-2HH 900 .780</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>DOUBLE BAR WITH DIAL</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-1II* 700 .660 EH 71-2II 900 .780</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>
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<p>POINTER</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-0P* 500 .510 EH 71-1P 700 .610 EH 71-2P 900 .710</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>SKIRTED POINTER</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-0K* 500 .660 EH 71-1K 700 .780 EH 71-2K 900 1.010</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>SINGLE BAR</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-0SB 500 .510 EH 71-1SB 700 .610 EH 71-2SB 900 .790</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>SKIRTED SINGLE BAR</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-0DSB 500 .510 EH 71-1DSB 700 .610 EH 71-2DSB 900 .790</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>LOW POINTER KNOB</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-0LP 500 .510 EH 71-1LP 700 .610 EH 71-2LP 900 .790</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>	<p>ROUND WITH POINTER</p>  <p>STYLE NOS. DIA. HGT.</p> <p>EH 71-0NP 500 .510 EH 71-1NP 700 .610 EH 71-2NP 900 .790 EH 71-3NP 1.250 .700</p> <p><small>*See chart below for shaft hole specifications & colors</small></p>
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DUAL CONCENTRIC ROUND AND SKIRTED ROUND



STYLE NOS. DIA. HGT.

Plain Round

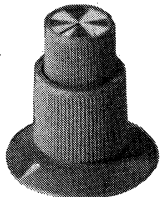
EH 71-1N+0 500/.700 1.020
 EH 71-2N+1 700/.900 1.320

Skirted Round

EH 71-1D+0 500/.700 1.190
 EH 71-2D+1 700/.900 1.540

*See chart below for shaft hole specifications & colors

DUAL CONCENTRIC WITH DIAL



STYLE NOS. KNOB DIA. HGT. DIA. DIA.

Without Arrow

EH 71-2GG+1 500/.700 1.150 1.020
 EH 71-1GG+0* 700/.900 1.525 1.320

With Arrow

EH 71-1F+0 500/.700 1.150 1.020
 EH 71-2F+0 700/.900 1.525 1.320

*See chart below for shaft hole specifications & colors

MATERIALS OF CONSTRUCTION

PLASTIC - Cylolac. (Polycarbonate available upon special request.)

BUSHINGS - Plated to withstand salt-spray. (Method 101, test condition B, of Mil. Std. 202)

SET SCREWS - Each Knob to have two socket head set screws, Type III Style 4 of Specification FF-S-103.

Knobs are supplied with either 4-40 or 8-32 set screws.

SET SCREW SPECIFICATIONS EACH KNOB FURNISHED WITH (2) SET SCREWS

Series	Diam. Size	1/8" Shaft Hole	1/4" Shaft Hole
0	.500	4-40 UNC-3A	4-40 UNC-3A
1	.700	4-40 UNC-3A	4-40 UNC-3A
2	.900	4-40 UNC-3A	8-32 UNC-3A
3	1.250	—	8-32 UNC-3A
4	1.750	—	8-32 UNC-3A

ORDERING INFORMATION

TO SPECIFY	Bushing Number	Color	EXAMPLE
Then indicate bushing number and color.	(Shaft Hole Spec.) 1 - 1/8" round 2 - 1/4" round 3 - 1/8" "D" hole 4 - 1/4" "D" hole 5 - .190 round 6 - .267 round	B = Matte Black S = Mirror Black G = Matte Gray J = Mirror Gray	EH71-ON2S EH71 = Series O = Size N = Style 2 = Brushing S = Color

MS91528 SERIES

















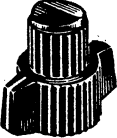


ELECTRONIC HARDWARE CORPORATION

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Call: 1.516.752.1950 • FAX 516.752.1971 • Email: nyknob1@aol.com

Website: <http://www.ehcknobs.com>

<p>ROUND (1N)</p>  <p>STYLE NOS. 50-1-_____ ROUND (ON) 50-1WD-_____ ROUND (OC) W/INDICATOR DOT</p> <table border="1"> <thead> <tr> <th>SERIES</th> <th>DIA.</th> <th>HGT.</th> </tr> </thead> <tbody> <tr><td>50</td><td>.500</td><td>.510</td></tr> <tr><td>70</td><td>.700</td><td>.610</td></tr> <tr><td>90</td><td>.900</td><td>.790</td></tr> <tr><td>125</td><td>1.125</td><td>.700</td></tr> <tr><td>175</td><td>1.750</td><td>.800</td></tr> <tr><td>225</td><td>2.250</td><td>.875</td></tr> </tbody> </table>	SERIES	DIA.	HGT.	50	.500	.510	70	.700	.610	90	.900	.790	125	1.125	.700	175	1.750	.800	225	2.250	.875	<p>ROUND-RING SKIRTED (1D)</p>  <p>STYLE NOS. 50-2-_____ SKIRTED RD (OD) 50-2WD-_____ SKIRTED RD (OE) W/INDICATOR DOT</p> <table border="1"> <thead> <tr> <th>SERIES</th> <th>DIA.</th> <th>HGT.</th> </tr> </thead> <tbody> <tr><td>50</td><td>.500</td><td>.655</td></tr> <tr><td>70</td><td>.700</td><td>.782</td></tr> <tr><td>90</td><td>.900</td><td>1.010</td></tr> <tr><td>125</td><td>1.250</td><td>.850</td></tr> <tr><td>175</td><td>1.750</td><td>1.070</td></tr> <tr><td>225</td><td>2.250</td><td>1.095</td></tr> </tbody> </table>	SERIES	DIA.	HGT.	50	.500	.655	70	.700	.782	90	.900	1.010	125	1.250	.850	175	1.750	1.070	225	2.250	1.095	<p>DIAL SKIRTED (1F)</p>  <p>STYLE NOS. 50-3NP-_____ DIAL KNOB (OG) 50-3-_____ DIAL W/ARROW (OF)</p> <table border="1"> <thead> <tr> <th>SERIES</th> <th>DIA.</th> <th>HGT.</th> <th>SKIRT DIA.</th> </tr> </thead> <tbody> <tr><td>50</td><td>.500</td><td>.655</td><td>.900</td></tr> <tr><td>70</td><td>.700</td><td>.782</td><td>1.150</td></tr> <tr><td>90</td><td>.900</td><td>1.010</td><td>1.525</td></tr> <tr><td>125</td><td>1.250</td><td>.850</td><td>1.837</td></tr> <tr><td>175</td><td>1.750</td><td>1.070</td><td>2.468</td></tr> <tr><td>225</td><td>2.250</td><td>1.095</td><td>3.020</td></tr> </tbody> </table>	SERIES	DIA.	HGT.	SKIRT DIA.	50	.500	.655	.900	70	.700	.782	1.150	90	.900	1.010	1.525	125	1.250	.850	1.837	175	1.750	1.070	2.468	225	2.250	1.095	3.020	<p>POINTER (1P)</p>  <p>STYLE NOS. 50-4-_____ POINTER KNOB (OP)</p> <table border="1"> <thead> <tr> <th>SERIES</th> <th>DIA.</th> <th>HGT.</th> </tr> </thead> <tbody> <tr><td>50</td><td>.500</td><td>.510</td></tr> <tr><td>70</td><td>.700</td><td>.610</td></tr> <tr><td>90</td><td>.900</td><td>.790</td></tr> </tbody> </table>	SERIES	DIA.	HGT.	50	.500	.510	70	.700	.610	90	.900	.790	<p>SKIRTED POINTER (1K)</p>  <p>STYLE NOS. 50-5-_____ SKIRTED PTR (OK)</p> <table border="1"> <thead> <tr> <th>SERIES</th> <th>DIA.</th> <th>HGT.</th> </tr> </thead> <tbody> <tr><td>50</td><td>.500</td><td>.655</td></tr> <tr><td>70</td><td>.700</td><td>.782</td></tr> <tr><td>90</td><td>.900</td><td>1.010</td></tr> </tbody> </table>	SERIES	DIA.	HGT.	50	.500	.655	70	.700	.782	90	.900	1.010	<p>DOUBLE BAR ROUND (1GG)</p>  <p>STYLE NOS. 70B-1-_____ DOUBLE BAR (1GG)</p> <table border="1"> <thead> <tr> <th>SERIES</th> <th>DIA.</th> <th>HGT.</th> <th>LENGTH (MAX)</th> </tr> </thead> <tbody> <tr><td>70</td><td>.700</td><td>.610</td><td>1.150</td></tr> </tbody> </table>	SERIES	DIA.	HGT.	LENGTH (MAX)	70	.700	.610	1.150
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Construction Material, Set-Screw Specs and Ordering Information on next page.

MS91528 SERIES

CONTINUED



ELECTRONIC HARDWARE CORPORATION

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Website: <http://www.ehcknobs.com>

DOUBLE BAR W/DIAL CONCENTRIC



STYLE NOS.
70B-3CB-_____

TOTAL DIAL	HGT.	DIA.	DIA.
50/70	.700	1.26	1.15

SPINNER (3)



STYLE NOS.
125-6-_____

SERIES	DIA.	HGT.	(MAX)	LENGTH
125	1.250	1.350	1.715	
175	1.750	1.758	2.359	
225	2.250	1.782	2.859	

MATERIALS OF CONSTRUCTION

Plastic - Polycarbonate

Bushings - Brass plated to withstand salt-spray (Method 101, test cond. B-Mil. std. 202)

Set Screws - Each knob to have two (2) socket head set screws-Mil. std. FF-S-103.

SET SCREW SPECIFICATIONS

Each knob furnished with two (2) set screws

Dia.	1/8" Shaft Hole	1/4" Shaft Hole
.500	4-40 UNC-3A	4-40 UNC-3A
.700	4-40	4-40
.900	4-40	8.32
1.250	8-32	8.32
1.750	8.32	8.32
2.250	8.32	8.32

EXAMPLE
G70-3NP-2G
G = COLOR
70 = DIA.
3 = TYPE
NP = STYLE
2 = SHAFT SIZE
G = FINISH

KNOB LOCK POINTER (1AA)



NOTE
See Knob Locks on following page for more information.

KNOB LOCK (1CC)



NOTE
See Knob Locks on following page for more information.

ORDERING INFORMATION

Color	Dia.	Type	Style	Shaft Size	Finish (End of PN)
None = Black	50 = 1/2"	1 = Round	CB = Concentric Base	1 = 127	None = Mirror
G = Grey	70 = .700	2 = Skirted Round	NP = No Pointer (No Arrow)	2 = 252	G = Matte
	90 = .900	3 = Dial	WD = White Dot	3 = .125D	
	125 = 1.250	4 = Pointer		4 = 252D	
	175 = 1.750	5 = Skirted Pointer			
	225 = 2.250	6 = Spinner			
		7 = Bar			
		8 = Bar W/Dial			

MIL-K 25049 — Backlit for commercial and military aircraft.

MS21385-04ANW	MS21385-02FNW	MS21384-01ANN	MS21385-11MNN	MS21385-12SNN	MS21385-02BNN
MS21385-04CNN	MS21385-02KNN	MS21386-18BNN	MS21384-01CNN	MS21385-02ENN	MS21384-02BNN
MS21387-05NWN	MS21386-16ANN	MS21385-11UNN	MS21384-02DNC	MS21385-01DNN	Specials

INDUSTRIAL 400 SERIES



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ROUND	ROUND/ DIAL SKIRT	BAR POINTER	BAR POINTER DIAL SKIRT	BAR POINTER CRANK	BAR POINTER CRANK/DIAL SKIRT
STYLE NOS. 406R 5/8 .813 407R 3/4 .813 409R 7/8 .813 412R 1-1/4 .813	STYLE NOS. 406D .92 .813 407D 1.05 .813 409D 1.27 .813 412D 1.71 .813	STYLE NOS. 406P 5/8 .813 1.22 407P 3/4 .813 1.43 409P 7/8 .813 1.69 412P 1-1/4 .813 2.31	STYLE NOS. 406PD .92 .813 1.37 407PD 1.05 .813 1.65 409PD 1.27 .813 2.01 412PD 1.71 .813 2.86	STYLE NOS. 406 .625 .813 1.22 407 .720 .813 1.43 409 .875 .813 1.69 412 1.250 .813 2.31	STYLE NOS. 406 .92 .813 1.37 407 1.05 .813 1.65 409 1.27 .813 2.01 412 1.71 .813 2.86

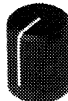
ORDERING GUIDE FOR INDUSTRIAL SERIES		CONSTRUCTION MATERIALS		
Style	Shaft Hole	Color		
R- Round	1- 1/8"	B- Black Matte	Plastic - ABS (Cyclocac)	
WD- w/Dot (Round only)	2- 1/4"	S- Black	Bushing - Zinc	
D- Round/Dial Skirt w/Arrow		Custom Colors and	Set Screws - Corrosion treated steel with hex socket.	
P- Bar Pointer		Custom Materials	Example : 406-R-2B	
PD- Bar Pointer/Dial Skirt w/Arrow		(avail. by request)	Approximate Diameter	Style
			5/8"	Round
			406	2
				Shaft Hole
				.250"
				Color
				B-Black Matte
				B

3000 Series- Fine Knurl

Available in 1/8" or 1/4" shaft styles, Matte or Gloss, Black or Gray, ABS plastic. Custom markings available.



3008



3440

3008
3440
Diam. .500
Height .625



3488



3489

3488
3489
Diam. .690
Height .620



3009



3441

3009
3441
Diam. .850
Height .600



3010

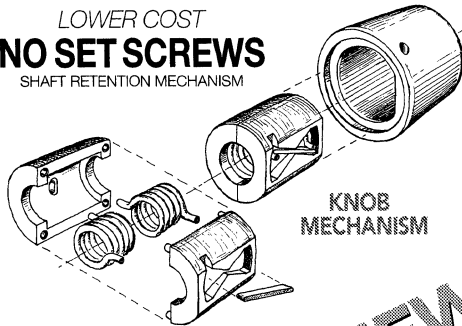


3442

3010
3442
Diam. .975
Height .750

SRM KNOB (PATENT PENDING)

LOWER COST
NO SET SCREWS
SHAFT RETENTION MECHANISM



KNOB MECHANISM

Electronic Hardware Corp. has developed a simplified knob mounting system which saves initial procurement cost and installation time. No special tools are required; the unit can be utilized wherever a set screw knob is presently used.

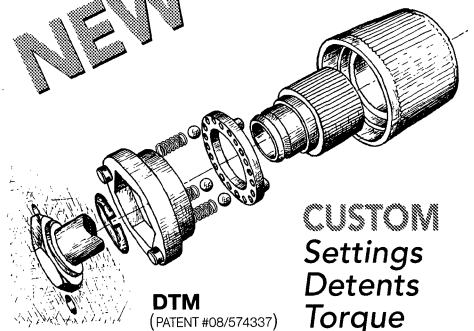
The SRM prolongs shaftlife by eliminating the overtorquing normally associated with set screw knobs.

Production units are available.

SHOCK RESISTANT DETENT KNOB

Indexing Knob provides moderate security against shock and vibration through multiposition detent mechanisms engaging the indexing feature on the knob body. The system design affords the choice of selection from a number of possible positions, torques and accents.

NEW

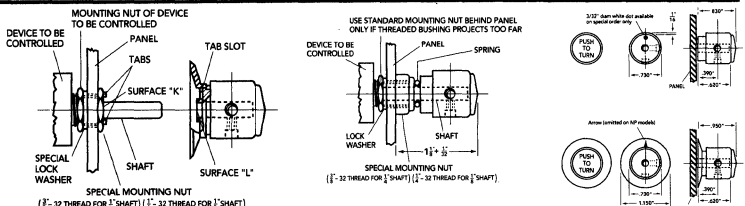


DTM (PATENT #08/574337)

CUSTOM Settings Detents Torque

70 SERIES SELF LOCKING KNOBS "Push-to-Turn" & "Push-to-Engage"

"Self-Locking Push-to-Turn" devices are designed for applications in which control settings must be maintained under conditions of shock and vibration. The setting can not be changed accidentally since the knob must be fully depressed before movement.





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CLAMPING KNOB CORONADA SERIES

ABS molded thermoplastic material, the Coronada series features 3 sizes of clamping knobs, utilizing brass inserts and studs. Parts are black, semi-gloss and textured. Decorative inlays available.

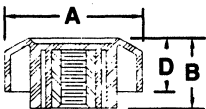
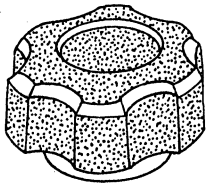


FIG 1

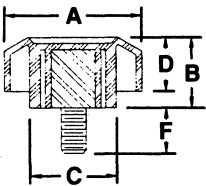


FIG 2

EI "20" SERIES FEMALE INSERT TYPE

DIM. A = 1.38 B = .75 C = .80 D = .39

TYPE	FIG	F DIM	THREAD
EI20-832	1	—	8-32
EI20-1032	1	—	10-32
EI20-2520	1	—	1/4-20
EI20-3118	1	—	5/16-18

EI "30" SERIES FEMALE INSERT

DIM. A = 1.75 B = .88 C = 1.25 D = .44

TYPE	FIG	F DIM	THREAD
EI30-1032	1	—	10-32
EI30-2520	1	—	1/4-20
EI30-3118	1	—	5/16-18
EI30-3716	1	—	3/8-16

ES "20" SERIES THREADED STUD TYPE

DIM. A = 1.38 B = .75 C = .80 D = .39

TYPE	FIG	F DIM	THREAD
ES20-252050	2	1/2	1/4-20
ES20-252062	2	5/8	1/4-20
ES20-252075	2	3/4	1/4-20
ES20-252010	2	1	1/4-20
ES20-252014	2	1-1/4	1/4-20
ES20-311862	2	5/8	5/16-18
ES20-311810	2	1	5/16-18
ES20-311815	2	1-1/2	5/16-18
ES20-371675	2	3/4	3/8-16
ES20-371610	2	1	3/8-16
ES20-371615	2	1-1/2	3/8-16

ES "30" SERIES THREADED TYPE

DIM. A = 1.75 B = .88 C = 1.25 D = .44

TYPE	FIG	F DIM	THREAD
ES30-252050	2	1/2	1/4-20
ES30-252062	2	5/8	1/4-20
ES30-252075	2	3/4	1/4-20
ES30-252010	2	1	1/4-20
ES30-252014	2	1-1/4	1/4-20
ES30-311862	2	5/8	5/16-18
ES30-311810	2	1	5/16-18
ES30-311815	2	1-1/2	5/16-18
ES30-371675	2	3/4	3/8-16
ES30-371610	2	1	3/8-16
ES30-371615	2	1-1/2	3/8-16

EI "40" SERIES FEMALE INSERT TYPE

DIM. A = 2.38 B = 1 C = 1.38 D = .50

TYPE	FIG	F DIM	THREAD
EI40-2520	1	—	1/4-20
EI40-3118	1	—	5/16-18
EI40-3716	1	—	3/8-16
EI40-5013	1	—	1/2-13

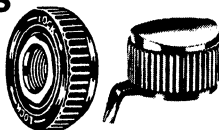
ES "40" SERIES THREADED STUD SERIES

DIM. A = 2.38 B = 1 C = 1.38 D = .50

TYPE	FIG	F DIM	THREAD
ES40-252050	2	1/2	1/4-20
ES40-252062	2	5/8	1/4-20
ES40-252075	2	3/4	1/4-20
ES40-252010	2	1	1/4-20
ES40-252014	2	1-1/4	1/4-20
ES40-311862	2	5/8	5/16-18
ES40-311810	2	1	5/16-18
ES40-311815	2	1-1/2	5/16-18
ES40-371675	2	3/4	3/8-16
ES40-371610	2	1	3/8-16
ES40-371615	2	1-1/2	3/8-16
ES40-501310	2	1	1/2-13
ES40-501315	2	1-1/2	1/2-13
ES40-501320	2	2	1/2-13

KNOBS LOCKS AND POINTERS

1/8" turn of Knob Lock holds precise or critical settings under shock and vibration by providing a positive friction lock to bottom of knob. Mounts directly to threaded bushing of control, replacing nuts and washers.



LOCK

Style	Type	Dia.	Height	Thread
KL701	Standard	1"	3/8	3/8-32
KL702	Standard	1"	3/8	1/4-32
KL703	Splash Proof	1"	3/8	3/8-32
KL901	Standard	1-5/16"	3/8	3/8-32
KL902	Splash Proof	1-5/16"	3/8	3/8-32
KL1251	Standard	1-5/8"	3/8	3/8-32
KL1252	Splash Proof	1-5/8"	3/8	3/8-32

POINTER

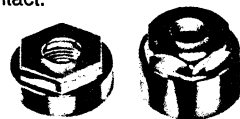
Matching KL PTR Knob	Matching Std. Knob Dia.
70-1LK-2	.700
70-1LK-1	.700
70-1LK-2	.700
90-1LK-2	.900
90-1LK-2	.900
125-1LK-2	1.250
125-1LK-2	1.250

Style number above is for black mirror finish, add a G to end of style number for black matte (KL701G = Matte Black) or (70-1LK-2G = Finish Knob)

SHAFT LOCK & SEAL

Tapered nylon collar grips control shaft tightly and exerts even frictional drag which prevents control shaft from rotating under shock and vibration or accidental contact.

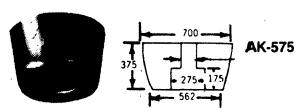
Acts as dust and waterproof seal at shaft and panel surface. Mount in place of nut and washer.



Style	Dia.	Height	Shaft Size	Control Bushing Thread Size	Color
SL-100B	.63	.48	1/4"	3/8-32 NEF-2	Black
SL-105B	.45	.32	1/8"	1/4-32 NEF-2	Black
SL-110B	.63	.29	1/4"	3/8-32 NEF-2	Black
SL-101R	.63	.48	1/4"	3/8-32 NEF-2	Red

SL-110B low profile fits under any 90 series, or larger, ring, or dial skirted round, skirted pointer or crank knob.

CHASSIS AND CABINET BUMPERS

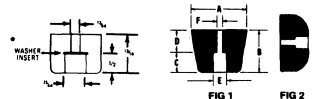


Color: 4=Black; 7=Brown

NO. AK-576-4 HEAVY DUTY CHASSIS AND CABINET BUMPER (WITH STEEL WASHER INSERT)

Molded neoprene. 1" diameter. 1 3/16" high. Configuration similar to AK-574 above. Color: Black. Other colors on request.

*No. AK-162610-4 New, improved non-marring, high tear strength, neoprene.



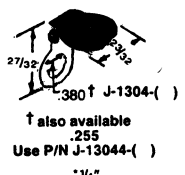
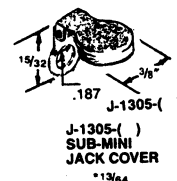
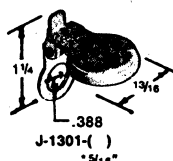
JACK COVERS (TRIMMER COVERS)

Fit jack or panel bushings used to keep out dust and moisture and prevent inadvertent disturbance of control. Outer surfaces finished in standard colors of baked enamel.

To Order Colors Specify:

- (-1) Black Texture; (-2) Smooth Gray;
- (-3) Smooth Olive; (-4) Smooth Black;
- (-5) Bright Nickel Plate; (-6) Red (Top section only); (-7) White (Top section only).

Example: Jack cover, color black texture, order as J-1301(-1)



*Overall height in closed position when mounted on panel.

ELMA Electronic Inc.
 44350 Grimmer Blvd., Fremont, CA 94538
 (510) 656-3400, (510) 656-3783 Fax
<http://www.elma.com>, E-Mail: sales@elma.com



Collet Knobs and Front Panel Hardware

All ELMA products are available off-the-shelf and **COMPETITIVELY PRICED**. For complete information or our free catalog call, write or fax today.

Safety Knobs

Modular Design

The modular design and the wide assortment of ELMA collet safety knobs offer countless possible combinations. The standard and wing knobs are of contemporary design, available in 7 sizes and various colors. A broad selection of accessory components is also available, including knobs, caps and pointers in no less than 7 colors, various printed dials, stators, sockets and nut covers are available in gloss or matte finish.

Material

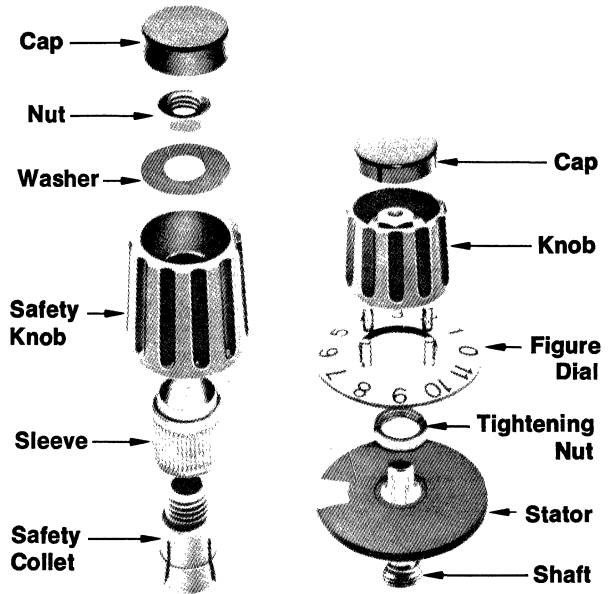
With the exception of the transparent figure dials all of the ELMA collet safety knobs and accessories are made of Polyamide.

Safety

With the knob installed and the cap in place there is no possibility of shock hazard as there are no exposed metal parts, thus satisfying both O.S.H.A. and U.L. requirements.

Colors

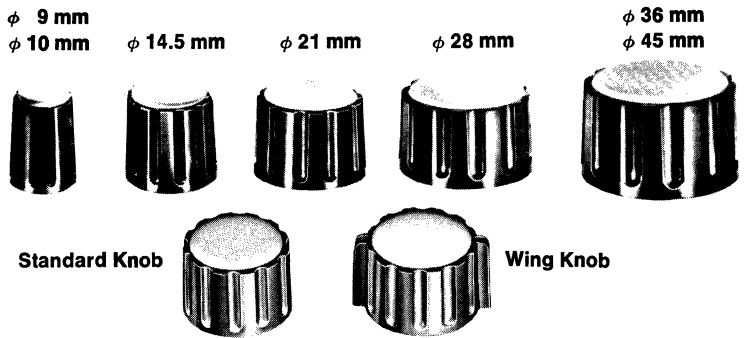
ELMA collet safety knobs offer a very wide choice of standard colors and color combinations in both glossy and matte finish. Collet knobs are available in light gray, black and red. Caps and pointers are available in light gray, black, red, blue, yellow, and green. In addition ELMA offers custom colors to meet your exacting requirements.



Collet Knob Sizes/Designs

ELMA collet safety knobs are available in diameters of 9 mm, 10 mm, 14.5 mm, 21 mm, 28 mm, 36 mm and 45 mm.

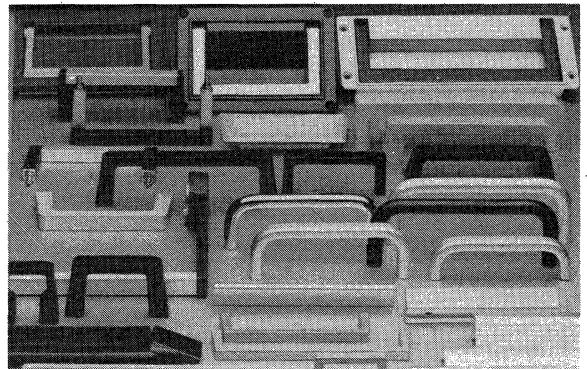
Every ELMA knob is available from stock in both conventional and wing versions, each with or without setting line.



Wide Range of Handles and Front Panel Components

General Description

- Fixed handles for front panels, plastic and aluminum
- Injector/ejector handles for front panels
- Fixed handles for enclosures
- Strap handles for enclosures
- Tilt and bail handles for enclosures
- Fixed and tilt feet for enclosures
- LED arrays, Coded Switches, Test Sockets
- Huge array of other front panel products



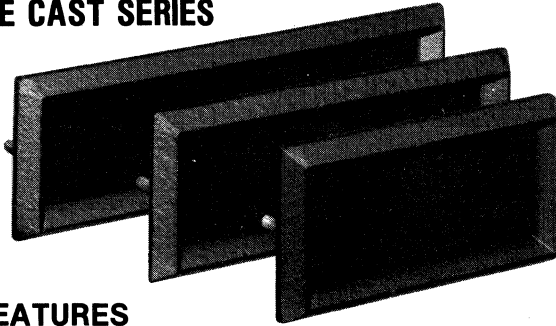
See Section 1400 (Cabinet Enclosures), see Section 5100 (Switches),



Technical Products, Inc.

STANDARD AND CUSTOM DIGITAL DISPLAY BEZELS

DIE CAST SERIES

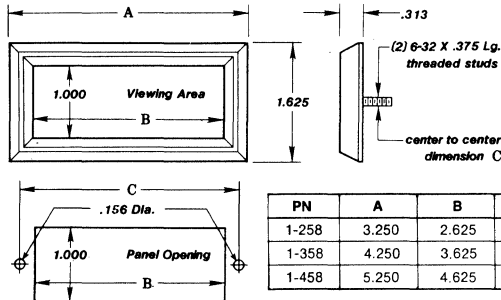


FEATURES DIE CAST METAL FRAME

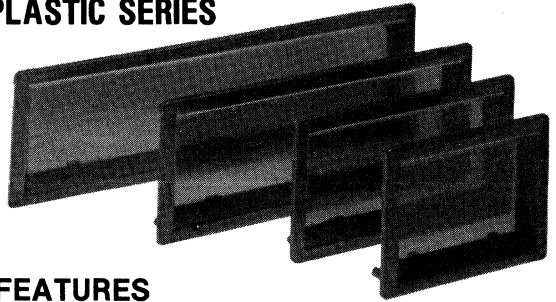
- Nonreflective black finish
- Durable — heat resistant
- Integral 6-32 mounting studs
- No exposed hardware
- Mounts in panels up to 3/16" thick
- Includes mounting hardware
- Available in three sizes
- Filters available in 10 colors and clear

DESCRIPTION

The DIE CAST SERIES of bezels consist of a special plastic screen and a die cast metal frame. Mounting is accomplished by two 6-32 studs which can also be used to mount PC boards or other components behind the panel. The high quality of the screen and frame, combined with the universal sizes and mounting flexibility, make the bezels usable for a wide range of applications.



PLASTIC SERIES

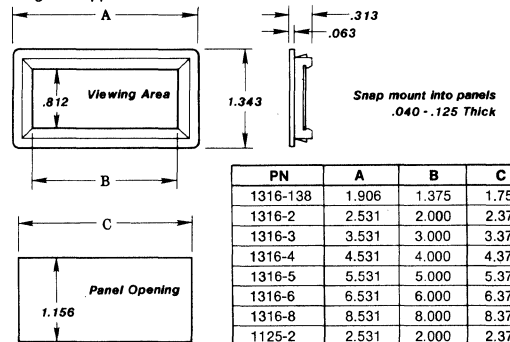


FEATURES INJECTION MOLDED PLASTIC FRAME

- Nonreflective black finish
- Impact resistant ABS
- Snaps into front panels
- No exposed hardware
- Mounts in panels up to .125" thick
- Available in eight sizes
- Filters available in 10 colors and clear

DESCRIPTION

The PLASTIC SERIES of bezels consist of a special plastic screen and an injection molded ABS frame. Mounting is accomplished by a snap-fit into rectangular cut-outs from the outside. The combination of a high quality filter and an inexpensive, easy to mount bezel make this series ideal for a wide range of applications.



LOW COST CUSTOM BEZELS

Our new fabricating facility is totally dedicated to the production of non-standard bezels. Using specially designed machines, we can now offer made-to-order sizes in proto-type or production quantities, without costly tooling or extended lead times.

TYPICAL BEZEL MATERIALS

- Aluminum
- Stainless Steel
- Plastic

DESIGN FLEXIBILITY

- Panel Seals
- Welded Studs
- Any Size Viewing Area
- Multi-Opening Bezels

VARIETY OF FILTER MATERIALS

- Anti-Reflective Coatings
- Polycarbonate
- Large Selection of Colors
- High Scratch Resistance

VARIETY OF FINISHING PROCESSES

- Anodizing
- Painting
- Screening

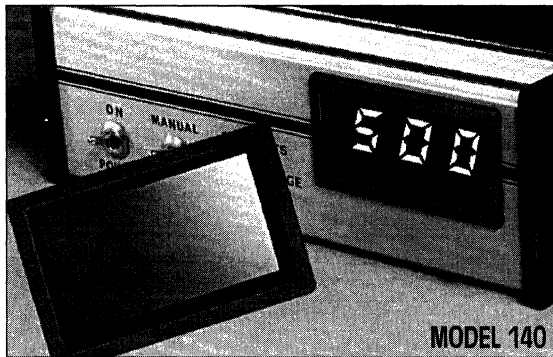
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BEZEL & FILTER ASSEMBLIES *from RMF*

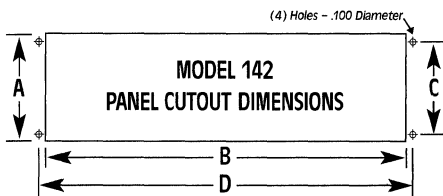
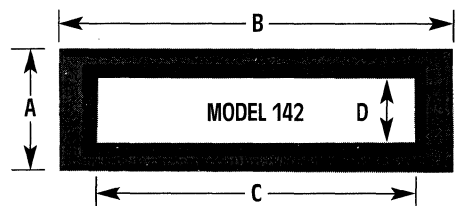
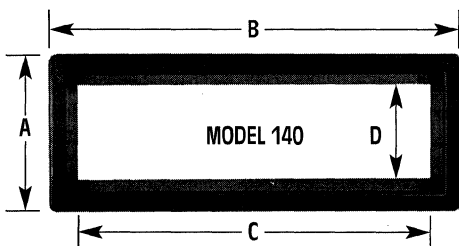
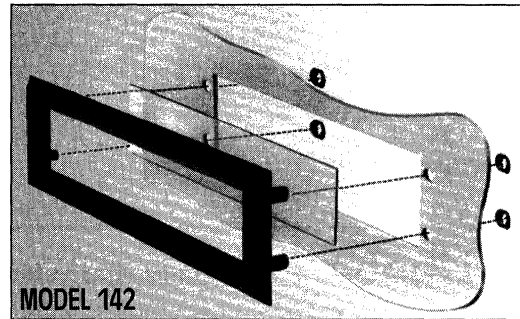
Whatever your application may be, these low-cost bezel and filter assemblies will improve the front panel appearance and make the display itself more readable. Attractive ABS

plastic bezels are available in many sizes to match the most popular types of displays. The colored acrylic filters have a special non-glare surface to make viewing easier.

Standard colors are red and clear for LED and LCD displays although any color is available on special order.



Model 142 bezels have a black textured finish and are designed specifically for liquid crystal displays. Sizes are available for the most popular single line and multi-line displays. All filters have a non-glare surface to make viewing easier.



MODEL	DIMENSIONS				PANEL OPENING		FILTER*	
	A	B	C	D	HEIGHT	WIDTH	HEIGHT	WIDTH
140-1	1.343	1.906	1.375	.812	1.156	1.750	.875	1.437
140-2	1.343	2.531	2.0	.812	1.156	2.375	.875	2.087
140-3	1.343	3.531	3.0	.812	1.156	3.375	.875	3.040
140-4	1.343	4.531	4.0	.812	1.156	4.375	.875	4.078
140-5	1.343	5.531	5.0	.812	1.156	5.375	.875	5.078
140-6	1.343	6.531	6.0	.812	1.156	6.375	.875	6.078
140-8	1.343	8.531	8.0	.812	1.156	8.375	.875	8.078
141-2	1.656	2.531	2.0	1.125	1.469	2.375	1.187	2.087

MODEL	DIMENSIONS				FILTER*	
	A	B	C	D	HEIGHT	WIDTH
142-1	1.433	3.023	2.393	.952	1.100	2.531
142-2	.984	3.130	2.500	.500	.656	2.609
142-3	1.063	2.992	2.362	.583	.734	2.468

* Filter material is .030 thick

MODEL	PANEL CUTOUT DIMENSIONS			
	A	B	C	D
142-1	1.234	2.671	1.000	2.826
142-2	.781	2.734	.500	2.934
142-3	.859	2.593	.500	2.796

INSTALLATION IS A QUICK AND EASY OPERATION

Model 140 Installation

Insert the filter into the slots on the rear of the bezel, then snap the entire assembly into the panel cutout. Recommended panel thickness is from .040 to .125 in.

Model 142 Installation

The filter is inserted into the retaining slot in the rear of the bezel and is then secured to the panel with 4 push-on clips (supplied). This type of mounting allows the display to be placed directly behind the filter for maximum readability.

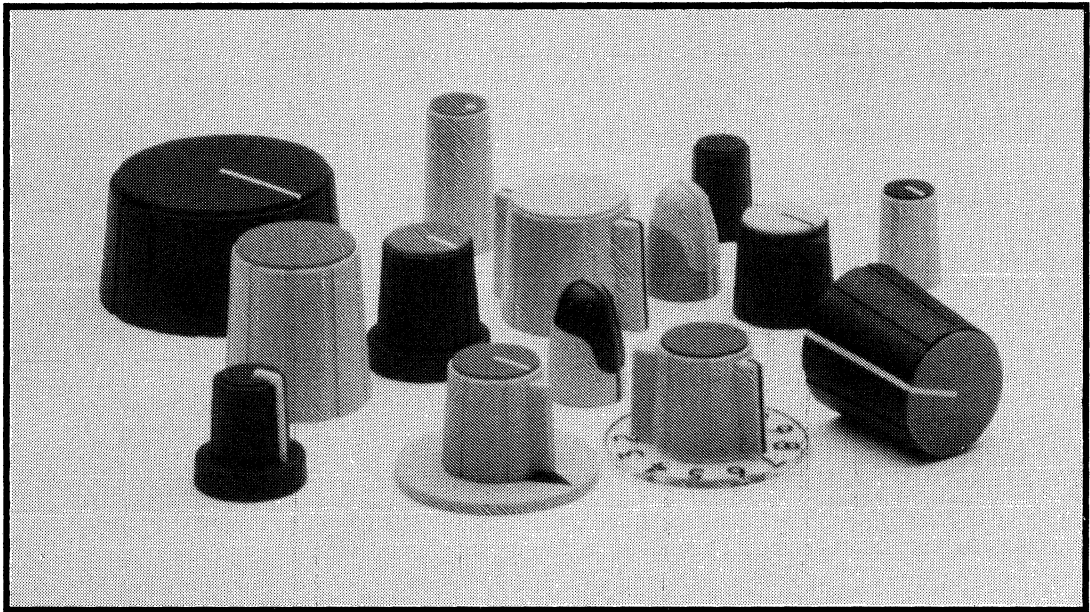


RMF PRODUCTS, INC.

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SELCO COLLET &



Collet Knobs - Knob base diameters from 10mm-47mm

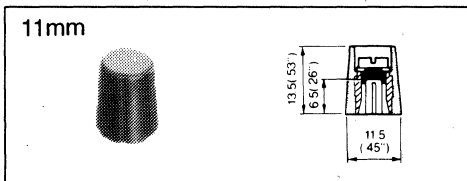
Function, styling and simplicity of assembly were the designers' main criteria in the development of the Selco range of collet knobs. The various accessories (caps, pointers, figure dials and nut covers) push-fit into the basic knob to give added versatility. Caps are available in over 20 different colors.

Materials

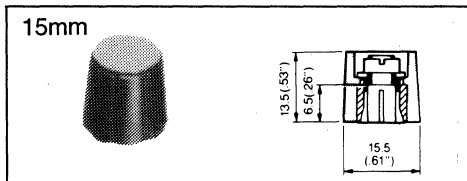
All knobs, caps, pointers and nut covers are made from Nylon and have a matte finish. The transparent figure dials are made from polycarbonate and the colored dials are of Nylon.

Collets, sleeves and nuts, installed into the knobs during manufacture, are of brass. They will accommodate a wide range of shaft lengths and bush lengths.

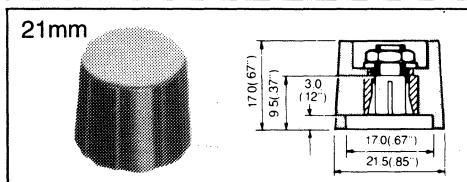
Our Most Popular Stock Models:



Shaft Size	Plain	With Line
2mm	S110 002	S111 002
3mm	S110 003	S111 003
1/8 in	S110 125	S111 125
4mm	S110 004	S111 004



Shaft Size	Plain	With Line
3mm	S150 003	S151 003
1/8 in	S150 125	S151 125
4mm	S150 004	S151 004
3/16 in	S150 187	S151 187
6mm	S150 006	S151 006
1/4 in	S150 250	S151 250



Shaft Size	Plain	With Line
3mm	S210 003	S211 003
1/8 in	S210 125	S211 125
4mm	S210 004	S211 004
3/16 in	S210 187	S211 187
6mm	S210 006	S211 006
1/4 in	S210 250	S211 250

* 15mm and 21mm Collet Knobs are now available in soft-touch. Be sure to ask for accessories that push fit into knob body, i.e. caps, dials, nut covers and pointers.



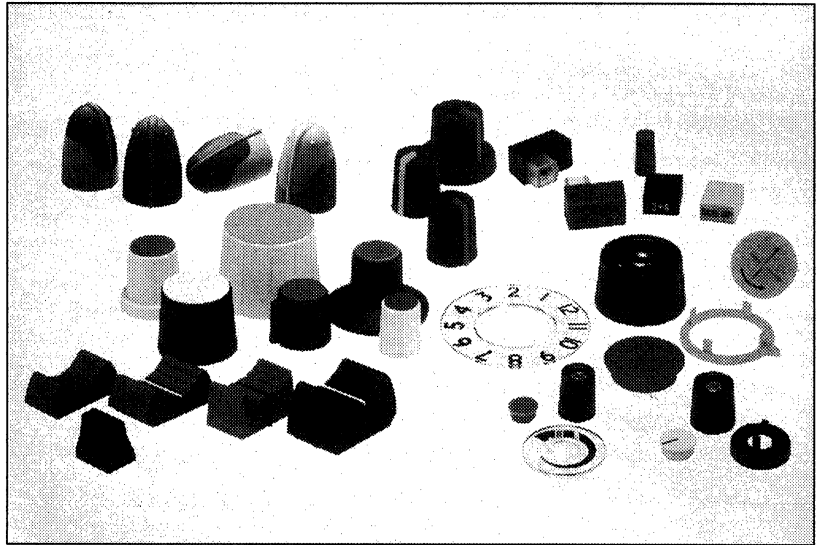
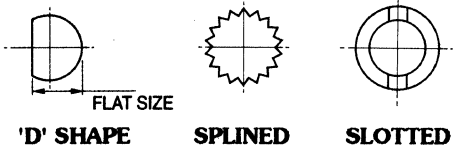
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PUSH-ON KNOBS

Push-On Knobs

Selco push-on knobs have been designed to provide a secure shaft attachment, with "D" shaft, splined or slotted configurations (option of a built-in compression ring). Available in black or gray with a nylon matte-finish. Colored caps are available in plain, or printing with line or dot in over 20 different colors.

Shaft Configuration

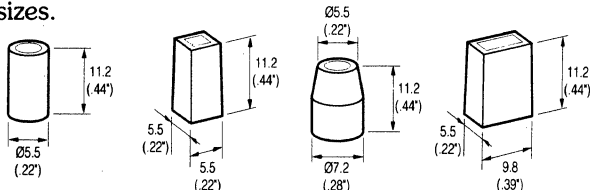


Pushbuttons

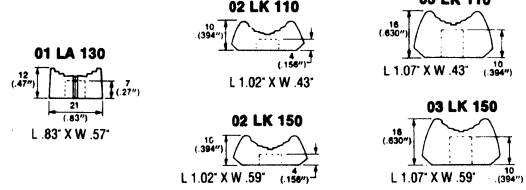
Selco's pushbuttons are molded in a nylon matte-finish available in square, round, rectangular and cylindrical. They are available, as standard, in black, gray, red and white for 3.33mm and 2.8mm shaft sizes.

Slider Knobs

Slider knobs are available in black nylon matte-finish with white line. Other color options for body and line are available for special order.



CYLINDRICAL SQUARE ROUND RECTANGULAR



Double Injected/Soft Touch Push-On Knobs

A two shot molding process is used so that the cap/pointer is an integral part of the knob, thus avoiding subsequent assembly costs.

	<p>KNOB and INTEGRAL POINTER 3/03/TP 110 006</p> <p>6mm SHAFT Ø 18 SPLINES</p>		<p>KNOB and INTEGRAL CAP/POINTER 3/02/TP N 110 006</p> <p>6mm SHAFT Ø 18 SPLINES</p>
	<p>KNOB and INTEGRAL POINTER 3/03/DP 110 004</p> <p>4mm SHAFT Ø 3mm FLAT SIZE</p>		<p>KNOB and INTEGRAL POINTER 3/03/TPN 110 006</p> <p>6mm SHAFT Ø 18 SPLINES</p>
	<p>KNOB and INTEGRAL POINTER 3/03/DR 110 006</p> <p>6mm SHAFT Ø 4.5mm FLAT SIZE</p>		<p>KNOB and INTEGRAL POINTER 3/03/TPN 130 006</p> <p>6mm SHAFT Ø 18 SPLINES</p>



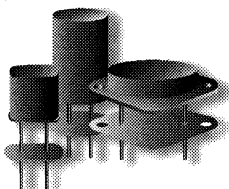
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IMAGINE

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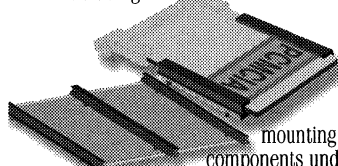


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Available for industry's most popular sizes and styles of power and heat-sensitive devices, and in a variety of colors and types. Bivar insulators protect against heat, shock and vibration without adding height. New self-retaining Electrolytic Capacitor insulators provide complete insulation to allow circuitry beneath the capacitor.

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Bivar's HG Series provides a complete range of design options, including



mounting components underneath PCMCIA cards for greater board densities. An all-new HCG Series of horizontal guides for 1/16" PCBs, enables a new way to package or add extra boards to new systems designs.

Permanent & Wash-Away Component Spacers

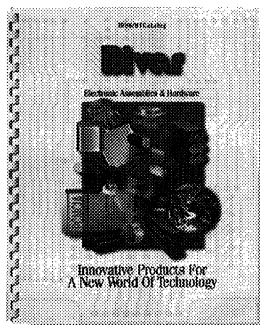
New designs are added to industry's largest assortment of sizes and styles. PERM-O-PAD® Mounts provide fast, accurate and economical component positioning and protection. DISS-O-PAD® Spacers protect leads during assembly, then wash away in hot or warm running water without leaving residue.



EXPERIENCE

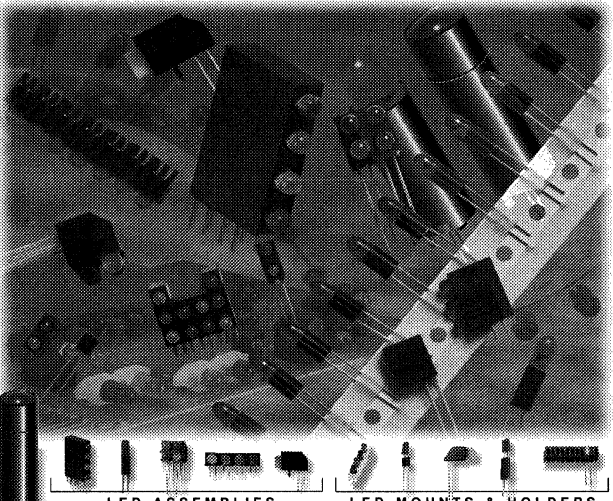
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NEW! LED ASSEMBLIES



Now All The Choices Are Yours, Any Color, Any Quantity

Bivar introduces an all-new LED Assembly product line, featuring complete freedom of choice of any color, style and type of LED for a new era of LED display design. You'll find new products, like the quad-level T-1 assembly and variable-height assemblies with optional light shield for increased intensity.

Experience reduced assembly costs with staggered LED lead lengths, or LED assemblies on tape and reel for auto-insertion. It's just the beginning. Coupled together with the world's largest line of LED Mounts & Holders, Bivar presents a unique, single-source choice for the designer unlike any other supplier, with the same approach to immediate availability and service, regardless of the size of the order.

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- Interchangeable Guides
- Circular Card Guides
- Narrow Card Guides
- Anti-Static Card Guides
- Inserters & Extractors
- Card Ejectors & Handles
- PCB Retainers

LED Mounts & Holders

- Extruded LED Mounts Self-Retaining
- Rectangular LED Mounts Self-Retaining
- T-1 & T-1 3/4 LED Mounts
- LED Strip Mounts
- Molded LED Mounts Self-Retaining
- Individual LED Holders Self-Retaining
- Panel Clips & Rings Self-Retaining

LED Assemblies

- Variable Height, Recessed Light Shield
- T-1 90° Multi-Level
- T-1 90° Stations, Arrays
- Rectangular 90° Station Arrays
- Surface Mount Assemblies

Component Mounts, Spacers & Holders

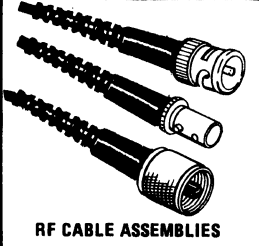
- SIP & DIP Mounts
- Discrete Capacitor Mounts
- Vertical Component Mounts
- Universal TO-5, TO-18 & TO-1 3/4 LED Mounts
- TO-18 Mounts, TO-18 Spreaders
- TO-5 & IC Mounts
- IC Mounts & Spreaders
- Power Transistor Mounts
- Electrolytic Capacitor Mounts & Insulators**
- Universal Discrete Spacers
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- Wash-Away Spacers**
- General Purpose, Axial & Universal Spacers
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- Self-Retaining Screw Spacers
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BIVAR, INC. 4 THOMAS • IRVINE, CALIFORNIA 92618 (949) 951-8808 FAX (949) 951-3974
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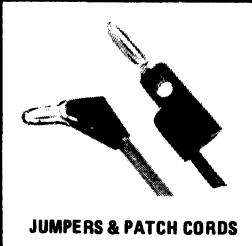
THE WORLD'S GREATEST COLLECTION



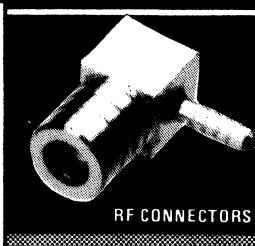
RF CABLE ASSEMBLIES



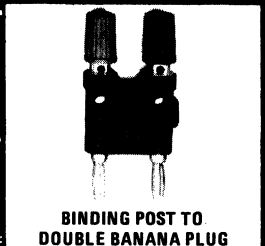
SOLDERLESS LUGS & TERMINALS



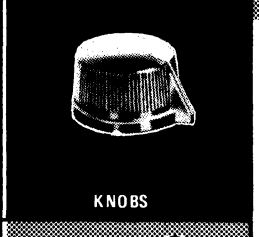
JUMPERS & PATCH CORDS



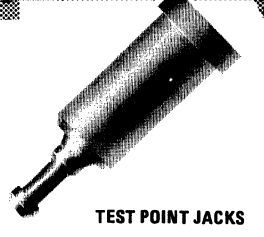
RF CONNECTORS



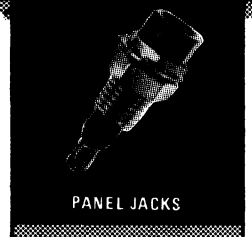
BINDING POST TO DOUBLE BANANA PLUG



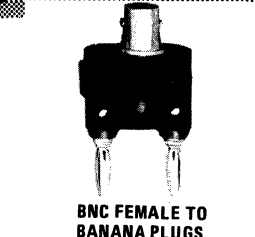
KNOB



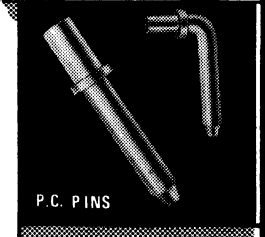
TEST POINT JACKS



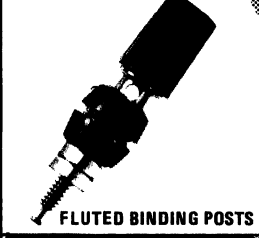
PANEL JACKS



BNC FEMALE TO BANANA PLUGS



P.C. PINS

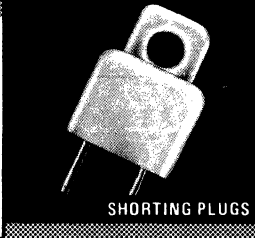


FLUTED BINDING POSTS



BREAKOUTS
BNC AND ALLIGATOR
CLIP

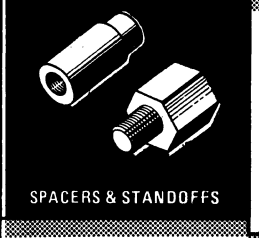
TEST ACCESSORIES



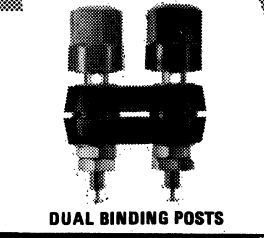
SHORTING PLUGS



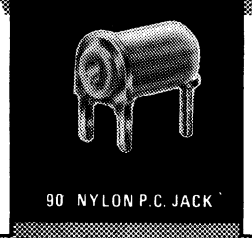
OSCILLOSCOPE PROBES



SPACERS & STANDOFFS



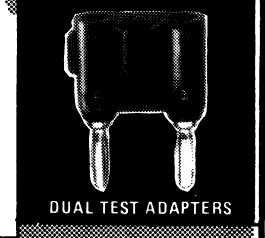
DUAL BINDING POSTS



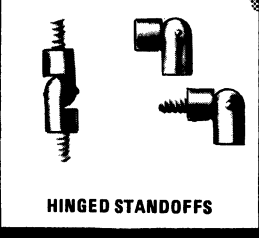
90° NYLON P.C. JACK



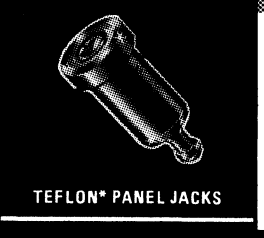
MIL-C-39024 JACKS



DUAL TEST ADAPTERS



HINGED STANDOFFS



TEFLON® PANEL JACKS



SAFETY HOOK TEST CLIPS



SAFETY TEST PROBE TO SHROUDED BANANA PLUG



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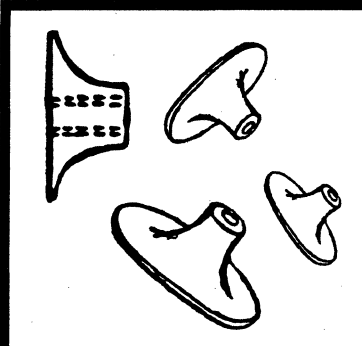
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ELECTRONIC MOUNTING HARDWARE

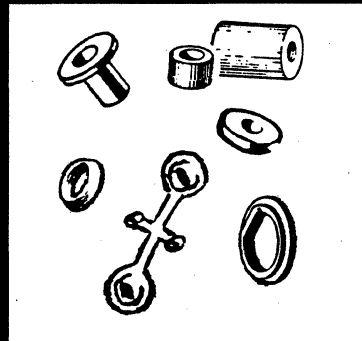
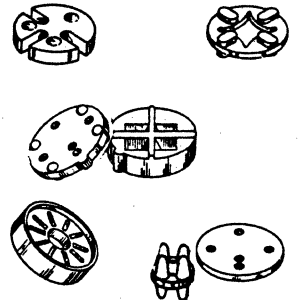


TOROID RETAINERS

Precision molded from DuPont zytel FR-50-NC-10 (UL-rated 94-V1), these toroid retainers are maintained in stock in various sizes and are available with a clearance hole or thread to assist in your mounting requirements. Custom retainers can also be molded to your specifications.

DIALYL PHTHALATE NYLON TRANSISTOR PADS

Available with or without stand-offs in configurations for all applications, these pads are molded of zytel or diallyl phthalate and provide an excellent mounting base. They resist continuous exposure to heat - nylon to 275 F, diallyl to 400 F - and offer high dielectric strength.

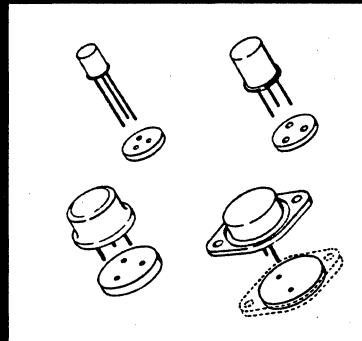
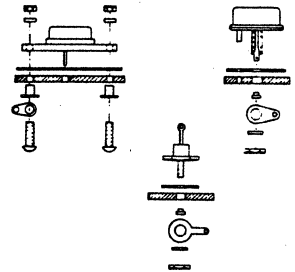


INSULATING HARDWARE

Bushings, spacers, filler washers, D-washers, flat washers...A complete line of non-conductive hardware is stocked and available. Materials include general purpose nylon, 30% glass-filled nylon, delrin, teflon, and phenolic. Parts can also be custom made to suit your specific needs.

MOUNTING KITS

These and other standard kits incorporating mica, beryllium oxide or anodized aluminum insulators provide the parts necessary to mount all semiconductors. Special materials and configurations can also be furnished to your specifications.

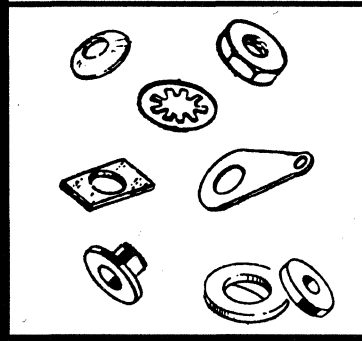


BERYLLIUM OXIDE TRANSISTOR HEAT SINKS

Made of high purity (99+%) sintered BeO, these sinks provide a satisfactory solution to the design engineer where electronic applications require both dielectric insulation and high heat transfer.

MICA INSULATORS

Delbert Blinn mica insulators are precision stamped from quality controlled stock and will withstand temperatures to 1000 F with negligible dehydration. Standard thickness is .002 ± .001. Other designs, shapes, thicknesses or tolerance are available on special order.

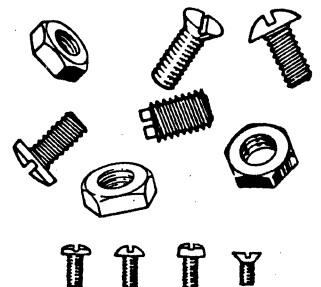


MOTOROLA INC. MOUNTING HARDWARE

Full hardware line available: compression washers, nylon/teflon spacers & bushings, insulating pads, mica washers, nylon screws, nuts, washers, rectangular metal washers, solder lugs. *Specifications are to Motorola prints & part numbers.

MOLDED NYLON NUTS & SCREWS

High quality, close tolerance nuts and screws molded with clean, accurate threads. Slotted screws available from stock in four styles - round head, flat head, fillister head and binder head - also, various sizes of set screws available, nuts in standard sizes. Can supply additional head styles and special orders by request.



The DELBERT BLINN COMPANY has for many years designed, fabricated and supplied specialty hardware items for the rapidly changing and expanding electronics industry. Our vast experience in plastic and metal fabrication guarantees you the best possible service for your particular needs regardless of quantity.

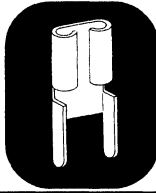


ISO 9002
Certified

Quick-Fit Terminals

Female PC Quick-Fit Terminals

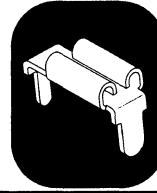
Vertical Terminals



Mfg. No.	Accepts Tab
3534	.110" x .020"
3544	.110" x .032"
3548	.187" x .020"
3551	.187" x .032"
3525	.205" x .020"
3522	.205" x .025"
3522	.205" x .032"
3528	.250" x .032"

Mfg. No.	Accepts Tab
3545	.110" x .020"
3549	.110" x .032"
3546	.205" x .020"
3550	.205" x .025"
3550	.205" x .032"
3547	.250" x .032"

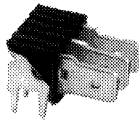
Horizontal Terminals



Material: Brass, Nickel Plate

Male Sturdi-Mount PC Quick-Fit Headers

Horizontal .250" x .032" Headers



Brass Tabs	Steel Tabs	No. Tabs
7802	7822	2
7803	7823	3
7804	7824	4
7805	7825	5
7806	7826	6

Vertical .250" x .032" Headers

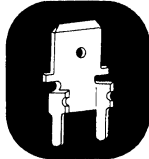


Brass Tabs	Steel Tabs	No. Tabs
7812	7832	2
7813	7833	3
7814	7834	4
7815	7835	5
7816	7836	6

Terminals: Brass or Steel, Tin Plate Insulator: Noryl, UL 94V-O

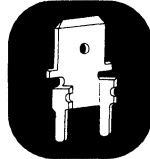
Male Sturdi-Mount PC Quick-Fit Terminals

.187" x .020" Terminal



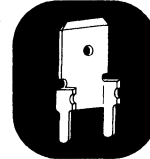
Brass, Tin Plate
Mfg. No. 4900 .416" Height

.250" x .032" Terminal



Brass, Tin Plate
Mfg. No. 4901 .537" Height

.250" x .032" Terminal



Brass, Tin Plate
Mfg. No. 4902 .438" Height

Male PC Quick-Fit Terminals

.110" Terminals



Brass, Tin Plate
Mfg. No. 1267 .110" x .020"
Mfg. No. 1211 .110" x .032"

.187" & .205" Terminals



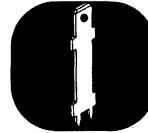
Brass, Tin Plate
Mfg. No. 1285 .187" x .020"
1212 .187" x .032"
Mfg. No. 1286 .205" x .020"
1213 .205" x .032"

.250" Terminals



Brass, Tin Plate
Mfg. No. 1287 .250" x .032" x .400" Hgt.
Mfg. No. 1289 .250" x .032" x .631" Hgt.

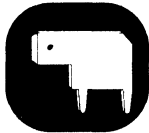
.250" Terminal



Brass, Tin Plate
Mfg. No. 1281 .250" x .032"

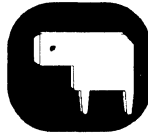
Male PC Quick-Fit Terminals

.110" Terminals



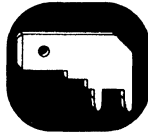
Brass, Tin Plate
Mfg. No. 4903 .110" x .020"
Mfg. No. 4906 .110" x .032"

.187" Terminals



Brass, Tin Plate
Mfg. No. 4904 .187" x .020"
Mfg. No. 4907 .187" x .032"

.250" Terminals



Brass, Tin Plate
Mfg. No. 4966 .250" x .032" x .590" Wide
Mfg. No. 1266 .250" x .032" x .789" Wide

.250" Terminal



Brass, Tin Plate
Mfg. No. 4908 .250" x .032"

Male Quick-Fit Terminals - Rivet Mount

45° & 90° Single Terminals



45°
Mfg. No. 2004
1271
1280

Brass, Bright Finish
Size
.110" x .020"
.187" x .020"
.250" x .032"



90°
Mfg. No. 2002
1261
1256

45° & 90° Dual Terminals



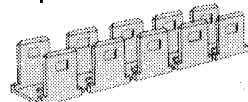
45°
Mfg. No. 2005
1263
1258

Brass, Bright Finish
Size
.110" x .020"
.187" x .020"
.250" x .032"



90°
Mfg. No. 2003
1262
1257

Multiple .250" x .032" Terminals



Brass, Bright Finish
Mfg. No. Number of Pairs
1005 2
1006 3
1007 4
1008 5

Full Line Engineering Catalog #990 Available

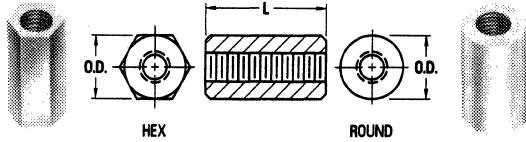
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e-mail: eem@keyelco.com • WebSite: http://www.keyelco.com



Spacers & Standoffs

Hex & Round Threaded Standoffs

Nylon 6/6 (UL 94-VO & UL 94-V2) & Phenolic (PBE Grade, Natural)



Note: Sizes not shown are available on special order.

4-40 Threaded Standoffs

Length "L"	O.D.	Hex Nylon 6/6 UL94-VO	Hex Nylon 6/6 UL94-V2	Round Phenolic PBE Natural
.250"	.250"	1902A	8440A	376
.375"	.250"	1902B	8440B	377
.500"	.250"	1902C	8440C	378
.625"	.250"	1902F	8440D	—
.750"	.250"	1902D	8440E	379
.875"	.250"	1902G	8440F	—
1.000"	.250"	1902E	8440G	380
1.500"	.250"	—	—	381
2.000"	.250"	—	—	382

6-32 Threaded Standoffs

Length "L"	O.D.	Hex Nylon 6/6 UL94-VO	Hex Nylon 6/6 UL94-V2	Round Phenolic PBE Natural
.250"	.250"	1903A	8441A	383
.375"	.250"	1903B	8441B	384
.500"	.250"	1903C	8441C	385
.625"	.250"	1903F	8441D	—
.750"	.250"	1903D	8441E	386
.875"	.250"	1903G	8441F	—
1.000"	.250"	1903E	8441G	387
1.500"	.250"	—	—	388
2.000"	.250"	—	—	389

8-32 Threaded Standoffs

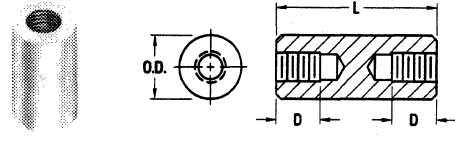
Length "L"	O.D.	Hex Nylon 6/6 UL94-VO	Hex Nylon 6/6 UL94-V2	Round Phenolic PBE Natural
.250"	.250"	1904A	8442A	390
.375"	.250"	1904B	8442B	391
.500"	.250"	1904C	8442C	392
.625"	.250"	1904F	8442D	—
.750"	.250"	1904D	8442E	393
.875"	.250"	1904G	8442F	—
1.000"	.250"	1904E	8442G	394
1.500"	.250"	—	—	395
2.000"	.250"	—	—	396
.250"	.312"	—	—	460
.375"	.312"	—	—	461
.500"	.312"	—	—	462
.750"	.312"	—	—	463
1.000"	.312"	—	—	464
1.500"	.312"	—	—	465
2.000"	.312"	—	—	466

10-32 Threaded Standoffs

Length "L"	O.D.	Round Phenolic PBE Natural
.250"	.312"	467
.375"	.312"	468
.500"	.312"	469
.750"	.312"	470
1.000"	.312"	471
1.500"	.312"	472
2.000"	.312"	473

Round Ceramic Threaded Standoffs

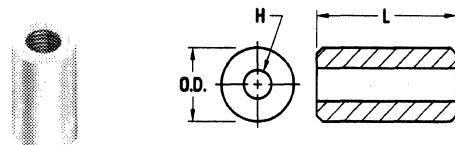
Grade L5 Ceramic



Mfg. No.	Length "L"	O.D.	Thread Size	Thread Depth "D"	NL#
7710	.250"	.250"	6-32	THRU	Commercial
7711	.500"	.250"	6-32	.156"	Commercial
7712	.375"	.375"	6-32	.156"	Commercial
7713	.500"	.375"	6-32	.187"	Commercial
7714	.500"	.500"	6-32	.140"	Commercial
7715	.750"	.500"	6-32	.250"	Commercial
7716	1.000"	.500"	6-32	.375"	Commercial
7717	1.500"	.500"	6-32	.562"	Commercial
7718	2.500"	.500"	6-32	.500"	Commercial
7719	2.500"	.750"	1/4-20	.750"	Commercial
7720	4.000"	.750"	1/4-20	.750"	Commercial
7661	.500"	.375"	6-32	.156"	NL523W01-004
7662	.625"	.375"	6-32	.250"	NL523W01-005
7663	.625"	.500"	8-32	.187"	NL523W02-005
7664	.750"	.375"	6-32	.250"	NL523W01-006
7665	.750"	.500"	8-32	.250"	NL523W02-006
7666	1.000"	.375"	6-32	.375"	NL523W01-008
7667	1.000"	.500"	8-32	.375"	NL523W02-008
7668	1.000"	.750"	10-32	.375"	NL523W03-008
7669	1.250"	.375"	6-32	.375"	NL523W01-010
7670	1.250"	.500"	8-32	.375"	NL523W02-010
7671	1.250"	1.000"	1/4-20	.437"	NL523W04-010
7672	1.500"	.375"	6-32	.375"	NL523W01-012
7673	1.500"	.500"	8-32	.375"	NL523W02-012
7674	1.500"	.750"	10-32	.375"	NL523W03-012
7675	1.500"	1.000"	1/4-20	.500"	NL523W04-012
7676	2.000"	.375"	6-32	.375"	NL523W01-016
7677	2.000"	.500"	8-32	.375"	NL523W02-016
7678	2.000"	.750"	10-32	.375"	NL523W03-016

Round Clear Hole Spacers

Nylon 6/6 (UL 94-V2) & Phenolic (PBE Grade, Natural)



Note: Sizes not shown are available on special order.

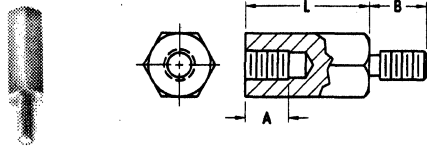
Length "L"	# 4 .250" O.D. .120" Dia. "H"		# 6 .250" O.D. .140" Dia. "H"		# 8 .250" O.D. .171" Dia. "H"		# 10 .312" O.D. .200" Dia. "H"
	Phenolic Mfg. No.	Nylon Mfg. No.	Phenolic Mfg. No.	Nylon Mfg. No.	Phenolic Mfg. No.	Nylon Mfg. No.	Phenolic Mfg. No.
.125"	—	875	—	883	—	891	—
.250"	360	876	367	884	1490	892	453
.375"	361	877	368	885	1491	893	454
.500"	362	878	369	886	1492	894	455
.625"	—	879	—	887	—	895	—
.750"	363	880	370	888	1493	896	456
.875"	—	881	—	889	—	897	—
1.000"	364	882	371	890	1494	898	457
1.500"	365	—	372	—	374	—	458
2.000"	366	—	373	—	375	—	459

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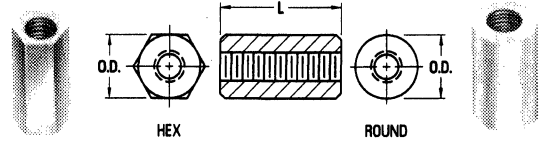
KEYSTONE ISO 9002 Certified

Hex & Round Standoffs

Hex Male/Female Threaded Standoffs English & Metric • Nylon, Stainless, Brass & Aluminum



Hex & Round Threaded Standoffs English & Metric • Brass & Aluminum



Spacers over 1.000"; Tapping is .375" deep, each end

4-40 Threaded Standoffs - .250" Hex

Length "L"	Dim. "A"	Dim. "B"	Nylon 6/6	Stainless Steel	Brass Nickel Plate	Aluminum Clear Iridite
.250"	.140"	.187"	4800	8712	8713	8714
.375"	.250"	.187"	4801	2087	7200	8400
.500"	.250"	.187"	4802	2088	1944	8401
.625"	.250"	.187"	4803	2089	1945	8402
.750"	.250"	.187"	4804	2090	1946	8403
.875"	.250"	.187"	4805	2091	7201	8404
1.000"	.250"	.187"	4806	2092	1947	8405
1.125"	.250"	.187"	4807	2093	7202	8406
1.250"	.250"	.187"	4808	2094	1948	8407
1.375"	.250"	.187"	4809	2095	1949	8408
1.500"	.250"	.187"	4810	2096	1950	8409
1.625"	.250"	.187"	4811	2097	7203	8410
1.750"	.250"	.187"	4812	2098	7205	8411
2.000"	.250"	.187"	4813	2099	1951	8412

6-32 Threaded Standoffs - .250" Hex

Length "L"	Dim. "A"	Dim. "B"	Nylon 6/6	Stainless Steel	Brass Nickel Plate	Aluminum Clear Iridite
.250"	.140"	.250"	4814	8715	8716	8717
.375"	.250"	.250"	4815	2119	7210	8413
.500"	.375"	.250"	4816	2120	1952	8414
.625"	.375"	.250"	4817	2121	1953	8415
.750"	.375"	.250"	4818	2122	1954	8416
.875"	.375"	.250"	4819	2123	7211	8417
1.000"	.375"	.250"	4820	2124	1644	8418
1.125"	.375"	.250"	4821	2125	7212	8419
1.250"	.375"	.250"	4822	2126	1955	8420
1.375"	.375"	.250"	4823	2127	1956	8421
1.500"	.375"	.250"	4824	2128	1645	8422
1.625"	.375"	.250"	4825	2129	7214	8423
1.750"	.375"	.250"	4826	2130	7215	8424
2.000"	.375"	.250"	4827	2131	1646	8425

8-32 Threaded Standoffs - .250" Hex

Length "L"	Dim. "A"	Dim. "B"	Nylon 6/6	Stainless Steel	Brass Nickel Plate	Aluminum Clear Iridite
.250"	.140"	.375"	4828	—	—	—
.375"	.250"	.375"	4829	2149	7220	8426
.500"	.375"	.375"	4830	2150	1957	8427
.625"	.375"	.375"	4831	2151	1958	8428
.750"	.375"	.375"	4832	2152	1959	8429
.875"	.375"	.375"	4833	2153	7221	8430
1.000"	.375"	.375"	4834	2154	1960	8431
1.125"	.375"	.375"	4835	2155	7222	8432
1.250"	.375"	.375"	4836	2156	1961	8433
1.375"	.375"	.375"	4837	2157	1962	8434
1.500"	.375"	.375"	4838	2158	1963	8435
1.625"	.375"	.375"	4839	2159	7224	8436
1.750"	.375"	.375"	4840	2160	7225	8437
2.000"	.375"	.375"	4841	2161	1964	8438

Metric M3 x 0,5mm Threaded Standoffs

Length "L"	Dim. "A"	Dim. "B"	5.0mm Hex Brass Nickel Plate	5.5mm Hex Brass Nickel Plate
10.0mm	8.0mm	8.0mm	4313	4319
12.0mm	8.0mm	8.0mm	4314	4320
15.0mm	8.0mm	8.0mm	4315	4321
18.0mm	8.0mm	8.0mm	4316	4322
20.0mm	8.0mm	8.0mm	4317	4323
25.0mm	8.0mm	8.0mm	4318	4324

2-56 Threaded Standoffs

Length "L"	O.D.	Hex Aluminum Clear Iridite	Round Aluminum Clear Iridite	Hex Brass Zinc Plate	Round Brass Zinc Plate
.187"	.156"	1797A	1801A	1798A	1802A
.250"	.156"	1797B	1801B	1798B	1802B
.312"	.156"	1797C	1801C	1798C	1802C
.375"	.156"	1797D	1801D	1798D	1802D

4-40 Threaded Standoffs

Length "L"	O.D.	Hex Aluminum Clear Iridite	Round Aluminum Clear Iridite	Hex Brass Zinc Plate	Round Brass Zinc Plate
.250"	.187"	1891	2025	1450	1547
.375"	.187"	1892	2026	1451	1548
.500"	.187"	1893	2027	1452	1549
.625"	.187"	1894	2028	1453	1550
.750"	.187"	1895	2029	1454	1551
.875"	.187"	1896	2030	1455	1552
1.000"	.187"	1897	2031	1456	1553
.250"	.250"	2201	3478	1450A	1547A
.375"	.250"	2202	3479	1450B	1547B
.500"	.250"	2203	3480	1450C	1547C
.625"	.250"	1808	1839	1829	1867
.750"	.250"	2204	3481	1450D	1547D
.875"	.250"	1809	1846	1830	1876
1.000"	.250"	2205	3482	1450E	1547E
1.500"	.250"	2206	3483	1831	1877
2.000"	.250"	2207	3484	1832	1878

6-32 Threaded Standoffs

Length "L"	O.D.	Hex Aluminum Clear Iridite	Round Aluminum Clear Iridite	Hex Brass Zinc Plate	Round Brass Zinc Plate
.250"	.250"	2208	3485	1451A	1548A
.375"	.250"	2209	3486	1451B	1548B
.500"	.250"	2210	3487	1451C	1548C
.625"	.250"	1813	1847	1451D	1548D
.750"	.250"	2211	3488	1451E	1548E
.875"	.250"	1816	1848	1833	1879
1.000"	.250"	2212	3489	1635	1548F
1.250"	.250"	1818	1853	1636	1881
1.500"	.250"	2213	3490	1637	1882
1.750"	.250"	1819	1855	1638	1883
2.000"	.250"	2214	3491	1639	1884
2.250"	.250"	1820	1856	1642	1885
2.500"	.250"	1825	1857	1643	1886

8-32 Threaded Standoffs

Length "L"	O.D.	Hex Aluminum Clear Iridite	Round Aluminum Clear Iridite	Hex Brass Zinc Plate	Round Brass Zinc Plate
.250"	.250"	2215	3492	1474A	1692A
.375"	.250"	2216	3493	1474B	1692B
.500"	.250"	2217	3494	1474C	1692C
.625"	.250"	1827	1858	1834	1887
.750"	.250"	2218	3495	1474D	1692D
.875"	.250"	1828	1859	1836	1888
1.000"	.250"	2219	3496	1474E	1692E
1.500"	.250"	2220	3497	1837	1889
2.000"	.250"	2221	3498	1838	1899
.375"	.375"	1926A	2315A	1452A	1549A
.500"	.375"	1926B	2315B	1452B	1549B
.625"	.375"	1926C	2315C	1452C	1549C
.750"	.375"	1926D	2315D	1452D	1549D
1.000"	.375"	1926E	2315E	1452E	1549E

Metric M3 Threaded Standoffs

Length "L"	5.0mm Hex Brass Nickel Plate	5.5mm Hex Brass Nickel Plate
5.0mm	4390	4395
10.0mm	4391	4396
15.0mm	4392	4397
20.0mm	4393	4398
25.0mm	4394	4399

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Test Points & Terminals

PC Test Points Snap-In Mounting Color Coded

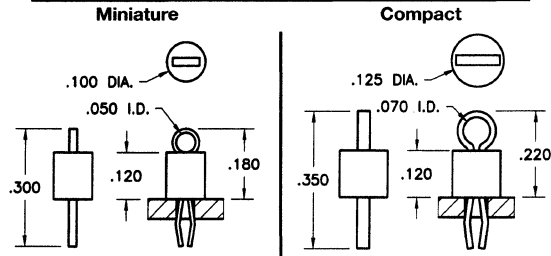


Fig. No. 1
Terminal: Brass Wire, Tin Plate
Base: Glass Filled Nylon, UL 94 V-0

Fig. No. 2
Terminal: Brass Wire, Tin Plate
Base: Valox, UL 94 V-0

Multipurpose

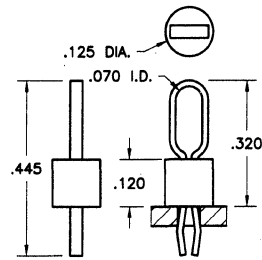
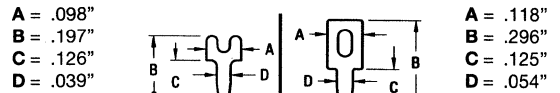


Fig. No. 3
Terminal: Phos. Br., Tin Plate
Base: Valox, UL 94 V-0

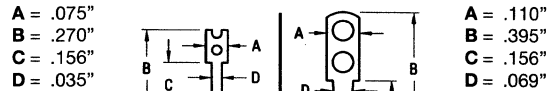
Mfg. No.	Base Color	Fig. No.
5000	Red	1
5001	Black	1
5002	White	1
5003	Orange	1
5004	Yellow	1
5005	Red	2
5006	Black	2
5007	White	2
5008	Orange	2
5009	Yellow	2
5010	Red	3
5011	Black	3
5012	White	3
5013	Orange	3
5014	Yellow	3

PC Test Point Terminals



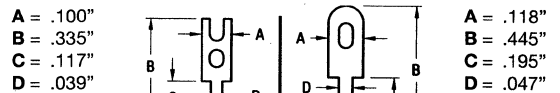
Mfg. No. 4950
.025" Brass, Tin Plate

Mfg. No. 1033
.025" Brass, Tin Plate



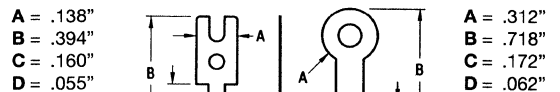
Mfg. No. 1031
.020" Brass, Tin Plate

Mfg. No. 1038
.020" Brass, Tin Plate



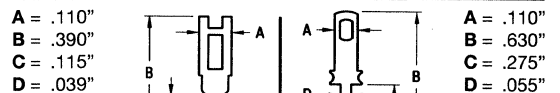
Mfg. No. 1035
.020" Brass, Tin Plate

Mfg. No. 1249
.025" Brass, Tin Plate



Mfg. No. 1039
.025" Brass, Tin Plate

Mfg. No. 680
.015" Brass, Tin Plate

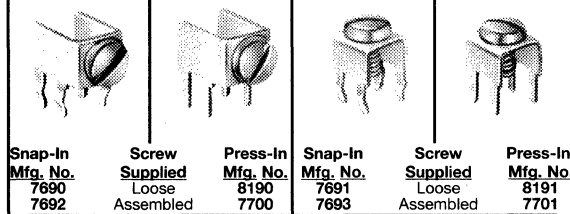


Mfg. No. 1040
.025" Brass, Tin Plate

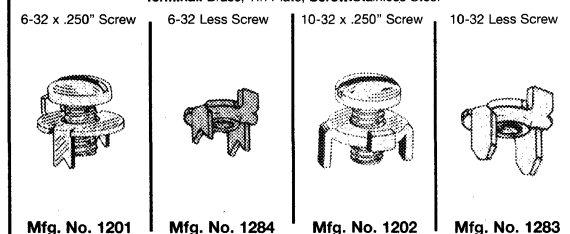
Mfg. No. 1041
.032" Brass, Tin Plate

Screw Terminals

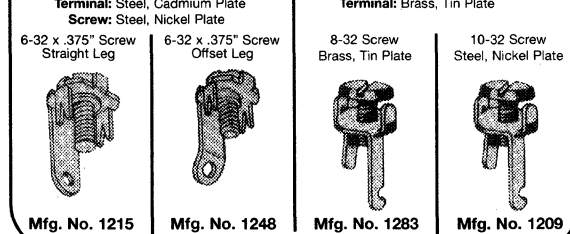
Horizontal Terminal: Brass, Tin Plate
Vertical Terminal: Brass, Tin Plate
Screw: 6-32 x .250" Brass, Nickel Plate



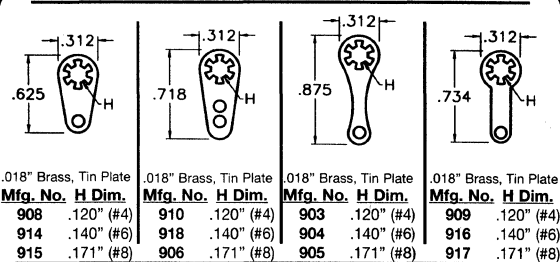
Terminal: Brass, Tin Plate; **Screw:** Stainless Steel



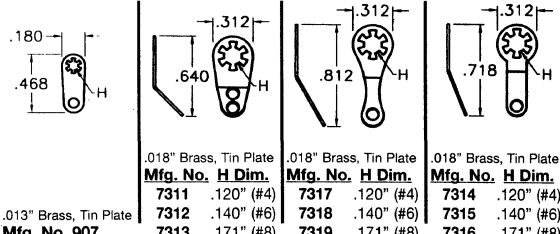
Terminal: Steel, Cadmium Plate; **Screw:** Steel, Nickel Plate



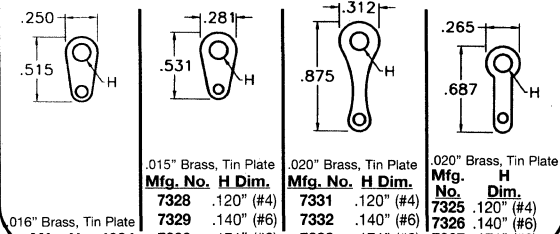
Lockwasher & Solder Terminals



Terminal: Brass, Tin Plate; **Screw:** Stainless Steel



Terminal: Steel, Cadmium Plate; **Screw:** Steel, Nickel Plate

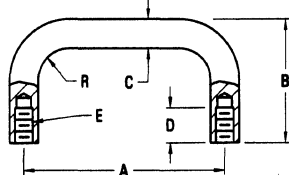


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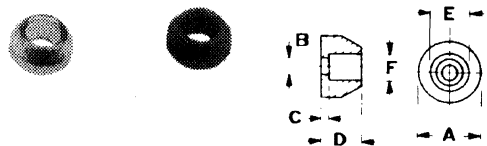
Handles & Brackets

Round Instrumentation Handles



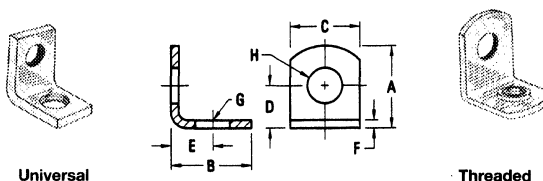
Brass Nickel Plate	Alum. Black Anodize	Mounting Centers A	Height B	Thread E	Depth D	Radius R	Diameter C
7140	7170	1.250"	1.000"	4-40	.375"	.156"	.156"
7141	7171	2.000"	1.000"	4-40	.375"	.156"	.156"
7142	7172	3.000"	1.000"	4-40	.375"	.156"	.156"
9100	9110	1.250"	.625"	4-40	.156"	.187"	.187"
9101	9111	1.500"	.625"	4-40	.156"	.187"	.187"
9104	9114	1.500"	.750"	4-40	.250"	.187"	.187"
9102	9112	1.750"	.625"	4-40	.156"	.187"	.187"
9105	9115	1.750"	.750"	4-40	.250"	.187"	.187"
9103	9113	2.000"	.625"	4-40	.156"	.187"	.187"
9106	9116	1.250"	1.000"	6-32	.250"	.187"	.187"
9107	9117	1.500"	1.000"	6-32	.250"	.187"	.187"
9108	9118	2.000"	1.000"	6-32	.250"	.187"	.187"
9109	9119	3.000"	1.000"	6-32	.250"	.187"	.187"
7143	7173	3.000"	1.500"	8-32	.562"	.250"	.250"
485	515	3.000"	1.750"	8-32	.562"	.250"	.250"
480	510	3.500"	1.500"	8-32	.562"	.250"	.250"
7144	7174	4.000"	1.500"	8-32	.562"	.250"	.250"
486	516	4.000"	1.750"	8-32	.562"	.250"	.250"
481	511	4.500"	1.500"	8-32	.562"	.250"	.250"
487	517	4.500"	1.750"	8-32	.562"	.250"	.250"
482	512	5.000"	1.500"	8-32	.562"	.250"	.250"
488	518	5.000"	1.750"	8-32	.562"	.250"	.250"
483	513	5.500"	1.500"	8-32	.562"	.250"	.250"
484	514	6.000"	1.500"	8-32	.562"	.250"	.250"
489	519	6.000"	1.750"	8-32	.562"	.250"	.250"
7145	7175	3.000"	1.500"	10-32	.562"	.312"	.312"
7146	7176	4.000"	1.500"	10-32	.562"	.312"	.312"
493	523	4.000"	1.750"	10-32	.562"	.312"	.312"
490	520	4.500"	1.500"	10-32	.562"	.312"	.312"
494	524	4.500"	1.750"	10-32	.562"	.312"	.312"
7147	7177	4.562"	1.500"	10-32	.562"	.312"	.312"
491	521	5.000"	1.500"	10-32	.562"	.312"	.312"
495	525	5.000"	1.750"	10-32	.562"	.312"	.312"
492	522	5.500"	1.500"	10-32	.562"	.312"	.312"
7148	7178	6.000"	1.500"	10-32	.562"	.312"	.312"
496	526	6.000"	1.750"	10-32	.562"	.312"	.312"
7149	7179	6.437"	1.750"	10-32	.562"	.312"	.312"
7150	7180	4.000"	1.375"	10-32	.375"	.375"	.375"
7151	7181	6.000"	1.375"	10-32	.375"	.375"	.375"

Ferrules for Round Handles



Brass Nickel Plate	Alum. Black Anodize	For Diameter Thread	A	B	C	D	E	F
7162	7192	.156"/4-40	.250"	.120"	.047"	.125"	.200"	.161"
9120	9122	.187"/4-40	.312"	.120"	.062"	.125"	.265"	.203"
9121	9123	.187"/6-32	.312"	.144"	.062"	.125"	.265"	.203"
7163	7193	.250"/8-32	.375"	.170"	.062"	.187"	.320"	.260"
7164	7194	.312"/10-32	.562"	.196"	.062"	.250"	.406"	.320"

Mounting Brackets



Universal Mounting Brackets

Mfg. No.	A	B	C	D	E	F	G Dia.	H Dia.	Material Finish
610	.171"	.171"	.125"	.109"	.109"	.018"	.067"	.067"	Brass, Tin Plate
633	.375"	.375"	.281"	.218"	.218"	.032"	.140"	.140"	Brass, Nickel Plate
613	.390"	.453"	.375"	.234"	.299"	.032"	.128"	.147"	Brass, Tin Plate
615	.420"	.343"	.281"	.281"	.203"	.032"	.125"	.144"	Brass, Nickel Plate
4335	.562"	.562"	.500"	.412"	.411"	.062"	.120"	.120"	Steel, Nickel Plate
4336	.562"	.562"	.500"	.412"	.412"	.062"	.144"	.144"	Steel, Nickel Plate
618	.628"	.628"	.375"	.378"	.378"	.050"	.169"	.169"	Brass, Nickel Plate
619	.687"	.687"	.375"	.500"	.500"	.032"	.144"	.144"	Steel, Tin Plate
4326	1.013"	.487"	.312"	.816"	.332"	.050"	.140"	.140"	Steel, Nickel Plate
620	1.156"	.656"	.375"	.906"	.406"	.032"	.169"	.169"	Steel, Tin Plate

Threaded Mounting Brackets

Mfg. No.	A	B	C	D	E	F	G Dia.	H Dia.	Material Finish
612	.343"	.375"	.250"	.203"	.250"	.062"	4-40	.130"	Steel, Zinc Plate
621	.343"	.375"	.250"	.203"	.250"	.062"	4-40	4-40	Steel, Zinc Plate
616	.453"	.312"	.250"	.265"	.187"	.047"	4-40	.136"	Brass, Tin Plate
634	.375"	.375"	.281"	.218"	.218"	.032"	6-32	.140"	Brass, Nickel Plate
614	.420"	.343"	.312"	.250"	.197"	.032"	6-32	.144"	Brass, Tin Plate
4334	.562"	.562"	.500"	.412"	.412"	.062"	6-32	6-32	Steel, Nickel Plate
617	.578"	.500"	.500"	.328"	.299"	.062"	6-32	.165"	Steel, Tin Plate
611	.375"	.422"	.312"	.234"	.250"	.037"	8-32	.135"	Brass, Tin Plate

Mounting Brackets

.062" Brass, Nickel Plate
Mfg. No. **A**
4332 6-32
4333 8-32

.050" Steel, Nickel Plate
Mfg. No. **4325**

.032" Brass, Tin Plate
Mfg. No. **630**

.037" Steel, Tin Plate
Mfg. No. **631**

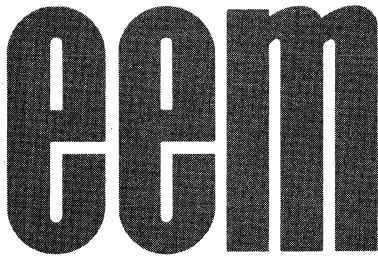
.062" Steel, Nickel Plate
Mfg. No. **708**

.062" Steel, Nickel Plate
Mfg. No. **1564**

Full Line Engineering Catalog #990 Available

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COMMONLY USED ELECTRICAL/ELECTRONIC ABBREVIATIONS AND ACRONYMS

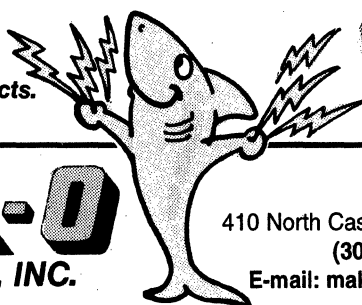
- A**
A/D acrylonitrile butadiene-styrene
A/D analog to digital
ADC analog to digital converter
ADP automatic data processing
AFC audio frequency control
AFT automatic filter test
ALGOL algorithmic language
AM a logical operator
AQL acceptable quality level
ASCII American national standard code for information interchange
ASIC application specific IC
ATE automatic test equipment
ATG automatic test generation
AWG American wire gauge
- B**
BALUN balanced to unbalanced
BASIC beginners' all-purpose symbolic instruction
BCD binary-coded decimal
BNC baby "N" connector
BUS basic utility system
- C**
CAD computer-aided design
CAE computer-aided engineering
CAM computer-aided manufacture
CAMAC computer-automated measurement and control
CAPP computer-aided process planning
CAT computer-aided test
CATV cable television or community antenna television
CCC (lead) ceramic chip carriers
CCD computer-controlled display
CERMET ceramic metal element
CIE computer-integrated engineering
CIM computer-integrated manufacturing
CLCC ceramic leadless chip carriers
CMOS complementary metal-oxide semiconductor
Comm. communications
CPS characters per second
CPU central processing unit
- D**
D/A digital to analog
DAC digital to analog converter
DBMS data base management system
DC direct current
DFT design for testability
DIAC bidirectional trigger diode
DIL dual in-line
DIN Deutsche Industrie Normenausschuss
DIP dual in-line package
DPM digital panel meter
DRAM dynamic RAM
DTL diode transistor logic
- E**
EDA electronic design automation
EDP electronic data processing
EBCDIC extended binary coded decimal interchange code
EEPROM electrically erasable PROM
- EIA** Electronic Industries Association
EMC electromagnetic compatibility
EMI electromagnetic interference
EMP electromagnetic pulse
EPROM erasable programmable ROM
ESR equivalent series resistance
- F**
FEP fluorinated ethylene propylene Copolymer, 200° Teflon
FET field-effect transistor
FM frequency modulation
FORTRAN formula translator
- G**
GaAsFET gallium arsenide FET
CMIP commn management information protocol
GPIB general purpose interface bus
GPS global positioning system
- H**
HF high frequency (3 to 30 MHz)
HIPOT test, measurement, and diagnostic equipment
HLL high level language
HV high voltage
Hz Hertz
- I**
IAB Internet Activities Board
IC integrated circuit
IDC insulation displacement contact
IF intermediate frequency
IO input/output (devices)
IR insulation resistance (or) infrared
ISDN integrated services digital network
ISO International Standards Organization
- J**
JEDEC Joint Electronic Device Engineering Council
JFET junction FET
JMOS junction MOS
- K**
kHz kilohertz (10^3 hertz)
KSR keyboard send /receive
- L**
LAN local area network
LC (filters) inductance/capacitance
LCC leaded chip carrier
LCD liquid crystal display
LED light-emitting diode
LF low frequency (30 to 300 kHz)
LIF low insertion force
LNA low noise amplifier
LNB low noise band
LSI large scale integration
LVDT linear velocity displacement transformer
- M**
MASER microwave amplification by stimulated emission of radiation
MATV master antenna television
- μF** microfarad
MHz megahertz
MIC microwave IC
MIPS million instructions per second
MIB microcomputer interface board
MOS metal oxide semiconductor
MOSFET metal oxide semiconductor FET
MOSIGT metal oxide semiconductor insulated-gate transistor
MOV metal oxide varistor
MPU microprocessor unit
MSI medium scale integration
- N**
NBS National Bureau of Standards
NEMP nuclear electromagnetic pulse
NIM national instrumentation module
NOR not OR
NTC negative temperature coefficient
- O**
OCR optical character reader
OEM original equipment manufacturer
OR a logical operator
OSI open systems interconnection
- P**
PAL programmable array logic
PC printed circuit
PCB printed circuit board
PCM pulse code modulation
PCS plastic clad silica
pF picofarad
PGA pin grid array
PIN positive-intrinsic-negative (transistor)
PLA programmable logic array
PLCC plastic leaded chip carrier
PLL phased lock loop
PPI plan position indicator
PROM programmable ROM
PTC positive temperature coefficient
PUT programmable unijunction transistor
- Q**
QAM quadrature amplitude modulation
Q (meter) quality-factor meter
- R**
RAM random access memory
RC resistance-capacitance
RFI radio frequency interference
RMS root mean square
ROM read only memory
RF radio frequency
RFC radio-frequency choke
RFI radio-frequency interference
RTD resistance-temperature detector
RTL resistor transistor logic
RTV room temperature vulcanizing
RW read/write
- S**
SAS silicon asymmetrical switch
SBC single board (micro) computer
- SBS** silicon bilateral switch
SCR silicon-controlled rectifier
SCS silicon-controlled switch
SDA source & detector assemblies
SGMP simple gateway monitoring protocol
SIDAC bidirectional voltage-triggered switch
SIMM single in-line memory module
SIP single in-line package
SMD surface mount device
SMT surface mount technology
SNMP simple network management protocol
SO small outline
SOIC small outline IC
SOT small outline transistor
SSI small scale integration
SSR solid-state relay
STL Schottky transistor logic
SUS silicon unilateral switch
- T**
TC temperature coefficient
TCE thermal coefficient of expansion
TXCO temperature compensated crystal oscillator
TFE tetrafluoride ethylene propylene Copolymer, 250° Teflon
TRIAC bidirectional AC switch
TTL transistor-transistor logic
TTY teletypewriter
- U**
UHF ultra high frequency (300 MHz to 3 GHz)
UJT silicon unijunction transistor
UL Underwriters Laboratory
UPS uninterruptible power supply
- V**
VAC volts (of) alternating current
VAN value-added network
VAR volt-ampere reactive
VCR video cassette recorder
VDC volts (of) direct current
VHF very high frequency (30 kHz to 300 MHz)
VHSIC very high speed integrated circuit
VLF very low frequency (3 to 30 kHz)
VLSI very large scale integration
VME virtual machine environment
VRM voice recognition module
VTVM vacuum tube volt meter
VU volume unit
VSWR voltage standing wave ratio
- W**
WPS word processing software
- Y**
YIG yttrium iron garnet
- Z**
ZIF zero insertion force



**STAINLESS STEEL
ELECTRONIC HARDWARE**

	<p>1. SHOULDER SCREWS PRECISION SOCKET HEAD PRECISION SLOTTED HEAD STANDARD HEX SOCKET HEAD</p>	
<p>2. NYLON TIPPED SET SCREWS SLOTTED SOCKET</p>		<p>3. KNURLED THUMB SCREWS PLAIN WASHER FACE</p>
<p>4. INSULATING NON-METALIC WASHERS FLAT SHOULDER</p>		<p>5. SPACERS ROUND HEX</p>
<p>6. SWAGE SPACERS ROUND HEX</p>		<p>7. COLLARS & COUPLING SLEEVES SINGLE SHAFT SLEEVES REDUCED SHAFT SLEEVES</p>
<p>8. STANDOFFS-FEMALE ROUND HEX SQUARE</p>		<p>9. STANDOFFS-SWAGE ROUND HEX</p>
<p>10. STANDOFFS-MALE/FEMALE ROUND HEX</p>		<p>11. CAPTIVE PANEL SCREWS 5 DIFFERENT TYPES OF SCREWS</p>
<p>11 cont.</p>		
<p>12. PANEL SCREW WASHERS</p>	<p>13. PANEL SCREW RETAINERS</p>	<p>14. PANEL SCREW SPRINGS & WASHERS</p>
	<p>15. HANDLES ROUND HALF ROUND RECTANGULAR</p>	<p>16. THREADED RODS</p>
		<p>17. PRECISION GROUND SHAFTINGS</p>

Distributors of Standard and, Special Stainless Steel Fastener Products.



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RAF Electronic Hardware offers the widest selection of English and metric dimensioned components. You choose the

style, size, material and finish that's right for your application. Our U.S. manufacturing and plating facility assures large

inventories, short lead times, and custom designs. RAF products are also available from distributors worldwide.

Standoffs



- Aluminum, brass, steel, stainless steel, nylon.
- More than 40 metallic finishes.
- Threads from 2-56 to 5/16-18.
- Lengths from 3/16 to 10 inches.
- Diameters from 1/8 to 5/8 inch.

The basic standard for PCB mounting, female standoffs are available in round, hex, and square styles with regular or swaged ends. Swages include plain and knurled shanks, and front, back, or front and back faced knurls. Male-female models are available in round and hex profiles. A male-male standoff also is offered.

Handles & Ferrules



- Round, rectangular, and oval.
- Fixed, offset, 2- & 3-position, free fall, and infinite position styles.
- Aluminum, brass, steel, stainless steel.
- Lengths from 3/4 to 7 inches.

Eleven attractive fixed and folding handle lines are available in an extensive selection of sizes, materials, and finishes. They provide the right handle for applications ranging from rack-mounted equipment to stylish carrying cases. In addition, a choice of ferrules is offered to reinforce and complete the installation.

Spacers



- Aluminum, brass, steel, stainless steel, nylon, phenolic.
- More than 40 metallic finishes.
- Lengths from 1/8 to 2 inches.
- Diameters from 1/8 to 3/4 inch, clearance from 0.064 to 0.505 inch.

Used for printed circuit board mounting and other applications requiring close control of dimensions, these spacers offer a wide variety of outside dimensions and lengths. In addition to standard models, swage configurations are available to accommodate circuit boards with thicknesses from 1/32 to 1/4 inch.

Jack Screws



- Standard design hex jack screws.
- Supplied with washers and nut.
- Material: Steel with zinc plate per ASTM-B-633 (yellow chromate) finish.
- Threads: 4-40.
- Thread lengths from 3/16 to 3/4 in.

Primarily used to secure D-type cable connectors in computer and other electronic equipment, standard 3/16 inch hex jack screws come as a complete set including two flat washers, one lock washer, and a nut. They meet all the important industry specifications or can be customized for your special application.

Captive Panel Screws



- Five style captive panel screws and seven swaged retainer types.
- Brass, steel, stainless steel.
- Threads from 2-56 to 3/8-16.
- Lengths from 21/32 to 2 inches.
- Head diameters 5/16 to 3/4 inch.

Invaluable for equipment panels where mounting hardware is subject to loss, these captive screws and retainers assure easy and secure assembly. In addition to standard models, users choose variations such as slotted, unslotted, or hex heads, washers for oval head styles, plus retainer spring and washer sets.

Circuit Board Spacers



- Fifty-six different PCB support components include standoffs, spacers, adhesive base supports, threaded and snap-on, blind-hole, flexible hinge, edge/corner and many others.

Inexpensive plastic circuit board supports are used extensively to mount small, non-critical PCBs in many types of consumer and commercial electronic equipment. With easy no-tool insertion and removal, this wide range of available plastic support components provides a complete selection for all applications

Precision Shoulder Screws



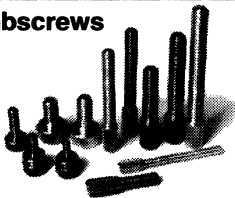
- Brass, steel, stainless steel.
- Threads from 4-40 to 3/8-16.
- Shoulder lengths from 0.1250 to 1.500 inch; shoulder diameters from 0.1245 to 0.4995 inch.
- Head diameters 1/4 to 5/8 inch.

Useful as a precision spacer and bearing surface for a wide variety of applications, shoulder screws are manufactured with exacting tolerances (shoulder diam: +.000/- .001, shoulder length: +.002/- .000). Undercuts made on each side of the shoulder are used to assure perfect seating for precise low friction assembly.

Custom Design, Engineering, and Manufacturing

When you have a critical project that requires a special piece of electronic hardware, RAF is ready to work with you to produce just what you need. Whether you want to modify one of the existing stock components or have something completely different in mind, we offer the design, engineering, and production services that turn your ideas into reality. Our world-class production facility and in-house plating operation combined with years of problem solving means that any part can be customized to your exact specifications. Contact an RAF representative today and find out how easy it is to get that special hardware.

Thumbscrews



- Aluminum, brass, steel, stainless.
- Threads from 4-40 to 1/4-20.
- Lengths from 1/2 to 2-1/2 inches.
- Head diameters 3/16 to 1/2 inch.

Thumbscrews add the finishing touch to front panels or other equipment and offer the ease of no-tool assembly and disassembly for many applications. These components have easy-to-grip diamond knurl head surfaces plus a choice of materials and finishes that will complement any design.

Write, call, fax, or contact us via the internet for a free electronic hardware catalog

RAF Electronic Hardware

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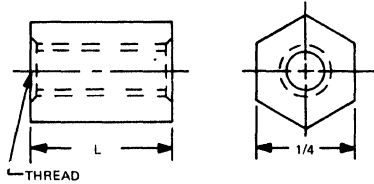
A Selection of Popular Hardware

Here are some of the most frequently ordered items from the RAF Electronic Hardware Catalog. Of course, there are

thousands of other components available including a complete line of metric dimensioned hardware, as well as rug-

ged, stylish handles for every purpose. Ask for a full line catalog and visit your RAF distributor for more information.

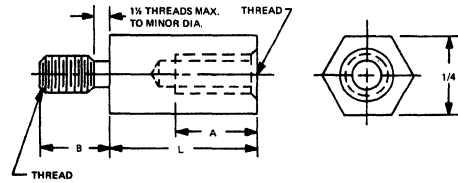
Hex Threaded Standoffs



Rugged 1/4" O.D. hex standoffs are easy to grip with wrench for tightening. Threads are tapped through length of body. Materials: aluminum with clear iridite finish (A-7), zinc plated brass (B-12), and stainless steel (SS).

Length Inches	Part Number		
	4-40 Thread	6-32 Thread	8-32 Thread
1/4	2100-440-A-7	2100-632-A-7	2100-832-A-7
1/4	2100-440-B-12	2100-632-B-12	2100-832-B-12
1/4	2100-440-SS	2100-632-SS	2100-832-SS
3/8	2102-440-A-7	2102-632-A-7	2102-832-A-7
3/8	2102-440-B-12	2102-632-B-12	2102-832-B-12
3/8	2102-440-SS	2102-632-SS	2102-832-SS
1/2	2104-440-A-7	2104-632-A-7	2104-832-A-7
1/2	2104-440-B-12	2104-632-B-12	2104-832-B-12
1/2	2104-440-SS	2104-632-SS	2104-832-SS
5/8	2106-440-A-7	2106-632-A-7	2106-832-A-7
5/8	2106-440-B-12	2106-632-B-12	2106-832-B-12
5/8	2106-440-SS	2106-632-SS	2106-832-SS
3/4	2108-440-A-7	2108-632-A-7	2108-832-A-7
3/4	2108-440-B-12	2108-632-B-12	2108-832-B-12
3/4	2108-440-SS	2108-632-SS	2108-832-SS
7/8	2110-440-A-7	2110-632-A-7	2110-832-A-7
7/8	2110-440-B-12	2110-632-B-12	2110-832-B-12
7/8	2110-440-SS	2110-632-SS	2110-832-SS
1.0	2112-440-A-7	2112-632-A-7	2112-832-A-7
1.0	2112-440-B-12	2112-632-B-12	2112-832-B-12
1.0	2112-440-SS	2112-632-SS	2112-832-SS

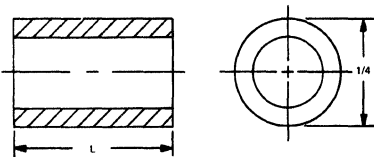
Hex Male-Female Standoffs



Hex body is 1/4" O.D. Lengths shown are female body length. Thread lengths for 4-40: A=1/4", B = 3/16"; 6-32: A = 3/8", B = 1/4"; 8-32: A = 7/16"; B = 3/8". Materials: aluminum with clear iridite finish (A-7), zinc plated brass (B-12), and stainless steel (SS).

Length Inches	Part Number		
	4-40 Thread	6-32 Thread	8-32 Thread
1/4	4530-440-A-7	4530-632-A-7	4530-832-A-7
1/4	4530-440-B-12	4530-632-B-12	4530-832-B-12
1/4	4530-440-SS	4530-632-SS	4530-832-SS
3/8	4532-440-A-7	4532-632-A-7	4532-832-A-7
3/8	4532-440-B-12	4532-632-B-12	4532-832-B-12
3/8	4532-440-SS	4532-632-SS	4532-832-SS
1/2	4534-440-A-7	4534-632-A-7	4534-832-A-7
1/2	4534-440-B-12	4534-632-B-12	4534-832-B-12
1/2	4534-440-SS	4534-632-SS	4534-832-SS
5/8	4536-440-A-7	4536-632-A-7	4536-832-A-7
5/8	4536-440-B-12	4536-632-B-12	4536-832-B-12
5/8	4536-440-SS	4536-632-SS	4536-832-SS
3/4	4538-440-A-7	4538-632-A-7	4538-832-A-7
3/4	4538-440-B-12	4538-632-B-12	4538-832-B-12
3/4	4538-440-SS	4538-632-SS	4538-832-SS
7/8	4540-440-A-7	4540-632-A-7	4540-832-A-7
7/8	4540-440-B-12	4540-632-B-12	4540-832-B-12
7/8	4540-440-SS	4540-632-SS	4540-832-SS
1.0	4542-440-A-7	4542-632-A-7	4542-832-A-7
1.0	4542-440-B-12	4542-632-B-12	4542-832-B-12
1.0	4542-440-SS	4542-632-SS	4542-832-SS
1-1/4	4546-440-A-7	4546-632-A-7	4546-832-A-7
1-1/4	4546-440-B-12	4546-632-B-12	4546-832-B-12
1-1/4	4546-440-SS	4546-632-SS	4546-832-SS

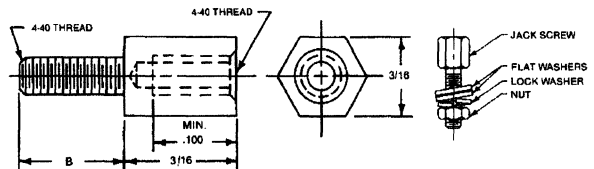
Round Clear Hole Spacers (1/4" O.D.)



Materials: aluminum/clear iridite finish (A-7), zinc plated brass (B-12)

Length Inches	Part Number		
	Clears #4 screw	Clears #6 screw	Clears #8 screw
1/8	1122-4-A-7	1122-6-A-7	1122-8-A-7
1/8	1122-4-B-12	1122-6-B-12	1122-8-B-12
1/4	1124-4-A-7	1124-6-A-7	1124-8-A-7
1/4	1124-4-B-12	1124-6-B-12	1124-8-B-12
3/8	1126-4-A-7	1126-6-A-7	1126-8-A-7
3/8	1126-4-B-12	1126-6-B-12	1126-8-B-12
1/2	1128-4-A-7	1128-6-A-7	1128-8-A-7
1/2	1128-4-B-12	1128-6-B-12	1128-8-B-12
5/8	1130-4-A-7	1130-6-A-7	1130-8-A-7
5/8	1130-4-B-12	1130-6-B-12	1130-8-B-12
3/4	1132-4-A-7	1132-6-A-7	1132-8-A-7
3/4	1132-4-B-12	1132-6-B-12	1132-8-B-12

Hex Jack Screws



Standard 3/16-inch jack screws feature 4-40 threads in a variety of lengths. They come as a complete set including two flat washers, one lock washer, and a nut. Steel with yellow chromate zinc plate.

Thread Length	P/N	Thread Length	P/N
3/16"	4750-1	1/2"	4750-6
1/4"	4750-2	9/16"	4750-7
5/16"	4750-3	5/8"	4750-8
3/8"	4750-4	11/16"	4750-9
7/16"	4750-5	3/4"	4750-10

FANS & BLOWERS

Manufacturer	Starting EEM Page No.	Model/ Series	AC	DC	Type		Noise dB	Capacity (CFM)				Variable Speed Control	Customized Options
					Fan	Blower		1-49	50-99	100-499	500 & up		
ACK Technology, Inc.	C-1476	586		✓	✓		23	✓					✓
		Pentium Pro		✓	✓		24	✓					✓
		Pentium II		✓	✓		25	✓					✓
		8025		✓	✓		30	✓					✓
		9025		✓	✓		30	✓					✓
		6025		✓	✓		25	✓					✓
		5010		✓	✓		25	✓					✓
		4010		✓	✓		20	✓					✓
		6010		✓	✓		23	✓				✓	
Advanced Technology Co.	C-1477	JCL/JCR	✓	✓	✓		31-62	✓	✓	✓	✓	✓	✓
		AD02		✓	✓		22-26	✓				✓	✓
		AD03		✓	✓		22-26	✓				✓	✓
		AD04		✓	✓		30-32	✓				✓	✓
		AD05		✓	✓		22-28	✓				✓	✓
		AD06		✓	✓		20-33	✓				✓	✓
		AD08		✓	✓		23-32	✓				✓	✓
		AD09		✓	✓		25-40	✓				✓	✓
		AD12		✓	✓		35-47	✓	✓			✓	✓
		UF240	✓			✓	50-53				✓	✓	✓
		UF260	✓			✓	51-53				✓	✓	✓
		UF280	✓			✓	51-53				✓	✓	✓
AMCO Engineering	C-1486	BMI				✓	55				✓	✓	✓
		BTA4					38			✓	✓	✓	✓
		BDS5-HF					48			✓	✓	✓	✓
Comair Rotron	C-1487	Sprint DC		✓	✓			✓				✓	✓
		Diplomat 5.25		✓		✓						✓	✓
		Diplomat 7.5		✓		✓						✓	✓
		Falcon		✓								✓	✓
		Maltese		✓								✓	✓
		Tarzan		✓								✓	✓
		Caravel		✓							✓	✓	✓
		Diplomat 5.25	✓			✓						✓	✓
Diplomat 7.5	✓			✓						✓	✓		
Falcon	✓			✓						✓	✓		
Maltese	✓			✓						✓	✓		
ETRI, Inc.	C-1492	146, 126, 99, 113	✓		✓			✓	✓	✓			Voltage, Speed bearing system, Termination Voltage, Speed bearing system, Termination
		98, 125, 141, 129						✓	✓	✓			
		148, 154						✓	✓	✓			
		276, 280, 272, 281		✓	✓			✓	✓	✓			
246, 299, 298, 158													
225, 148													
Interfan	C-1495	Various	✓	✓	✓	✓	22-53	✓	✓	✓			✓
Knight Electronics	C-1496	Orion	✓	✓	✓		18-52	✓	✓	✓			
Lafan	C-1497	AC/DC Cooling Fan	✓	✓	✓	✓	Low	✓	✓	✓	✓	✓	✓

FANS & BLOWERS (cont'd.)

Manufacturer	Starting EEM Page No.	Model/ Series	Type				Noise dB	Capacity (CFM)				Variable Speed Control	Customized Options
			AC	DC	Fan	Blower		1-49	50-99	100-499	500 & up		
McLean Engineering	C-1502	Centrifugal blower Packaged blower Card cooler	√	√	√	√		√	√	√	√		√
McLean Midwest	C-1506	Filter Fan	√		√		42	√	√	√			√
Mechatronics Inc.	C-1508	UF A, E, F, G	√	√	√	√		√	√	√		√	Tach Output, Locked Rotor Output, Added-Value
Micronel U.S.	C-1518	D240 D300/350/360 D460 D480 D570/580 D590/600 U64/97 F41LM/MM F62LM/MM F80LM/MM		√	√		37 41-52 28 55 27 56 27-52 23-35 20-26 26-35	√				√	
NMB Technologies, Inc.	C-1524		√	√	√		25-56 20-52	√	√	√			
Rodale Technical Sales	C-1526	D02 D04 D05 D06 D08 D09 D12 TA JC A08 A09 A12 FP108EX JAFM JC		√	√		26 22 32 26.7 23 25-33 32-37 60 31 31 32 26-49 38-51 50-60 52	√		√	√		√
Sanyo Denki America, Inc.	C-1530		√	√	√	√	27				√	√	√
Sunon/EME Fan & Motor	C-1536		√	√	√		11-49	√	√	√			Brushless DC
U.S. Toyo Fan Corp.	C-1548	TF120 TFDD120 UST120 TF92 TFDD92 UST92 TF80	√	√	√		35 39 38 36 28 35 32			√		√	

AIR CONDITIONERS, COOLERS, HEAT PUMPS, HEAT SINKS

Manufacturer	Starting JEEM Page No.	Type of System	Model/Series	Capacity Cooling (BTU/hr.)	Features/Applications
Aavid Thermal Technologies, Inc.	C-1473	PCB heat sinks Extruded head sinks Liquid cold plates Liquid chill blocks Bonded fin assemblies Heat sink accessories	JEDEC packages JEDEC and modules Modules Press packs Modules, press packs, JEDEC, etc. Various	Low & medium power Medium & high power Medium & high power Medium & high power Medium & high power	Standard & custom design Standard & custom design Standard & custom design Standard & custom design Standard & custom design Kon-Dux, Rubber-Duc, Tin Tabs, Kook Klips, In-Sil-8 pads
ACK Technology, Inc.	C-1476	Heat Sink - Extended Heat Sink - Pin Fin Heat Sink - Bonded Tin Heat Pipe Heat Pump, Sink and Fan Thermoelectric Thermoelectric Super Cooler Cold Station Heat Pipe Assembly	S1-XXXX C1-XXXX SC-XX CS-XX HP-XX	Low to High Low to Medium Medium to High Medium Low to Medium Low to Medium Low to High Low to Medium Low to High Low to Medium	Power Device CPU Power Devices Notebook PC IR/Lab IR/CPU CPU/Cold Chamber CPU Lab/Laser Notebook PC
Electro Impulse Laboratory, Inc.	C-1491	Closed Loop, Liquid, Recirculating	CU, RU, CUW & Custom units	500W-400kW	High reliability units for PAO, water and many special coolants
Ferrotec America	C-1494	Thermoelectric coolers Thermoelectric coolers	63 95		up to 150°C up to 200°C
Interfan	C-1495	Heat Sink			Semiconductor Cooling
Marlow Industries, Inc.	C-1500	Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers Thermoelectric coolers	DT 12-8 DT 12-6 DT 12-4 DT 12-2.5 DT 6-6 MI1020T MI1023T MI2021T MI3026T MI4012T MI6030	Tmax 68 C, Qmax 71.0 Watts Tmax 70 C, Qmax 54.0 Watts Tmax 69 C, Qmax 35.5 Watts Tmax 68 C, Qmax 23.5 Watts Tmax 70 C, Qmax 30.0 Watts Tmax 67 C, Qmax 0.90 Watts Tmax 67 C, Qmax 9.20 Watts Tmax 91 C, Qmax 0.92 Watts Tmax 109 C, Qmax 0.62 Watts Tmax 114 C, Qmax 0.76 Watts Tmax 133 C, Qmax 0.58 Watts	Single Stage, High heat load Single Stage, High heat load Single Stage, High heat load Single Stage, High heat load Single Stage, High heat load Single Stage, High heat load Single Stage, High heat load Two Stage, small heat load Three Stage, small heat load Four Stage, small heat load Six Stage, small heat load
McLean Midwest	C-1506	Closed-loop, Air/Air, Air/Water, Modified Heat Pipe, Convoluted Aluminum Core	Stock, Modified Standard, Custom	1000-20000 BTU/Hr, up to 93 W/F°	NEMA 12, NEMA 4X, UL, CUL, CE, digital display
MELCOR Thermoelectric	C-1513	Solid State	Technicool™	up to 1200	Soldi state reliability, Enclosure cooling, Liquid chillers, AC or DC
Rodale Technical Sales	C-1526	CPU Cooler Fan Heat Sink	Standard & Custom Standard & Custom	Low & Medium Low & Medium	Snap on design
Sanyo Denki America, Inc.	C-1530	CPU Cooler	SAN ACE MC	0.79° C/W	Low Noise, High Reliability, Pulse, Low Speed, Locked Sensors available
TECA Thermoelectric	C-1544	Air Conditioner Air Conditioner Air Conditioner Air Conditioner Air Conditioner Cold Plates Liquid Chillers	XP FHP X AHP LHP CP ALC/TLC	400-1000 400-1700 250-1000 100-1000 300-1200 100-1500 500-1700	Hazardous Duty C1 D2 Flush Mount Nema 4X Nema 12 Liquid Cooled Cold Plates
Thermalloy, Inc.	C-1545	Fan/Heat Sinks Fan/Heat Sinks Heat Sinks	Powergain® Series TCM's® Extruded, Stamped, Radial Fin	70-8525 17-135 6-85/0-35/0-35	Cools power modules Efficient spot cooling for micro-processors with heat sink & belt bearing fan Accommodate many productivity enhancements
The Staver Company	C-1529	Heat Sinks	Standard & Custom	Low to Medium Power	Low cost, easy to use
Wakefield Engineering	C-1550	Heat Sinks Heat Sinks Heat Sinks Heat Sinks Heat Sinks Heat Sinks Heat Sinks	230 Series 759 Series 120/126 Series Custom Fabrications 510/511/512 Series 392 Series 250 Series		Lightweight, Selfclipping, to-220 5VDC/12VDC fan, socket attachment, daisy chain connector Silicone and non-silicone thermal compounds Wide variety of extruded shapes, hole positions, panelizing High fin density heat sinks Power module heat sinks with industry standard hole patterns Lightweight self clipping, multiwatt stamped heat sinks



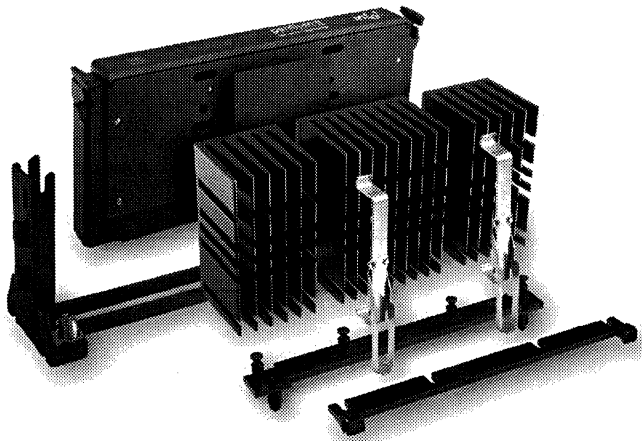
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World's Largest Selection of Heat Sinks and Other Thermal Management Solutions.

Extensive design and technical capabilities

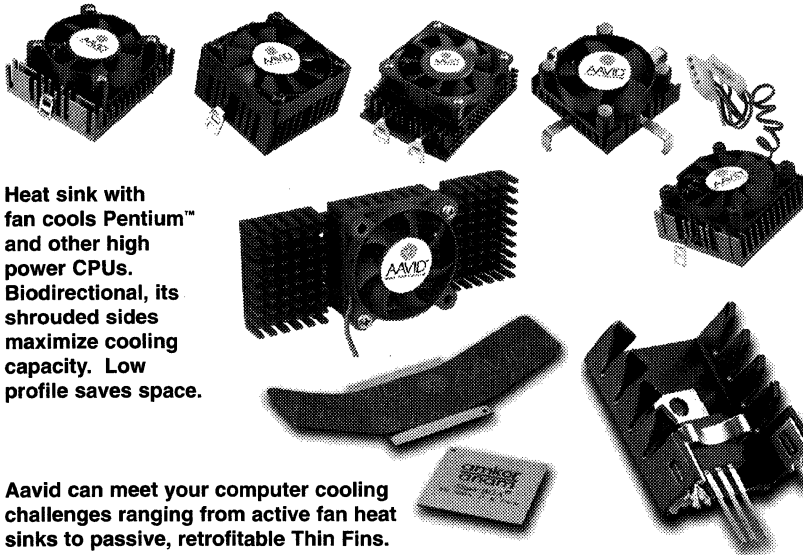
Aavid can apply any thermal engineering discipline to meet your design requirements. No one else has our depth of experience in providing innovative, cost-effective solutions to complex

thermal management problems. Our broad thermal and mechanical analysis and modeling capabilities are available to help satisfy your specific needs. Ask for application support.



Wide choice of heat sinks for microprocessors

Innovative thermal solutions for Pentium® II include matched interface materials; Cool Clips™ brand Side-Slide™ spring clips; attachment brackets; and fan, bi-, and omni-directional heat sinks.



Heat sink with fan cools Pentium™ and other high power CPUs. Bidirectional, its shrouded sides maximize cooling capacity. Low profile saves space.

Aavid can meet your computer cooling challenges ranging from active fan heat sinks to passive, retrofitable Thin Fins.

Hundreds of standard heat sinks for PC board-mounted semiconductors

• For TO-220, TO-218, TO-247, TO-3P, TO-92, TO-202, TO-3-TO-5, TO-66, TO-251, Multiwatt™, DIPs. New heat sinks for surface mount packages supplied in tape and reel for automated assembly.

• **D-PAK** surface mount products
• **Slim profile** heat sinks save board space.
• **Small plug-in** heat sinks save labor, eliminate nuts and bolts. Fins hold semiconductor securely for top thermal performance.

• For TO-3, TO-3P, TO-5, TO-66, TO-92, TO-202, TO-218, TO-220, TO-247, TO-251 devices, etc.
• For leadless chip carrier sockets.
• For DIPs (plastic and ceramic), SIPs, and Multiwatts®.

Labor-saving options

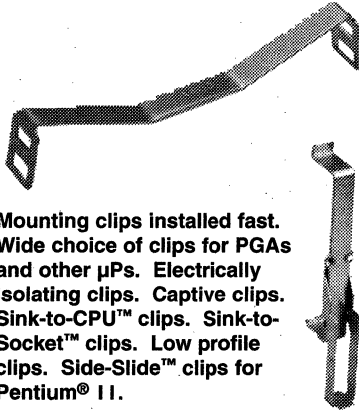
• **Shur-Lock™ solderable tabs** replace complex PCB mounting hardware at low cost.
• **Cool Clips™ brand Spring Clips** allow quick assembly of semiconductor to heat sink – and quick release.
• **Interface pads** between heat sink and device improve thermal conductivity, electrical isolation, gap filling, etc.

Shur-Lock™ self-locking tabs lock heat sinks securely to PC boards. Unique spring action prevents heat sinks from leaning, tipping, or backing out of the hole before, during and after wave soldering.

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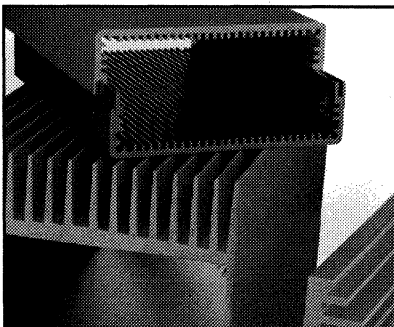
Mounting clips installed fast. Wide choice of clips for PGAs and other μ Ps. Electrically isolating clips. Captive clips. Sink-to-CPU™ clips. Sink-to-Socket™ clips. Low profile clips. Side-Slide™ clips for Pentium® II.

- Double sided tapes quickly attach all types of devices to heat sinks.

- Solderable tabs and stand-offs. A wide range of choices gives you complete versatility for mounting heat sinks to PC boards.

Over 3000 standard extrusion profiles

Aavid offers the most complete selection of extruded heat sink profiles in the world. Many unusual and complex extruded heat sinks and extruded enclosures are available. Channels, angles, bars and tees are also available.

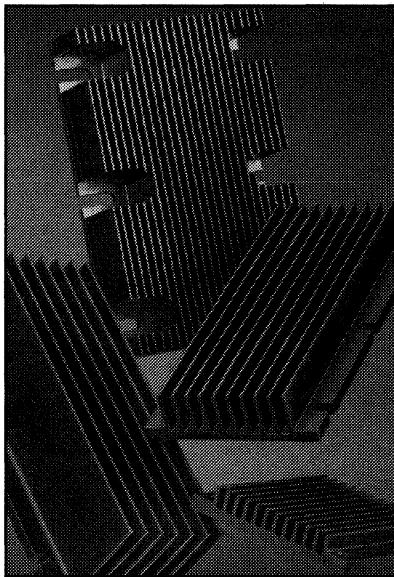


Enclosures cut packaging costs. Extruded aluminum enclosures increase design flexibility, improve product appearance and reduce fabricating operations. Wide choice of shapes and sizes.

Broad applications. Extrusions and castings are designed to cool all kinds of semiconductors including:

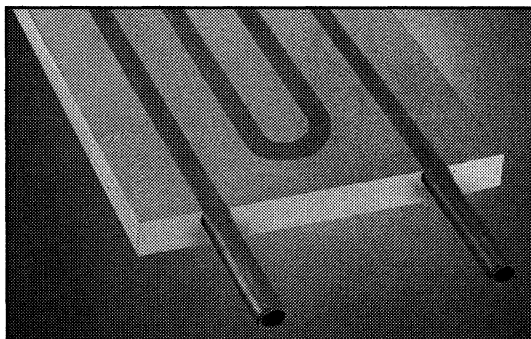
- DC-DC converters • High-current SCRs
- Power modules • Power transistors
- Press packs (hockey pucks) • Rectifiers
- Solid state relays • Stud-mount devices
- TO-3s and other high power JEDEC devices

Better cooling for DC-DC converters. Expanded line of heat sinks designed specifically for DC-DC converters to achieve optimum life, reliability.



High Power cooling products.

- **Bonded-fin heat sinks.** 2-3 times more cooling per unit volume, lighter weight, and more design flexibility than extrusions.

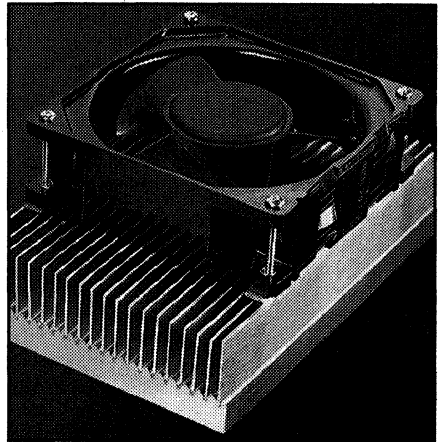


- **Folded-fin heat sinks.** Lightest weight product for handling high heat levels.

- **Epoxy isolation systems,** isolated heat spreaders and multi-piece isolation assemblies. High thermal conductivity.

- **Aavid's Vacuum Die-Cast** technology allows thermal engineers to create highly complex net shape castings with superior performance characteristics.

Polar Cap™ module coolers.



- **Augmented fin heat sinks**
- **Liquid cooled cold plates** and bus bars offer many times greater cooling than air.
- **Custom Heat Pipe assemblies.**

New concept in cold plates. HiContact™ liquid-cooled cold plates cool high power density electronic devices. Remove over 15% more heat than conventional designs and greatly reduce junction temperature.

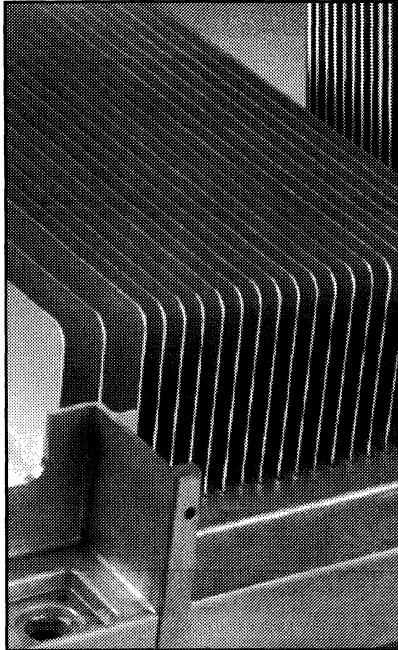
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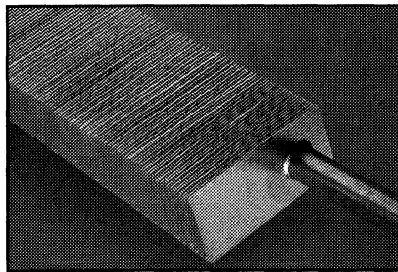
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High Power Cooling Products

(continued)



Bonded fins give 2-3x more cooling than equal sized extrusions due to more surface area per inch. No tooling costs on existing base profiles (1.25 to 17-in. W) Ideal for high current IGBTs, etc. Prototype in days, not weeks.

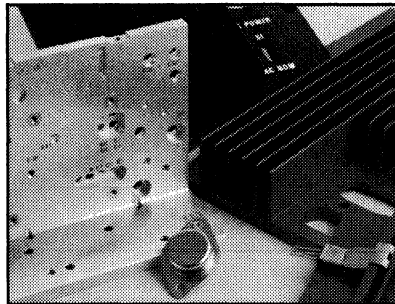


Aavid makes Heat Pipe assemblies for many specific applications

Dozens of secondary operations

Aavid is equipped for virtually any secondary operation from routine cut and wash to complex milling and stamping. Typical secondary operations are:

- Broaching • Chamfering • Counterboring
- Cutting • Deburring • Drilling • Fly-cutting
- Milling • Punching • Reaming • Sanding
- Stamping • Tapping • Tumbling
- Washing



Fabricated to meet your space. Aavid will fabricate standard extrusions to satisfy your performance, cost and production requirements. Or, we can help you with custom designs.

Finishing and other options

Aavid offers a complete range of finishing options including:

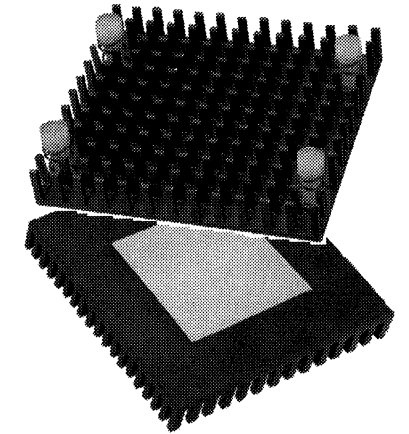
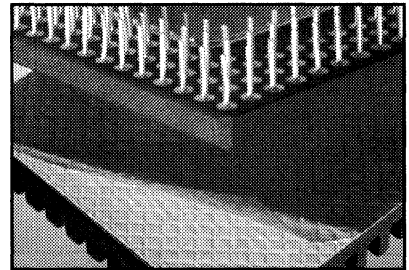
- Anodizing, regular & hard
- Bushings • Caustic etching • Chromating
- Insulators • Irriditing • Painting
- Silk creening • Surface coating
- Threaded inserts

Alpha is a trademark of Digital Equipment Corporation
Multiwait is a registered trademark of SGS Thomson.
Pentium is a trademark of Intel Corporation

Total manufacturing capabilities

Aavid's capabilities go far beyond the usual stamping, extruding, casting and machining technologies. These include:

- Metallurgical, adhesive and mechanical bonding
- NC extruded cutoff and deburr
- NC machining, multi-axis
- Wire EDM machining
- SPC quality control
- Screw machine parts



Peel and stick our double-sided tape. Mount heat sinks to BGAs quickly. Thermally conductive. No cutting. Quilted surface offers maximum surface wetting.

CORPORATE HEADQUARTERS

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AAVID TAIWAN: 3F, No. 25, Lane 228 • Ankang Road, Neihu • Taipei, Taiwan R.O.C. • TEL: (886) 227935677 • FAX: (886) 227933460

AAVID EUROPE: Unit C Hillbottom Road • Sands Industrial Estate • High Wycombe, Bucks, England HP12 4HS • TEL: (44) 1494-474747 • FAX: (44) 1494-474748

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ACK Technology, Inc. The Cooling Specialist

Heat Sink, Heat Pipe, & Heat Pump

You got Heat Problems? We got Solutions!

Over 28-year experience in Cooling products

- Fast delivery, heat sink tooling or production ~ 7 weeks
- Fast delivery, heat pipe & heat pump ~4 weeks standard products in stock
- Low Tooling Cost, Fully Refundable
- Low Minimum Order
- Engineering support

Extruded Heat Sink

Over 1000 Extrusion tooling
High Quality 6063-T5 AL Alloy

- Power Module
- Microprocessor
- Power Amplifier
- Extruded Enclosures
- Front Panel

All Secondary Processing
& Finishing in one location

- CNC Milling
- Multispindle Drilling
- Tapping, Graining
- Punching, Sanding
- Anodizing, Iriditing, Coating
- Silk screening, Painting

Bonded Fin Heat Sink

- High Aspect Ratio & Fin Density
- Flexibility for Custom Design
- Low Tooling Cost
- Quick Delivery

Heat Pipe & Assembly

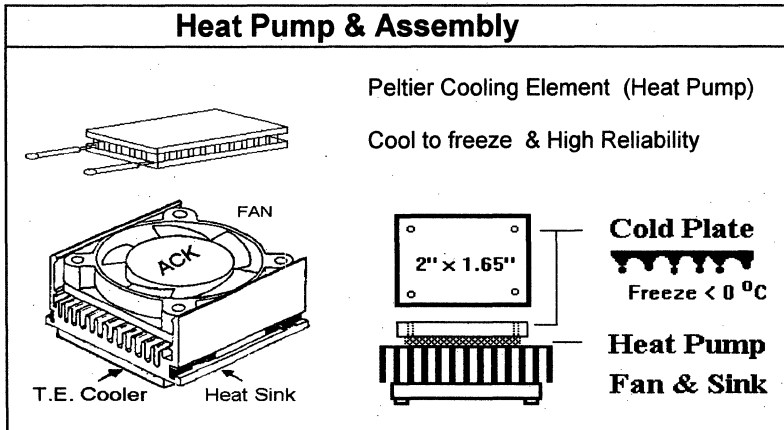
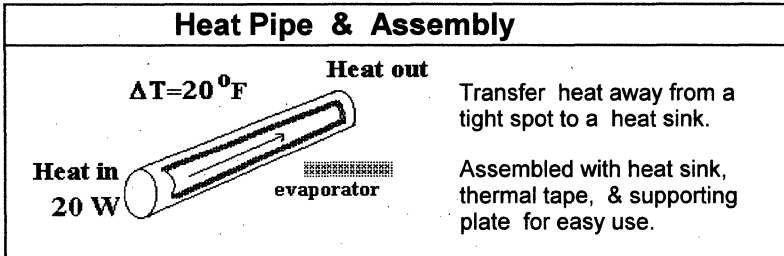
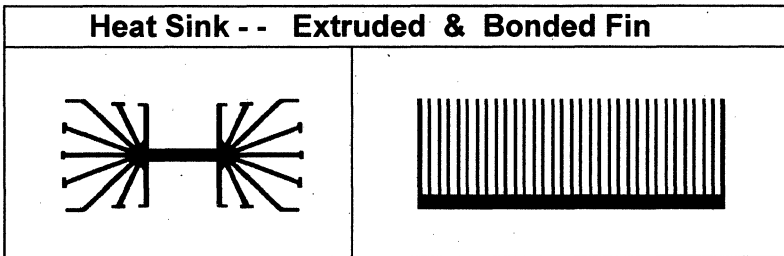
- High Thermal Conductivity
Transfer heat away to heat sink
- Assembled with heat sink, heat spreader, thermal tape, & supporting plate.
- Light Weight & Sturdy

Heat Pump & Assembly

- 100 TE Cooling Modules to Choose
- from .32 W to 125 W cooling power
- from .13" x .13" to large 2.17 x 2.17
- Cold Stations - 5 W to 30 W
- Super Coolers - keep CPU cool

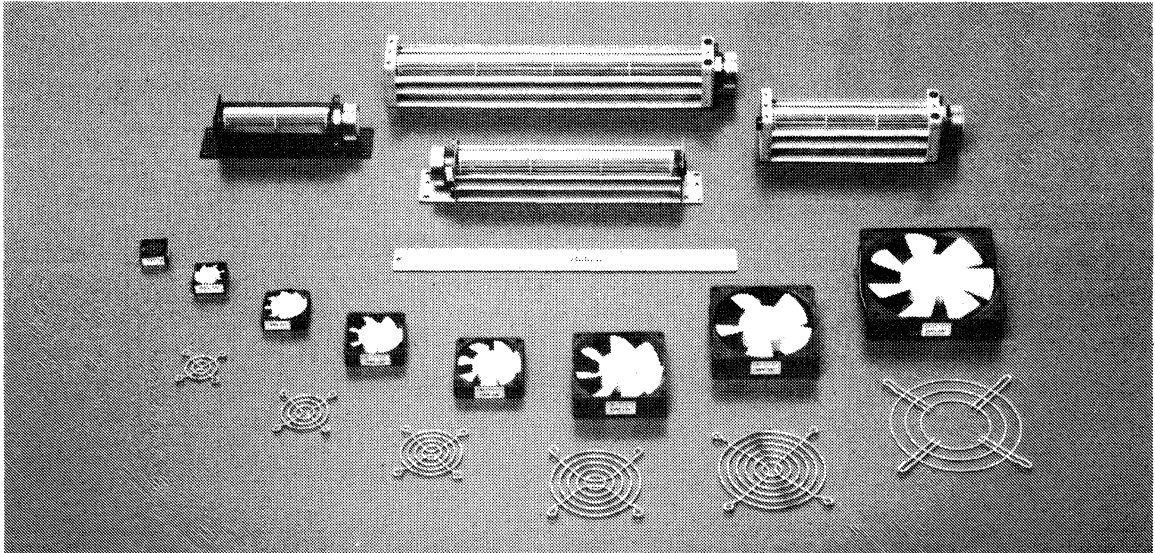
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Buena Park, CA 90620
(714) 739 5797, fax 5898





Advanced Technology Company



Advanced Technology's line of Super-Thin, Super-Alert, and standard fans are the result of Advanced Technology Company and its affiliates' experience in design and development of optimized brushless motors and highly efficient fan designs.

Our appreciation of the customer's cooling requirements, mechanical constraints, noise considerations, and cost factors allow Advanced Technology Company to offer optimized solutions to your cooling problems.

Call us today!

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E Series.....	C•1485
S Series.....	C•1485

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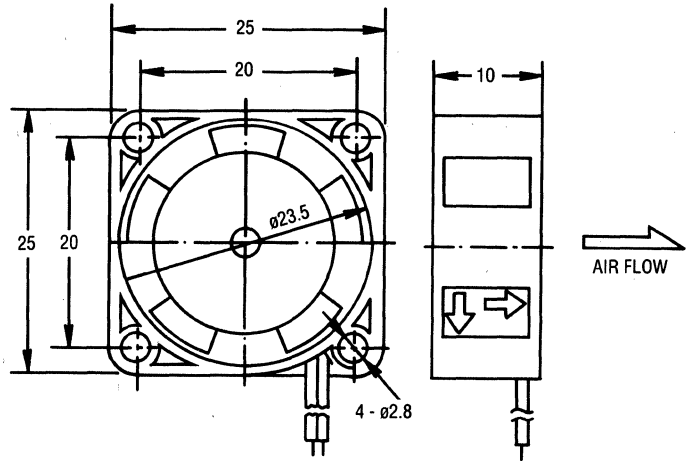
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AD02

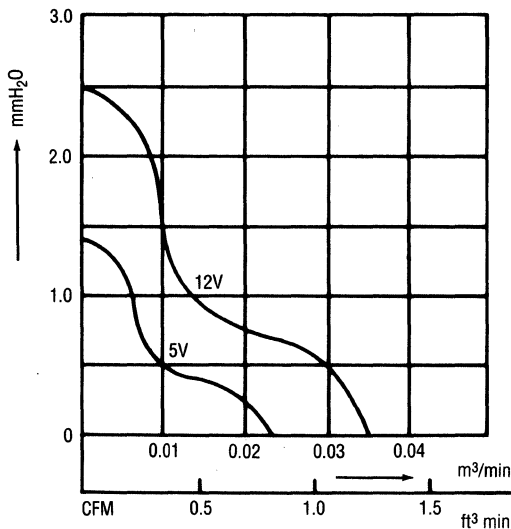
25 X 25 X 10

SPOT COOLING, ALSO SUITABLE FOR SMALL SPACE REQUIREMENTS-LAP-TOPS PC'S AND NOTEBOOK, PC.

VOLTAGE AVAILABLE			
5	12	24	48
X	X		



MODEL	NOMINAL VOLTAGE (V)	INPUT CURRENT (A)	INPUT POWER (W)	SPEED (rpm)	AIR FLOW (CFM)	STATIC PRESSURE (INCH-H2O)	NOISE LEVEL (dB A)	WEIGHT (g)
AD0205HB-G51	5	.09	0.45	8000	0.8	0.06	25	8
AD0212HB-G51	12	.08	0.96	8000	1.13	0.1	29	8



Type		AD0205HB-G51
Rated Voltage (V)		5
Rated Current (A)	Locked	0.20
	Moved	0.09
Max. Air Flow (m ³ /min)		0.023
Max. Air Pressure (mmH ₂ O)		1.4
Noise (dB) at 1m		25
Operating Voltage (V)		4.5 - 5.5
Operating Temperature (°C)		-10 ~ +60
Life Expectancy (h)		30,000
Weight (g)		8

Type		AD0212HB-G51
Rated Voltage (V)		12
Rated Current (A)	Locked	0.20
	Moved	0.08
Max. Air Flow (m ³ /min)		0.035
Max. Air Pressure (mmH ₂ O)		2.5
Noise (dB) at 1m		29
Operating Voltage (V)		10.2 - 13.8
Operating Temperature (°C)		-10 ~ +60
Life Expectancy (h)		30,000
Weight (g)		8

NOTE: THE BEARING TYPE IS NOTED AT THE EIGHTH PLACE IN THE PART NUMBER. "S"—FOR SLEEVE AND "B"—FOR BALL. BOTH TYPES ARE AVAILABLE.

LIFE EXPECTANCY: BALL BEARINGS 50K/HRS AT 25°C, 65%RH. SLEEVE BEARINGS 20K/HRS AT 25°C, 65%RH.

WARRANTY: FAN MOTORS ARE WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF DELIVERY.

SAFETY APPROVALS UL E132139 CSA LR85488 * APPLIED UL



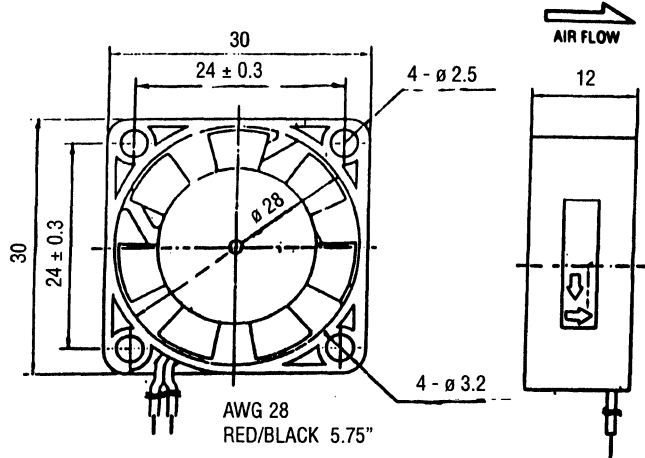
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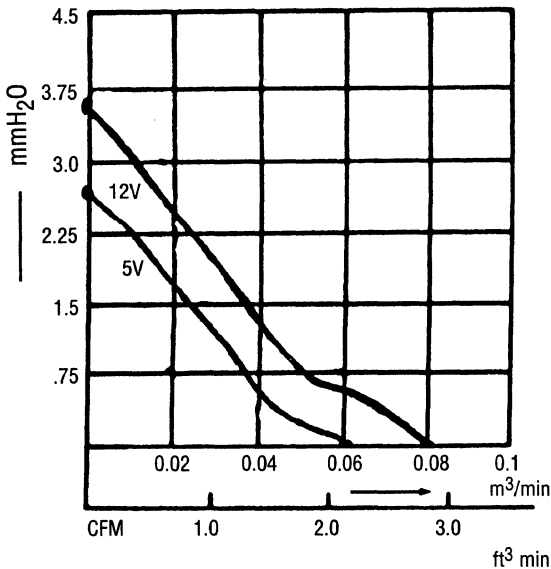
AD03

SPOT COOLING, ALSO
SUITABLE FOR SMALL
SPACE REQUIREMENTS-
LAP-TOPS PC'S AND
NOTEBOOK PC'S

VOLTAGE AVAILABLE			
5	12	24	48
X	X		



MODEL	NOMINAL VOLTAGE (V)	INPUT CURRENT (A)	INPUT POWER (W)	SPEED (rpm)	AIR FLOW (CFM)	STATIC PRESSURE (INCH-H2O)	NOISE LEVEL (dB A)	WEIGHT (g)
AD0305HB-G70	5	.07	.35	5000	2.0	.08	23	10
AD0312HB-G70	12	.06	.72	6500	2.7	.16	27	10



Type		
Rated Voltage	(V)	5
Rated Current (A)	Locked	0.2
	Moved	0.07
Max. Air Flow	(m³/min)	0.06
Max. Air Pressure	(mmH ₂ O)	2.0
Noise	(dB) @ 1m	23
Operating Voltage	(V)	4.5V-5.5V
Operating Temperature	(°C)	-10 +60
Life Expectancy	(h)	40,000
Weight	(g)	10

Type		
Rated Voltage	(V)	12
Rated Current (A)	Locked	0.2
	Moved	0.06
Max. Air Flow	(m³/min)	0.08
Max. Air Pressure	(mmH ₂ O)	2.7
Noise	(dB) @ 1m	27
Operating Voltage	(V)	10.2V-13.8V
Operating Temperature	(°C)	-10 +60
Life Expectancy	(h)	40,000
Weight	(g)	10



Advanced Technology Company

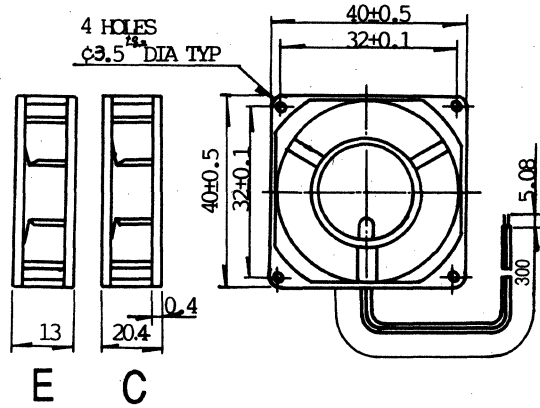
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AD04

40 x 40 x 10

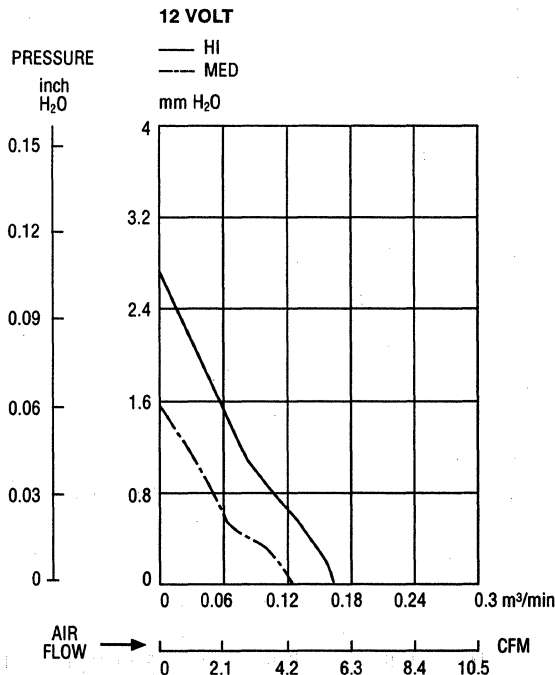
SPOT COOLING, ALSO
SUITABLE FOR SMALL
SPACE REQUIREMENTS-
LAP-TOPS AND PC'S

VOLTAGE AVAILABLE TENSION DISPONIBLE			
5	12	24	48
X	X		



Other technical characteristics are available on request.

MODEL	NOMINAL VOLTAGE (V)	INPUT CURRENT (A)	INPUT POWER (W)	SPEED (rpm) (TR/MIN)	AIR FLOW (CFM)	STATIC PRESSURE (INCH-H2O)	NOISE LEVEL (dB A)	WEIGHT (g)
AD0405HS-G70	5	0.15	0.75	6000	6.2	0.12	24.5	24
AD0405MS-G70	5	0.11	0.55	4200	4.2	0.06	16.0	
AD0412HS-G70	12	0.10	1.2	6000	6.2	0.12	24.5	
AD0412MS-G70	12	0.08	1.96	4200	4.2	0.06	16.0	





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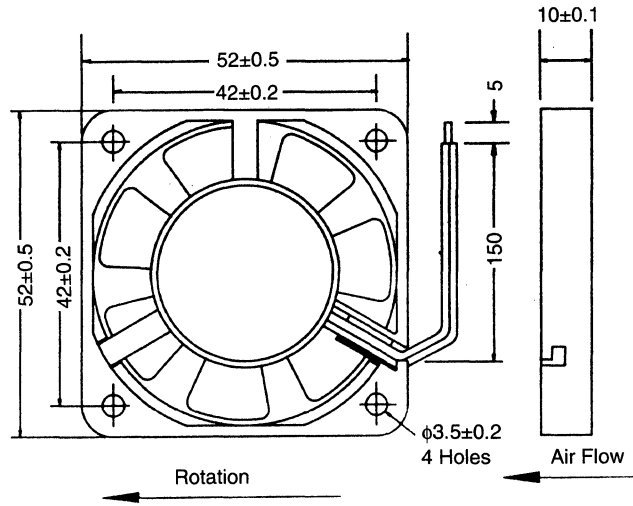
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AD05

52 x 52 x 15

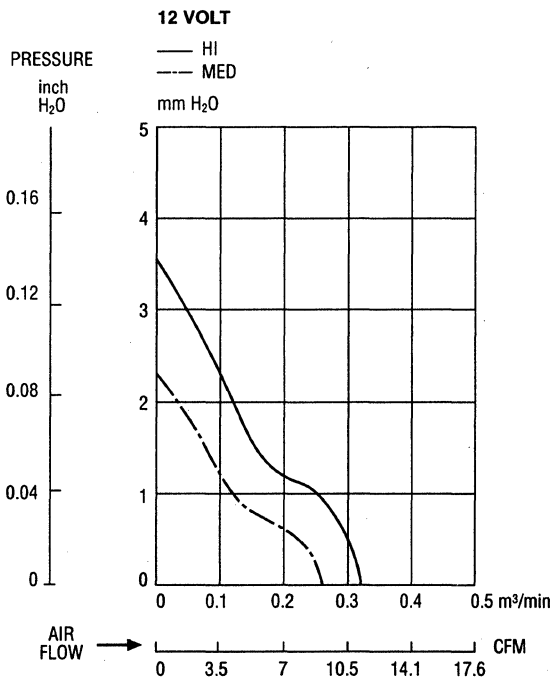
SUITABLE FOR PC'S
WORD PROCESSORS
TEST EQUIPMENT
AND POWER SUPPLIES

VOLTAGE AVAILABLE			
5	12	24	48
□	X	□	□



Other technical characteristics are available on request.

MODEL	NOMINAL VOLTAGE (V)	INPUT CURRENT (A)	INPUT POWER (W)	SPEED (rpm)	AIR FLOW (CFM)	STATIC PRESSURE (INCH-H2O)	NOISE LEVEL (dB A)	WEIGHT (g)
	(V)	(A)	(W)	(TR/MIN)	DEBIT (CFM)	(INCH-H2O)	(dB A)	(g)
AD0512HS-D71	12	0.10	1.44	4600	11.7	0.14	28.5	55
AD0512MS-D71	12	0.09	1.08	3700	9.5	0.09	22.0	





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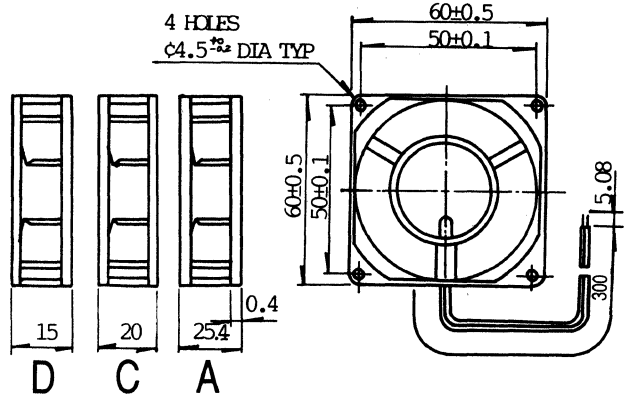
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AD06

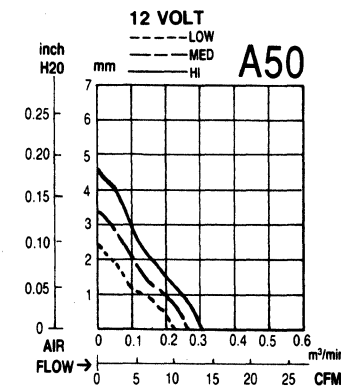
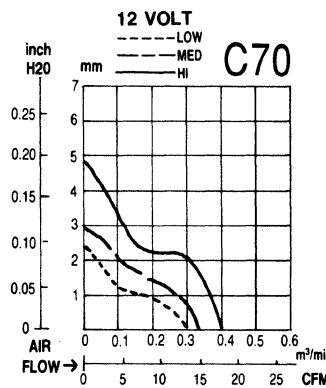
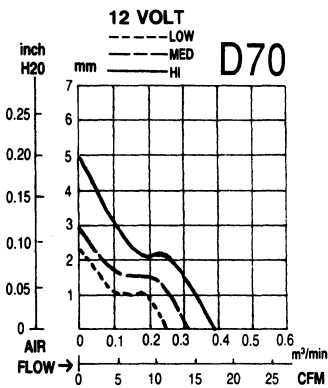
60 × 60 × 15
60 × 60 × 20
60 × 60 × 25

SUITABLE FOR PC'S WORD PROCESSORS TEST EQUIPMENT AND POWER SUPPLIES.

VOLTAGE AVAILABLE			
5	12	24	48
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	MODEL	VOLTAGE	CURRENT	POWER	SPEED	AIR FLOW	STATIC PRESSURE	SOUND LEVEL	WEIGHT
		(V)	(Amp)	(W)	(rpm)	(CFM)	(INCH-H2O)	(dB A)	(g)
*	AD0612LS-D70	12	0.10	1.20	3500	11.5	0.10	20.0	20.0
*	AD0612MS-D70	12	0.07	0.84	3900	13.1	0.11	23.0	
*	AD0612HS-D70	12	0.08	0.96	4500	16.7	0.17	27.0	
	AD0612LS-C70	12	0.10	1.20	3500	13.6	0.10	21.0	49.2
	AD0612MS-C70	12	0.07	0.84	3900	14.1	0.12	25.0	
	AD0612HS-C70	12	0.08	0.96	4500	17.7	0.19	29.0	
	AD0612LS-A50	12	0.09	1.08	3500	10.0	0.100	27.5	68.0
	AD0612MS-A50	12	0.11	1.32	3900	11.5	0.14	31.0	
	AD0612HS-A50	12	0.13	1.80	4500	13.6	0.185	33.0	
*	AD0624LS-D70	24	0.08	1.92	3400	10.5	0.10	21.0	20.0
*	AD0624MS-D70	24	0.10	2.40	3700	13.5	0.12	25.0	
*	AD0624HS-D70	24	0.07	1.68	4300	16.7	0.19	29.0	
	AD0624MS-C70	24	0.10	2.40	3700	14.1	0.12	25.0	49.2
	AD0624HS-C70	24	0.07	1.68	4300	17.7	0.19	29.0	
	AD0624MS-A50	24	0.10	1.20	3900	14.1	0.12	25.0	
	AD0624HS-A50	24	0.07	1.68	4500	17.7	0.19	29.0	68.0



NOTE: THE BEARING TYPE IS NOTED AT THE EIGHTH PLACE IN THE PART NUMBER. "S"—FOR SLEEVE AND "B"—FOR BALL. BOTH TYPES ARE AVAILABLE.

LIFE EXPECTANCY: BALL BEARINGS 50K/HRS AT 25°C, 65%RH. SLEEVE BEARINGS 20K/HRS AT 25°C, 65%RH.

WARRANTY: FAN MOTORS ARE WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF DELIVERY.

SAFETY APPROVALS UL E132139 CSA LR85488 * APPLIED UL



Advanced Technology Company

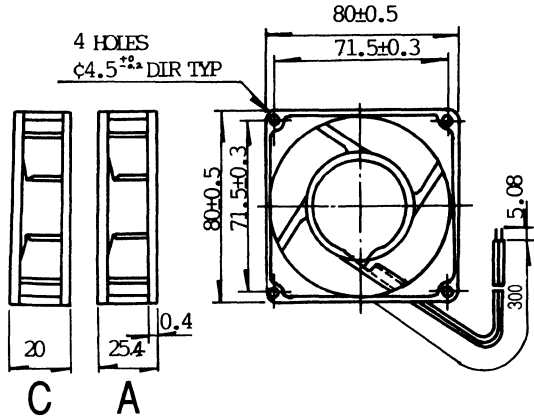
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AD08

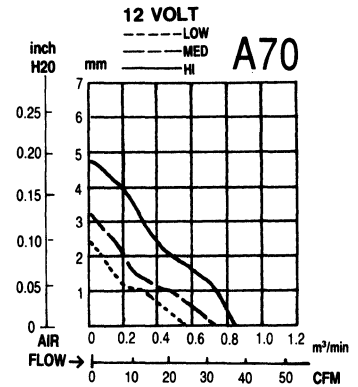
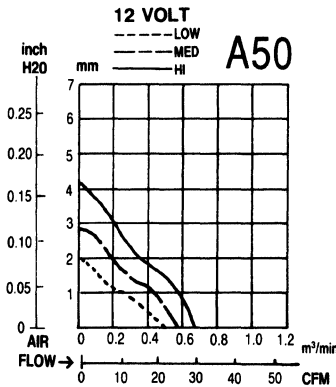
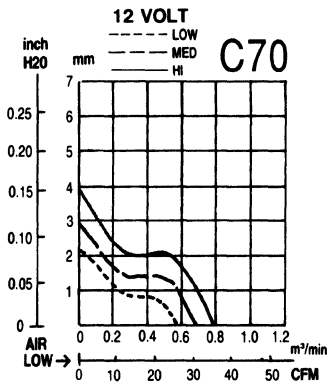
80 × 80 × 20
80 × 80 × 25-5
80 × 80 × 25-7

LARGER AIR FLOW LOWER NOISE.
SUITABLE FOR POWER SUPPLIES
AND MEASURING INSTRUMENTS.

VOLTAGE AVAILABLE			
5	12	24	48
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



MODEL	VOLTAGE (V)	CURRENT (Amp)	POWER (W)	SPEED (rpm)	AIR FLOW (CFM)	STATIC PRESSURE (INCH-H2O)	SOUND LEVEL (dB A)	WEIGHT (g)
* AD0812LS-C70	12	0.09	1.08	2030	26.5	0.07	23.0	70.1
* AD0812MS-C70	12	0.12	1.44	2440	30.0	0.10	27.0	
* AD0812HS-C70	12	0.17	2.04	3010	37.1	0.15	32.0	
AD0812LS-A50	12	0.10	1.20	2100	21.0	0.08	25.0	108.8
AD0812MS-A50	12	0.12	1.44	2550	25.0	0.12	30.0	
AD0812HS-A50	12	0.17	2.04	3000	30.0	0.165	36.0	
AD0812LS-A70	12	0.09	1.08	2030	26.5	0.07	23.0	83.2
AD0812MS-A70	12	0.12	1.44	2440	30.0	0.10	27.0	
AD0812HS-A70	12	0.17	2.04	3010	37.1	0.15	32.0	
* AD0824LS-C70	24	0.08	1.92	2030	26.5	0.07	23.0	70.1
* AD0824MS-C70	24	0.12	2.88	2440	30.0	0.10	27.0	
* AD0824HS-C70	24	0.17	4.08	3010	37.1	0.15	32.0	
AD0824LS-A50	24	0.08	1.92	2100	26.0	0.10	25.0	108.8
AD0824MS-A50	24	0.10	2.40	2550	31.0	0.13	27.0	
AD0824HS-A50	24	0.12	2.88	3000	36.0	0.18	29.0	
* AD0824LS-A70	24	0.08	1.92	2030	26.5	0.07	23.0	83.2
* AD0824MS-A70	24	0.12	2.88	2440	30.0	0.10	27.0	
* AD0824HS-A70	24	0.17	4.08	3010	37.1	0.15	32.0	



NOTE: THE BEARING TYPE IS NOTED AT THE EIGHTH PLACE IN THE PART NUMBER. "S"—FOR SLEEVE AND "B"—FOR BALL. BOTH TYPES ARE AVAILABLE.

LIFE EXPECTANCY: BALL BEARINGS 50K/HRS AT 25°C, 65%RH. SLEEVE BEARINGS 20K/HRS AT 25°C, 65%RH.

WARRANTY: FAN MOTORS ARE WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF DELIVERY.

SAFETY APPROVALS UL E132139 CSA LR85488 * APPLIED UL



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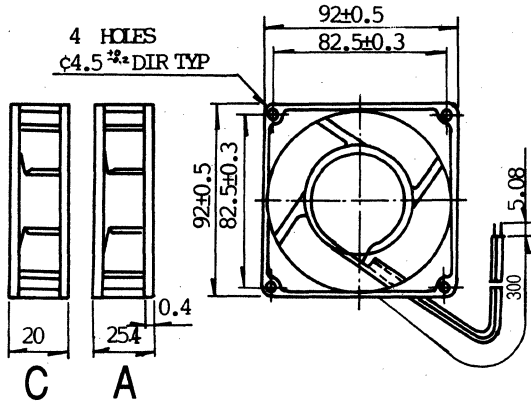
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AD09

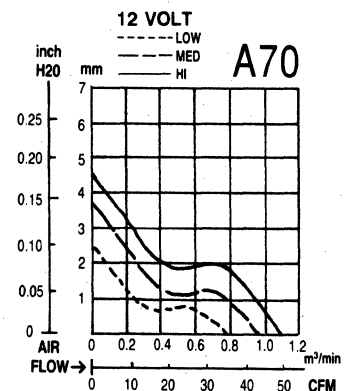
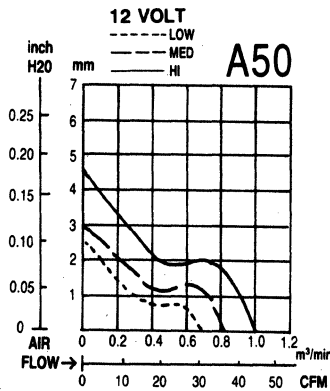
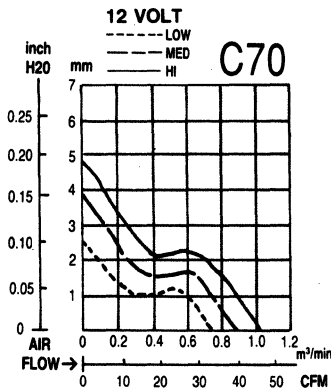
90 × 90 × 20
90 × 90 × 25-5
90 × 90 × 25-7

THIS FAN IS SUITABLE FOR LARGE AIR FLOW, LOW NOISE APPLICATION PERIPHERALS.

VOLTAGE AVAILABLE			
5	12	24	48
X	X	X	X



MODEL	VOLTAGE (V)	CURRENT (Amp)	POWER (W)	SPEED (rpm)	AIR FLOW (CFM)	STATIC PRESSURE (INCH-H2O)	SOUND LEVEL (dB A)	WEIGHT (g)
* AD0912LS-C70	12	0.13	1.56	2030	34.6	0.09	25.0	85.1
* AD0912MS-C70	12	0.16	1.92	2430	41.7	0.14	30.0	
* AD0912HS-C70	12	0.22	2.64	2740	47.7	0.17	33.0	
AD0912LS-A50	12	0.15	1.8	2100	31.5	0.10	31.0	124.6
AD0912MS-A50	12	0.18	2.16	2550	37.0	0.12	35.0	
AD0912HS-A50	12	0.26	3.12	3000	43.0	0.17	40.0	
AD0912LS-A70	12	0.13	1.56	2030	34.6	0.09	25.0	99.0
AD0912MS-A70	12	0.16	1.92	2430	41.7	0.14	30.0	
AD0912HS-A70	12	0.22	2.64	2740	47.7	0.17	33.0	
* AD0924LS-C70	24	0.08	1.92	2030	34.6	0.09	25.0	85.9
* AD0924MS-C70	24	0.10	2.40	2430	41.7	0.14	30.0	
* AD0924HS-C70	24	0.10	2.40	2740	47.7	0.17	33.0	
AD0924LS-A50	24	0.10	2.40	2100	31.5	0.11	27.0	124.6
AD0924MS-A50	24	0.12	2.88	2550	37.0	0.15	30.0	
AD0924HS-A50	24	0.14	3.36	3000	43.0	0.19	32.0	
* AD0924LS-A70	24	0.10	1.92	2030	34.6	0.09	25.0	99.0
* AD0924MS-A70	24	0.10	2.40	2430	41.7	0.14	30.0	
* AD0924HS-A70	24	0.08	2.40	2740	47.7	0.17	33.0	



NOTE: THE BEARING TYPE IS NOTED AT THE EIGHTH PLACE IN THE PART NUMBER. "S"—FOR SLEEVE AND "B"—FOR BALL. BOTH TYPES ARE AVAILABLE.

LIFE EXPECTANCY: BALL BEARINGS 50K/HRS AT 25°C, 65%RH. SLEEVE BEARINGS 20K/HRS AT 25°C, 65%RH.

WARRANTY: FAN MOTORS ARE WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF DELIVERY.

SAFETY APPROVALS UL E132139 CSA LR85488 * APPLIED UL

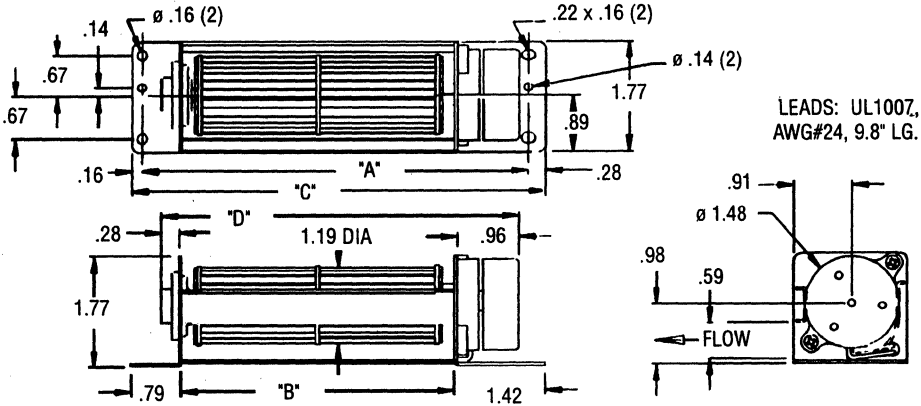


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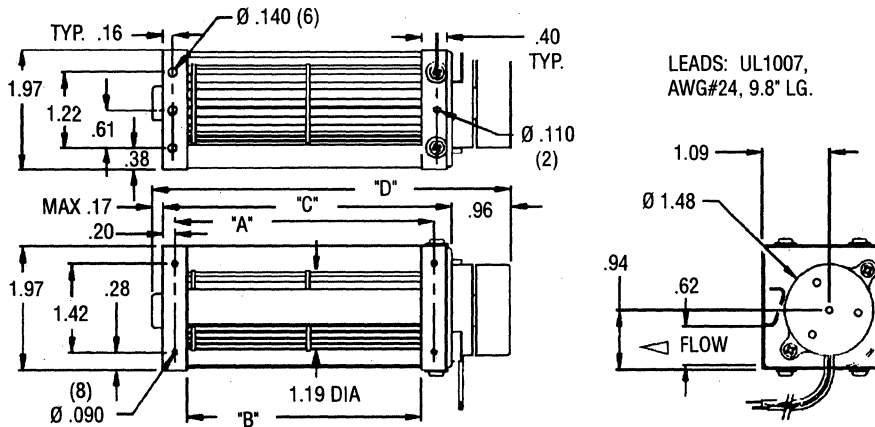
CROSSFLOW FAN / DC BRUSHLESS MOTOR

"E" Series



PART NO.	DIMENSIONS (mm/inch)				RPM	CFM	WATTS	AMPERES	
	A	B	C	D				12V	24V
JCR-3010E	154/6.06	109/4.29	165/6.50	142/5.61	4150	19	3.5	0.4	0.2
JCR-3015E	204/8.03	159/6.26	215/8.46	192/7.58	3950	27	4	0.3	0.15
JCR-3020E	254/10.00	211/8.30	267/10.51	244/9.62	3500	41	4.5	0.35	0.18
JCR-3030E	359/14.13	315/12.40	371/14.60	348/13.72	3200	55	5	0.4	0.2

"S" Series

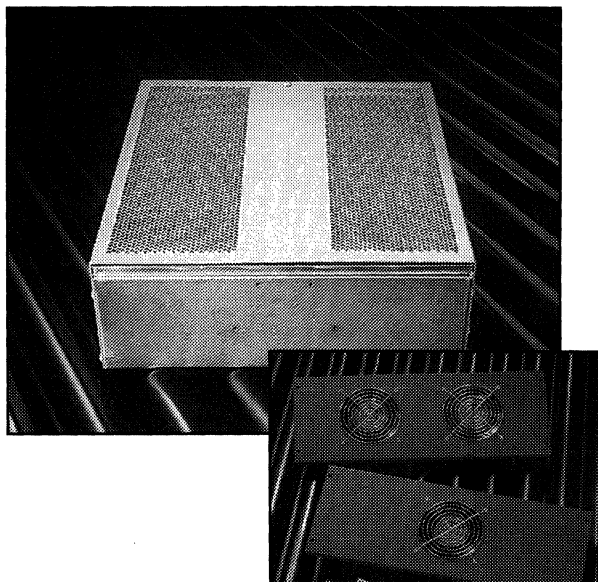


PART NO.	DIMENSIONS (mm/inch)				RPM	CFM	WATTS	AMPERES	
	A	B	C	D				12V	24V
JCR-3010S	108/4.24	98/3.84	120/4.71	148/5.84	4150	19	3.5	0.4	0.2
JCR-3015S	158/6.22	148/5.82	170/6.68	198/7.81	3950	27	4	0.3	0.15
JCR-3020S	208/8.19	198/7.80	220/8.66	249/9.79	3500	41	4.5	0.35	0.18
JCR-3030S	308/12.11	297/11.72	320/12.58	348/13.71	3200	55	5	0.4	0.2

ISO 9002 CERTIFIED**HIGH QUALITY, HIGH EFFICIENCY TUBE AXIAL FANS,
MOTORIZED IMPELLERS AND CENTRIFUGAL BLOWERS**

In applications where temperature control is essential, AMCO-engineered cooling devices have been the components of choice for generations of design engineers. *Why?* For precisely the reason AMCO enclosures are specified— quality design, exacting manufacture, and levels of performance and service that give you peace-of-mind.

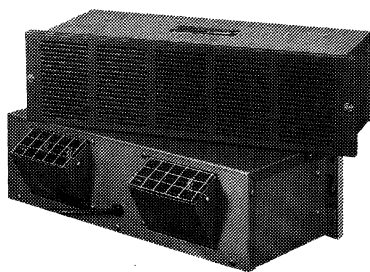
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- AMCO dual scroll centrifugal blowers are known for exceptional performance and design flexibility.
- Our tube axial fans maximize air movement while minimizing space requirements. They're ideal for applications with minimal air flow restrictions.



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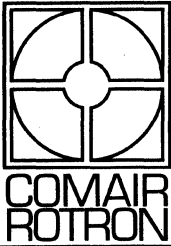
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COOLING
DEVICES FOR TEMPERATURE CONTROL





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DESIGN

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QUALITY CONTROL

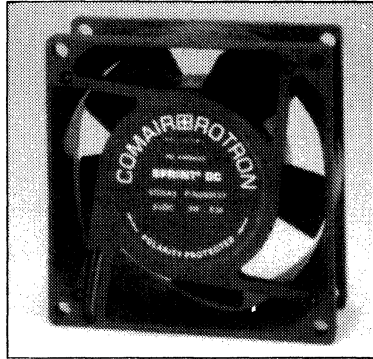
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When you choose Comair Rotron for your air movement needs, you have the advantage of quality, service, price, performance, research and development, and most important, technical support from our Application Engineering Department. Our Customer Service representative will make sure that your order is rapidly placed and your requirements are fulfilled. We're here for you to answer any questions, facilitate your ordering process and help meet your deadline.

SPRINT® DC

16-40 CFM (7.5 to 19 L/sec)



3.15" square x 1.26" deep (80.0 mm x 32.0 mm) 2.812" mounting hole centers

5, 12, 24 or 48 VDC (nominal)

As low as 0.8 watts

Various speed models

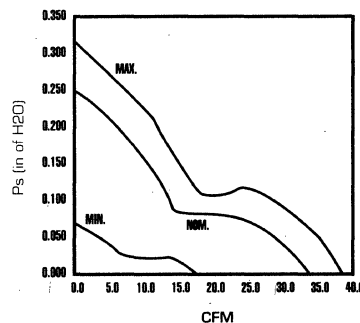
Sleeve or ball bearings

-10°C to +70°C

6.3 oz. (.18 Kg)

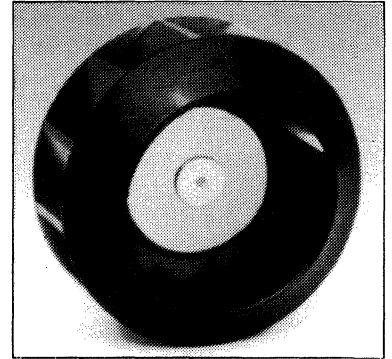
- Low noise level
- Venturi black plastic UL94V-0
- Electronic locked rotor protection or impedance protected
- Polarity protected
- Auto restart
- UL recognized E31293
- CSA certified LR52898
- TUV certificate EN60950
- Tachometer Output sensor option
- Available with ThermoPro-V Technology
- Fan Performance Sensor (FPS) option

Sprint®



DIPLOMAT™ 5.25" MI DC

85 to 170 CFM (40 to 80 L/Sec.)



5.25" diameter x 3.6" deep (133 mm x 91 mm)

12, 24 or 48 volts (nominal)

As low as 29 watts

Various speed models

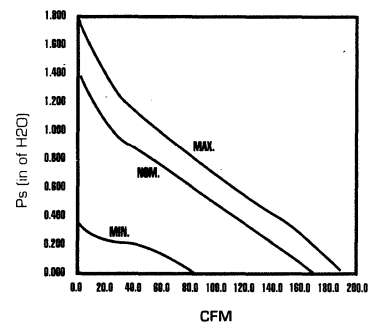
Ball bearings

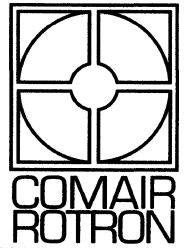
-10°C to +70°C

1.5 lb. (.68 Kg)

- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Patented inlet ring for optimum performance
- Brushless DC motor
- Single Piece Diecast Aluminum
- Impeller black plastic UL94V-0
- Various Fan Performance Sensor Options
- Available with ThermoPro-V Technology
- Tachometer output
- Leadwire and Terminals

Diplomat™ 5.25" MI DC



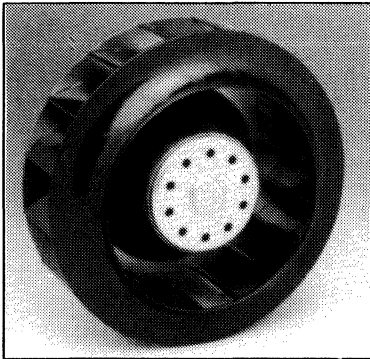


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e-mail: sales@comairrotron.com • web site: http://www.comairrotron.com

DIPLOMAT™ 7.5 MI DC

150 to 275 CFM (153 L/Sec.)



7.55" diameter x 3.58" deep (191.8 mm x 90.4 mm)

12, 24 or 48 volts (nominal)

As low as 36.1 watts

Various speed models

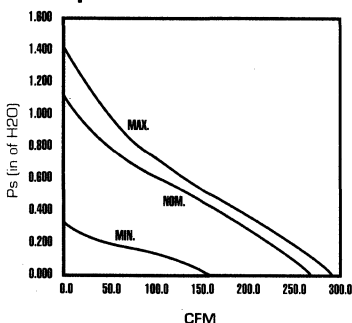
Ball bearings

-10°C to +70°C

2.35 lb. (1.1 Kg)

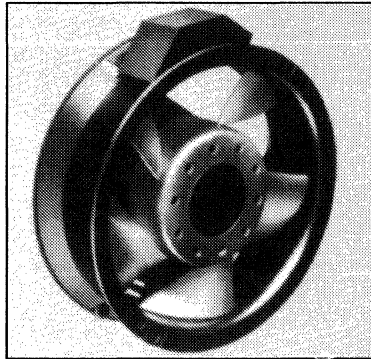
- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Patented inlet ring for optimum performance
- Brushless DC motor
- Single Piece Diecast Aluminum
- Impeller black plastic UL94V-0
- Various Fan Performance Sensor Options
- Tachometer output
- Available with ThermaPro-V Technology
- Leadwire and terminals

Diplomat™ 7.5 MI DC



FALCON™ DC

300 CFM (141 L/sec)



6.75" X 2.165" deep (171.5 mm x 55.0 mm)

12, 24 or 48 volts (nominal)

As low as 34.5 watts

Various speed models

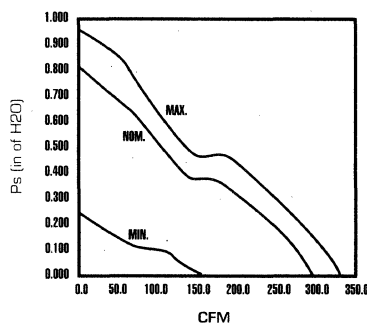
Ball bearings

-10°C to +70°C

1.90 lb. (.86 Kg)

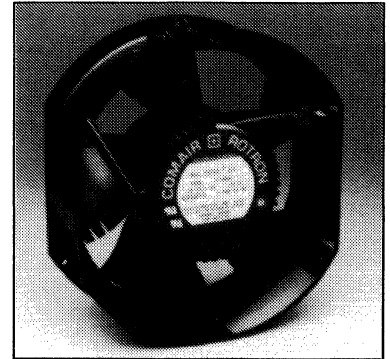
- Feathered Edge for low noise
- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Brushless DC motor design
- Single piece die-cast aluminum
- Various fan performance sensor options
- Tachometer output
- Available with ThermaPro-V Technology
- Terminals and leadwires

Falcon™ DC



MALTESE™ DC

300 CFM (141 L/sec)



6.75" X 5.92" x 2.165" deep (171.5 mm x 150.4 mm x 55.0 mm)

12, 24, 48 volts (nominal)

As low as 34.5 watts

Various speed models

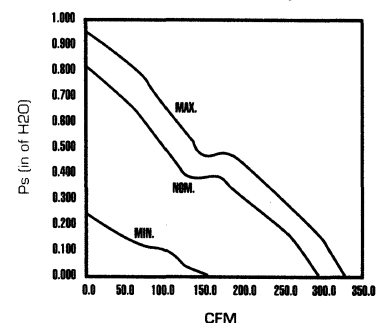
Ball bearings

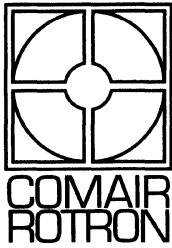
-10°C to +70°C

1.90 lb. (.86 Kg)

- Feathered Edge for low noise
- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Brushless DC motor design
- Single piece die-cast aluminum
- Various fan performance sensor options
- Available with ThermaPro-V Technology
- Tachometer output
- Terminals and leadwires

Maltese™ DC





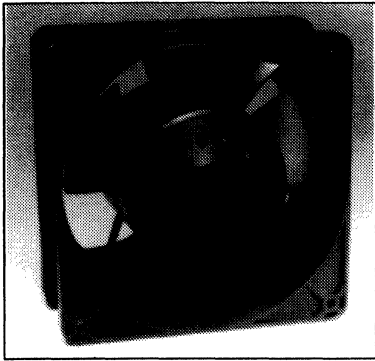
2675 Customhouse Court, San Ysidro, CA 92173

Tel: (619) 661-6688 • Fax: (619) 661-1757

e-mail: sales@comairrotron.com • web site: <http://www.comairrotron.com>

TARZAN® DC

330 CFM (155 L/Sec.)



6.91" square x 4.40" deep (175.5 mm x 112 mm)

24, 48 volts (nominal)

As low as 33.6 watts

Various speed models

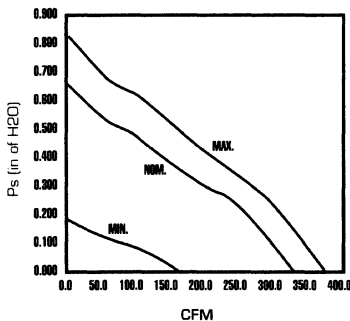
Ball bearings

-10°C to +70°C

3.15 lb. (1.43 Kg)

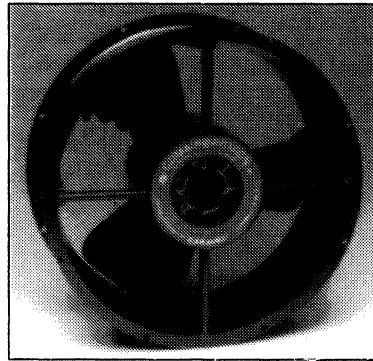
- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Brushless DC motor design
- Venturi, black plastic UL94V-0
- Propeller, black plastic UL94V-0
- Various Fan Performance Sensor Options
- Available with ThermaPro-V Technology
- Tachometer output
- Leadwire and terminals

Tarzan® DC



CARAVEL® DC

550 CFM (250 L/Sec.)



10.00" square x 3.50" deep (254.0 mm x 88.9 mm)

24, 48 volts (nominal)

As low as 29 watts

Various speed models

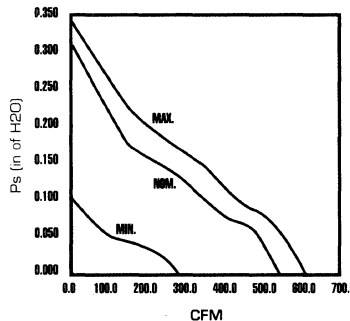
Ball bearings

-10°C to +70°C

3.40 lb. (1.54 Kg)

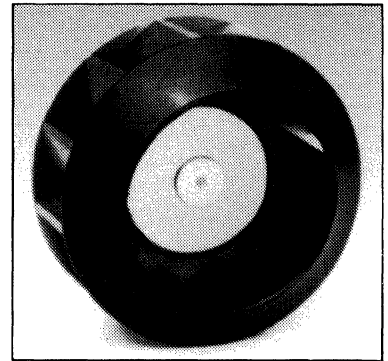
- Feathered Edge for low noise
- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Brushless DC motor
- Single Piece Diecast Aluminum
- Various fan Performance Sensor Options
- Available with ThermaPro-V Technology
- Tachometer output
- Lead wire and terminals

Caravel® DC



DIPLOMAT™ 5.25 MI AC

85 to 170 CFM (40 to 80 L/Sec)



5.29" diameter x 3.60" deep (134 mm x 91.0 mm)

115 or 220/230 VAC, 1 phase, 50/60 Hz

As low as 30 watts

2850/3350

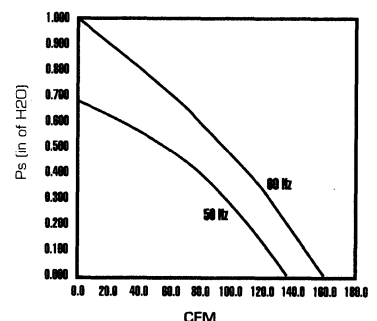
Ball bearings

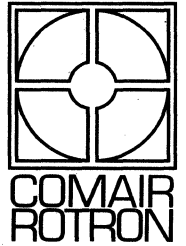
-10°C to +70°C

1.95 lb. (.89 Kg)

- Patented inlet ring available for optimum performance
- Impeller, black plastic, UL94V-0
- Single piece die-cast aluminum base
- UL recognized EN31293
- CSA certified/UL EN31293
- TUV certified EN60950
- Automatic reset thermal protector

Diplomat™ 5.25 MI AC



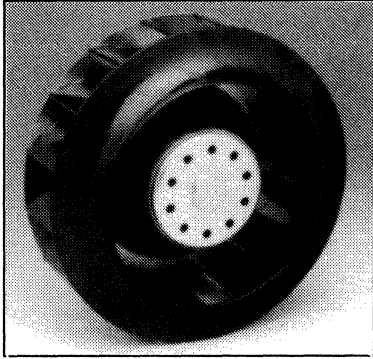


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e-mail: sales@comairrotron.com • web site: http://www.comairrotron.com

DIPLOMAT™ 7.5 MI AC

150 to 275 CFM (153 L/Sec.)



7.55" diameter x 3.58" deep (191.8 mm x 90.4 mm)

115 or 220/230 VAC, 1 phase, 50/60 Hz

As low as 36.1 watts

2100

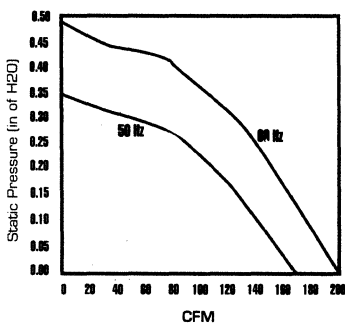
Ball bearings

-10°C to +70°C

2.35 lb. (1.1 Kg)

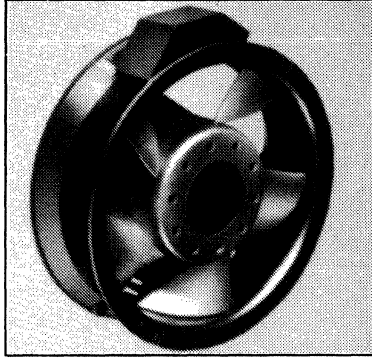
- UL recognized E31293
- CSA certified/UL E31293
- TUV certified EN60950
- Patented inlet ring for optimum performance
- Single Piece Dicast Aluminum Base
- Impeller black plastic UL94V-0
- Various Fan Performance Sensor Options
- Leadwire and terminals

Diplomat™ 7.5 MI AC



FALCON™ AC

300 CFM (141 L/Sec.)



6.75" diameter x 2.165" deep (171.5 mm x 55 mm) 6.375" mounting hole centers

115 or 220/230 VAC, 1 phase, 50/60 Hz

As low as 41.1 watts

3400

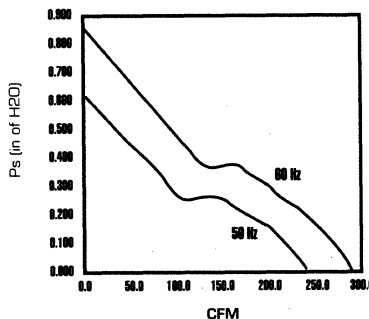
Ball bearings

-10°C to +70°C

2.25 lb. (1.02 Kg)

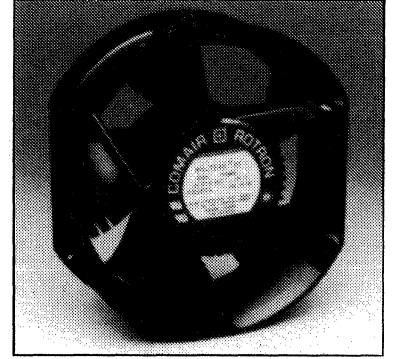
- Feathered Edge blade for lower noise
- Rugged single piece die-cast aluminum housing
- UL recognized EN31293
- CSA certified/UL EN31293
- TUV certified EN609503
- Fan Performance Sensor (FPS) options
- Automatic reset thermal protector
- Flame retardant polycarbonate UL94V-0
- 2 pole Permanent Split Capacitor motor

Falcon™ AC



MALTESE™ AC

300 CFM (141 L/Sec.)



6.75" x 5.92" x 2.165" deep (171.5 mm x 150.4 mm x 55 mm) 6.375" mounting hole ctrs

115 or 220/230 VAC, 1 phase, 50/60 Hz

As low as 41 watts

3400

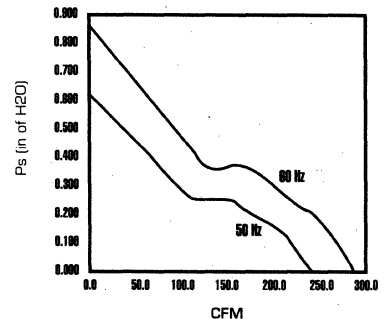
Ball bearings

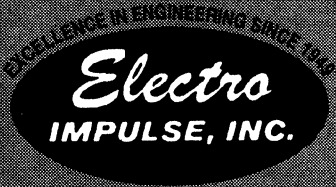
-10°C to +70°C

2.25 lb. (1.02 Kg)

- Feathered Edge blade for lower noise
- Rugged single piece die-cast aluminum housing
- CSA certified/UL EN31293
- TUV certified EN609503
- Fan Performance Sensor (FPS) options
- Automatic reset thermal protector
- Flame retardant polycarbonate UL94V-0
- 2 pole Permanent Split Capacitor motor

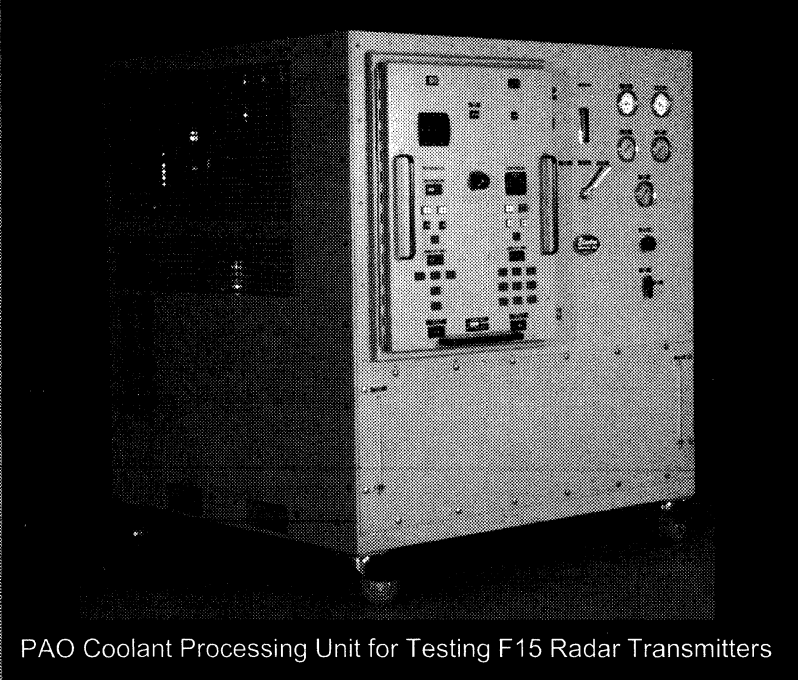
Maltese™ AC





LIQUID COOLING SYSTEMS DUMMY LOADS AND RF CALORIMETERS

COOLING SYSTEMS

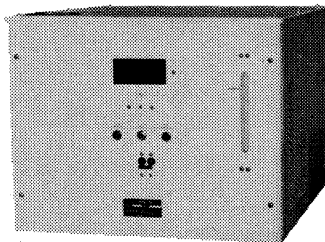


PAO Coolant Processing Unit for Testing F15 Radar Transmitters

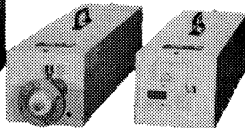
A complete line of custom and standard liquid cooling systems for 50, 60 and 400 Hz. power.

RF POWER CALORIMETERS

Calorimeters provide high accuracy RF power measurement capabilities.



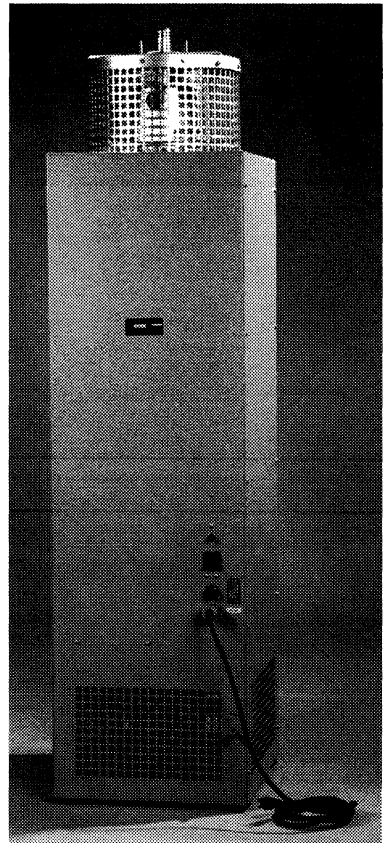
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LOADS



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- Accuracy % of full scale, less load error

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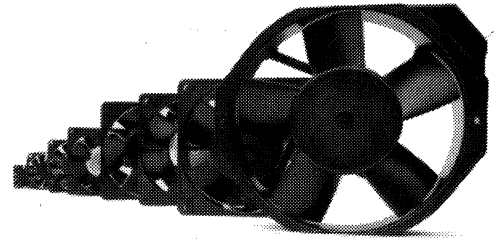
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ETRI DC Fans

size & airflow

ETRI's line of DC fans offers the design engineer a wide range of product. Options in various voltages, speeds, bearing systems and termination configurations allow the engineer to precisely select the performance for his particular application. UL/CSA/VDE approvals on most models.



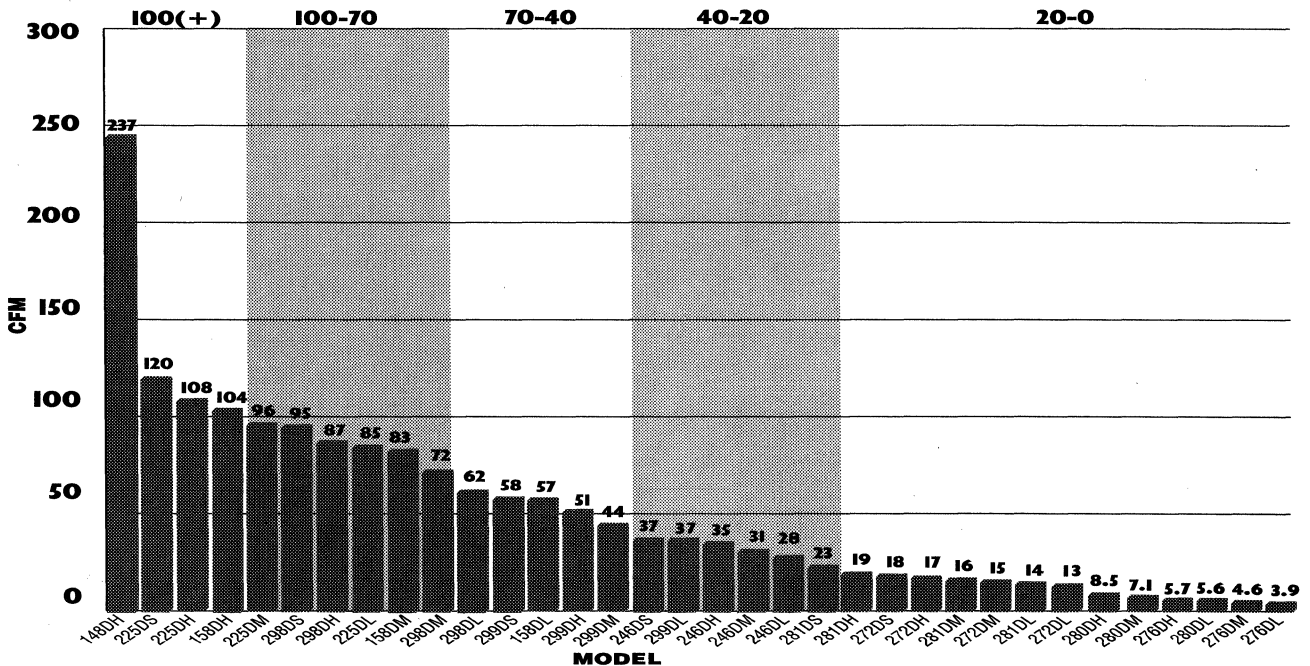
Consult factory for additional models.

Call or write for complete catalog:
 ETRI, Inc.
 1503 Rocky River Road North
 Monroe, NC 28110
 704/289-5423, Fax 704/283-7170
 Internet: www.etrinet.com
 Email: sales@etrinet.com

Size

Fan Size	Fan Size		Shape	Weight		Fan Models
	Inches	mm		ounce	kg	
1.57 sq. x 0.39	40 sq. x 10	□	0.7	0.020	276	
1.57 sq. x 0.79	40 sq. x 20	□	1.2	0.035	280	
2.36 sq. x 0.79	60 sq. x 20	□	1.9	0.055	272	
2.36 sq. x 1	60 sq. x 25	□	2.6	0.074	281	
3.15 sq. x 1	80 sq. x 25	□	2.8	0.080	246	
3.6 sq. x 1	92 sq. x 25	□	3.2	0.090	299	
4.6 sq. x 1	120 sq. x 25	□	6.3	0.180	298	
4.69 sq. x 1.26	120 sq. x 32	□	8.2	0.230	158	
4.6 sq. x 1.5	120 sq. x 38	□	8.8	0.250	225	
6.75 dia. x 1.5	172 dia. x 38	○	27.2	0.770	148	

Airflow



ETRI AC Fans

size & airflow

ETRI has long been a leader in the design of AC air-moving devices, from large mine ventilators to miniature flat axial fans. Today, ETRI air movers are cooling and protecting the most sophisticated of electronic packages, and our basic commitment to uncompromising quality and high performance standards has not changed. UL/CSA/VDE approvals on most AC models.

Consult factory for additional models.

Call or write for complete catalog:

ETRI, Inc.

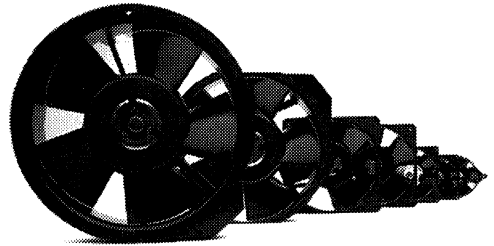
1503 Rocky River Road North

Monroe, NC 28110

704/289-5423, Fax 704/283-7170

Internet: www.etrinet.com

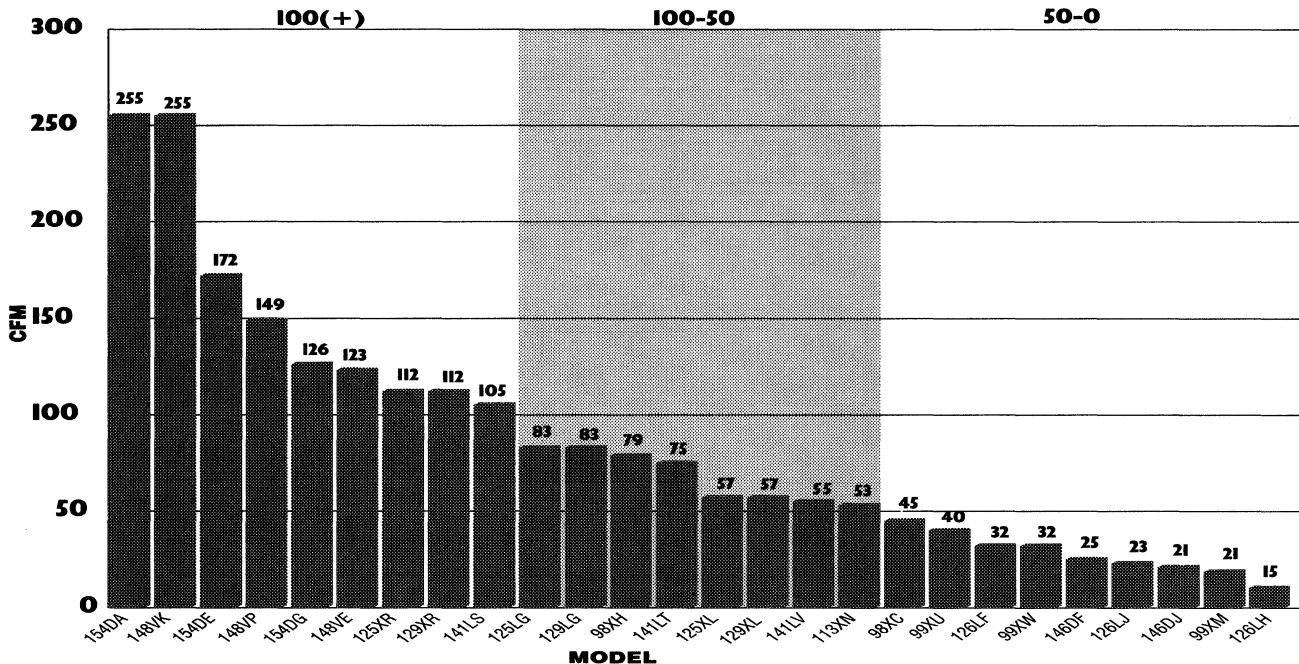
Email: sales@etrinet.com



Size

Fan Size	Fan Size		Shape	Weight		Fan Models
	inches	mm		ounces	kg	
3.15 dia. x 1	80 dia. x 25	○	10.5	0.3	146	
3.15 sq. x 1.5	80 sq. x 38	□	14.0	0.4	126	
3.6 sq. x 1	92 sq. x 25	□	13.9	0.4	99	
3.6 sq. x 1.5	92 sq. x 38	□	21.6	0.6	113	
4.6 sq. x 1	120 sq. x 25	□	16.3	0.5	98	
4.6 sq. x 1.5	120 sq. x 38	□	25.5	0.7	125, 129, 141	
6.75 dia. x 1.5	172 dia. x 38	○	38.7	1.1	148	
6.75 dia. x 2	172 dia. x 50	○	31.0	0.9	154	

Airflow

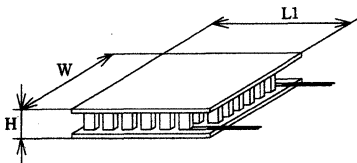


Thermoelectrics From Ferrotec

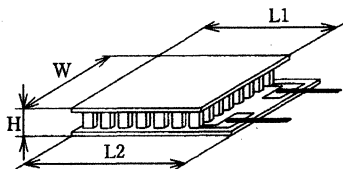
"Cooling For The Future"

Modules may be specified with either of two maximum temperature ratings. For general cooling applications we advise using our "63" series which is rated for continuous operation up to +150°C. For high temperature and thermal cycling applications, we recommend our "95" series. These "Super Chips" are rated for continuous operation at +200°C and exhibit very small changes in resistance when cycling. All of our modules operate over wide temperature ranges.

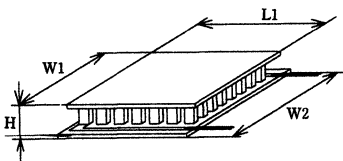
TYPE 1



TYPE 2



TYPE 3



STANDARD THERMOELECTRIC COOLING MODULES

PART NUMBER		Suffix	I _{max} (amps)	Q _{max} (watts)	V _{max} (volts)	CONFIGURATION and DIMENSIONS in millimeters (mm)				
150°C	200°C					Type	W	L1	L2	H*
63 or 95	00/007/012	A,H,M	1.2	0.6	0.9	0	4.0	4.0		2.3
63 or 95	00/018/012	A,H,M		1.6	2.4	2	6.1	6.1	7.6	2.6
63 or 95	02/031/012	A,M		2.8	4.1	1	8	8		2
63 or 95	02/065/012	A,M		5.8	8.6	1	12.2	11.2		2.6
63 or 95	00/007/018	A,H,M	1.8	0.9	0.9	1	4	4		2
63 or 95	02/017/018	A,H,M		2.3	2.3	1	6.05	6.05		2.3
63 or 95	02/018/018	A,H,M		2.3	2.4	2	6.1	6.1	7.6	2.3
63 or 95	02/023/018	A,H,M		3.1	3.2	1	6.1	8		1.7
63 or 95	02/029/018	A,H,M		3.9	4	1	6.1	9.9		2.3
63 or 95	02/031/018	A,M		4.1	4.1	1	8	8		1.7
63 or 95	02/065/018	A,M		8.7	8.6	1	12.2	11.2		2.3
63 or 95	02/018/022	A,H,M	2.2	2.9	2.5	2	7.8	8.4	10.2	3.2
63 or 95	01/017/030	A,L,M	3.0	3.8	2.3	1	11.5	11.5		3.2
63 or 95	01/023/030	A,B		5.2	3.1	1	7.3	22.4		3.2
63 or 95	01/031/030	A,B,M		7	4.1	1	15.1	15.1		3.2
63 or 95	01/071/030	A,B		16	9.4	1	22.4	22.4		3.2
63 or 95	01/127/030	A,B,M		29	16.8	1	29.8	29.8		3.9
63 or 95	01/128/030	A,B		29	17.6	2	29.7	29.7	34.0	3.9
63 or 95	01/017/040	A,B	4.0	5.1	2.3	1	15.1	15.1		4.2
63 or 95	00/031/040	A,B		9.3	4.1	1	20	20		4.2
63 or 95	00/035/040	A,B		10.5	4.6	1	14.8	29.8		4.2
63 or 95	00/071/040	A,B		21	9.4	1	29.8	29.8		4.2
63 or 95	00/127/040	A,B		38	16.8	1	39.7	39.7		4.2
63 or 95	00/128/040	A,B		38	16.9	2	39.7	39.7	42.8	4.2
63 or 95	01/017/040	A,B,M		5.1	2.3	1	11.5	11.5		3.2
63 or 95	01/023/040	A,B		6.9	3.1	1	7.3	22.4		3.2
63 or 95	01/031/040	A,B,M		9.3	4.1	1	15.1	15.1		3.2
63 or 95	01/071/040	A,B		21	9.4	1	22.4	22.4		3.2
63 or 95	01/127/040	A,B,M		38	16.8	1	29.8	29.8		3.9
63 or 95	01/128/040	A,B		38	17.6	2	39.6	39.6	42.8	4.1
63 or 95	00/017/060	A,B	6.0	7.6	2.3	1	15.1	15.1		4.2
63 or 95	00/031/060	A,B		14	4.1	1	20	20		4.2
63 or 95	00/035/060	A,B		16	4.6	1	14.8	29.8		4.2
63 or 95	00/071/060	A,B		32	9.4	1	29.8	29.8		4.2
63 or 95	00/127/060	A,B		57	16.8	1	39.7	39.7		4.2
63 or 95	00/127/060	A,B		57	17.6	1	29.7	29.7		3.68
63 or 95	00/128/060	A,B		57	16.9	2	39.7	39.7	42.8	4.2
63 or 95	00/017/085	A,B	8.5	10.8	2.3	1	15.1	15.1		3.9
63 or 95	00/031/085	A,B		20	4.1	1	20	20		3.9
63 or 95	00/035/085	A,B		22	4.6	1	14.8	29.8		3.9
63 or 95	00/071/085	A,B		45	9.4	1	29.8	29.8		3.9
63 or 95	00/127/085	A,B		80	16.9	2	39.7	39.7	42.8	3.9
63 or 95	00/128/085	A,B		80	16.9	2	39.7	39.7	42.8	3.9
63 or 95	00/031/090	A,B	9	21	3.8	1	29.8	29.8		4.6
63 or 95	00/031/120	A,B	12	63	9.8	1	40.1	40.1		4.6
63 or 95	00/031/150	A,B	15	35	3.8	1	29.8	29.8		4.7
63 or 95	04/071/150	A,B		79	9.8	1	40.1	40.1		4.6
63 or 95	00/031/240	A,B	24	55	3.8	1	39.7	39.7		4.6

*The "H" (Height) dimensions on solderable "M" (Metallized and "H" (Hybrid) modules are slightly larger.
 Notes: All modules have a DT of 70°C unless stated otherwise.
 "B" - Suffix modules are lapped to close height tolerance of +/-0.03 mm.
 95 Series recommended for thermal cycling and applications with temperatures up to 200°C.

TWO-STAGE "CASCADE" MODULES

PART NUMBER	Suffix	I _{max} (amps)	Q _{max} (watts)	V _{max} (volts)	DT _{max} degreeC	Couple Ratio	CONFIGURATION and DIMENSIONS (mm)				
							W1	L1	W2	L2	H
6320/157/040	C	3.5	11	16	93	31/126	39.7	39.7	20	20	7
6320/157/085	C	7	24	17	95	31/126	39.7	39.7	20	20	7
6320/157/090	C	7	37	19	87	59/126	39.7	39.7	28.8	29.8	7

Tabulated specifications are derived from the average performance of actual modules operating in ambient air at sea level. The temperature differential is the difference in temperature between two copper plates attached to the hot and cold module faceplates using zinc-oxide-loaded silicone grease at the plate-to-module interfaces.

The following symbols are used in the tables:

- I_{max} = Maximum or optimum input current in amperes
- Q_{max} = Maximum heat pumping capacity in watts at DT = 0
- V_{max} = Nominal maximum DC input voltage in volts at I_{max} and DT = 30°C
- DT_{max} = Nominal maximum temperature differential in °C at zero heat load

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- Locked rotor and polarity protection
- Industry standard frame and mounting dimensions

- Safety agencies certification
- Engineering technical support (call for other models)



DC Fans (BRUSHLESS)

Frame Size HxWxD mm (Inches)	Model	Voltage (V)	Airflow (CFM)	Input Current (mA)	Input Power (Watts)	Speed (RPM)	Noise Level (dBA)	Weight (Oz)	Construction	Guard Filter Cord
25 x 25 x 10 (1.0 x 1.0 x 0.4)	PO001-05D-1B-8	5	1.0	70	0.35	7700	22	0.3	Plastic housing and impeller, sealed ball bearing, 28AWG wire leads	N/A
	PO001-12D-1B-8	12	1.4	60	0.72	11000	29			
30 x 30 x 12 (1.2 x 1.2 x 0.5)	PO002-05D-1B-8	5	2.1	70	0.35	6500	23	0.4	Plastic housing and impeller, sealed ball bearing, 28AWG wire leads	N/A
	PO002-12D-1B-8	12	2.8	60	0.72	9000	27			
40 x 40 x 10 (1.6 x 1.6 x 0.4)	PO003-05D-1B-3	5	3.5	100	1.2	5200	30	0.7	Plastic housing and impeller, sealed ball bearing, 26AWG wire leads	40FP-45
	PO003-12D-1B-3	12								
40 x 40 x 20 (1.6 x 1.6 x 0.8)	PO005-12D-1B-3	12	5.0	150	1.8	6000	34	1.2	Plastic housing and impeller, sealed ball bearing, 26AWG wire leads	40FP-45
	PO005-24D-1B-3	24		100	2.4					
	PO006-12D-1B-2	12	6.4	95	1.5	6000	31	1.2		
	PO006-24D-1B-2	24		50						
60 x 60 x 25 (2.4 x 2.4 x 1.0)	PO012-12D-2B-7	12	14	80	0.96	3000	24	3.2	Plastic housing and impeller, sealed ball bearing, 26AWG wire leads	5516 60FP-45
	PO012-24D-2B-7	24		40						
	PO019-12D-2B-2	12	19	140	1.8	4300	34	2.7		
62 x 62 x 15 (2.5 x 2.5 x 0.6)	PO014-12D-2B-3	12	14	200	2.4	3700	30	1.5	Plastic housing and impeller, sealed ball bearing, 26AWG wire leads	5516 60FP-45
	PO014-24D-2B-3	24		100						
80 x 80 x 25 (3.2 x 3.2 x 1.0)	PO025-12D-3B-7	12	28	110	1.3	2400	25	3.6	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5508
	PO025-24D-3B-7	24		70	1.7					
	PO035-12D-3B-7	12	35	200	2.4	2950	31	3.6		
	PO035-24D-3B-7	24		100						
92 x 92 x 15 (3.6 x 3.6 x 0.6)	PO022-12D-3B-3	12	25	200	2.4	2250	32	3.0	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5520
	PO022-24D-3B-3	24		100						
92 x 92 x 25 (3.6 x 3.6 x 1.0)	PO040-12D-3B	12	40	180	2.1	3200	38	5.3	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5520
92 x 92 x 32 (3.6 x 3.6 x 1.3)	PO053-12D-3B-2	12	53	280	3.5	3200	39	5.1	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5520
	PO053-24D-3B-2	24		140						
120 x 120 x 25 (4.7 x 4.7 x 1.0)	PM078-12D-4B-2	12	78	370	4.5	2650	42	6.4	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5504 5502
	PM078-24D-4B-2	24		230						
120 x 120 x 38 (4.7 x 4.7 x 1.5)	PM082-12D-4B	12	82	560	6.7	3200	45	9.0	Die cast aluminum housing, plastic impeller, sealed ball bearing, 24AWG wire leads	5504 5502
	PM082-24D-4B	24		300	7.2	3250				
	PM0100-12D-4B-2	12	100	540	7.0	2650	42	8.8	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5504 5502 120FP-30 5505
	PM0100-24D-4B-2	24		320						
	PO106-12D-4B-7	12	108	550	6.6	2950	43	9.2	Plastic housing and impeller, sealed ball bearing, terminal block	5504 5502 120FP-30 5505
	PO106-24D-4B-7	24		310	7.4					
	PO106-48D-4B-7	48		160	7.7				Plastic housing and impeller, sealed ball bearing, terminal block	5504 5502 120FP-30 5505
	PO106-12D-4BT-7	12	108	550	6.6	2950	43	9.2		
	PO117-24D-4B-2	24	117	420	10	3000	49	8.8	Plastic housing and impeller, sealed ball bearing, 24AWG wire leads	5504 5502 120FP-30 5505
	PO117-48D-4B-2	48		210						

Heat Sink Fans

44 x 44 x 7 (1.7 x 1.7 x 0.3)	HS05D44	5	-	90	0.45	-	26	0.6	Aluminum alloy housing, plastic impeller, ball bearing, 28AWG wire leads	N/A
	HS12D44	12		60	0.72		30			

AC Fans

80 x 80 x 20 (3.2 x 3.2 x 0.8)	PM018-115-3B	115	18	-	8.5	2600	33	7	Die cast aluminum housing, plastic impeller, sealed ball bearing 22AWG wire leads	5508
80 x 80 x 25 (3.2 x 3.2 x 1.0)	PM024-115-3B	115	24	-	7.0	3050	36	8	Die cast aluminum housing, plastic impeller, sealed ball bearing 24AWG wire leads	5508
	PM024-230-3B	230				3100				
80 x 80 x 38 (3.2 x 3.2 x 1.5)	PM032-115-3B-7	115	34	-	6.9	3300	38	9.5	Die cast aluminum housing, plastic impeller, sealed ball bearing, terminal block	5508 5505
	PM032-230-3B-7	230			6.6					
92 x 92 x 25 (3.6 x 3.6 x 1.0)	PM040-115-3B	115	40	-	9.5	3100	36	10	Die cast aluminum housing, plastic impeller, ball bearing, terminal block	5520 5505
	PM040-230-3B	230			11.0					
120 x 120 x 20 (4.7 x 4.7 x .8)	PM058-115-4B	115	58	-	11.0	2350	39	10	Die cast aluminum housing, plastic impeller, sealed ball bearing 22AWG wire leads	5504 5502 120FP-30
	PM058-230-4B	230			14.5	2500				
120 x 120 x 25 (4.7 x 4.7 x 1.0)	PM074-115-4B	115	74	-	11.5	2900	43	15	Die cast aluminum housing, plastic impeller, sealed ball bearing, terminal block	5504 5502 120FP-30 5505
	PM074-230-4B	230			12.0		27			
120 x 120 x 38 (4.7 x 4.7 x 1.5)	PM106-115-4BT-2	115	106	-	14.0	2900	41	20	Die cast aluminum housing, plastic impeller, sealed ball bearing, terminal block	5504 5502 120FP-30 5505
	PM106-230-4BT-2	230								
	PM106-115-4B-7	115	102	-	14.0	2900	41	20		
	PM106-230-4B-7	230								
172 Dia x 55 (6.8 Dia x 2.2)	MM235-115-6B	115	235	-	38.0	3350	53	43	All metal, sealed ball bearing, 20AWG wire leads	5506
	MM235-230-6B	230			37.6					

Radial Blowers

120 x 120 x 38 (4.8 x 4.8 x 1.5)	PMB24-115-4B	115	24	-	20	2300	53	23	Plastic housing, plastic wheel, sealed ball bearing 20AWG wire leads	N/A
	PMB24-230-4B	230								



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ORION DC Cooling Fans

Size A X B Inches (mm)	Model Number	Speed RPM	Max. CFM	Noise (dB)	Volts (VDC)	Current (Amp)	Max Static Pres.	Price 1-49 Ball	Price 1-49 Sleeve	
1.57" X .79 (40 x 20) Mtg Ctrs 1.26" (32mm) Figure A	OD4010-05H ()	7000	4.8	31	5	0.1	0.16	10.00	7.00	
	05M ()	5000	3.8	27	5	0.07	0.12	10.00	7.00	
	05L ()	4000	2.5	24	5	0.06	0.08	10.00	7.00	
	OD4010-12H ()	8000	5	31	12	0.07	0.16	10.00	7.00	
	12M ()	6000	3.8	27	12	0.05	0.12	10.00	7.00	
	12L ()	4000	2.5	24	12	0.04	0.08	10.00	7.00	
	OD4010-24H ()	8000	5	31	24	0.06	0.16	10.00	7.00	
	24M ()	6000	3.8	27	24	0.05	0.12	10.00	7.00	
	24L ()	4000	2.5	24	24	0.03	0.08	10.00	7.00	
	1.57" X .79 (40 x 20) Mtg Ctrs 1.26" (32mm) Figure A	OD4020-05H ()	6000	7	30	5	0.12	0.12	10.00	7.00
		05M ()	5000	5.3	24	5	0.1	0.1	10.00	7.00
		05L ()	4000	4	20	5	0.09	0.09	10.00	7.00
OD4020-12H ()		7000	7.5	30	12	0.08	0.08	10.00	7.00	
12M ()		5500	5.3	24	12	0.07	0.07	10.00	7.00	
12L ()		4500	4.5	20	12	0.06	0.06	10.00	7.00	
OD4020-24H ()		7000	7.5	30	24	0.06	0.06	10.00	7.00	
24M ()		5500	5.3	24	24	0.05	0.05	10.00	7.00	
24L ()		4500	4.5	20	24	0.04	0.04	10.00	7.00	
2.36" X .1" (60 x 25) Mtg Ctrs 1.97" (50mm) Figure A		OD6025-05H ()	2800	20	26	5	0.24	0.17	11.00	8.50
		05M ()	2200	15	21	5	0.17	0.14	11.00	8.50
		05L ()	1800	12	18	5	0.12	0.1	11.00	8.50
	OD6025-12H ()	3800	25	30	12	0.15	0.23	11.00	8.50	
	12M ()	3000	17	25	12	0.12	0.16	11.00	8.50	
	12L ()	2500	14	20	12	0.08	0.14	11.00	8.50	
	OD6025-24H ()	3800	25	30	24	0.12	0.23	11.00	8.50	
	24M ()	3000	17	25	24	0.09	0.16	11.00	8.50	
	24L ()	2500	14	20	24	0.06	0.14	11.00	8.50	
	3.15" X .1" (80 x 25) Mtg Ctrs 2.82" (71.5mm) Figure A	OD8025-05H ()	2800	35	32	5	0.28	0.22	11.00	8.50
		05M ()	2200	30	27	5	0.2	0.15	11.00	8.50
		05L ()	1800	22	21	5	0.15	0.1	11.00	8.50
OD8025-12H ()		3300	40	33	12	0.18	0.23	11.00	8.50	
12M ()		2800	32	28	12	0.15	0.16	11.00	8.50	
12L ()		2000	22	21	12	0.12	0.1	11.00	8.50	
OD8025-24H ()		3300	40	33	24	0.12	0.23	11.00	8.50	
24M ()		2800	32	27	24	0.1	0.16	11.00	8.50	
24L ()		2000	22	21	24	0.08	0.1	11.00	8.50	
3.62" X 1" (92 x 25) Mtg Ctrs 3.25" (82.5mm) Figure A		OD9225-05H ()	2300	35	33	5	0.32	0.22	11.00	8.50
		05M ()	2100	32	30	5	0.25	0.17	11.00	8.50
		05L ()	1600	25	23	5	0.18	0.12	11.00	8.50
	OD9225-12H ()	2800	50	33	12	0.29	0.24	11.00	8.50	
	12M ()	2400	35	30	12	0.2	0.18	11.00	8.50	
	12L ()	1800	25	23	12	0.12	0.12	11.00	8.50	
	OD9225-24H ()	3000	50	33	24	0.18	0.24	11.00	8.50	
	24M ()	2500	35	30	24	0.12	0.18	11.00	8.50	
	24L ()	1800	25	23	24	0.1	0.12	11.00	8.50	
	4.72" X 1.5" (120 x 38) Mtg Ctrs 4.13" (105mm) Figure A	OD1225-05H ()	2900	86	42	5	0.5	0.24	19.00	16.00
		05M ()	2400	70	35	5	0.36	0.19	19.00	16.00
		05L ()	1700	45	25	5	0.25	0.15	19.00	16.00
OD1225-12H ()		3000	86	42	12	0.45	0.24	19.00	16.00	
12M ()		2500	70	35	12	0.35	0.19	19.00	16.00	
12L ()		1800	45	25	12	0.2	0.15	19.00	16.00	
OD1225-24H ()		3000	86	42	24	0.23	0.24	19.00	16.00	
24M ()		2500	70	35	24	0.23	0.19	19.00	16.00	
24L ()		1800	45	25	24	0.17	0.15	19.00	16.00	
OD1225-38H ()		3000	86	42	38	0.12	0.24	23.00	19.00	
38M ()		2400	70	35	38	0.1	0.19	23.00	19.00	
38L ()		1700	45	25	38	0.08	0.15	23.00	19.00	
OD1225-48H ()	3000	86	42	48	0.1	0.24	23.00	19.00		
48M ()	2400	70	35	48	0.07	0.19	23.00	19.00		
48L ()	1800	45	25	48	0.06	0.15	23.00	19.00		
4.72" X 1.5" (120 x 38) Mtg Ctrs 4.13" (105mm) Figure A	OD1238PT-12H ()	3100	108	43	12	0.5	0.28	20.00	16.00	
	12M ()	2500	88	33	12	0.4	0.23	20.00	16.00	
	12L ()	2000	60	26	12	0.16	0.14	20.00	16.00	
	OD1238PT-24H ()	3000	108	43	24	0.26	0.28	20.00	16.00	
	24M ()	2500	88	33	24	0.19	0.23	20.00	16.00	
	24L ()	2000	60	26	24	0.15	0.14	20.00	16.00	
	OD1238PT-38H ()	3000	108	43	38	0.14	0.28	24.50	20.00	
	38M ()	2500	88	33	38	0.1	0.23	24.50	20.00	
	38L ()	2000	60	26	38	0.08	0.14	24.50	20.00	
	OD1238PT-48H ()	3000	108	43	48	0.12	0.28	24.50	20.00	
	48M ()	2500	88	33	48	0.08	0.23	24.50	20.00	
	48L ()	2000	60	26	48	0.06	0.14	24.50	20.00	

ORION AC Cooling Fans

Size A X B Inches (mm)	Model Number	Speed RPM	Max. CFM	Noise (dB)	Volts	Watts	Max Static Pres.	Price 1-49 Ball	Price 1-49 Sleeve
3.15" X 1 (80 x 25) Mtg Ctrs 2.82" (71.5mm) Figure A	OA825AP-11-1W ()	3000	25	28	115	9	0.21	16.00	13.50
	11-2W ()	2300	18	24	115	6	0.14	16.00	13.50
	11-3W ()	1600	13	20	115	4	0.11	16.00	13.50
	OA825AP-22-1W ()	3000	25	28	230	9	0.21	16.00	13.50
	22-2W ()	2300	18	24	230	6	0.14	16.00	13.50
	22-3W ()	1600	13	20	230	4	0.11	16.00	13.50
3.15" X 1.5" (80 x 38) Mtg Ctrs 2.82" (71.5mm) Figure A	OA80AP-11-1 ()	3000	31	29	115	12	0.24	16.00	13.50
	11-2 ()	2300	23	22	115	9	0.15	16.00	13.50
	11-3 ()	1600	17	18	115	5	0.1	16.00	13.50
	OA80AP-22-1 ()	3000	31	29	230	12	0.24	16.00	13.50
	22-2 ()	2300	23	22	230	9	0.15	16.00	13.50
	22-3 ()	1600	17	18	230	5	0.1	16.00	13.50
3.62" X 1" (92 X 25) Mtg Ctrs 3.25" (82.5mm) Figure A	OA92AP-11-1 ()	3000	35	30	115	13	0.2	16.00	13.50
	11-2 ()	2300	27	22	115	10	0.14	16.00	13.50
	11-3 ()	1600	21	19	115	6	0.09	16.00	13.50
	OA92AP-22-1 ()	3000	35	30	230	13	0.2	16.00	13.50
	22-2 ()	2300	27	22	230	10	0.14	16.00	13.50
	22-3 ()	1600	21	19	230	6	0.09	16.00	13.50
3.62" X 1.5" (92 X 38) Mtg Ctrs 3.25" (82.5mm) Figure A	OA938AP-11-1 ()	3100	50	32	115	9	0.22	16.00	13.50
	11-2 ()	2400	32	23	115	5	0.17	16.00	13.50
	11-3 ()	1800	21	19	115	3	0.1	16.00	13.50
	OA938AP-22-1 ()	3100	50	32	230	9	0.22	16.00	13.50
	22-2 ()	2400	32	23	230	5	0.17	16.00	13.50
	22-3 ()	1800	21	19	230	3	0.1	16.00	13.50
4.72" X 1" (120 X 25) Mtg Ctrs 4.13" (105mm) Figure A	OA125AP-11-1 ()	2900	81	33	115	13	0.23	16.00	13.50
	11-2 ()	2300	60	27	115	10	0.18	16.00	13.50
	11-3 ()	1600	42	22	115	6	0.12	16.00	13.50
	OA125AP-22-1 ()	2900	81	33	230	13	0.23	16.00	13.50
	22-2 ()	2300	60	27	230	10	0.18	16.00	13.50
	22-3 ()	1600	42	22	230	6	0.12	16.00	13.50
4.72" X 1.5" (120 X 38) Mtg Ctrs 4.13" (105mm) Figure A	OA109AP-11-1 ()	3000	110	37	115	15	0.28	16.00	13.50
	11-2 ()	2300	71	30	115	11	0.21	16.00	13.50
	11-3 ()	1600	51	25	115	8	0.15	16.00	13.50
	OA109AP-22-1 ()	3000	110	37	230	15	0.28	16.00	13.50
	22-2 ()	2300	71	30	230	11	0.21	16.00	13.50
	22-3 ()	1600	51	25	230	8	0.15	16.00	13.50
5" X 1.5" (127 X 38) Mtg Ctrs 4.13" (105mm) Figure A	OA119AP-11-1 ()	3000	130	39	115	14	0.33	23.50	19.00
	11-2 ()	2300	95	33	115	10	0.27	23.50	19.00
	11-3 ()	1400	74	26	115	7	0.20	23.50	19.00
	OA119AP-22-1 ()	3000	130	39	230	14	0.33	23.50	19.00
	22-2 ()	2300	95	33	230	10	0.27	23.50	19.00
	22-3 ()	1400	74	26	230	7	0.20	23.50	19.00
6.77x5.91x2 (172x150x51) Mtg Ctrs 6.38" (162MM) Figure C	OA162-5E-115BW	3400	230	52	115	42	0.50		



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HYPRO LONGER LIFE FAN



Adda AC/DC brushless cooling fans and CPU coolers are built with the world's most advanced design of its worldwide patented HYPRO Bearing System and 8-pole motor. Models of the sleeve-bearing and ball-bearing types are also available.

Adda the world's first ISO certified AC/DC fan manufacturer who created the world's first and smallest HYPRO fans. ISO 9001 certified Taiwan factory and ISO 9002 certified China factory operates with over 1,000 workers offering you the largest range of BRUSHLESS DIRECT CURRENT fans in the world. All Adda fans are designed to meet the UL, CSA, TUV, CE and CUL requirements.

What is HYPRO fan? (HY-“Hydrodynamic wave”; Pro-“Oil protection system”)

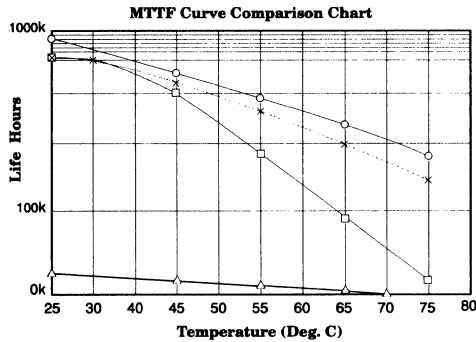
- 1) By means of reducing the surface friction area between the shaft and the bearing, the bearing temperature will be reduced naturally when HYPRO fan operates.
- 2) This unique HYPRO bearing construction can store and maintain more oil volume with an oil-cycling protection.
- 3) This HYPRO bearing is made from a new alloy material that is harder than bronze.

These are the reasons why HYPRO fans can perform longer life expectancy, lower noise, and *most of all, steadier at high temperature than sleeve, ball or even hydro bearing fans.*

How excellent the HYPRO fan

This designed and manufactured innovation lasts twice as long as sleeve bearing fans; *and costs less than durable ball-bearing fans. Moreover, it performs longer life than ball-bearing fan (50,000 hours) at ambient temperature.*

Please refer to our life curve at high temperature and cross reference as below:



ITEM \ BEARING	HYPRO	SLEEVE	BALL
LIFE	●	×	▲
SILENCE	●	▲	×
OIL PROTECTION	●	×	▲
CONCENTRICITY	●	●	▲
PRICE	MIDDLE	CHEAP	EXPENSIVE

● SUPERIOR ▲ MEDIUM × INFERIOR

DEFENDER® - THIN DC FAN

AD 2006	AD 2506	AD 3006	AD 3506	AD 4006	AD 4506
20x20x6mm	25x25x6mm	30x30x6mm	35x35x6mm	40x40x6mm	45x45x6mm
5VDC, 12VDC 10500RPM-0.6CFM 14000RPM-1.0CFM Noise:20.0 ~ 27.5dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 9000RPM-1.8CFM 12000RPM-2.5CFM Noise:20.5 ~ 26.3dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 7500RPM-2.5CFM 9000RPM-3.4CFM Noise:20.0 ~ 25.1dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 6500RPM-3.5CFM 7700RPM-4.5CFM Noise:19.0 ~ 25.3dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 4800RPM-4.7CFM 5500RPM-5.3CFM 6200RPM-6.0CFM Noise:19.5 ~ 27.5dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 4500RPM-6.0CFM 5200RPM-7.0CFM 6000RPM-8.0CFM Noise:21.5 ~ 29.0dB(A) Frame: PBT plastic, 94V-0

DEFIER® - MINI DC FAN

AD 2010	AD 2510	AD 3010	AD 4010	AD 4510	AD 5010
20x20x10mm	25x25x10mm	30x30x10mm	40x40x10mm	45x45x10mm	50x50x10mm
5VDC, 12VDC 9000RPM-0.6CFM 11500RPM-0.8CFM Noise:19.7 ~ 25.8dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 10000RPM-2.1CFM 12000RPM-2.4CFM Noise:22.2 ~ 25.3dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 5500RPM-2.1CFM 8000RPM-3.0CFM 9000RPM-3.7CFM Noise:18.3 ~ 22.4dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC, 24VDC 3300RPM-3.7CFM 4200RPM-4.7CFM 6000RPM-6.5CFM Noise:13.3 ~ 27.5dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 4000RPM-7.0CFM 5200RPM-8.1CFM 6000RPM-9.2CFM Noise:19.2 ~ 29.0dB(A) Frame: PBT plastic, 94V-0	5VDC, 12VDC 3500RPM-8.1CFM 4300RPM-10.2CFM 5000RPM-12.1CFM Noise:22.7 ~ 33.8dB(A) Frame: PBT plastic, 94V-0









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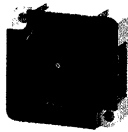

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NEPTUNE® - DC CPU COOLER

AP 3507 	AP 4507 	AP 4510 	AP 5007 	AP 5009 	AP 5011 
35x35x7mm 5VDC, 12VDC 7500RPM-2.5CFM 8800RPM-3.2CFM Noise:20.0 ~ 25.1dB(A) Frame: Aluminum	45x45x7mm 5VDC, 12VDC 4800RPM-4.7CFM 5500RPM-5.3CFM 6200RPM-6.0CFM Noise:19.5 ~ 27.5dB(A) Frame: Aluminum	45x45x10mm 5VDC, 12VDC 3300RPM-3.6CFM 4200RPM-4.7CFM 6000RPM-6.8CFM Noise:15.1 ~ 27.5dB(A) Frame: Aluminum	50x50x7mm 5VDC, 12VDC 4500RPM-5.4CFM 5200RPM-6.2CFM 6000RPM-7.0CFM Noise:21.5 ~ 29.0dB(A) Frame: Aluminum	50x50x9mm 5VDC, 12VDC 4500RPM-5.4CFM 5200RPM-6.2CFM 6000RPM-7.0CFM Noise:21.5 ~ 29.0dB(A) Frame: Aluminum	50x50x11mm 5VDC, 12VDC 3300RPM-3.6CFM 4200RPM-4.7CFM 6000RPM-6.8CFM Noise:15.1 ~ 27.5dB(A) Frame: Aluminum







COMET® - DC BLOWER

AB 2007 	AB 2507 	AB 2510 	AB 3007 	AB 3506 	AB 3507 
20x20x7mm 5VDC 12000RPM-0.2CFM Noise:20.5dB(A) Frame: Aluminum	25x25x7mm 5VDC 10000RPM-0.2CFM 12000RPM-0.3CFM Noise:19.5 ~ 24.4dB(A) Frame: Aluminum	25x25x10mm 5VDC 10000RPM-0.2CFM 12000RPM-0.3CFM Noise:19.4 ~ 27.8dB(A) Frame: Aluminum	30x30x7mm 5VDC 7000RPM-0.3CFM 8500RPM-0.4CFM Noise:13.4 ~ 19.3dB(A) Frame: Aluminum	35x35x6mm 5VDC 7000RPM-0.3CFM 8000RPM-0.4CFM Noise:15.3 ~ 17.0dB(A) Frame: Aluminum	35x35x7mm 5VDC 7000RPM-0.5CFM 8500RPM-0.6CFM Noise:20.4 ~ 23.3dB(A) Frame: Aluminum
AB 3510 	AB 4007 	AB 4507 	AB 5007 		
35x35x10mm 5VDC 7000RPM-0.9CFM 8500RPM-1.1CFM Noise:30.0 ~ 34.9dB(A) Frame: Aluminum	40x40x7mm 5VDC 6000RPM-0.5CFM 7000RPM-0.8CFM Noise:20.9 ~ 26.4dB(A) Frame: Aluminum	45x45x7mm 5VDC 4000RPM-0.5CFM 5000RPM-0.6CFM Noise:17.0 ~ 22.7dB(A) Frame: Aluminum	50x50x7mm 5VDC 4000RPM-0.6CFM 5000RPM-0.9CFM Noise:21.5 ~ 25.1dB(A) Frame: Aluminum	PATENT FOR ALL SERIES 8 POLE FAN MOTOR DESIGN Specifications subject to change without notice.	

HEAT SINK/FAN ASSEMBLY

ADDA-012B 	ADDA-028 	ADDA-021A 	ADDA-021B 	ADDA-033 
for pentium (pro)	for pentium up to 200 MHz, AMD K6.	for pentium up to 200 MHz, cyrix 6x86, AMD K5	for pentium up to 200 MHz, cyrix 6x86, AMD K5	for pentium II

VENUS® - DC FAN

AD 4015 	AD 4020 	AD 5215 	AD 6010 	AD 6015 	AD 6020 
40x40x15mm 5VDC, 12VDC 6000RPM-7.6CFM 7000RPM-8.9CFM 8000RPM-10.1CFM Noise:26.6 ~ 34.0dB(A) Frame: PBT plastic, 94V-0	40x40x20mm 5VDC, 12VDC 5700RPM-7.2CFM 6700RPM-8.3CFM 7500RPM-9.6CFM Noise:25.8 ~ 31.5dB(A) Frame: PBT plastic, 94V-0	52x52x15mm 5VDC, 12VDC 3700RPM-9.7CFM 4600RPM-12.0CFM Noise:22.6 ~ 28.7dB(A) Frame: PBT plastic, 94V-0	60x60x10mm 5VDC, 12VDC 3000RPM-11.9CFM 3600RPM-14.1CFM 4200RPM-16.6CFM Noise:23.1 ~ 32.8dB(A) Frame: PBT plastic, 94V-0	60x60x15mm 5VDC, 12VDC 3900RPM-14.2CFM 4500RPM-16.6CFM Noise:28.8 ~ 32.4dB(A) Frame: PBT plastic, 94V-0	60x60x20mm 12VDC, 24VDC 3500RPM-13.3CFM 3900RPM-14.5CFM 4500RPM-16.4CFM Noise:21.6 ~ 29.7dB(A) Frame: PBT plastic, 94V-0

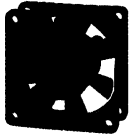







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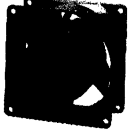




MERCURY® - DC FAN

AD 6025  60x60x25mm 12VDC, 24VDC 2500RPM-13.2CFM 3500RPM-18.0CFM 4500RPM-23.2CFM Noise:16.1 ~ 32.3dB(A) Frame: PBT plastic, 94V-0	AD 7025  70x70x25mm 12VDC, 24VDC 3800RPM-26.1CFM 4200RPM-31.4CFM Noise:22.3 ~ 29.8dB(A) Frame: PBT plastic, 94V-0	AD 8015  80x80x15mm 5VDC, 12VDC, 24V 2440RPM-22.4CFM 3200RPM-29.9CFM Noise:26.0 ~ 33.4dB(A) Frame: PBT plastic, 94V-0	AD 8020  80x80x20mm 12VDC, 24VDC 2440RPM-22.1CFM 3010RPM-27.3CFM Noise:25.4 ~ 31.4dB(A) Frame: PBT plastic, 94V-0	AD 8025  80x80x25mm 5VDC, 12VDC, 24VDC 2030RPM-26.2CFM 2440RPM-31.4CFM 3010RPM-38.6CFM 3900RPM-50.1CFM Noise:22.5 ~ 39.1dB(A) Frame: PBT plastic, 94V-0	AD 9220  92x92x20mm 12VDC, 24VDC 2430RPM-29.0CFM 2740RPM-32.8CFM Noise:28.9 ~ 32.8dB(A) Frame: PBT plastic, 94V-0
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PLUTO® - DC FAN

AD 9225  92x92x25mm 5VDC, 12VDC, 24VDC 2300RPM-41.6CFM 2600RPM-47.2CFM 2900RPM-52.5CFM 3300RPM-60.1CFM Noise:29.8 ~ 39.4dB(A) Frame: PBT plastic, 94V-0	AD 12025  120x120x25mm 12VDC, 24VDC 1800RPM-72.1CFM 2050RPM-80.5CFM 2200RPM-85.2CFM 2500RPM-98.6CFM Noise:34.4 ~ 43.3dB(A) Frame: PBT plastic, 94V-0	AD 12038  120x120x38mm 12VDC, 24VDC, 48VDC 1950RPM-72.3CFM 2540RPM-94.1CFM 2800RPM-104.8CFM 3100RPM-116.3CFM Noise:32.9 ~ 42.8dB(A) Frame: PBT or Aluminum	AD 178  172x150x38mm 12VDC, 24VDC, 48VDC 2350RPM-141.2CFM 2950RPM-176.5CFM Noise:42.6 ~ 48.2dB(A) Frame: Aluminum	AD 175  172x150x50mm 12VDC, 24VDC, 48VDC 2500RPM-178.6CFM 3000RPM-218.2CFM Noise:48.8 ~ 54.7dB(A) Frame: Aluminum	AD 1725  172x50mm 12VDC, 24VDC, 48VDC 2500RPM-178.6CFM 3000RPM-218.2CFM Noise:48.8 ~ 54.7dB(A) Frame: Aluminum
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PLANET® - AXIAL AC FAN

AA 8025  80x80x25mm 115VAC, 230VAC 2150RPM-17.7CFM Frame: Aluminum Noise:20.3dB(A) Impeller: PBT plastic, 94V-0	AA 8038  80x80x38mm 115VAC, 230VAC 2300RPM-24.0CFM 2800RPM-29.6CFM Frame: Aluminum Noise:25.3 ~ 31.6dB(A) Impeller: PBT plastic, 94V-0	AA 9225  92x92x25mm 115VAC, 230VAC 2000RPM-29.6CFM Frame: Aluminum Noise:25.2dB(A) Impeller: PBT plastic, 94V-0	AA 12025  120x120x25mm 115VAC, 230VAC 2300RPM-70.9CFM Frame: Aluminum Noise:41.3dB(A) Impeller: PBT plastic, 94V-0	AA 12038  120x120x38mm 115VAC, 230VAC 2500RPM-98.0CFM 2800RPM-110.5CFM Frame: PBT or Aluminum Noise:45.8 ~ 48.3dB(A) Impeller: PBT plastic, 94V-0	AA 178  172x150x38mm 115VAC, 230VAC 2350RPM-141.2CFM 2950RPM-176.5CFM Frame: Aluminum Noise:42.6 ~ 48.2dB(A) Impeller: PBT plastic, 94V-0
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PLANET®

AA 175  172x150x50mm 115VAC, 230VAC 2500RPM-178.6CFM 3000RPM-218.2CFM Frame: Aluminum Noise:48.8 ~ 54.7dB(A) Impeller: PBT plastic, 94V-0	AA 1725  172x50mm 115VAC, 230VAC 2500RPM-178.6CFM 3000RPM-218.2CFM Frame: Aluminum Noise:48.8 ~ 54.7dB(A) Impeller: PBT plastic, 94V-0
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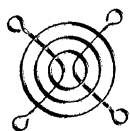
SATURN® DC BLOWER

AD 3508  35x35x8mm 5VDC, 12VDC 6300RPM-0.6CFM Noise:27.5dB(A) Frame: PBT plastic, 94V-0	AD 7530  75x75x30mm 12VDC, 24VDC 2600RPM-8.0CFM 3000RPM-10.3CFM Noise:35.2 ~ 37.8dB(A) Frame: PBT plastic, 94V-0	AD 25  120x120x32mm 12VDC, 24VDC 2300RPM-23.7CFM 2600RPM-26.6CFM Noise:50.1 ~ 53.9dB(A) Frame: PBT plastic, 94V-0	AD 04  13VDC 2100RPM-1.6CFM Noise:10.0dB(A) PBT plastic, 94V-0
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Specifications subject to change without notice.

ACCESSORIES

**FINGER GUARD
AFG Serise**



FOR 40mm fan
FOR 50mm fan
FOR 60mm fan
FOR 80mm fan
FOR 92mm fan
FOR 120mm fan
all series METAL

**FAN FILTER KITS
AFS Serise**



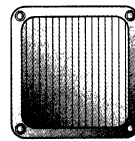
FOR 60mm fan
FOR 80mm fan
FOR 92mm fan
FOR 120mm fan
all series Plastic

**FAN FILTER KITS
AFC Serise**



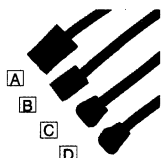
FOR 40mm fan
FOR 50mm fan
FOR 60mm fan
FOR 80mm fan
FOR 92mm fan
FOR 120mm fan
all series Plastic

**METAL FAN FILTER
AFM Serise**



FOR 80mm fan
FOR 92mm fan
FOR 120mm fan
all series METAL

**AC CORDS
ACC Serise**



- A ACC001:180°
- B ACC002:45°
- C ACC003:90°
- D ACC004:T type



marlow industries, inc.

Thermoelectric Innovation Through Research



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THERMOELECTRIC COOLERS

WHAT IS A THERMOELECTRIC COOLER?

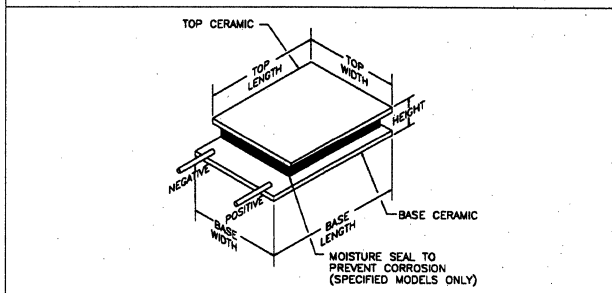
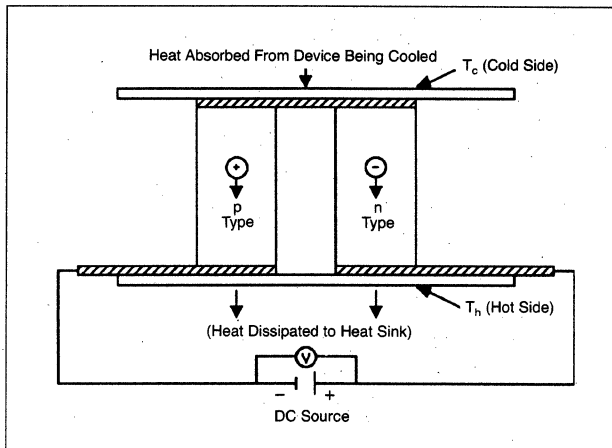
Thermoelectric coolers (TECs) are solid-state, vibration-free, noise-free heat pumps. They are modular devices and are simple to install and operate. Since they consist primarily of thermoelectric material sandwiched between ceramic plates with no moving parts, they are inherently reliable.

A single-stage thermoelectric cooler is composed of a matrix of thermoelectric couples, connected electrically in series and thermally in parallel. The thermoelectric couple consists of a p- and n-type semiconductor material.

A TEC can be fabricated with as few as one couple to as many as several hundred couples sandwiched between two ceramic plates. These plates form the top and base of the cooler and provide structural integrity as well as electrical insulation from, and thermal conduction to, the heat sink and the device being cooled.

HOW IT WORKS

Regulating the direction and amount of current—with the use of a feedback loop and temperature controller—allows TECs to cool, heat, or stabilize temperature. Reversing the direction of the current reverses the direction of heat pumping. The figure opposite illustrates the operation of a thermoelectric couple in the cooling mode.



Miscellaneous Electronic Components such as high speed integrated circuits, parametric amplifiers, avalanche photo diodes, and vidicon tubes can be spot cooled using thermoelectric coolers.

TYPICAL APPLICATIONS

Thermoelectric coolers are ideally suited to a wide variety of applications due to their small size, wide operating temperature range, low power requirements, and high reliability. Applications can be found in military, aerospace, and commercial products, laboratory and scientific equipment, medical instruments, and test equipment.

Electro-optic applications include cooling infrared detectors, charge coupled devices (CCDs) and thermal reference sources (TRSS).

Laser cooling applications include temperature stabilization of solid state, pump and high power lasers.

Volume cooling includes small volumes of air or liquid, and cold plates.

SELECTED STANDARD THERMOELECTRIC COOLERS*

Part Number	Δ T in Vacuum	Δ T in Dry N2	Qmax (Watts)	I _{max} (Amps)	V _{max} (Volts)	Base Ceramic Width in. (mm)	Base Ceramic Length in. (mm)	Top Ceramic Width in. (mm)	Top Ceramic Length in. (mm)	Height in. (mm)
MI1010T-XXAC	67	61	0.47	1.00	0.80	0.156 (4.0)	0.156 (4.0)	0.156 (4.0)	0.156 (4.0)	0.095 (2.4)
MI1011T-XXAC	67	61	1.00	1.00	2.00	0.260 (6.6)	0.260 (6.6)	0.260 (6.6)	0.260 (6.6)	0.095 (2.4)
MI1012T-XXAC	67	61	2.10	1.00	3.70	0.346 (8.8)	0.346 (8.8)	0.346 (8.8)	0.346 (8.8)	0.095 (2.4)
MI1013T-XXAC	67	61	4.80	1.00	8.50	0.518 (13.2)	0.518 (13.2)	0.518 (13.2)	0.518 (13.2)	0.095 (2.4)
MI1020T-XXAC	67	64	0.90	1.80	0.80	0.156 (4.0)	0.156 (4.0)	0.156 (4.0)	0.156 (4.0)	0.085 (2.2)
MI1021T-XXAC	67	64	2.20	1.80	1.90	0.260 (6.6)	0.260 (6.6)	0.260 (6.6)	0.260 (6.6)	0.085 (2.2)
MI1022T-XXAC	67	64	4.00	1.80	3.50	0.346 (8.8)	0.346 (8.8)	0.346 (8.8)	0.346 (8.8)	0.085 (2.2)
MI1023T-XXAC	67	64	9.20	1.80	8.00	0.518 (13.2)	0.518 (13.2)	0.518 (13.2)	0.518 (13.2)	0.085 (2.2)
MI1025T-XXAC	67	64	5.00	1.80	4.40	0.346 (8.8)	0.432 (11.0)	0.346 (8.8)	0.346 (8.8)	0.084 (2.1)
MI2021T-XXAC	91	83	0.92	1.40	2.00	0.260 (6.6)	0.260 (6.6)	0.156 (4.0)	0.156 (4.0)	0.149 (3.8)
MI2012T-XXAB	86	77	2.40	1.20	5.40	0.432 (11.0)	0.389 (9.9)	0.346 (8.8)	0.260 (6.6)	0.147 (3.7)
MI3026T-XXBC	109	93	0.62	1.30	3.40	0.346 (8.8)	0.346 (8.8)	0.160 (4.1)	0.174 (4.4)	0.234 (5.9)
MI3040-XXBC	109	98	5.60	4.50	7.30	0.855 (21.7)	1.113 (28.3)	0.339 (8.6)	0.511 (13.0)	0.430 (10.9)
MI4012T-XXBC	114	—	0.76	1.00	6.70	0.520 (13.2)	0.678 (17.2)	0.160 (4.1)	0.314 (8.0)	0.345 (8.8)
MI4040-XXBC	120	—	2.70	4.00	6.80	0.855 (21.7)	1.113 (28.3)	0.253 (6.4)	0.425 (10.8)	0.561 (14.3)
MI6030-XXBC	133	—	0.58	3.60	6.30	0.855 (21.7)	1.113 (28.2)	0.205 (5.2)	0.205 (5.2)	0.809 (20.5)

DURATECH (DT) COOLERS

Introducing Marlow Industries new low cost high reliability TEC coolers. The DT Coolers are ideal for large thermoelectric cooling applications such as: portable cool boxes, refrigerators, water chillers, electronic cabinets, and micro processors.

Part Number	Δ T Max. Vacuum (C)	Δ T Max. Dry N2 (C)	Qmax (Watts)	I _{max} (Amps)	V _{max} (Volts)	Base Ceramic Width in. (mm)	Base Ceramic Length in. (mm)	Top Ceramic Width in. (mm)	Top Ceramic Length in. (mm)	Height in. (mm)
DT12-8-YYYY	68	64	71	7.4	14.7	1.575 (40.0)	1.732 (44.0)	1.575 (40.0)	1.575 (40.0)	.143 (3.63)
DT6-8-YYYY	68	64	39	7.4	8.2	1.181 (30.0)	1.339 (34.0)	1.181 (30.0)	1.181 (30.0)	.143 (3.63)
DT3-8-YYYY	68	63	17	7.4	3.6	0.787 (20.0)	0.965 (24.5)	0.787 (20.0)	0.787 (20.0)	.143 (3.63)
DT12-6-YYYY	68	66	54	5.6	14.6	1.575 (40.0)	1.732 (44.0)	1.575 (40.0)	1.575 (40.0)	.158 (4.01)
DT6-6-YYYY	68	65	30	5.6	8.2	1.181 (30.0)	1.339 (34.0)	1.181 (30.0)	1.181 (30.0)	.158 (4.01)
DT3-6-YYYY	68	65	13	5.6	3.6	0.787 (20.0)	0.965 (24.5)	0.787 (20.0)	0.787 (20.0)	.158 (4.01)
DT12-4-YYYY	68	65	36	3.7	14.6	1.181 (30.0)	1.339 (34.0)	1.181 (30.0)	1.181 (30.0)	.135 (3.43)
DT6-4-YYYY	68	64	20	3.7	8.2	0.925 (23.5)	1.102 (28.0)	0.925 (23.5)	0.925 (23.5)	.135 (3.43)
DT3-4-YYYY	68	64	9	3.7	3.6	0.630 (16.0)	0.807 (20.5)	0.630 (16.0)	0.630 (16.0)	.135 (3.43)
DT12-2.5-YYYY	68	66	23	2.5	14.7	1.181 (30.0)	1.339 (34.0)	1.181 (30.0)	1.181 (30.0)	.159 (4.04)
DT6-2.5-YYYY	68	65	13	2.5	8.2	0.925 (23.5)	1.102 (28.0)	0.925 (23.5)	0.925 (23.5)	.159 (4.04)
DT3-2.5-YYYY	68	64	6	2.5	3.6	0.630 (16.0)	0.807 (20.5)	0.630 (16.0)	0.630 (16.0)	.159 (4.04)

NOTES:

- 1) Delta T-max values are for a hot side of 27 C on an unsealed cooler. The sealed option reduces delta T-max by roughly 0.5 C to 2.5 C (larger decrease on smaller modules).
- 2) Height is for unslapped cooler. Slapped height is 0.004 in. less than unslapped height.

NEW THERMAL CYCLING COOLER

Introducing Marlow Industries' SP1848 TEC designed especially for thermal cycling applications. The SP1848 was designed for superior reliability when subjected to harsh thermal cycling applications required in the medical and industrial markets.

SP1848-XXAC	—	62	21.3	9.36	3.48	1.000 (25.4)	1.130 (28.7)	1.000 (25.4)	1.000 (25.4)	0.192 (4.88)
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Marlow Industries reserves the right to change the design and specifications of products without notice.



marlow industries, inc.

Thermoelectric Innovation Through Research



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ADVANTAGES OF USING THERMOELECTRIC COOLING

- Localized Cooling
- Solid State Reliability
- Temperature Control Above or Below Ambient
- DC Powered
- No Gases or Refrigerant Required
- Small, Lightweight Package
- Operation in Any Orientation
- High Resistance to Shock and Vibration
- Operation in Zero Gravity
- No Moving Parts
- Operation in High-G Levels
- No Acoustical Noise
- Heating or Cooling—Depending on Current Direction
- No Electrical Noise
- Precision Temperature Control to less than .05°C
- Maintenance Free

TEMPERATURE CONTROLLER/POWER SUPPLIES

Marlows SE5000 Series of three Temperature Controller/Power Supplies (TC/PS) is designed for temperature control of TEC's used with laser diodes, infrared detectors, charge-coupled devices, high-gain amplifiers, and cold plates. This full featured, linear bipolar power supply offers one of the widest precision temperature control ranges on the market—from -99.9°C to 150°C. Features include: Adjustable bipolar DC output current; programmable PID control/ramp-to-setpoint control; high, low, and deviation limit alarms; digital readout of output voltage and current; simultaneous display of temperature and setpoint; availability with four thermistor types of thermocouple; automatic and manual operating modes; 115/230 VAC at 60/50 Hz for worldwide use; bench/rack model.

- SE5000** Output: 9 volts @ 2 amps to 12 volts @ 1 amp
- SE5010** Output: 16 volts @ 6 amps to 21 volts @ 1 amp
- SE5020** Output: 16 volts @ 12 amps to 21 volts @ 1 amp
- SE1032** Output: 3.5 volts @ 2 amps to 4 volts @ .14 amps

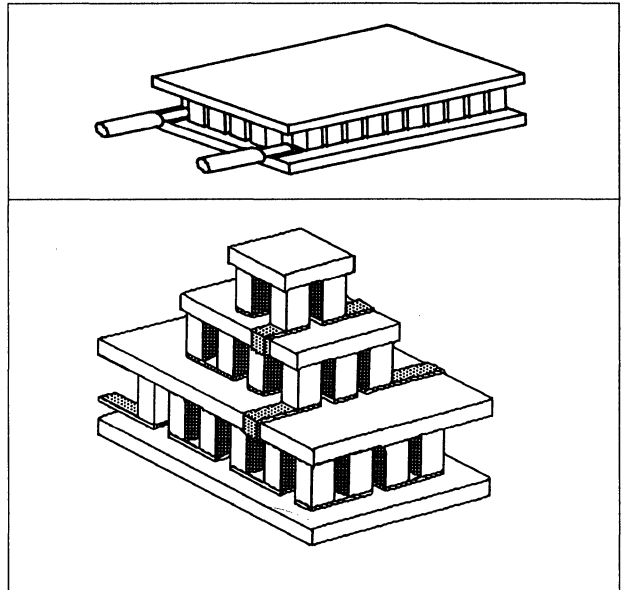
ORDERING INFORMATION

Our Customer Service Department will be pleased to provide our full catalog as well as product data sheets on the TECs which best meet your needs. Please direct your call to our Customer Service department at 214-340-4900, or send a FAX to 214-341-5212. Marlow Industries can also provide support through local representatives in most international locations.

HOW TO SPECIFY THERMOELECTRIC COOLERS

The standard TECs on the previous page are a representative sample of our product line and are grouped according to the number of stages indicated by the first digit following the "MI." They are listed in increasing order according to heat pumping capacity (Q_{max}); the net heat load to completely suppress ΔT at the maximum applied power (I_{max} @ V_{max}). For example, the MI3026T is a three-stage TEC which produces 109° ΔT in a vacuum at 1.3 amps @ 3.4 volts. It will take .62 watts to completely suppress that ΔT to zero. This suppression is linear, so that 10% of Q_{max} (0.072 watts) applied to the cold plate would suppress ΔT 10%, thereby producing 98.1°C ΔT for that heat load condition. Because of the non-linear behavior of TECs and the number of variables involved in analyzing them, they can be designed and modeled more accurately by our experienced engineers using Marlow Industries' proprietary computer software.

Our Applications Engineers will assist you in selecting a standard product to meet your needs or modeling a custom design.



ASSEMBLIES AND RELATED PRODUCTS

COLD PLATES

Liquid Cooled. ST2018. ΔT_{max} = 49°C; V_{max} = 12.4 volts; I_{max} = 9.5 amps; Q_{max} = 70 watts; 3.5" × 4.25" (89 × 109) Cold Plate

Fan Cooled. ST2033. ΔT_{max} = 38°C; V_{max} = 12.5 volts; I_{max} = 8.5 amps; Q_{max} = 60 watts; 3.25" × 3.25" (83 × 83) Cold Plate

VACUUM ENCLOSURE. ST1018. 3.6" (91) ID; 1.5" (38) dia. Quartz window; O-Ring seal; 42 Feed-throughs

HEAT SINKS

Fan Cooled. ST2032. Fan power required: 115 VAC, 60HZ; Heat sink resistance = 0.15°C/watt

Liquid Cooled. ST1050. Water inlet required; Heat sink resistance = 0.05°C/watt @ 0.4 Gal/min.

ORDERING TECs

Standard Thermoelectric Cooler ordering options

After you have chosen the TEC which meets your performance requirements, you will need to specify the complete part number. This consists of the base part number followed by the type of metallization (which varies depending on method of installation) and type of ceramic (following part number in table at left).

- XX=01 = both sides are metallized
- XX=02 = hot side only is metallized
- XX=03 = no metallization

Options include:

- Pretinning with 96°C or 117°C solder
- Thermistor mounting (calibration available)
- Lapping to 0.001" (0.025 mm)
- Thermal screening

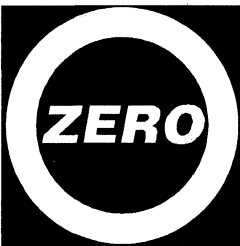
DuraTech ordering options

All DuraTech modules are built with 20 AWG 4" (10.2cm) long lead wires. Options are as specified by the part number suffixes listed below:

Suffix (YYYY)	Description	Height Tolerance
-01	Base Model	±.005"
-01L	Lapped Model	±.001"
-01S	Sealed Model	±.005"
-01LS	Lapped & Sealed Model	±.001"

Ex: DT12-6-01LS

Marlow Industries reserves the right to change the design and specifications of products without notice.



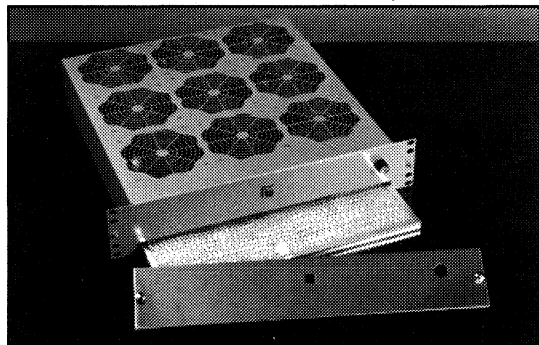
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McLean IS Air Cooling Technology

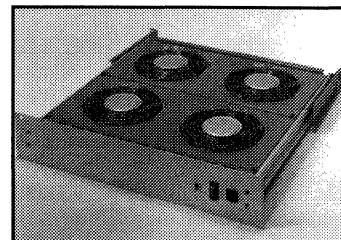
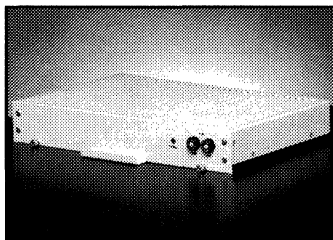
FAN TRAYS

High-volume, intelligent cooling that maximizes system performance, uptime and overall reliability.



- High Volume - 150 to 1,300 CFM
- 0.0" to 0.7" Water Static Pressure
- Filtered and Unfiltered
- Modular Design Allows Mounting Up To 12 Fans
- 1.75" and 3.5" Panel Heights
- 19" and 24" Panel Widths, EIA Notched
- 115 or 230 VAC, 12, 24, 48 VDC
- Fans UL Recognized, CSA Certified
- Field Repairable

Using a highly efficient modular design, the widest range of intelligent control options and a vertically integrated manufacturing process, McLean can develop a fan tray product to cool any rack-mounted electronics.



UNIT TYPE	SOUND DATA dB(A)							
	1.75" FAN TRAYS				3.5" FAN TRAYS			
	BASIC	BASIC	THERMAL	BASIC	BASIC	BASIC	THERMAL	
	LOW	HIGH	RANGE	LOW AC	HIGH 12VDC	HIGH	RANGE	
1 19" TRAY	54	58	50-58	51	54.5	57	51-56	
1 24" TRAY	55	59	51-59	52.5	55.5	58	52.5-57	
2 19" TRAYS	56	60	52-60	54	57	60	54-59	
2 24" TRAYS	58	62	54-62	55.5	58.5	61	55.5-60	
3 19" TRAYS	58.5	62.5	54.5-62.5	N/A	N/A	N/A	N/A	
3 24" TRAYS	59.5	63.5	55.5-63.5	N/A	N/A	N/A	N/A	

DATA	3.5" FAN TRAY INDIVIDUAL FAN PERFORMANCE DATA (2 FANS PER STRIP ON 19" WIDE PANEL, 3 FANS PER STRIP ON 24" PANEL)															
	115			230			12 VDC			24 VDC			48 VDC			
	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	
	LOW	HIGH	RANGE	LOW	HIGH	RANGE	LOW	HIGH	RANGE	LOW	HIGH	RANGE	LOW	HIGH	RANGE	
CFM	110	220	110-220	110	220	N/A	180	110	220	110-210	110	220	110-210	110	220	110-210
AMPS	0.15	0.28	0.08-0.14	N/A	1.80	0.40	1.0	0.40-1.0	0.30	0.45	0.30-0.45					
LR AMPS	0.20	0.47	0.10-0.23	N/A	2.60	1.50	1.50	1.50-1.50	0.70	0.70	0.70-0.70					
WATTS	15	28	15-29	N/A	22	10	24	10-24	15	22	15-24					
SPEED	1700	3160	1700-3160	N/A	2660	1700	3160	1700-3125	1700	3160	1700-3125					

VOLTAGE	1.75" FAN TRAY INDIVIDUAL FAN PERFORMANCE DATA (3 FANS PER STRIP ON 19" WIDE PANEL, 4 FANS PER STRIP ON 24" PANEL)														
	115			230			12 VDC			24 VDC			48 VDC		
	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL	BASIC	BASIC	THERMAL
	LOW	HIGH	RANGE	LOW	HIGH	RANGE	LOW	HIGH	RANGE	LOW	HIGH	RANGE	LOW	HIGH	RANGE
CFM	73	97	46-86	73	97	46-86	73	97	46-86	73	97	46-86	73	97	46-86
AMPS	0.14	0.16	0.05-0.09	0.09	0.09	0.03-0.05	0.27	0.50	0.24-0.50	0.17	0.25	0.11-0.23	0.11	0.13	0.08-0.15
LR AMPS	0.17	0.24	0.09-0.13	0.10	0.12	0.05-0.07	0.64	1.30	1.10-1.10	0.43	0.70	0.44-0.44	0.23	0.35	0.23-0.23
WATTS	13.3	13.3	5.4-11.6	13	13.4	5.4-11.6	3.3	6.0	2.9-6.4	4.0	6.0	2.8-6.0	5.3	6.0	3.9-7.2
SPEED	2450	3225	1625-3250	2450	3225	1625-3250	2650	3100	1625-3150	2800	3100	1625-3150	2800	3100	1625-3150

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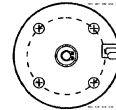
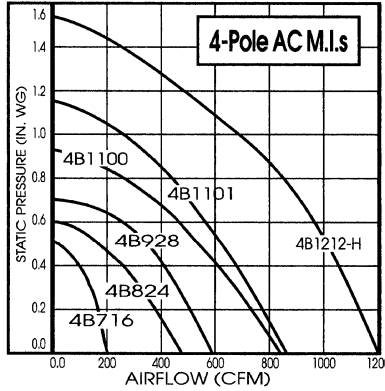
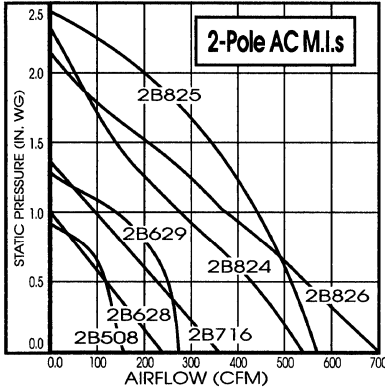
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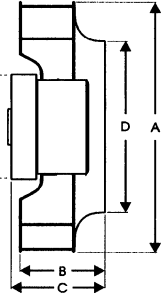
AC & DC MOTORIZED IMPELLERS



AC MOTORIZED IMPELLERS



Base Mounting Pattern
4 Holes on
58.0mm (2.28") B.C.D.
M4 x 5mm (Max Thread Depth)



2 POLE MOTORS

McLean MODEL NO.	CFM	AMPS RUN	AMPS LR.	WATTS	CAP mFD	A mm	A in.	B in.	C in.	D in.
2B508-115TEG	170	0.25	0.60	35	5	133	5.24	2.36	3.57	3.70
2B628-115TEG	225	0.49	0.70	62	5	175	6.89	1.87	2.20	5.16
2B629-115TEG	280	0.57	0.70	69	5	175	6.89	2.46	2.70	5.16
2B629-115TEG	280	0.29	0.35	69	2	175	6.89	2.46	2.70	5.16
2B716-115TEG	340	0.71	1.02	85	5	190	7.48	2.48	2.70	5.24
2B824-115TEG	335	0.82	1.36	100	7.5	220	8.66	2.48	2.80	6.28
2B825-115TEG	565	1.20	1.45	115	20	220	8.66	2.48	2.80	6.28
2B826-115TEG	710	1.90	2.25	215	20	220	8.66	3.48	3.90	6.28

All data taken @ 0.00 S.P. with inlet ring at 60Hz (name plate rating may vary from data).

4 POLE MOTORS

McLean MODEL NO.	CFM	AMPS RUN	AMPS LR.	WATTS	CAP mFD	A mm	A in.	B in.	C in.	D in.
4B716-115TEG	230	0.35	0.80	35	3	190	7.48	2.48	2.70	5.24
4B824-115TEG	440	0.60	1.40	60	6	220	8.66	3.48	3.90	6.28
4B928-115TEG	565	0.65	1.30	75	6	250	9.84	3.00	3.33	7.38
4B1100-115TEG	815	0.73	1.40	95	10	280	11.02	4.19	4.45	8.31
4B1101-115TEG	820	1.00	1.80	115	10	280	11.02	4.24	4.88	7.64
4B1212-115 H	1200	2.60	7.70	240	7.5	315	12.40	5.04	6.26	7.87

All data taken @ 0.00 S.P. with inlet ring at 60Hz (name plate rating may vary from data).

DC MOTORIZED IMPELLERS

McLean MODEL NO.	CFM	WATTS	DBa	A mm	A in.	B in.	C in.	D in.
DB400-XX20	115	25	60	101.6	4.00	1.78	2.13	2.80
DB508-XX18	115	18	60	133.4	5.25	1.80	2.88	3.78
DB508-XX25	180	25	63	133.4	5.25	2.34	3.58	3.78
DB628-XX18	260	30	62	175.0	6.89	1.87	2.15	5.16
DB628-XX25	315	40	64	175.0	6.89	2.46	2.70	5.16
DB716-XX25	310	45	61	190.0	7.48	2.46	2.70	5.24
DB824-XX25	475	50	63	225.0	8.66	2.47	2.80	6.28
DB824-XX36	785	2900	73	225.0	8.66	3.47	3.90	6.28
DB928-XX30	850	2800	70	250.0	9.92	2.89	3.33	6.77
DB928-XX39	1050	2625	70	250.0	9.92	3.91	4.33	6.77
DB1100-XX32	1100	140	73	280.0	11.06	3.20	3.60	7.52
DB1100-XX44	1100	135	72	280.0	11.06	4.39	4.80	7.52

All data taken @ 0.00 S.P. with inlet ring at name plate voltage.

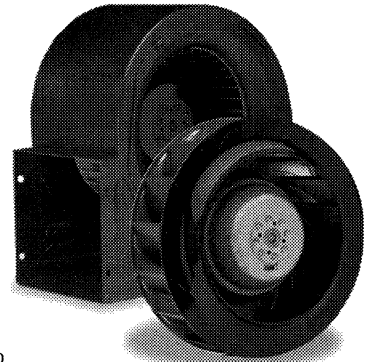
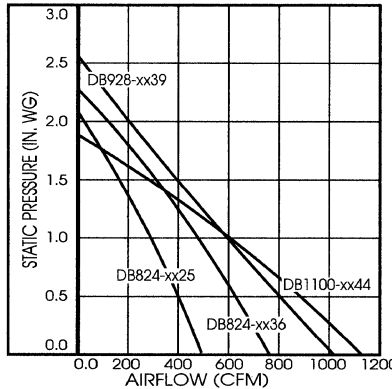
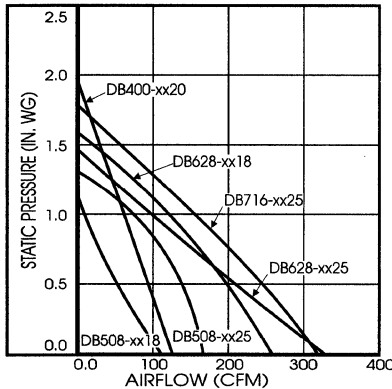
AC & DC MOTORIZED IMPELLERS

PRODUCT FEATURES

- Sealed Ball Bearings ● 18" Lead Lengths
- CW Rotation Viewing Inlet
- DC Speed Control ● DC Tach Output

OPTIONAL ACCESSORIES

- Inlet Rings ● Wire Terminations
- Mounting Brackets ● Customized Packaging



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ZERO Stranton, Refer to Cabinets & Enclosures Section 1400



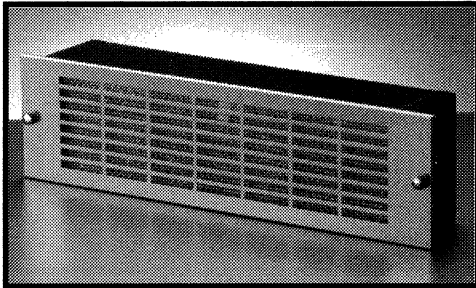
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The technology that keeps enclosures cool and clean, systems efficient and dependable. Catalog or custom, McLean wrote the book on electronics cooling.

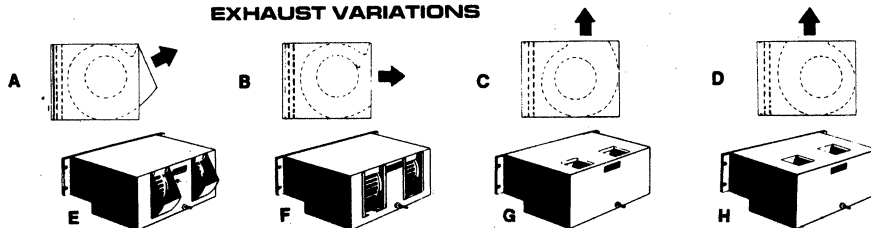
PACKAGED BLOWERS



McLean pioneered packaged cooling technology and leads the industry in providing the most efficient, compact and powerful rack mounted cooling products.

- Broad, Even Discharge
- Clean, Filtered Airflow to 2,000 CFM
- Static Pressure to 4.0" Water
- 115 or 230 VAC, or Brushless 12, 24 or 48 VDC
- Standard, Modified or Custom Packaging
- 19" and 24" Widths, Complete Range of Panel Heights

EXHAUST VARIATIONS



WHEN ORDERING, SPECIFY EXHAUST LOCATION BY LETTER DESIGNATION

Performance characteristics of McLean Blowers and Fans with motors operating on 115 volt, 60 Hz, single phase power. Performance curves of specific models supplied on request.

- **ALL DIMENSIONS ARE IN INCHES**
- **ALL MODEL NUMBERS LISTED ARE FOR 115VAC, SINGLE PHASE 50/60 Hz**
- **EXHAUST VARIATIONS B,D,F,G, & H BUILT TO ORDER**
- **MOTORS UL RECOGNIZED, CSA CERTIFIED**
- **MOTOR DESIGN INCLUDES BALL BEARINGS AND THERMAL OVERLOAD PROTECTION**
- **230VAC AVAILABLE ON ORDER EXCEPT MODELS MARKED +**

Blower Style Code	Computer Age Grill	DIMENSIONS								
		CFM	Fig.	E	F	P max.	RPM	AMPS	WATTS	
1E220C	1E221C†	150	1	—	6 ¹ / ₂	3 ¹ / ₂	3100	1.0	80	
2EB300A	2EB301A	125	2	9 ¹ / ₂	7 ⁵ / ₁₆	5 ¹ / ₄	3000	0.9	80	
2EB3500A*	2EB3501A*	290	2	9 ¹ / ₂	7 ⁵ / ₁₆	5 ¹ / ₄	3050	1.6	122	
2EB3500C*	2EB3501C*	290	2	—	8 ¹ / ₄	5 ¹ / ₄	3050	1.6	122	
2EB3500E*	2EB3501E*	290	3	12 ¹ / ₂	10 ¹ / ₁₆	3 ¹ / ₂	3050	1.6	122	
2EB410A	2EB411A	300	2	10 ³ / ₁₆	8 ⁷ / ₃₂	7	1550	1.2	95	
2EB410C	2EB411C	300	2	—	8 ² / ₃₂	7	1550	1.2	95	
2EB410E	2EB411E	300	3	12 ¹ / ₁₆	10 ² / ₃₂	5 ¹ / ₄	1550	1.2	95	
2EB412A*	2EB413A*	350	2	10 ⁷ / ₃₂	8 ⁷ / ₃₂	7	3100	1.8	200	
2EB412C*	2EB413C*	350	2	—	8 ² / ₃₂	7	3100	1.8	200	
2EB412E*	2EB413E*	350	3	12 ² / ₃₂	10 ² / ₃₂	5 ¹ / ₄	3100	1.8	200	
2EB512A	2EB513A	500	2	11 ⁹ / ₁₆	8 ³ / ₃₂	8 ³ / ₄	1700	1.8	130	
2EB512C	2EB513C	500	2	—	9 ¹ / ₃₂	8 ³ / ₄	1700	1.8	130	
2EB512E	2EB513E	500	3	14 ¹ / ₄	11 ² / ₃₂	7	1700	1.8	130	
2EB612A	2EB613A	800	2	13 ¹ / ₃₂	10 ⁷ / ₃₂	10 ¹ / ₂	1650	1.9	220	
1EB710B	1EB711B	180 130	4	14 ⁷ / ₁₆	12	3 ¹ / ₂	1400 1150	1.7 1.2	135 100	
1EB920B	1EB921B†	350 215	4	17 ⁷ / ₁₆	14 ¹ / ₂	5 ¹ / ₄	1135 675	5.3 2.7	410 200	
1EB990B†	1EB981B†	550 345	4	18 ⁷ / ₁₆	14 ¹ / ₂	7	1350 825	7.6 4.8	580 370	

ALL *MODELS AVAILABLE IN 24 and 48 VDC

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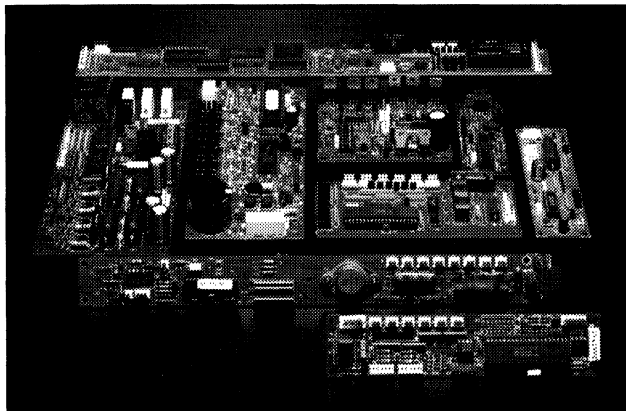
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ZERO

Cambridge Aeroflo

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SENSORS and CONTROLS

A variety of innovative sensors and controls that protect equipment from adverse environmental conditions are designed and manufactured by the Cambridge Aeroflo division of McLean Engineering. These devices can detect and compensate for restricted airflow, increased heat loads and changes in ambient conditions. In addition, these sophisticated units can trigger a variety of alarms indicating fan failure, filter blockage, over-temperature, power failure and logic failure. Custom designs combine any or all of these features with a PC interface for failure reporting and system reprogramming. Multiple devices can be networked via an I²C™ bus for central monitoring of integrated systems.

SIMPLE ALARM MODULES

Imbedded microcontroller measures the speed of up to 12 fans. Remote or local alarms are generated for complete fan failure or gradual deterioration.

PROGRAMMABLE MONITOR ALARM MODULES

Functions as either a measurement tool or an imbedded programmable monitoring device. Parameters downloadable to a PC via an I²C™ link. Networkable for system expansion.

SINGLE FAN CONTROL MODULES

Single board system designed to control the speed and monitor the performance of one fan. Varies fan speed based on measured enclosure temperature. Features kick-start voltage on power-up, minimum clamp voltage.

HEATER CONTROL MODULES

Controls AC heating elements within thermal management systems with a variety of control algorithms. Alarms for heater failure. Networkable and programmable.

THERMAL CONTROL MODULES

Controls fan speeds based on actual system cooling demands, for longer system life, minimum noise and vibration. Embedded software can schedule and prioritize multiple tasks. Alarms for fan failure, over-temperature and temperature sensor failure.

AIR FLOW/TEMPERATURE SENSORS AND CONTROLS

Real-time measurement of airflow and temperature. Airflow sensor can detect failed air mover or filter blockage. I²C™ sensor provides overall system interface capability. Very compact.

HUMIDITY SENSORS AND CONTROLS

Reliable and economical real-time relative humidity measurement to $\pm 3\%$ accuracy. Humidity levels exceeding user defined limits will trigger alarms and activate dehumidifiers. I²C™ networkable.

SUPPORT MODULES

3 or 4 Wire Converter Modules • I²C™ to PC Parallel Port Modules • I²C™ to RS-232 Port Module • I²C™ to Modem Modules. All are compact, versatile and offer increased system utility.

SYSTEM INTEGRATION AND CUSTOMIZATION

Efficient and effective solutions can range from low cost airflow sensors to complex configurations with multiple sensors monitoring and reporting status, faults and trends of a wide range of specified parameters.

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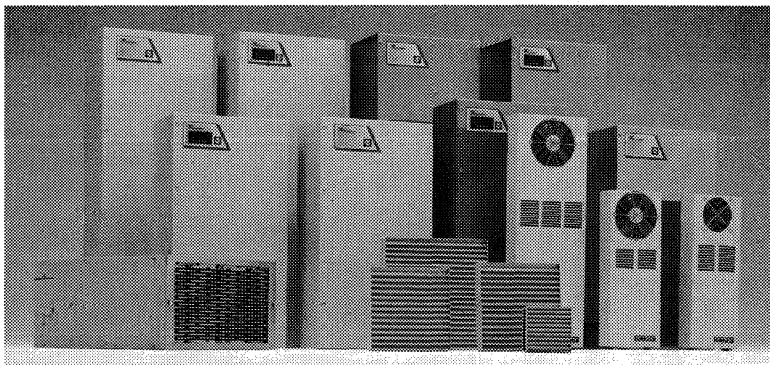
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COOLING FOR ELECTRICAL/ELECTRONIC ENCLOSURES

Protect your enclosed electronics from heat build-up, harsh dirty environments, and shut-downs.

Selecting the right product will depend upon the temperature and the quality of the ambient air to which your system will be exposed. The following should direct you to the right product family.



CALL FOR OUR FREE CATALOG OR SIZING SOFTWARE,
OR TRY OUR WEB SITE AT <http://www.zerocorp.com>

Closed-Loop Air Conditioners

- Temperature inside the enclosure must be maintained at or below the ambient temperature.
- Humidity must be removed from the enclosure
- Ambient air contaminants must be kept out of the enclosure by the use of a closed-loop cooling system.

Closed-Loop Heat Exchangers

- Electronic controls can operate at a temperature differential slightly above the ambient.
- Humidity is not a factor
- Ambient air contaminants must be kept out of the enclosure by the use of a closed-loop cooling system.

Filter Fan Packages

- Electronic controls can operate at a temperature differential slightly above the ambient.
- Humidity is not a factor
- Quality of filtered ambient air is acceptable to be drawn into the enclosure for cooling.

ORDER TO MEET YOUR REQUIREMENTS:

STOCK These *popular models* are *immediately available* with standard options.

STANDARD BUILD-TO-ORDER

These *basic models* can be modified with an encompassing line of *option packages* to accommodate your specific application.

GROUND-UP CUSTOM

Work with a *project team* comprised of engineering, manufacturing and testing experts to build a *unit suited for your specifications*.



Agency Approvals
available on many models.



Established Working Procedures.
State-of-the-Art Facility.

FOR FAST RESPONSE CALL (800) 896-2665

Other ZERO Companies Eager to Satisfy Your Needs

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Serving OEM & MRO in markets from

TELECOM to MACHINE TOOL/ROBOTICS to FOOD PROCESSING

	Model Name	Rated Capacity	Dimensions (Inches)	
SIDE-MOUNT AIR CONDITIONERS	Genesis 13	1000 BTU/Hr.	13.25 x 14.25 x 7.70	<i>In-Stock models available.</i>
	Genesis 17	1800 BTU/Hr.	17.65 x 12 x 8.57	<i>In-Stock models available.</i>
	ProAir CR23	1600 BTU/Hr.	23 x 10 x 8.75	<i>In-Stock models available.</i>
	Genesis 28	2000-6000 BTU/Hr.	28.50 x 17 x 11.26	<i>In-Stock models available.</i>
	ProAir CR29	2000-4000 BTU/Hr.	29.50 x 15.75 x 8.63	<i>In-Stock models available.</i>
	Genesis 33NSM	4000 BTU/Hr.	34.37 x 12 x 9.83	<i>In-Stock models available.</i>
	Slimboy 33 WC	4000 BTU/Hr.	34.13 x 12.38 x 8.75	
	Slimboy 36	6000 BTU/Hr.	36.69 x 19 x 10.88	<i>In-Stock models available.</i>
	Genesis 36N	6000 BTU/Hr.	38.72 x 15 x 11.27	<i>In-Stock models available.</i>
	ProAir CR43	6000-8500 BTU/Hr.	43.31 x 15.75 x 10.25	<i>In-Stock models available.</i>
	Slimboy 47N	8000-10000 BTU/Hr.	49.13 x 15 x 10.50	
	Slimboy 47WC	8000-12000 BTU/Hr.	47.25 x 19 x 10	
	Genesis 52	6000-12000 BTU/Hr.	52.63 x 17.13 x 11.27	<i>In-Stock models available.</i>
Slimboy 52HC	14000-19000 BTU/Hr.	52.50 x 23 x 12.88		
TOP-MOUNT AIR CONDITIONERS	Genesis HB11	2000-4000 BTU/Hr.	10.25 x 17 x 21.02	<i>In-Stock models available.</i>
	Hiboy 16	6000-9000 BTU/Hr.	15.72 x 19 x 25.19	
	Hiboy 30	6000 BTU/Hr.	14.13 x 31.38 x 15	
RACK-MOUNT AIR CONDITIONERS	ProAir RCR11	2000-4000 BTU/Hr.	10.47 x 19 x 21.47	<i>In-Stock models available.</i>
	Loboy 11WC	4000 BTU/Hr.	10.47 x 19 x 19.63	
	Loboy 14	7000 BTU/Hr.	14.75 x 19 x 23.63	
	Loboy 16	10000 BTU/Hr.	15.72 x 19 x 25.19	
HEAT EXCHANGERS (modified heat pipe core)	ProAir XR-20-4	4W/°F	20 x 7.50 x 3	<i>In-Stock models available.</i>
	ProAir XR-20-6	4W/°F	20 x 7.50 x 3	<i>In-Stock models available.</i>
	ProAir XR-29-3	8W/°F	29.50 x 10 x 3.13	<i>In-Stock models available.</i>
	HE-11	4W/°F	11.31 x 5.13 x 5.25	<i>In-Stock models available.</i>
	HE-15	14W/°F	15 x 7.13 x 7.88	<i>In-Stock models available.</i>
	HE-28	20W/°F	28.50 x 19 x 9.25	
	HE-33NSM	20W/°F	34.13 x 12.25 x 9.25	
	HE-33NRM	20W/°F	34.25 x 13.75 x 9.50	
HE-36HC	30W/°F	36.69 x 19 x 13.44		
HEAT EXCHANGERS (convoluted aluminum core)	HX-20SF	7W/°F	20.19 x 11.19 x 2.06	
	HX-20DF	7W/°F	20.19 x 11.19 x 2.06	<i>In-Stock models available.</i>
	HX-26SF	8W/°F	26.19 x 11.19 x 2.06	
	HX-26DF	8W/°F	26.19 x 11.19 x 2.06	
	HX-38SF	12W/°F	38.25 x 20 x 2.06	
	HX-38DF	17W/°F	38.25 x 20 x 2.06	<i>In-Stock models available.</i>
FILTER FAN PACKAGES	SF-05	35 CFM	5.10 x 5.10 x 3.24	<i>In-Stock models available.</i>
	SF-09	70 CFM	8.03 x 8.03 x 3.77	<i>In-Stock models available.</i>
	SF-10	130 CFM	9.84 x 9.84 x 5.19	<i>In-Stock models available.</i>
	SF-13	325 CFM	12.71 x 12.71 x 6.08	<i>In-Stock models available.</i>

FOR FAST RESPONSE CALL (800) 896-2665

Other ZERO Companies Eager to Satisfy Your Needs

ZERO PFT, Refer to Cabinets & Enclosures Section 1400
 ZERO Plastic Cases, Refer to Cabinets & Enclosures Section 1400
 ZERO Stantron, Refer to Cabinets & Enclosures Section 1400

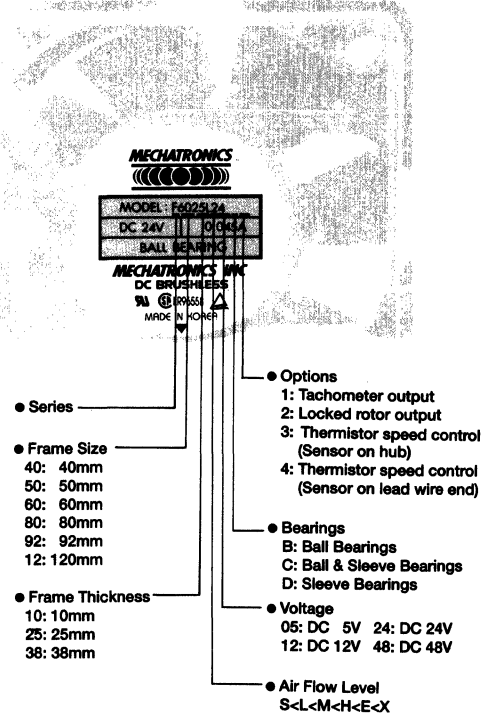

ZERO



Mechatronics, Inc., 8152 304th Ave., SE, Preston, WA 98050
TEL 800/453-4569 425/222-5900 FAX 425/222-5155

FEATURE

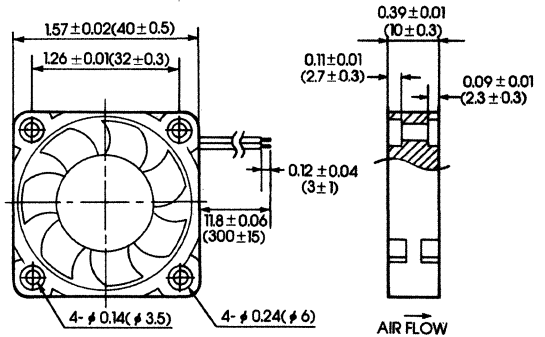
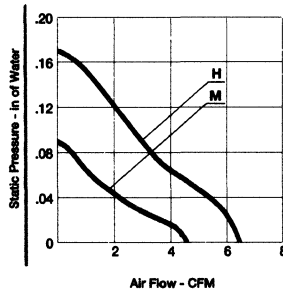
- DC Fans, 5/12/24/48 VDC
- Ball or Sleeve Bearing Construction
- Low Noise and Low Power Design
- Reverse Polarity and Locked Rotor Protection
- Tachometer and Locked Rotor Signal Outputs
- Thermistor Option
- All Models Designed to meet
 UL, CSA, I.E.C 950 Standards
 UL E137077, CSA 96558,
 TUV R9154180/R9154178/R9154634



DC AXIAL FANS

F4010

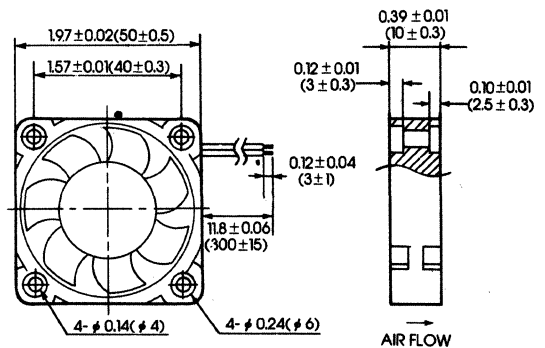
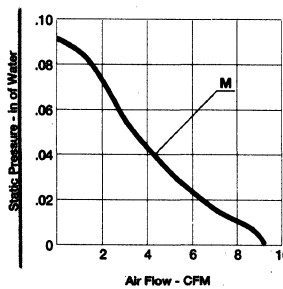
Size: 1.57 × 1.57 × 0.47inch
 40 × 40 × 10mm



Model No.	Rated Voltage (V)	Current (mA)		Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		5	12					
F4010M	5/12	100	40	4,200	4.6	0.09	21	0.56
F4010H	12		70	6,200	6.4	0.16	26	

F5010

Size: 1.57 × 1.57 × 0.79inch
 50 × 50 × 10mm



Model No.	Rated Voltage (V)	Current (mA)		Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		12	70					
F5010M	12		70	5,000	9.3	0.09	26	0.74

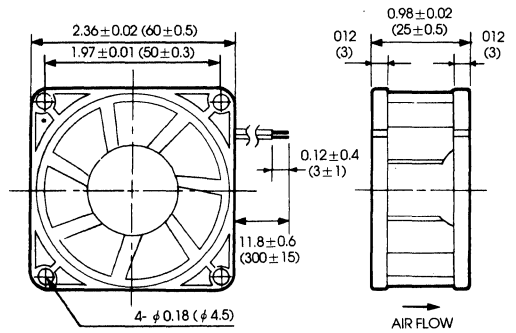
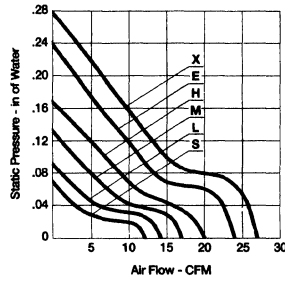


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DC AXIAL FANS

F6025

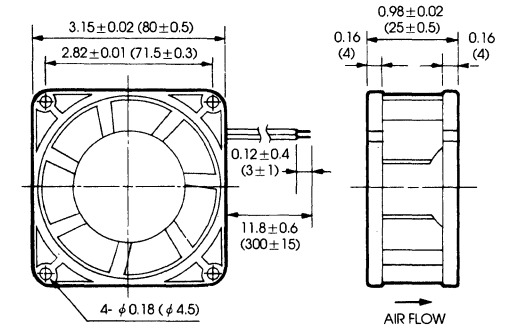
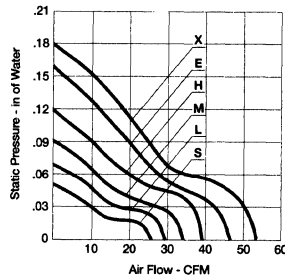
Size: 2.36 × 2.36 × 0.98 inch
60 × 60 × 25mm



Model No.	Rated Voltage (V)	Current (mA)			Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		5	12	24					
F6025S	5/12/24	150	75	40	2,300	12	0.07	22	2.47
F6025L	5/12/24	190	85	45	2,800	14	0.09	24	
F6025M	5/12/24	270	95	55	3,300	17	0.13	27	
F6025H	5/12/24	410	140	80	3,800	20	0.17	31	
F6025E	5/12/24	700	230	125	4,600	24	0.23	36	
F6025X	12/24	330	170	170	5,200	27	0.28	41	

F8025

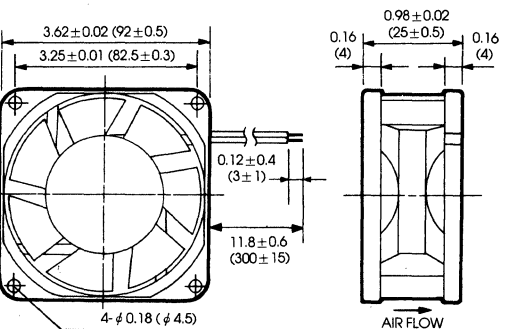
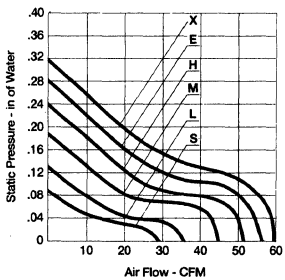
Size: 3.15 × 3.15 × 0.98 inch
80 × 80 × 25mm



Model No.	Rated Voltage (V)	Current (mA)			Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		5	12	24					
F8025S	5/12/24	150	75	50	1,500	25	0.05	20	2.79
F8025L	5/12/24	200	90	60	1,800	29	0.07	22	
F8025M	5/12/24	290	120	80	2,100	34	0.09	26	
F8025H	5/12/24	420	145	90	2,400	39	0.12	29	
F8025E	5/12/24	800	240	140	2,800	46	0.16	32	
F8025X	12/24	480	260	3,200	51	0.18	35		

E9225

Size: 3.62 × 3.62 × 0.98 inch
92 × 92 × 25mm



Model No.	Rated Voltage (V)	Current (mA)				Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		5	12	24	48					
E9225S	5/12/24	270	98	60	2,000	29	0.09	24	3.89	
E9225L	5/12/24	400	150	85	2,400	35	0.13	27		
E9225M	5/12/24	560	235	125	2,800	44	0.19	32		
E9225H	12/24/48	360	168	85	3,200	51	0.24	36		
E9225E	12/24/48	498	255	130	3,600	56	0.28	39		
E9225X	12/24	550	300	4,000	60	0.32	43			

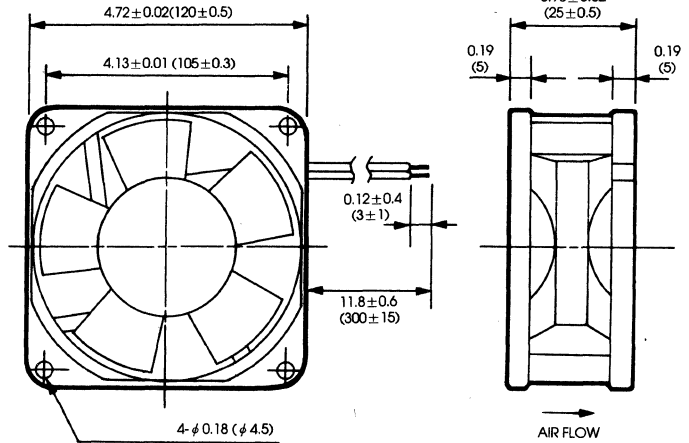
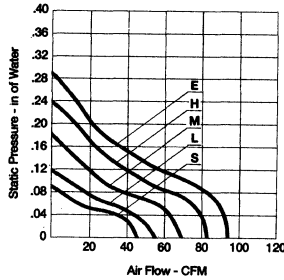


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DC AXIAL FANS

E1225

Size: 4.72×4.72×0.98 inch
120×120×25mm

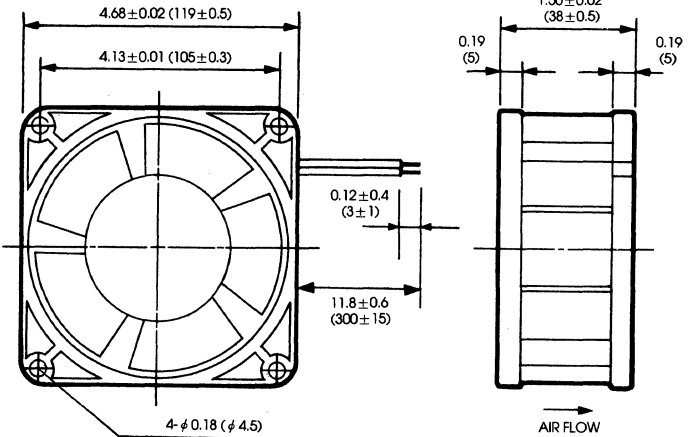
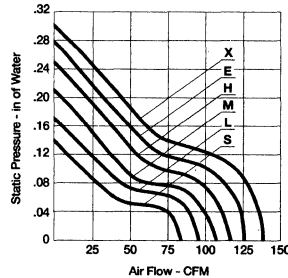


Model No.	Rated Voltage (V)	Current (mA)				Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		5	12	24	48					
E1225S	5/12/24	220	100	85		1,400	44	0.09	28	6.28
E1225L	5/12/24	340	142	95		1,800	55	0.12	32	
E1225M	5/12/24	600	245	160		2,200	67	0.18	36	
E1225H	12/24/48		385	240	120	2,600	82	0.24	40	
E1225E	12/24/48		580	340	170	3,000	93	0.29	44	

* Available with quick disconnect terminal block.

F1238

Size: 4.69×4.69×1.5 inch
119×119×38mm



Model No.	Rated Voltage (V)	Current (mA)				Revolution (RPM)	Air Volume (cfm)	Max. Static Pressure (in H ₂ O)	Sound Noise (dBA)	Weight (oz)
		5	12	24	48					
F1238S	5/12/24/48	520	180	90	60	1,800	82	0.14	34	7.87
F1238L	5/12/24/48	800	290	145	80	2,050	93	0.17	36	
F1238M	12/24/48		360	180	120	2,300	104	0.21	38	
F1238H	12/24/48		440	220	140	2,500	112	0.25	41	
F1238E	12/24		700	350		2,800	125	0.28	43	
F1238X	12/24		950	500		3,100	140	0.30	45	

* Available with quick disconnect terminal block.

● Mechatronics Fan Options

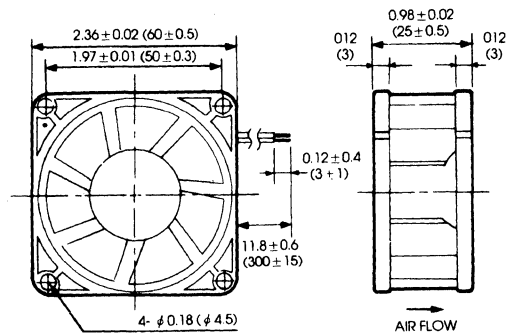
1. Tachometer Output Signal
2. Locked Rotor Output Signal
3. Thermistor Speed Control - Hub mounted sensor
4. Thermistor Speed Control - Wire mounted sensor

DC Axial Fans



F6025-HP Series

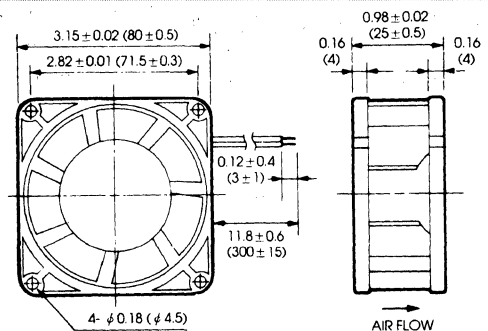
- 60mm square x 25mm frame size
- High back pressure impeller design for better cooling performance
- Flange type or rib type housing available
- UL/CUL/TUV agency listed
- Ball bearing or sleeve bearing construction available
- Custom added-value options (i.e. special leadwires, connector installation, etc.)



Model	Voltage (VDC)	Current (mA)	Power (W)	Speed (RPM)	Air Flow		Static Pressure		Noise (dBA)
					(m3/min)	(CFM)	(mmH2O)	(inH2O)	
F6025S12-HP	12	75	0.90	2,400	0.34	12	2.37	0.09	22
F6025L12-HP	12	85	1.02	3,000	0.41	14	3.54	0.14	25
F6025M12-HP	12	95	1.14	3,600	0.49	17	5.02	0.20	28
F6025H12-HP	12	140	1.68	4,200	0.57	20	6.64	0.26	32
F6025E12-HP	12	230	2.76	5,000	0.68	24	8.05	0.32	37
F6025X12-HP	12	330	3.96	5,800	0.79	28	9.36	0.37	42
F6025S24-HP	24	40	0.96	2,400	0.34	12	2.37	0.09	22
F6025L24-HP	24	45	1.08	3,000	0.41	14	3.54	0.14	25
F6025M24-HP	24	55	1.32	3,600	0.49	17	5.02	0.20	28
F6025H24-HP	24	80	1.92	4,200	0.57	20	6.64	0.26	32
F6025E24-HP	24	125	3.00	5,000	0.68	24	8.05	0.32	37
F6025X24-HP	24	170	4.08	5,800	0.79	28	9.36	0.37	42

F8025-HP Series

- 80mm square x 25mm frame size
- High back pressure impeller design for better cooling performance
- Flange type or rib type housing available
- UL/CUL/TUV agency listed
- Ball bearing or sleeve bearing construction available
- Custom added-value options (i.e. special leadwires, connector installation, etc.)



Model	Voltage (VDC)	Current (mA)	Power (W)	Speed (RPM)	Air Flow		Static Pressure		Noise (dBA)
					(m3/min)	(CFM)	(mmH2O)	(inH2O)	
F8025S12-HP	12	75	0.90	2,000	0.75	26	1.79	0.07	22
F8025L12-HP	12	90	1.08	2,400	0.87	31	2.62	0.10	26
F8025M12-HP	12	120	1.44	2,800	1.00	35	3.17	0.12	29
F8025H12-HP	12	145	1.72	3,200	1.14	40	4.32	0.17	32
F8025E12-HP	12	240	2.88	3,600	1.31	46	5.36	0.21	35
F8025X12-HP	12	480	5.76	4,200	1.49	53	6.48	0.26	39
F8025S24-HP	24	50	1.20	2,000	0.75	26	1.79	0.07	22
F8025L24-HP	24	60	1.44	2,400	0.87	31	2.62	0.10	26
F8025M24-HP	24	80	1.92	2,800	1.00	35	3.17	0.12	29
F8025H24-HP	24	90	2.16	3,200	1.14	40	4.32	0.17	32
F8025E24-HP	24	140	3.36	3,600	1.31	46	5.36	0.21	35
F8025X24-HP	24	260	6.24	4,200	1.49	53	6.48	0.26	39



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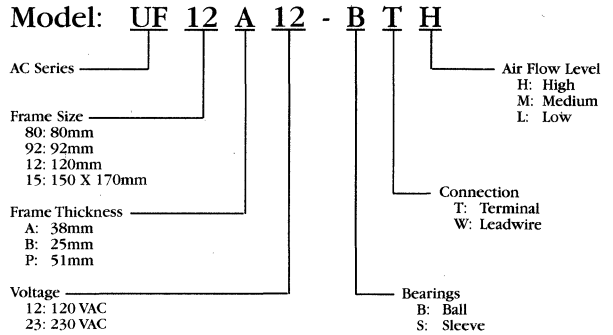


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AC AXIAL FANS

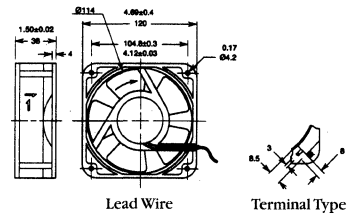
FEATURE

- Ball or Sleeve Bearing Construction
- Aluminum die-cast frame
- UL 94V-o impeller
- Terminal connector or leadwire
- Impedance protected
- Dielectric Strength
AC 1500V (50/60Hz) one min.
- Temperature range
Ball bearings -40°C to 70°C
Sleeve bearings -20°C to 70°C
- Meets UL, CSA and VDE standards
UL File No. E137077
CSA No. LR 95832-7M
VDE License No. 3074ÜG



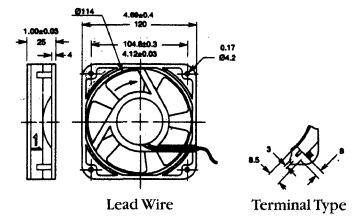
UF12A Series

Model No.	Rated Voltage (V)	Frequency (HZ)	Input Power (W)	Rated Current (A)	Locked Current (A)	Speed (RPM)	Air Volume (CFM)	Maximum Pressure (in H ₂ O)	Noise (dBA)	Weight (oz)
UF12A12-__H	120	60	15	0.19	0.20	3100	106	0.35	47	18.7
UF12A23-__H	230	60	15	0.09	0.10	3100	106	0.35	47	18.7
UF12A12-__M	120	60	14	0.17	0.19	2750	92	0.28	45	18.7
UF12A23-__M	230	60	14	0.08	0.09	2750	92	0.28	45	18.7
UF12A12-__L	120	60	12	0.15	0.16	2300	81	0.16	38	18.7
UF12A23-__L	230	60	12	0.07	0.08	2300	81	0.16	38	18.7



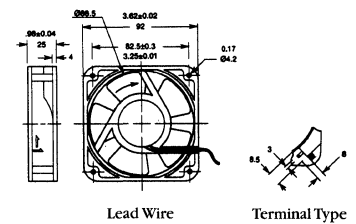
UF12B Series

Model No.	Rated Voltage (V)	Frequency (HZ)	Input Power (W)	Rated Current (A)	Locked Current (A)	Speed (RPM)	Air Volume (CFM)	Maximum Pressure (in H ₂ O)	Noise (dBA)	Weight (oz)
UF12B12-__H	120	60	13	0.15	0.17	2700	74	0.22	42	11.6
UF12B23-__H	230	60	13	0.07	0.08	2700	74	0.22	42	11.6
UF12B12-__L	120	60	12	0.13	0.14	2000	53	0.12	33	11.6
UF12B23-__L	230	60	12	0.06	0.07	2000	53	0.12	33	11.6



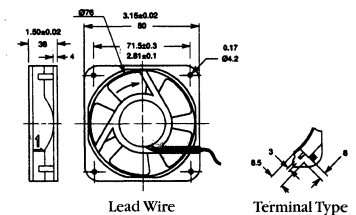
UF92B Series

Model No.	Rated Voltage (V)	Frequency (HZ)	Input Power (W)	Rated Current (A)	Locked Current (A)	Speed (RPM)	Air Volume (CFM)	Maximum Pressure (in H ₂ O)	Noise (dBA)	Weight (oz)
UF92B12-__H	120	60	13	0.14	0.15	2900	31	0.26	36	10.0
UF92B23-__H	230	60	13	0.07	0.08	2900	31	0.26	36	10.0
UF92B12-__L	120	60	12	0.12	0.13	2300	25	0.16	32	10.0
UF92B23-__L	230	60	12	0.06	0.07	2300	25	0.16	32	10.0



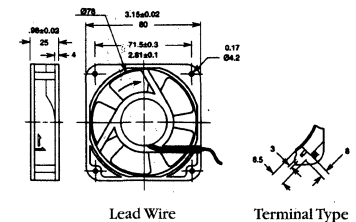
UF80A Series

Model No.	Rated Voltage (V)	Frequency (HZ)	Input Power (W)	Rated Current (A)	Locked Current (A)	Speed (RPM)	Air Volume (CFM)	Maximum Pressure (in H ₂ O)	Noise (dBA)	Weight (oz)
UF80A12-__H	120	60	10	0.12	0.13	3000	29	0.22	36	10.0
UF80A23-__H	230	60	10	0.06	0.07	3000	29	0.22	36	10.0
UF80A12-__L	120	60	9	0.11	0.12	2400	25	0.16	32	10.0
UF80A23-__L	230	60	9	0.05	0.06	2400	25	0.16	32	10.0



UF80B Series

Model No.	Rated Voltage (V)	Frequency (HZ)	Input Power (W)	Rated Current (A)	Locked Current (A)	Speed (RPM)	Air Volume (CFM)	Maximum Pressure (in H ₂ O)	Noise (dBA)	Weight (oz)
UF80B12-__H	120	60	13	0.14	0.15	3000	24	0.22	35	9.2
UF80B23-__H	230	60	13	0.07	0.09	3000	24	0.22	35	9.2
UF80B12-__L	120	60	12	0.13	0.14	2400	18	0.14	32	9.2
UF80B23-__L	230	60	12	0.06	0.07	2400	18	0.14	32	9.2





The World Leader in Thermoelectrics

A Brief Introduction to Thermoelectrics

Thermoelectric coolers (TECs) are solid state heat pumps that utilize the Peltier effect. During operation, DC current flows through the TEC, causing heat to be transferred from one side of the TEC to the other and creating a cold and hot side. A single-stage TEC can achieve temperature differences up to 70°C, or can transfer heat at a rate of 125W.

To achieve greater temperature differences (up to 131°C) select a multistage (cascade) TEC. To increase the amount of the heat transferred, the TEC's modular design allows the use of multiple TECs mounted side-by-side.

Benefits of MELCOR TECs

The special combination of benefits attained by TECs makes them the only effective solution for certain applications:

- Quick and economical cooling to below ambient
- Reduced space, size and weight
- Reliable solid-state operation – no sound or vibration (lifetimes of more than 200,000 hours!)
- Precision temperature control capability
- Minimal, if any, electrical noise
- DC operation
- Heating or cooling by changing direction of current flow
- More than 150 standard types available, from sub-miniature, low capacity to compact, high-capacity
- Multistage cascades to below -100°C, standard or designed to specifications
- Patented ThermaTEC™ cools at 200°C!

See the following pages for details on MELCOR's TECs!



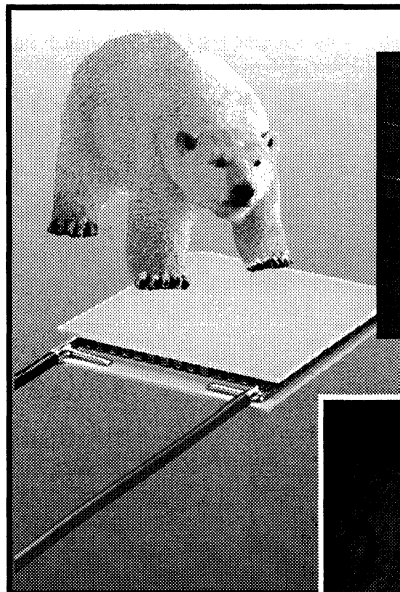
Melcor Corporation

EEM 1999

1040 Spruce Street
Trenton, N.J. 08648 USA
(609) 393-4178
FAX (609) 393-9461

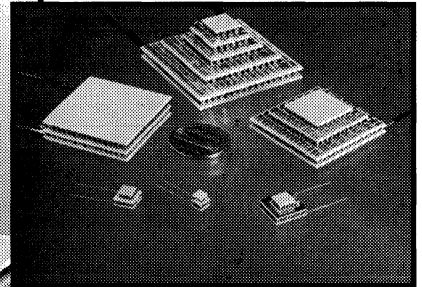
Web: www.melcor.com E-Mail: tecooler@melcor.com

For manufacturers' sales offices, see yellow pages

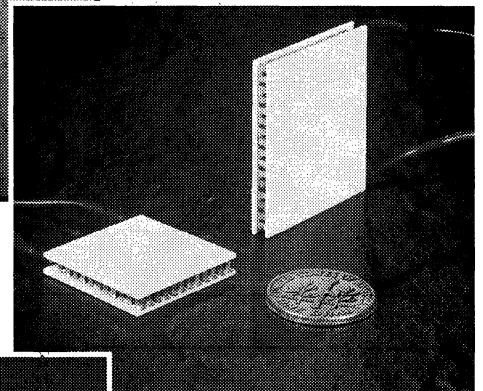


PolarTEC™

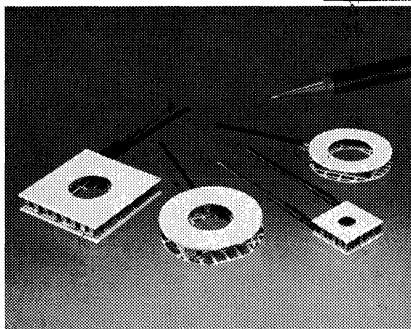
**ISO 9001
CERTIFIED**



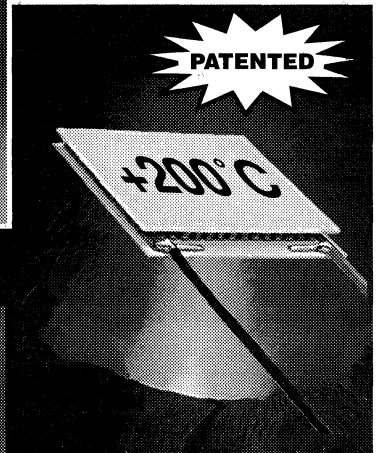
Multistage (Cascades)



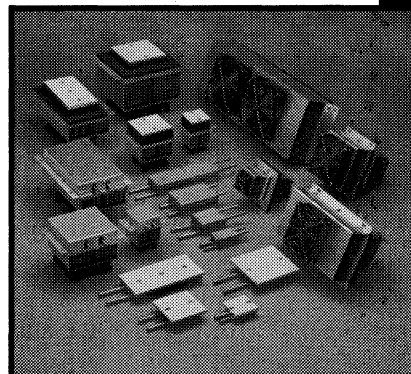
CP Series



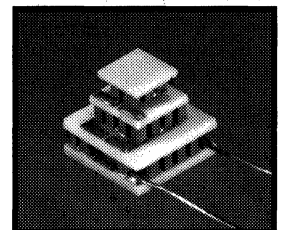
Center Hole



ThermaTEC™

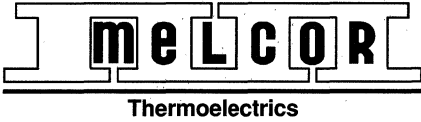


TechniCOOL™



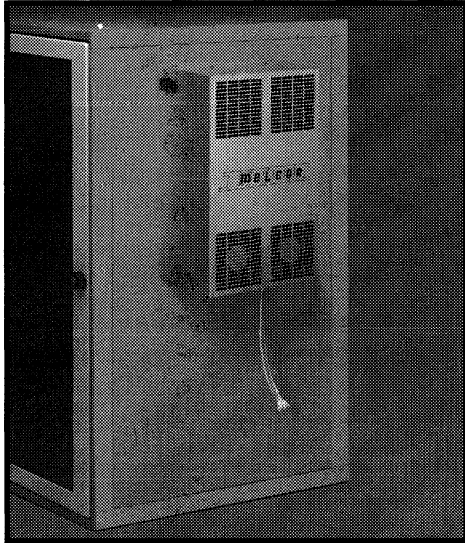
OptoTEC™

C-1513

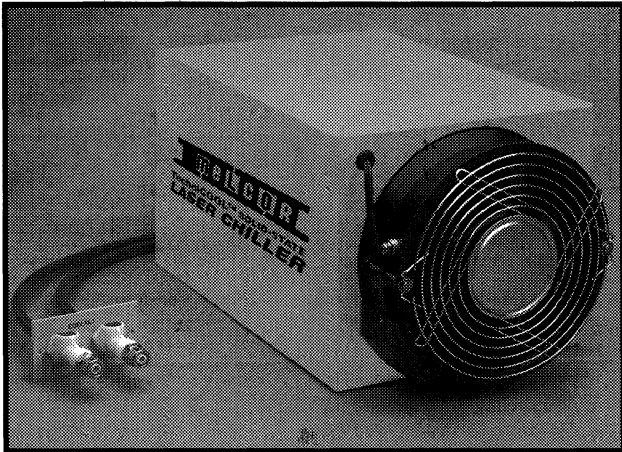


TechniCOOL™

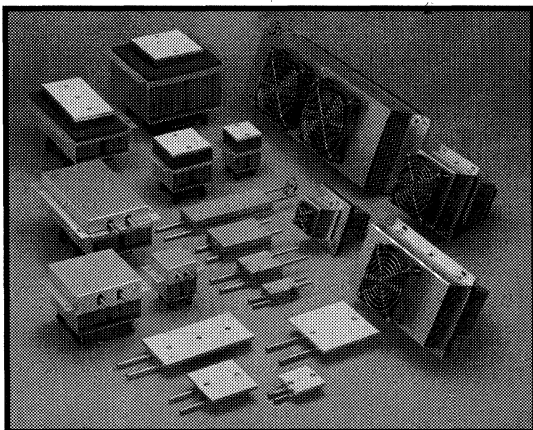
Air Conditioners • Chillers • Cold Plates



- Solid state air conditioners for electronics enclosures
- Externally mounted - no wasted cabinet space
- AC or DC operation
- Cooling and heating capabilities
- Digital temperature control
- Condensate removal system
- Mounts in any orientation
- Custom capabilities



- Compact liquid chillers for lasers, medical and process liquid
- Precise temperature control
- Low Cost
- Quiet operation
- Custom designed for your capacities and temperatures



- Range of standard sizes and capacities
- Solid state reliability
- Air conditioners
- Cold plate assemblies
- Liquid chillers
- Custom capabilities

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(609) 393-4178
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Web: www.melcor.com



Melcor Corporation

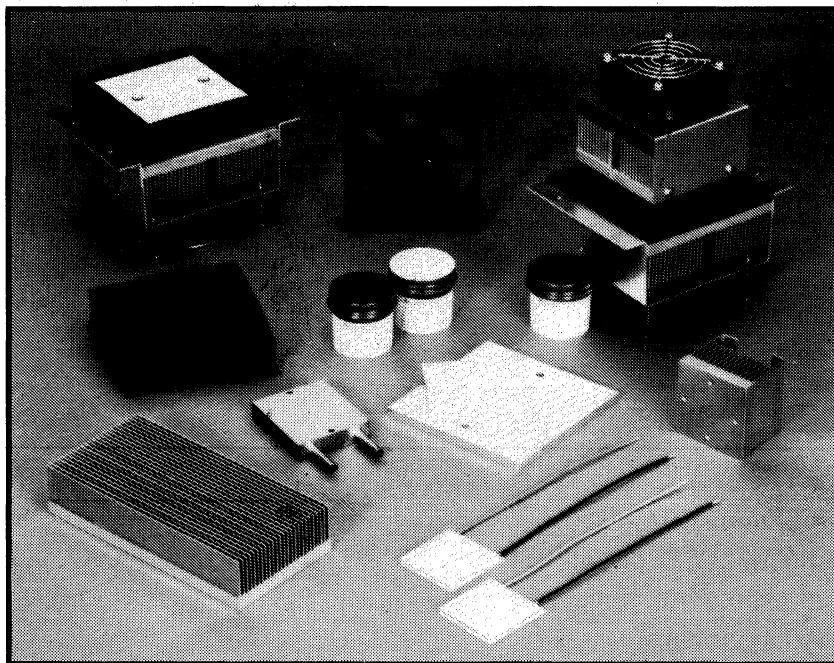
E-Mail: tecooler@melcor.com



**ISO 9001
CERTIFIED**

Melcor Thermal Solutions

To meet the requirements of a wide variety of heat transfer problems, Melcor offers a complete line of thermal management products. **Melcor Thermal Solutions** includes heat sinks and exchangers, cold plates, interface materials, power supplies, and controllers.



Some **Melcor Thermal Solutions** products:

Bonded Fin Heat Sinks

- High fin density (up to 8 fins/inch)
- Optional fan mount bracket
- Machined finish or solderable base
- Tapped & clearance assembly holes
- Sensor hole for temperature monitoring
- Custom options available

Extruded Fin Heat Sinks

- All aluminum
- Various finish options
- Low cost
- Custom options available

Liquid Heat Exchangers

- All copper construction
- Hose fittings
- Assembly holes (tapped or clearance)
- Machined flat finish
- Sensor hole for temperature monitoring

Interface Materials

- Wide variety of interface material types
- Expanded selection of thermal greases
- Choice of Aluminum Nitride, Aluminum Oxide, Graphite, and Paraffin/Aluminum interface pads
- Aluminum Nitride, Aluminum Oxide, and Silver filled thermally conductive epoxies

Cold Plates and Spacer Blocks

- All aluminum
- Assembly holes (tapped or clearance)
- Machine flat finish
- Sensor hole for temperature monitoring

Controllers

- Easy to use
- Very stable control
- Wide temperature control range
- Digital displays
- Universal AC input

Power Supplies

- Constant current or constant voltage operation
- Fully adjustable
- Digital displays
- Universal AC input



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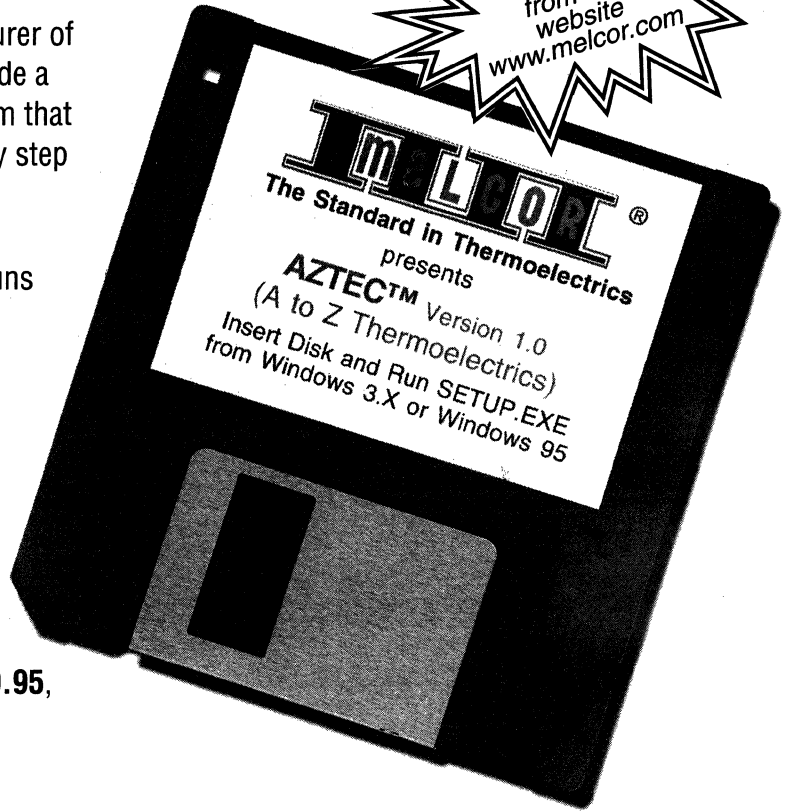


Software for Thermal Engineering

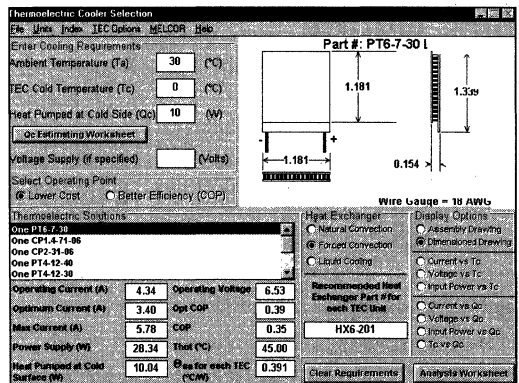
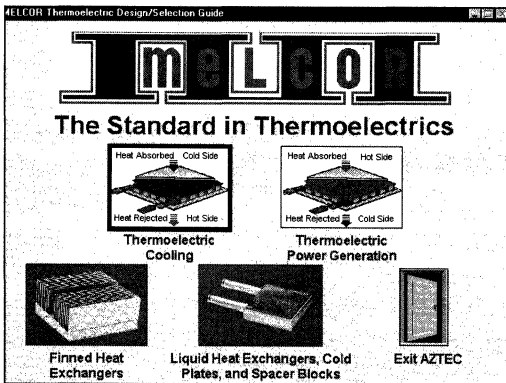


Leave it to the world's leading manufacturer of thermoelectric cooling products to provide a handy, Windows-based software program that takes the thermal designer through every step from A to Z.

AZTEC is an easy-to-use program that runs in either Windows 3.X or Windows 95. Available from MELCOR on a single floppy diskette or as a download from our web site, it includes thermal load estimating for both passive and active components, as well as for enclosures.



The AZTEC A to Z Thermoelectrics disk can be purchased from MELCOR for **\$49.95**, or downloaded free of charge from our web site (<http://www.melcor.com>).



The main menu screen lets you choose between Thermoelectric Cooling, Thermoelectric Power Generation, Finned Heat Sinks and Liquid Heat Exchangers/Cold Plates/Spacer Blocks.

When you go into Thermoelectric Cooling, AZTEC will select the thermoelectric cooler (TEC) that's right for your application, based upon the design parameters that you input, and provide a thermoelectric cooler analysis.



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Web: www.melcor.com E-Mail: tecooler@melcor.com



Thermoelectrics



Thermoelectric Cooling Modules

CP Series Specifications

for higher current, larger heat pumping applications

Catalog Number	IMAX (Amps)	TH = 25°C			N	Dimensions (mm)			
		QMAX ⁽¹⁾ (Watts)	VMAX (Volts)	ΔTMAX (°C)		A	B	C	D ⁽²⁾
CP 0.8-71-06L	2.1	10.1	8.6	67	71	18	18	18	3.4
CP 0.8-127-06L	2.1	18.1	15.4	67	127	25	25	25	3.4
*CP 0.8-254-06L	2.1/4.2	36.2	30.8/15.4	67	254	50	25	50	3.4
CP 0.8-127-05L	2.6	22.4	15.4	67	127	25	25	25	3.1
*CP 0.8-254-05L	2.6/5.2	44.8	30.8/15.4	67	254	50	25	50	3.1
CP 1.0-31-08L	2.5	5.3	3.75	67	31	15	15	15	4.0
CP 1.0-63-08L	2.5	10.6	7.62	67	63	15	30	15	4.0
CP 1.0-71-08L	2.5	12.0	8.60	67	71	23	23	23	4.0
CP 1.0-127-08L	2.5	21.4	15.4	67	127	30	30	30	4.0
*CP 1.0-254-08L	2.5/5.0	42.8	30.8/15.4	67	254	60	30	60	4.0
CP 1.0-31-06L	3.0	6.3	3.75	67	31	15	15	15	3.6
CP 1.0-63-06L	3.0	12.7	7.62	67	63	15	30	15	3.6
CP 1.0-71-06L	3.0	14.4	8.60	67	71	23	23	23	3.6
CP 1.0-127-06L	3.0	25.7	15.4	67	127	30	30	30	3.6
*CP 1.0-254-06L	3.0/6.0	51.4	30.8/15.4	67	254	60	30	60	3.6
CP 1.0-31-05L	3.9	8.2	3.75	67	31	15	15	15	3.2
CP 1.0-63-05L	3.9	16.6	7.62	67	63	15	30	15	3.2
CP 1.0-71-05L	3.9	18.7	8.60	67	71	23	23	23	3.2
CP 1.0-127-05L	3.9	33.4	15.4	67	127	30	30	30	3.2
*CP 1.0-254-05L	3.9/7.8	66.8	30.8/15.4	67	254	60	30	60	3.2
CP 1.4-17-10L	3.9	4.5	2.06	70	17	15	15	15	4.7
CP 1.4-31-10L	3.9	8.2	3.75	70	31	20	20	20	4.7
CP 1.4-35-10L	3.9	9.2	4.24	70	35	15	30	15	4.7
CP 1.4-71-10L	3.9	18.7	8.60	70	71	30	30	30	4.7
CP 1.4-127-10L	3.9	33.4	15.4	70	127	40	40	40	4.7
CP 1.4-17-06L	6.0	6.9	2.06	67	17	15	15	15	3.8
CP 1.4-31-06L	6.0	12.5	3.75	67	31	20	20	20	3.8
CP 1.4-35-06L	6.0	14.2	4.24	67	35	15	30	15	3.8
CP 1.4-71-06L	6.0	28.7	8.60	67	71	30	30	30	3.8
CP 1.4-127-06L	6.0	51.4	15.4	67	127	40	40	40	3.8
CP 1.4-17-045L	8.5	9.2	2.06	67	17	15	15	15	3.3
CP 1.4-31-045L	8.5	16.8	3.75	67	31	20	20	20	3.3
CP 1.4-35-045L	8.5	19.0	4.24	67	35	15	30	15	3.3
CP 1.4-71-045L	8.5	38.5	8.60	67	71	30	30	30	3.3
CP 1.4-127-045L	8.5	72.0	15.4	67	127	40	40	40	3.3
CP 2-17-10L	9.0	10.3	2.06	70	17	22	22	22	5.6
CP 2-31-10L	9.0	18.8	3.75	70	31	30	30	30	5.6
CP 2-49-10L	9.0	29.7	5.93	70	49	36	36	36	5.6
CP 2-71-10L	9.0	43.1	8.60	70	71	44	44	44	5.6
CP 2-127-10L	9.0	77.1	15.4	70	127	62	62	62	5.6
CP 2-17-06L	14.0	16.0	2.06	67	17	22	22	22	4.6
CP 2-31-06L	14.0	29.3	3.75	67	31	30	30	30	4.6
CP 2-49-06L	14.0	46.2	5.93	67	49	36	36	36	4.6
CP 2-71-06L	14.0	67.0	8.60	67	71	44	44	44	4.6
CP 2-127-06L	14.0	120.0	15.4	67	127	62	62	62	4.6
CP 2.8-31-06L	24.0	50.2	3.75	67	31	60	40	40	5.0
CP 5-31-10L	39.0	81.5	3.75	70	31	55	55	55	5.8
CP 5-31-06L	60.0	125.0	3.75	67	31	55	55	55	4.9

*CP __-254-__

These modules have four leads and can be wired in series or parallel. The Specifications table indicates maximum values for V and I when "Wired in Series"/ "Wired in Parallel."

Multistage (Cascade) Specifications

for greater temperature differentials

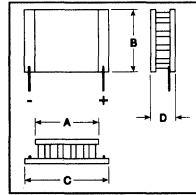
Catalog Number	IMAX (Amps)	TH = 25°C			Dimensions (mm)				
		QMAX ⁽¹⁾ (Watts)	VMAX (Volts)	ΔTMAX (°C)	A	B	C	D	E
2 OT 1.4-10-F9	1.4	0.4	0.84	86	3.2	3.2	3.9	3.9	3.8
2 OT 1.4-24-F9	1.4	1.0	1.96	83	4.1	4.1	6.1	6.1	4.3
2 OT 0.6-83-F9	0.6	1.2	7.96	92	4.9	4.9	9.8	9.8	4.2
2 CP 040 080-7-2	2.0	0.41	0.8	91	3.5	3.5	8	8	7.4
2 CP 040 065-31-17	2.1	3.11	3.8	81	11.5	11.5	15	15	6.6
2 CP 085 100-31-20	5.9	9.74	3.8	77	23	26	30	30	10.7
2 CP 055 065-71-31	4.3	12.65	8.6	85	20	20	30	30	7.2
2 SC 040 050-127-63	2.8	16.05	15.5	83	30	30	30	30	7.1
2 SC 055 045-127-63	6.0	34.51	15.5	83	40	40	40	40	7.5
2 SC 085 065-127-70	9.5	59.25	15.5	81	62	62	62	62	8.9
3 OT 1.3-26-F9	1.3	0.3	1.94	110	2.5	2.5	6.6	6.6	5.2
3 OT 1.3-46-F9	1.3	0.6	3.40	109	4.1	4.4	8.8	8.8	5.8
3 CP 040 065-127-71-31	1.8	6.48	15.4	96	15	15	30	30	9.5
3 CP 085 065-71-31-17	8.4	15.60	7.7	97	22	22	44	44	12.9
4 CP 040 065-71-31-17-7	1.7	1.66	7.9	110	8	8	23	23	12.5
4 CP 055 065-69-29-11-6	3.4	2.68	7.5	112	4.5	14.5	24	33	13.8
4 CP 055 065-127-71-31-17	3.1	6.84	14.6	107	15	15	40	40	13.8
5 CP 040 065-127-71-31-17-7	1.6	1.74	14.5	118	8	8	30	30	15.4
6 CP 040 065-127-71-31-17-2	1.5	0.63	14.5	131	3.5	3.5	30	30	18.3

OptoTEC™ Series Specifications

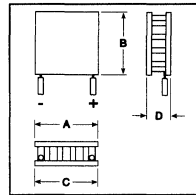
for low current, smaller heat pumping applications

Model	IMAX	TH = 25°C			Dimensions (mm)			
		QMAX ⁽¹⁾	VMAX	ΔTMAX	A	B	C	D
OT 1.2 - 7 - F1	1.2	0.57	0.85	67	4.1	4.1	4.1	2.7
OT 1.2 - 12 - F0	1.2	0.97	1.45	67	4.1	6.1	6.1	2.7
OT 0.8 - 18 - F0	0.8	0.97	2.18	67	4.9	4.9	6.5	2.4
OT 1.2 - 18 - F0	1.2	1.46	2.18	67	6.1	6.1	8.1	2.7
OT 1.2 - 18 - F2	1.2	1.46	2.18	67	6.1	6.1	8.1	2.7
OT 0.8 - 32 - F0	0.8	1.72	3.87	67	6.5	6.5	8.1	2.4
OT 1.2 - 32 - F0	1.2	2.59	3.87	67	8.1	8.1	10.2	2.7
OT 1.5 - 30 - F2	1.5	3.03	3.63	67	6.2	10.3	12.3	2.2
OT 1.5 - 32 - F0	1.5	3.23	3.87	67	8.1	8.1	10.2	2.4
OT 0.8 - 66 - F0	0.8	3.56	7.98	67	9.8	8.9	11.4	2.4
OT 2.0 - 31 - F1	2.0	4.18	3.75	67	8.1	8.1	8.1	2.2
OT 1.2 - 66 - F0	1.2	5.34	7.98	67	12.2	11.2	14.2	2.7
OT 1.5 - 66 - F0	1.5	6.67	7.98	67	12.2	11.2	14.2	2.4
OT 1.5 - 7 - F1A	1.5	0.71	0.85	67	4.0	4.0	4.0	2.4
OT 2.0 - 7 - F1A	2.0	0.95	0.85	67	4.0	4.0	4.0	2.2
OT 1.5 - 17 - F1A	1.5	1.72	2.06	67	6.6	6.6	6.6	2.4
OT 2.0 - 17 - F1A	2.0	2.30	2.06	67	6.6	6.6	6.6	2.2
OT 1.2 - 31 - F1A	1.2	2.51	3.75	67	8.8	8.8	8.8	2.7
OT 2.0 - 31 - F1A	2.0	4.18	3.75	67	8.8	8.8	8.8	2.2
OT 2.0 - 32 - F2A	2.0	4.31	3.87	67	8.8	8.8	11.0	2.2
OT 2.0 - 65 - F2A	2.0	8.76	7.98	67	13.2	12.1	13.2	2.2
HOT 1.2 - 18 - F2A	1.2	1.46	2.18	64	6.0	6.2	7.2	2.7
HOT 1.5 - 30 - F2A	1.5	3.03	3.63	64	6.2	10.3	12.3	2.2
HOT 2.0 - 32 - F2A	2.0	4.31	3.87	64	8.8	8.8	11.0	2.2
HOT 2.0 - 65 - F2A	2.0	8.76	7.86	64	13.2	12.1	3.2	2.2

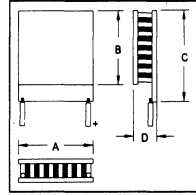
OT SERIES



CP SERIES



PolarTEC™/ThermaTEC™ SERIES



PolarTEC™ Series are low cost

thermoelectrics, for high volume commercial applications

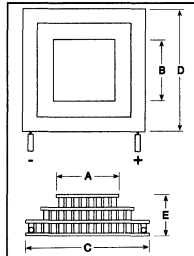
Catalog Number	IMAX (Amps)	TH = 25°C			Dimensions (mm)			
		QMAX ⁽¹⁾ (Watts)	VMAX (Volts)	ΔTMAX (°C)	A	B	C	D ⁽²⁾
PT2-12-30	2.3	20	14.4	65	30	30	34	3.7
PT3-12-30	2.8	24	14.4	65	30	30	34	3.4
PT4-7-30	3.9	18.5	8.1	67	30	30	34	4.2
PT4-12-30	3.9	33	14.4	65	30	30	34	3.4
PT4-12-40	3.9	33	14.4	67	40	40	44	4.2
PT6-7-30	6.0	29.1	8.1	65	30	30	34	3.9
PT6-12-40	6.0	52	14.4	65	40	40	44	3.9
PT8-7-30	8.5	40.3	8.1	64	30	30	34	3.5
PT8-12-40	8.5	72	14.4	64	40	40	44	3.5

ThermaTEC™ Series

are high temperature thermoelectrics, for high ambient conditions

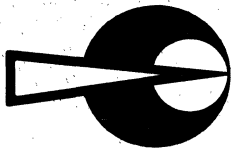
Catalog Number	TH = 25°C				TH = 200°C				Dimensions (mm)			
	IMAX (Amps)	QMAX ⁽¹⁾ (Watts)	VMAX (Volts)	ΔTMAX (°C)	IMAX (Amps)	QMAX ⁽¹⁾ (Watts)	VMAX (Volts)	ΔTMAX (°C)	A	B	C	D ⁽²⁾
HT2-12-30	2.3	20	14.4	63	1.9	22	21.6	68	30	30	34	3.7
HT3-12-30	2.8	24	14.4	63	2.4	27	21.6	68	30	30	34	3.4
HT4-7-30	3.9	17.9	8.1	64	3.2	20	12.1	70	30	30	34	4.2
HT4-12-30	3.9	33	14.4	63	3.3	38	21.6	68	30	30	34	3.4
HT4-12-40	3.7	32	14.4	64	3.2	37	21.6	70	40	40	44	4.2
HT6-7-30	6.0	28.5	8.1	63	5.1	33	12.1	68	30	30	34	3.9
HT6-12-40	6.0	51	14.4	63	5.1	59	21.6	68	40	40	44	3.9

Typical Multistage (Cascade)



SealTEC™ Protection

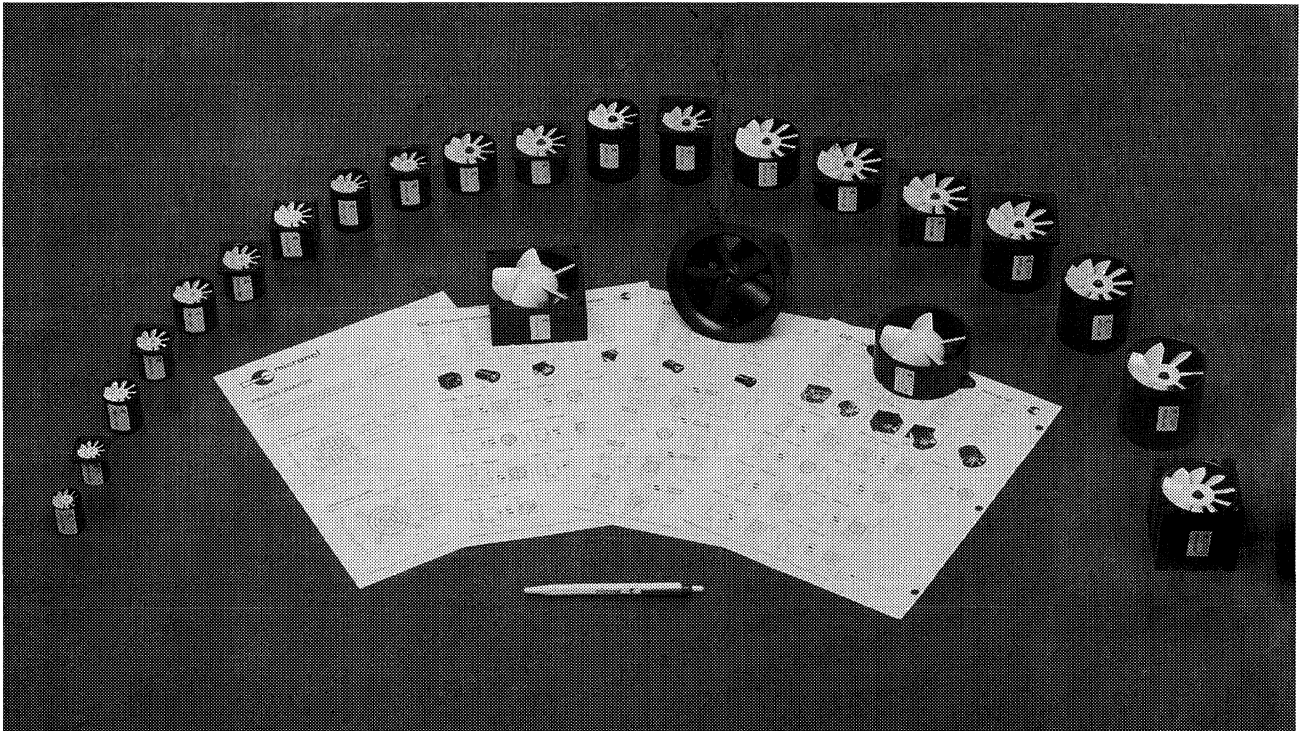
with a perimeter seal to protect it from the damaging effects of wet applications and condensation. SealTEC is available on all PolarTEC, ThermaTEC modules, and all 30 x 30



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D.C. ULTRA-MINIATURE FANS D.C. ULTRA-EFFICIENT FANS

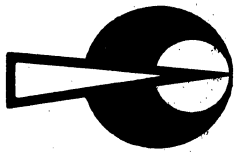


RANGE OF PERFORMANCE

MICRONEL's ultra miniature fans range in diameter from 0.95 inches to 3.15 inches. **Fan lengths** range from 0.47 inches to 2.36 inches. **Air delivery**, at zero back pres-

sure, is from 1 CFM to 52 CFM. **D.C. operational volt-ages** range from 1.5V to 48 VDC. Power input range from 0.01 to 0.2 watts per CFM.

D.C. FANS TYPE	AIR FLOW CFM	RATED VOLTAGE VOLTS	MAX SPEED RPM	MAX NOISE DBA	MAX POWER WATTS	SIZE ø = DIA. INCHES □ = SQ. INCHES
D240	3.2	6/12	14,500	43	0.3	0.95 ø x 1.18
D300	5.6	6/12/24	14,000	41	0.84	1.18 ø x 1.42
D340	12.6	6/12/24	13,000	45	1.1	1.42 ø x 1.42
D350	12.6	6/12/24	13,000	52	1.2	1.5 □ x 1.42
D360	12.6	6/12/24	13,000	45	1.2	1.42 ø x 1.77
D460	12.6	6/12	4,200	28	0.24	1.89 ø x 1.42
D480	23	6/12/24	11,000	58	4.2	1.89 ø x 2.36
D570	19.0	6/12	3,700	27	0.42	2.44 □ x 1.42
D580	19.0	6/12	3,700	27	0.42	2.36 ø x 1.42
D591	52.0	6/12/24	10,200	56	8.4	2.44 □ x 2.36
D600	52.0	6/12/24	10,200	56	8.4	2.36 ø x 2.36
D650	50.0	6/12/24	8,800	53	9.2	2.56 ø x 2.36

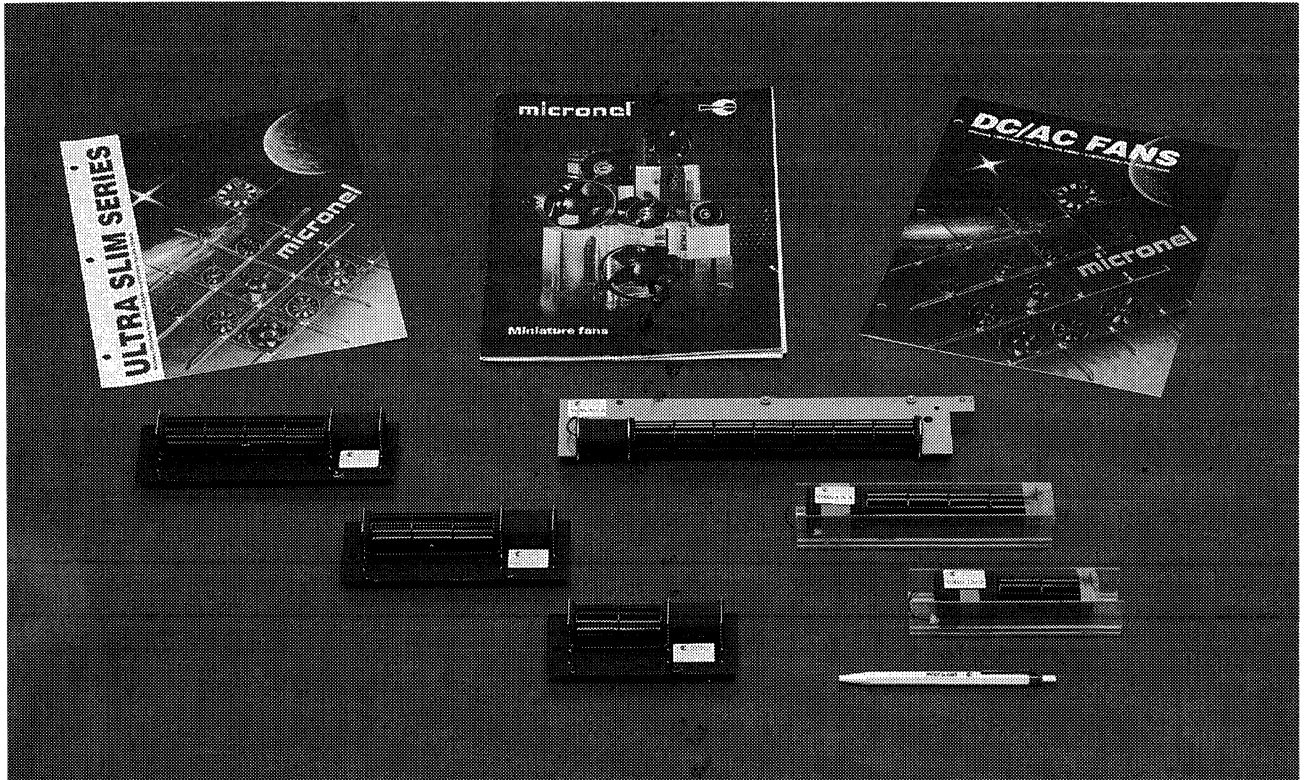


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D.C. MINIATURE CROSSFLOW FANS



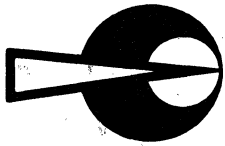
RANGE OF PERFORMANCE

MICRONEL's new line of T24 crossflow fans utilize aerodynamically optimized rotors 0.95 inches in diameter. **Rotor lengths** range from 2.2 inches to 9.6 inches in 1.07 inch segments. **Air volumes** range from 2.8 CFM to 17.5 CFM. Hi-efficiency ironless rotor drive motors (**D.C.**

operational voltages) for operation on 1.5, 5, 6, 12 and 24 volts supplies are standard. Brushless DC motors are available on special designs.

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CROSS FLOW FANS TYPE	AIR FLOW CFM	RATED VOLTAGE VOLTS	MAX SPEED RPM	MAX NOISE DBA	MAX POWER WATTS	SIZE ø = DIA. INCHES
T24XL-012XK - 2	2.8	12/24	3,500	14	1.44	.98ø x 4.75
T24XL-012XK - 3	4.2	12/24	3,500	16	3.00	.98ø x 5.75
T24XL-012XK - 4	5.6	12/24	3,500	18	3.36	.98ø x 6.75
T24XL-012XK - 5	7.0	12/24	3,500	20	3.72	.98ø x 7.75
T24XL-012XK - 6	8.5	12/24	3,500	22	4.08	.98ø x 9.00
T24XL-012XK - 7	10.0	12/24	3,500	24	4.44	.98ø x 10.25



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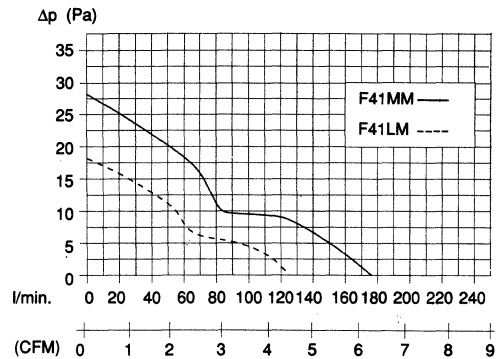
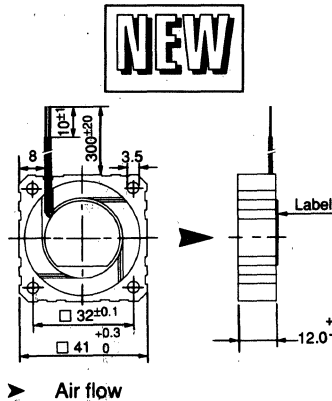
ULTRA-QUIET BRUSHLESS FANS ULTRA SLIM BRUSHLESS FANS

SERIES F 41 AIRFLOW PERFORMANCE GRAPH

Nearly, noiseless, due to a new applied Air-FlowTechnic, which causes almost a laminar airflow. This is at minimum nominal power.

- Housing and impeller of black glass-fibre reinforced plastic
- Mounting with M3 screws or self adhesive gasket
- Mounting possible in any orientation
- Electrical connection with red and black leads AWG26 (0.13 mm²), min. 300 mm long.
- Use of UL/CSA listed material

Dimensions: 12 x 41 x 41 mm
Types: F41LM (low)
 F41MM (medium)

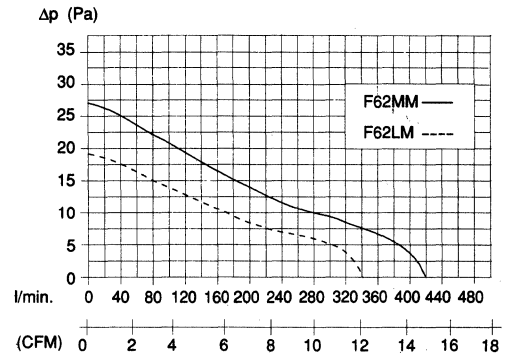
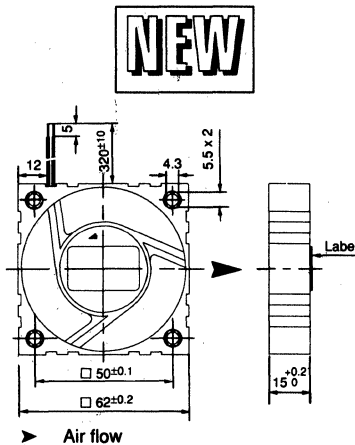


SERIES F 62 AIRFLOW PERFORMANCE GRAPH

Nearly, noiseless, due to a new applied Air-FlowTechnic, which causes almost a laminar airflow. This is at minimum nominal power.

- Housing of black glass-fibre reinforced plastic
- Impeller of black glass fibre reinforced plastic
- Mounting with screws to M4 and nuts M3 or self adhesive gasket
- Mounting possible in any orientation
- Electrical connection with red and black leads AWG24 (0.21 mm²), min. 300 mm long. Flat tabs connection on request.
- Use of UL/CSA listed material

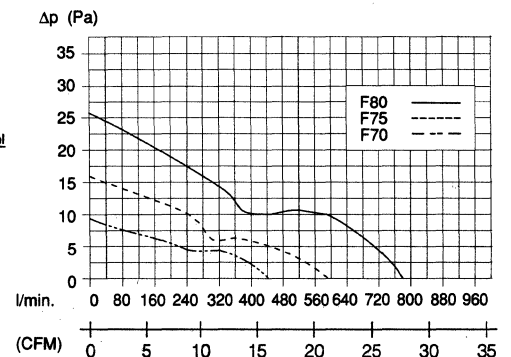
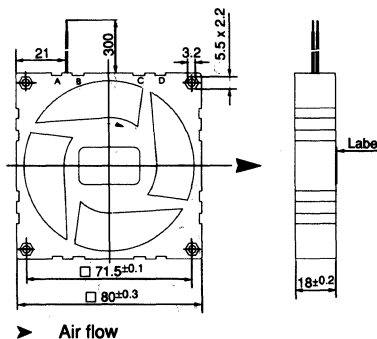
Dimensions: 15 x 62 x 62 mm
Types: F62LM (low)
 F62MM (medium)

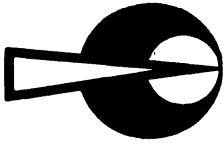


SERIES F 70 / 75 / 80 AIRFLOW PERFORMANCE GRAPH

- Housing of black glass-fibre reinforced plastic
- Impellar of black glass-fibre reinforced plastic
- Mounting with M3 screws or self adhesive plastic
- Mounting possible in any orientation
- Electrical connection with red and black leads AWG24 (0.21 mm²), min. 300 mm long. Flat tabs connection on request.
- F70, F75 and F80, 12V and 24V are suitable for AC or DC operation
- Use of UL/CSA listed material

Dimensions: 18 x 80 x 80 mm
Types: F70EM (low)
 F75EM (medium)
 F80EM (high)





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ULTRA-QUIET BRUSHLESS FANS ULTRA SLIM BRUSHLESS FANS

SERIES F 41—ULTRA-SLIM

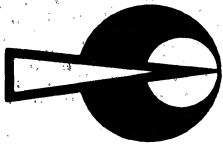
Nominal voltage	U _N	5V		12V		24V		
Types		F41LM-005XK	F41MM-005XK	F41LM-012XK	F41MM-012XK	F41LM-024XK	F41MM-024XK	
Voltage range	+15%/-10% U +10%/-15% U	4.5 - 5.75	4.5 - 5.75	10.8 - 13.8	10.2 - 13.2	21.6 - 27.6	20.4 - 26.4	V V
Nominal current max.	I _N	90	140	50	80	50	55	mA
Nominal power max.	P _N	0.45	0.70	0.60	0.96	1.20	1.32	W
Stall current	I _H	90	140	50	80	50	55	mA
Speed typical	n	4'200	5'400	4'200	5'400	4'200	5'400	min-1
Flow rate max.	ṽ	125	175	125	175	125	175	l/min
Static pressure difference	Δp	18	28	18	28	18	28	Pa
Acoustic emission level	LpA	14	21	14	21	14	21	dB(A)
Life expectancy acc. L ₁₀	†	35000	25000	35000	25000	35000	25000	h
Mean time to failure (MTTF)	†	50000	40000	50000	40000	50000	40000	h
Ambient temperature range	T	-20...+60						°C
Weight	m	20						g
Bearings		Ball bearings and Sleeve bearings						

SERIES F 62—ULTRA-QUIET

Nominal voltage	U _N	5V		12V		24V		
Types		F62LM-005GK	F62MM-005GK	F62LM-012GK	F62MM-012GK	F62LM-024GK	F62MM-024GK	
Voltage range	±10% U ±15% U	4.5 - 5.5	4.5 - 5.5	10.2 - 13.8	10.2 - 13.8	20.4 - 27.6	20.4 - 27.6	V V
Nominal current max.	I _N	88	165	58	92	33	48	mA
Nominal power max.	P _N	0.44	0.82	0.70	1.1	0.8	1.15	W
Stall current	I _H	118	215	75	120	40	55	mA
Speed typical	n	2750	3400	2750	3400	2750	3400	min-1
Flow rate max.	ṽ	340	420	340	420	340	420	l/min
Static pressure difference	Δp	19	27	19	27	19	27	Pa
Acoustic emission level	LpA	20	25	20	25	20	25	dB(A)
Life expectancy acc. L ₁₀	†	35000	25000	35000	25000	35000	25000	h
Mean time to failure (MTTF)	†	50000	40000	50000	40000	50000	40000	h
Ambient temperature range	T	-10...+65						°C
Weight	m	40						g
Bearings		Sleeve bearings						

SERIES F 70 / 75 / 80—ULTRA QUIET

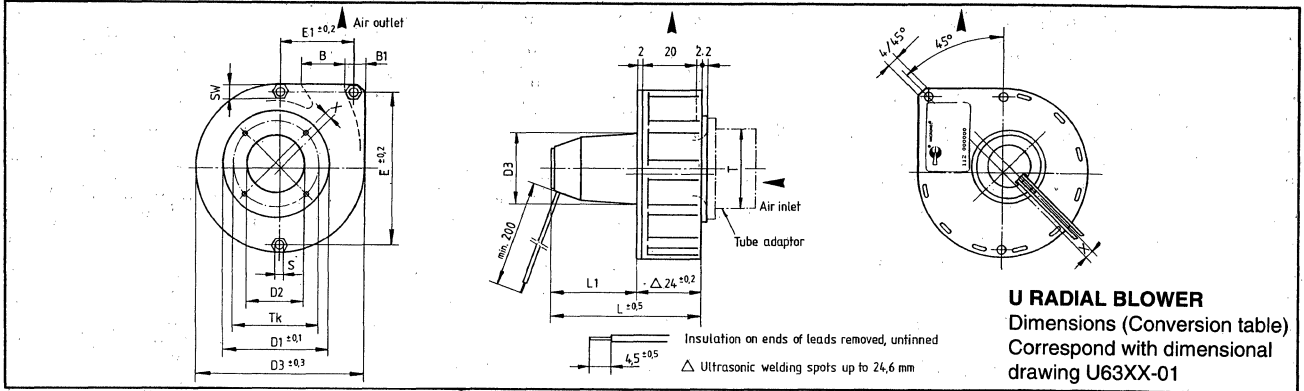
Nominal voltage	U _N	5V			12V			24V			
Types		F70EM-005CK	F75EM-005CK	F80EM-005CK	F70EM-012CK	F75EM-012CK	F80EM-012CK	F70EM-024CK	F75EM-024CK	F80EM-024CK	
Voltage range	±10% U	4.5 - 5.5 DC			10.8 - 13.2 DC/AC			21.6 - 26.4 DC/AC			V
Nominal current max.	I _N	260	275	590	130	130	290	60	60	160	mA
Nominal power max.	P _N	1.3	1.37	2.95	1.56	1.56	3.5	1.44	1.44	3.84	W
Stall current	I _H	250	270	630	180	180	500	80	80	230	mA
Speed typical	n	2000	2600	3325	2050	2600	3400	2050	2600	3500	min-1
Flow rate max.	ṽ	440	580	740	440	580	780	440	580	780	l/min
Static pressure difference	Δp	9	16	25	9.5	16	26	9.5	16	26	Pa
Acoustic emission level	LpA	23	32	38	23	32	40	23	32	41	dB(A)
Life expectancy acc. L ₁₀	†	20000									h
Mean time to failure (MTTF)	†	30000									h
Ambient temperature range	T	-10...+65									°C
Weight	m	75									g
Bearings		Sleeve bearings									



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D.C. ULTRA-EFFICIENT—HIGH PRESSURE BLOWERS



MODEL	PARAMETER	-1	-2	-3	UNITS	SIZE	U-51
	MODEL U51	VOLTAGE	3.0	6.0	12	VOLTS	D2	0.71
CURRENT		430	195	80	MA	B	0.59
FLOW *		4	4.5	5	C.F.M.	A or D	1.97
PRESSURE **		2.5	2.6	2.8	mbar	D3	0.95
NOISE		59	58	58	dB(A)	L	1.89
WEIGHT		2.8	2.8	2.8	OZ	L1	0.95
MODEL U63		PARAMETER	-1	-2	-3	UNITS	SIZE	U-63
	VOLTAGE	4.8	6.0	7.2	VOLTS	D2	0.866
	CURRENT	365	290	240	MA	B	0.787
	FLOW *	6.5	7.0	7.4	C.F.M.	A or D	A 2.44
	PRESSURE **	3.5	3.8	4.0	mbar	D3	1.024
	NOISE	48	50	52	dB(A)	L	2.24
	WEIGHT	2.9	2.9	2.9	OZ	L1	1.3
MODEL U81	PARAMETER	-1	-2	-3	UNITS	SIZE	U-81
	VOLTAGE	4.8	6.0	7.2	VOLTS	D2	1.024
	CURRENT	625	500	425	MA	B	0.98
	FLOW *	11.2	11.6	12.1	C.F.M.	A or D	A 3.1
	PRESSURE **	6.5	6.8	7.2	mbar	D3	1.1
	NOISE	52	54	56	dB(A)	L	2.4
	WEIGHT	4.5	4.5	4.5	OZ	L1	1.42
MODEL U97	PARAMETER	-1	-2	-3	UNITS	SIZE	U-97
	VOLTAGE	4.8	6.0	7.2	VOLTS	D2	1.18
	CURRENT	1400	1150	975	MA	B	1.18
	FLOW *	18.2	18.6	19.0	C.F.M.	A or D	A 3.78
	PRESSURE **	8.5	8.7	9.0	mbar	D3	1.18
	NOISE	54	56	58	dB(A)	L	2.4
	WEIGHT	5.5	5.1	5.1	OZ	L1	1.42

* - ZERO PRESSURE FLOW
 ** - ZERO FLOW PRESSURE

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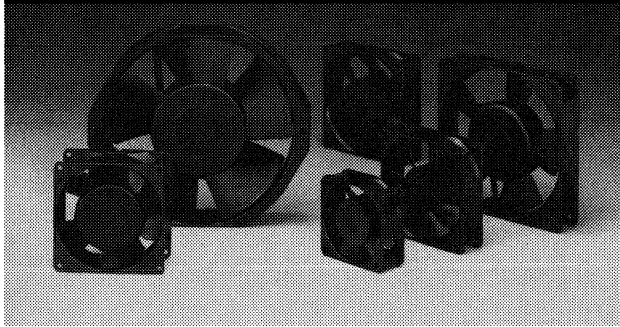
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Boxer™ Axial Cooling Fans



AC Fans

Model Number 50/60 Hz	Volts**	Noise dBA	Static Pressure in H ₂ O	CFM
2.36 (60) x 1.18 (30) Inches (mm)				
2412PS-12W-B30	115	29	0.12	10
3.15 (80) x .98 (25)				
3110PS-12W-B30	115	33	0.21	20
3.15 (80) x 1.50 (38)				
3115FS-12T-B00	115	31	0.07	18
B10	115	36	0.09	22
B20	115	40	0.13	27
B30	115	44	0.18	32
3115PS-12T-B10	115	25	0.09	26
B20	115	31	0.12	28
B30	115	38	0.20	34
3.62 (92) x .98 (25)				
3610PS-12T-B10	115	25	0.11	22
B20	115	35	0.17	30
B30	115	38	0.25	35
4.69 (119) x 1.0 (25)				
4710PS-12T-B20	115	30	0.09	57
B30	115	38	0.20	77
4.69 (119) x 1.50 (38)				
4715FS-12T-B00	115	40	0.08	60
B10	115	41	0.14	70
B20	115	43	0.16	80
B30	115	53	0.22	90
B40	115	55	0.29	100
B50	115	56	0.39	110
4715MS-12T-B10	115	28	0.07	50
B20	115	30	0.10	71
B30	115	37	0.20	88
B40	115	39	0.26	95
B50	115	41	0.31	102
5.9 (150) x 6.8 (172) x 1.5 (38)				
5915PC-12T-B10	115	38	0.25	110
B20	115	50	0.50	170
B30	115	56	0.95	220

AC Fan Features

Boxer cooling fans feature aluminum alloy frames, UL 94V-O flammability rating, Class A insulation, precision ball bearings, -10° to +70°C temperature range and a complete line of accessories. Low power and current consumption.

AC Fan Benefits

- Reliable Quality - Vertical integration manufacturing
- More than 100 Models - All popular sizes, 10 to 220 CFM
- Low Noise, Light Weight - Ideal for power supplies, copiers, computers and medical equipment
- 50,000 hour life (min.) utilizing NMB precision ball bearings
- All units designed to meet UL, CSA, TUV, CE and VDE requirements
- Modern Automated Factories - High volume production capabilities

Notes:

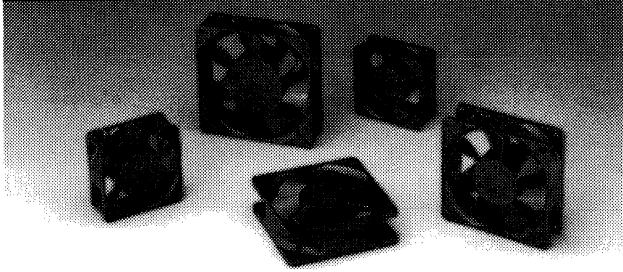
- **1. Standard voltages for AC fans are 115 or 230 VAC.
2. Most models are available with either terminals or lead wires.

For complete specifications and pricing, contact:

NMB
TECHNOLOGIES INC.

9730 Independence Avenue • Chatsworth, CA 91311
TEL: (800) 662-8321 or (818) 341-3355 FAX: (818) 341-8207
Internet: <http://www.nmbtech.com>

Low Noise Boxer™ Cooling Fans



DC Fan Features

Low noise DC cooling fans feature lightweight engineered plastic frames, aerodynamically designed seven-bladed impellers, brushless DC motors, precision ball bearings, -10° to $+70^{\circ}\text{C}$ temperature range, 94V-0 flammability rating, Class A insulation and a complete line of accessories.

DC Fan Benefits

- Frame Sizes - 1.2 to 6.8 inches
- Air Flow - 2 to 230 CFM
- Low Noise, Light Weight - Ideal for computers, copiers, word processors, facsimile machines, printers and power supplies
- All units designed to meet UL, CSA, TUV, CE and VDE requirements
- Auto-restart and locked rotor protection features are standard
- NMB precision ball bearings used for long life
- High volume production – competitive pricing

Options:

- *1. All DC fans available in either 12 VDC or 24 VDC. 48 volt versions available on some series.
2. Some models are available with either terminals or lead wires.
3. Tachometer Output, Locked Rotor Alarm, Temperature Sensor and 2-speed options available.
4. All models are designed to meet UL, CSA, TUV, CE and VDE requirements.

For complete specifications and pricing, contact:

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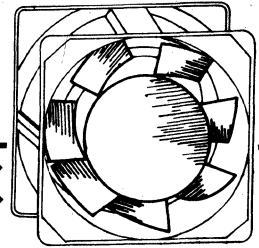
DC Fans

Model Number 50/60 Hz	Volts*	Noise dBA	Static Pressure in H ₂ O	CFM
1.18 (30) x .95 (24) Inches (mm)				
1204KL-04W-B30	12	20	0.04	2
B40	12	23	0.06	3
B50	12	26	0.08	4
1.6 (40) x .6 (15)				
1606KL-04W-B30	12	28	0.15	6
B50	12	34	0.25	8
2.36 (60) x .59 (15)				
2406KL-04W-B10	12	19	0.04	7
B20	12	25	0.10	12
B30	12	28	0.12	14
B40	12	31	0.16	16
B50	12	34	0.22	19
2.36 (60) x .79 (20)				
2408NL-04W-B10	12	20	0.06	9
B30	12	24	0.10	12
B50	12	28	0.16	16
2.36 (60) x .98 (25)				
2410ML-04W-B10	12	23	0.08	14
B30	12	31	0.16	19
3.15 (80) x .79 (20)				
3108NL-04W-B10	12	24	0.07	25
B30	12	31	0.12	32
B50	12	39	0.18	42
3.15 (80) x .98 (25)				
3110KL-04W-B10	12	22	0.06	25
B30	12	28	0.10	32
B50	12	34	0.15	39
3.62 (92) x .98 (25)				
3610KL-04W-B10	12	23	0.06	27
B30	12	33	0.11	41
B50	12	39	0.19	55
4.69 (119) x 1.0 (25)				
4710NL-04W-B10	12	25	0.06	50
B30	12	34	0.11	70
B50	12	39	0.18	90
4.69 (119) x 1.51 (38)				
4715KL-04W-B10	12	35	0.18	83
B30	12	43	0.27	108
B40	12	46	0.33	118
5.9 (150) x 6.8 (173) x 2.0 (51)				
5920PL-05W-B10	24	45	0.33	170
B30	24	51	0.49	210
B40	24	54	0.57	230
6.8 (173) x 2.0 (51)				
6820PL-05W-B10	24	42	0.33	170
B30	24	49	0.49	210
B40	24	52	0.57	230
6820PL-07W-B10	48	42	0.33	170
B30	48	49	0.49	210
B40	48	52	0.57	230



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dc brushless fans

SPECIAL FEATURES:

- Thermoplastic impeller and frame - UL rated 94VO
- Electronic commutation circuit polarity protected
- Lubricated sleeve or ball bearing construction
- Locked rotor protection
- Dependable brushless DC motor design
- Low EMI/RFI interference
- Long life
- 24 or 26 AWG lead wires
- Many fans available in 5VDC
- UL/CSA/TUV safety approvals
- Special wiring terminals or end connectors available

Operating Voltage Range: 10.2V to 13.8V (12VDC), 20.4V to 27.6V (24VDC), 4V to 6V (5VDC)
Operating Temperature: -10 to +70C (sleeve), -20 to +80C (ball)
Storage Temperature: -30 to 70C
Dielectric Strength: Withstand 600V for 1 second and 500V for 1 minute between housing and lead wire (+)
Insulation Resistance: 250VDC, 10M Ohm between housing and lead wire (+)

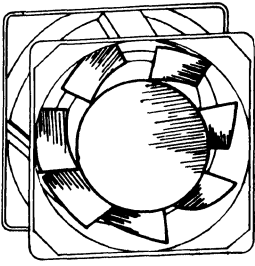
Dimension (mm)	Voltage Nominal	Current (mA/MP)	Air Flow (CFM)	Speed (RPM)	Noise db(a)	Part Number
25x25x10	12	0.06	1.95	10,000	30	RC-D02F12HWS
25x25x10	12	0.05	1.45	7,000	25	RC-D02F12MWS
40x40x7	12	0.15	4.60	5,500	26	RC-D04F12HHSWS
40x40x7	12	0.11	3.15	4,500	22	RC-D04F12HIMWS
40x40x7	5	0.12	2.60	4,000	21	RC-D04F05HIMWS
40x40x10*	12	0.08	5.4	6,000	30	RC-D04F12HWS
40x40x10*	12	0.06	4.0	4,500	25	RC-D04F12MWS
40x40x20	12	0.16	7.56	7,000	32	RC-D04T12HWS
40x40x20	12	0.10	5.4	5,000	25	RC-D04T12MWS
40x40x20	24	0.18	7.56	7,000	32	RC-D04T24HWS
40x40x20	24	0.12	5.4	5,000	25	RC-D04T24MWS
45x45x10	12	0.07	6.5	4,000	27	RC-D04FT12HWS
50x50x10*	12	0.10	10.5	5,500	31	RC-D05F12HWS
50x50x10*	12	0.07	8.0	4,200	27	RC-D05F12MWS
60x60x10	12	0.15	15.6	4,500	31	RC-D06F12HWS
60x60x10	24	0.12	15.6	4,500	31	RC-D06F12HWS
60x60x15	12	0.16	20	4,100	31	RC-D06F12HWS
60x60x15	12	0.12	17	3,500	26	RC-D06F11MWS
60x60x15	12	0.08	13.5	2,800	24	RC-D06F12LWS
60x60x20	12	0.15	18	4,300	30	RC-D06FX12HWS
60x60x20	12	0.13	13	3,500	27	RC-D06FX12MWS
60x60x20	24	0.10	18	4,300	30	RC-D06FX24HWS
60x60x20	24	0.08	13	3,500	27	RC-D06FX24MWS
60x60x25	12	0.13	20	4,000	30	RC-D06T12HWS
60x60x25	12	0.11	15.5	3,200	25	RC-D06T12MWS
60x60x25	12	0.09	12.7	2,600	22	RC-D06T12LWS
60x60x25	24	0.12	20	4,000	30	RC-D06T24HWS
60x60x25	24	0.10	15.5	3,200	25	RC-D06T24MWS
60x60x25	24	0.08	12.7	2,600	22	RC-D06T24LWS
80x80x25	12	0.20	34	3,200	32	RC-D08T12HWS
80x80x25	12	0.16	29	2,600	27	RC-D08T12MWS
80x80x25	12	0.12	22	2,200	20	RC-D08T12LWS
80x80x25	24	0.13	34	3,200	32	RC-D08T24HWS
80x80x25	24	0.11	29	2,600	27	RC-D08T24MWS
80x80x25	24	0.09	22	2,200	20	RC-D08T24LWS
92x92x25	12	0.32	45	3,200	32	RC-D09T12HWS
92x92x25	12	0.20	35	2,500	30	RC-D09T12MWS
92x92x25	12	0.16	27	2,200	27	RC-D09T12LWS
92x92x25	24	0.18	45	3,200	32	RC-D09T24HWS
92x92x25	24	0.14	35	2,500	30	RC-D09T24MWS
92x92x25	24	0.10	27	2,200	27	RC-D09T24LWS
120x120x25	12	0.38	80	3,000	42	RC-D12T12HWS
120x120x25	12	0.25	68	2,500	35	RC-D12T12MWS
120x120x25	12	0.14	54	2,000	25	RC-D12T12LWS
120x120x25	24	0.24	80	3,000	42	RC-D12T24HWS
120x120x25	24	0.18	68	2,500	35	RC-D12T24MWS
120x120x25	24	0.10	54	2,000	25	RC-D12T24LWS
120x120x38	12	0.60	105	3,000	45	RC-D12M12HWS
120x120x38	12	0.45	80	2,500	33	RC-D12M12MWS
120x120x38	12	0.28	60	1,900	26	RC-D12M12LWS
120x120x38	24	0.36	105	3,000	45	RC-D12M24HWS
120x120x38	24	0.28	80	2,500	33	RC-D12M24MWS
120x120x38	24	0.14	60	1,900	26	RC-D12M24LWS

120x120x38 models are available with die cast aluminum painted black housing or plastic fiberglass filled housing. Specifications for sleeve and ball bearing models may differ slightly.

*Available in 12MM thickness

CPU cooler fans

DC brushless fans with heatsinks
 Suitable for 486, 586, Pentium & Pentium Pro.



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ac axial-tube fans

SPECIAL FEATURES:

- Aluminum die cast frame
- Thermoplastic impeller - UL rated 94VO
- Impedance protection
- Lubricated sleeve or ball bearing construction
- 12" 24 AWG lead wires or terminals
- Optional prewired power cord
- UL/CSA/TUV safety approvals

Operating Voltage Range: 85 to 125V (115VAC), 185V to 245V (220VAC)

Operating Temperature: -10 to +70C (Sleeve Bearing), -20 to +80C (Ball Bearing)

Storage Temperature: -30 to +75C

Dielectric Strength: Withstand 1500VAC for 1 second at ambient temperature

Insulation Resistance: 500VAC, 100M Ohm between housing and terminal

FAN ACCESSORIES:

- Finger guards
- Fan cords
- Plastic filter guards

Dimension (mm)	Voltage Nominal	Frequency (hz.)	Current (mAMP)	Air Flow (CFM)	Power (W)	Speed (RPM)	Noise db(a)	Part Number
80x80x25	120	60	.17	23	14	2800	33	RC-A08T15HWS
80x80x25	120	60	.10	18	10	2500	29	RC-A08T15MWS
80x80x25	230	60	.10	23	14	2800	33	RC-A08T30HWS
80x80x25	230	60	.08	18	10	2500	29	RC-A08T30MWS
80x80x38	120	60	.12	30	12	2700	35	RC-A08M15HWS
80x80x38	120	60	.10	23	9	2300	27	RC-A08M15MWS
80x80x38	120	60	.06	16	5	1900	23	RC-A08M15LWS
80x80x38	230	60	.08	30	12	2700	35	RC-A08M30HWS
80x80x38	230	60	.06	23	9	2300	27	RC-A08M30MWS
80x80x38	230	60	.04	16	5	1900	23	RC-A08M30LWS
92x92x25	120	60	.20	36	17	2800	37	RC-A09T15HWS
92x92x25	120	60	.06	28	10	2400	30	RC-A09T15MWS
92x92x25	120	60	.05	22	6	1900	24	RC-A09T15LWS
92x92x25	230	60	.09	36	17	2800	37	RC-A09T30HWS
92x92x25	230	60	.05	28	10	2400	30	RC-A09T30MWS
92x92x25	230	60	.04	22	6	1900	24	RC-A09T30LWS
92x92x38*	120	60	.12	44	9	3000	37	RC-A09M15HWS
92x92x38*	230	60	.12	44	13	3000	37	RC-A09M30HWS
119x119x25	120	60	.18	80	16	2350	44	RC-A12T15HWS
119x119x25	120	60	.11	60	12	1900	37	RC-A12T15MWS
119x119x25	230	60	.11	80	16	2350	44	RC-A12T30HWS
119x119x25	230	60	.08	60	12	1900	37	RC-A12T30MWS
119x119x38	120	60	.18	115	17	3100	47	RC-A12M15XTS
119x119x38	120	60	.18	105	17	3000	47	RC-A12M15HTS
119x119x38	120	60	.12	71	10	2500	39	RC-A12M15MTS
119x119x38	120	60	.10	52	8	2000	34	RC-A12M15LTS
119x119x38	230	60	.12	115	20	3100	49	RC-A12M30XTS
119x119x38	230	60	.11	105	17	3000	47	RCA12M30HTS
119x119x38	230	60	.09	71	10	2500	39	RC-A12M30MTS
119x119x38	230	60	.06	52	8	2000	34	RC-A12M30LTS

* Both 120V and 230V operate at 50Hz. Specifications available upon request. RC-A12M series is available with optional metal blade.

† Available in medium and low speed also.

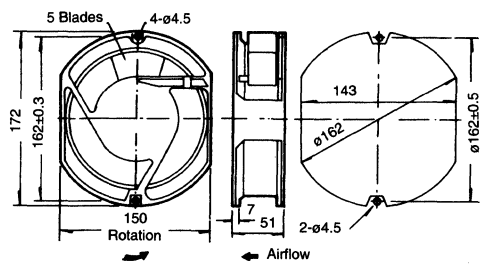
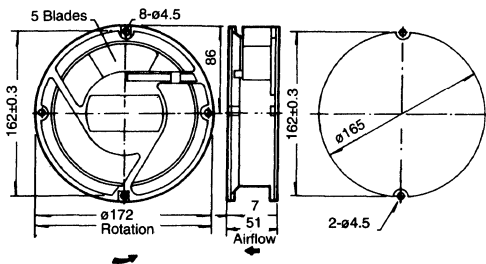
e/ex series

SPECIAL FEATURES:

- FP - 108E: ϕ 172mm x 51mm
- FP - 108EX: ϕ 172mm x 150mm x 51mm
- Weight: 1000g, 850g
- Bearing System: Sleeve and ball bearing
- Impeller: Plastic fiber glass filling
- Housing: Die cast aluminum painted black (or natural)
- Optional prewired power cord
- UL/CSA/TUV safety approvals

Voltage (VAC/Hz)	Air Volume (CFM)	Current (mAMP)	Input (W)	Speed (RPM)	Noise db(a)	Part Number
115/60	235	0.45	35	3100	50	FP-108EX-120 S-1
230/50	190	0.23	32	2800	45	FP-108EX-230 S-1
230/60	235	0.21	31	3100	50	FP-108EX-230 S-1
115/60	170	0.37	38	2400	38	FP-108EX-120 S-2
230/50	165	0.18	27	2300	33	FP-108EX-230 S-2
230/60	170	0.17	29	2400	38	FP-108EX-230 S-2
115/60	106	0.33	21	1500	30	FP-108EX-120 S-3
230/50	110	0.15	18	1600	33	FP-108EX-230 S-3
230/60	106	0.14	16	1500	.30	FP-108EX-230 S-3

Specifications are the same as above for FP-108E model. 115V version also operates at 50Hz.



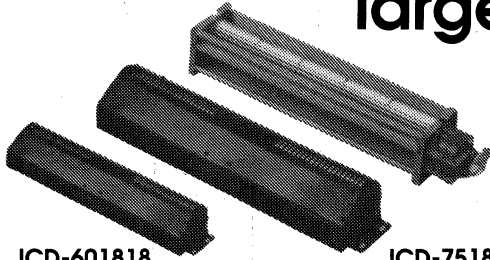


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large fans & blowers

CROSSFLOW FANS



JCD-601818
DC 12V, 24V

JCD-751818
DC 12V, 24V

Usages: Computers, printers, copy machines, compressors, etc.

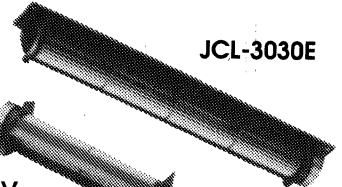
Features: Small size, extensive ventilation, low noise, power saver.

JCR-6042M
AC 110V, 220V

AC OR DC BRUSHLESS MOTOR



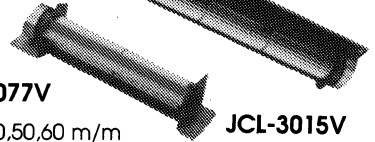
JCR-3315S



JCL-3030E



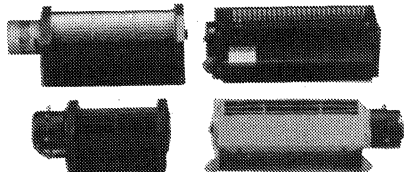
JCL-30077V



JCL-3015V

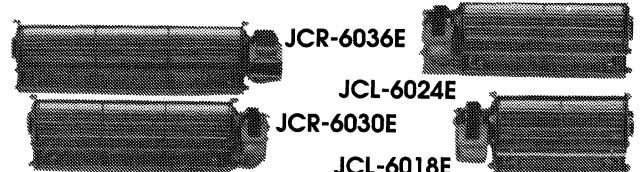
Wheel Dia: 25,30,33,40,50,60 m/m
Length: 120,180,240,300,360 m/m

- PAINTED CASING • CAPACITANCE MOTOR • GALVANIZED CASING • SHADED POLE MOTOR



JCR-6036E

JCL-6024E

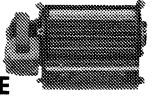


JCR-6030E

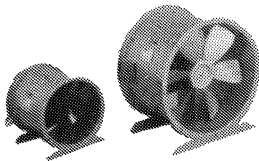
JCL-6018E

Usages: Elevator exhaust fan, transformer cooling fan, heater blowing fan & others.
S.P.: 3 - 15 mm/Aq
CAPACITY: 14 - 700 CFM

JCL-6012E

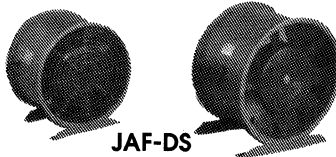


AXIAL FLOW FAN



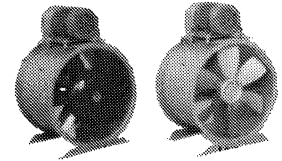
JAF-DA

Propeller: With fixed pitch casting aluminum
DIA: 8"ø-30" HP: 1/4HP-5HP
CAPACITY: 15-320m³/min
S.P.: 6-50mm/Aq



JAF-DS

Propeller: With steel plate
DIA: 18", 20", 24" HP: 3/4HP, 1HP, 2HP
CAPACITY: 80-240m³/min
S.P.: 10-40mm/Aq



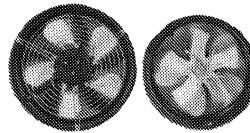
JAF-BE

JAF-BA

Propeller: With steel plate or casting aluminum
DIA: 16" - 30" HP: 1/2HP-5HP
CAPACITY: 80-320m³/min S.P.: 10-50mm/Aq

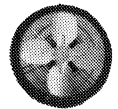
Features: Either direct drive or belt-drive, finely constructed. High flow rate. Easy to install.

Usage: Heavy equipment, and machinery, ventilation for mine, room, hotel kitchens, warehouse, marines, dust blowing, chimney enforced crafting, textile wetting.



JAF-M (4 Pole)

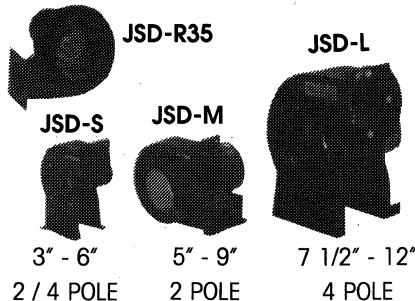
Propeller: Aluminum plate.
DIA: 6", 8", 10", 12"



JAF-M (2 Pole)

S.P.: 13-18mm/Aq
CAPACITY: 14-21 m³/min

CENTRIFUGAL FAN



JSD-R35

JSD-L

JSD-S

JSD-M

3" - 6"

5" - 9"

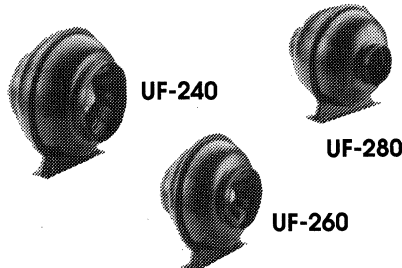
7 1/2" - 12"

2 / 4 POLE

2 POLE

4 POLE

UFO FAN



UF-240

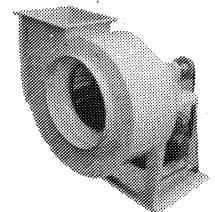
UF-280

UF-260

RADIAL TIP FAN

- DIRECT DRIVE
- BELT DRIVE

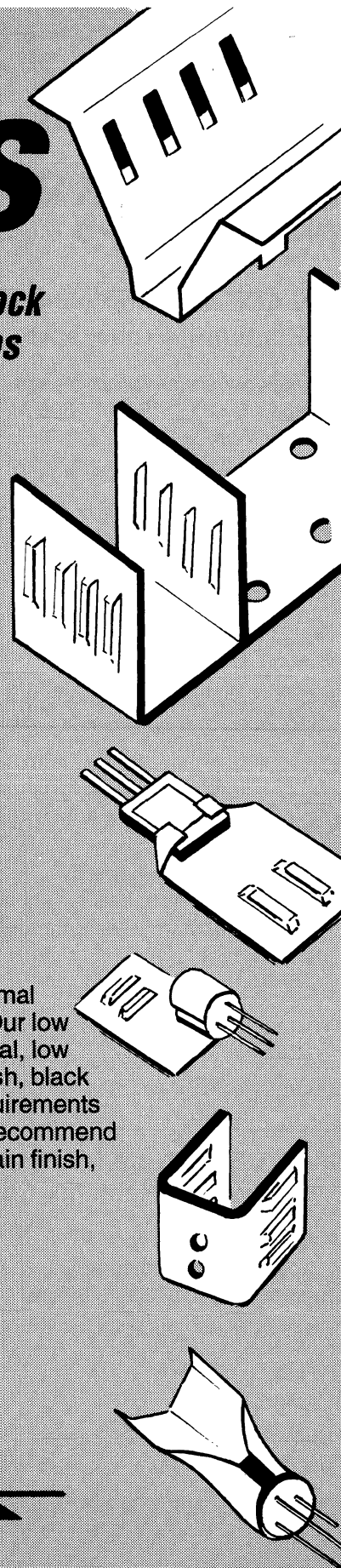
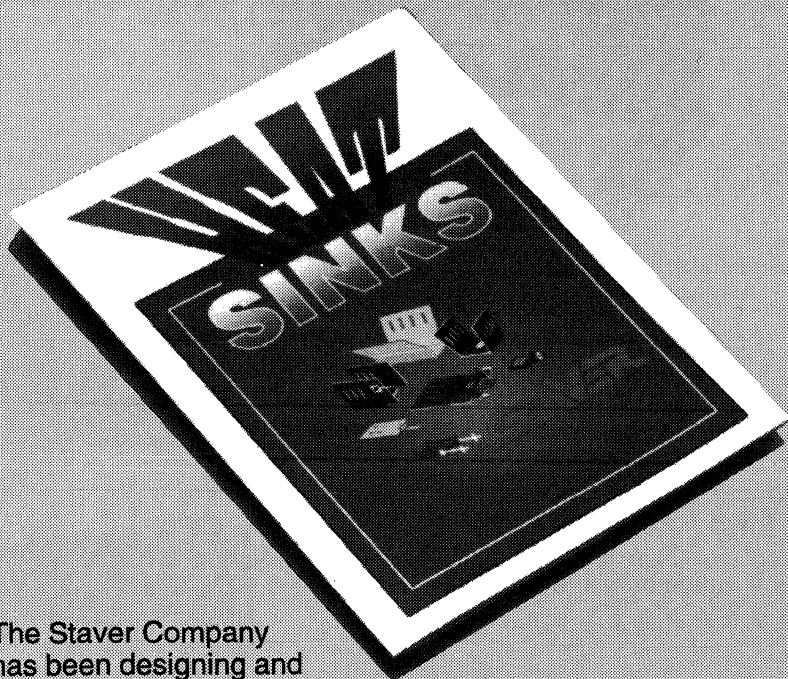
- RT-225
- RT-250
- RT-280
- RT-315
- RT-355



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Heat Sinks

- *Stamped & Radial Fin*
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The Staver Company has been designing and manufacturing heat dissipation products for over 47 years. We offer a complete line of low cost heat sinks for thermal management problems with any standard semiconductor type. Our low cost Thermoflag series are free standing "clip-on's" for small signal, low and medium power transistors. They are available with plain finish, black pre-paint, black anodized and solder coated. For dissipation requirements with medium to high power transistors or integrated circuits, we recommend our Thermovane series. Thermovanes are also available with plain finish, black pre-paint, black anodized and solder coated. The Staver Company also offers design and fabrication expertise for custom applications.

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WORLD

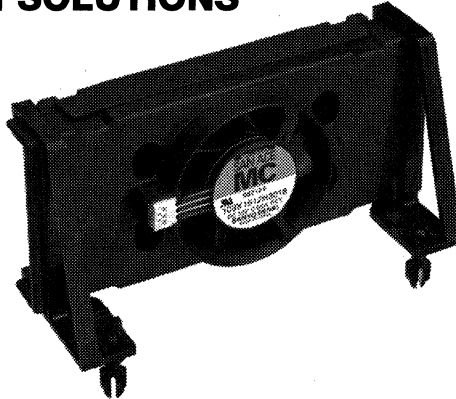
The Quietest and Longest Life Fan ...

THE SECRET IS OUT . . . INNOVATIVE CPU COOLING SOLUTIONS

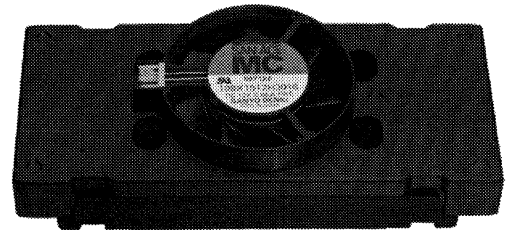
SAN ACE MC Fan/Heatsink for Pentium II Processors

Our new generation products are designed for 233, 266 and 300 MHz Pentium II processors.

- High tone ratio on heatsink fins
- SPEED: 4000 RPM (233 & 266 MHz), 5000 RPM (300 MHz)
- OPERATING TEMPERATURE RANGE: 0° C~+70° C
- NOISE: 33 dB[A] max.; 29 dB[A] nominal for 233 & 266 MHz
- Includes 2 heatsink supports, 2 snap plugs and harness assembly



- Heatsink is attached to CPU with Riv-Screws®
- OPTIONS: pulse sensor, locked rotor, low speed sensor or no sensor



Waterproof Fans: The World's First

- APPLICATIONS: high humidity environments, from cellular phone towers to restaurant drive-through menu boards
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- VOLTAGES: 12, 21, 24 and 48 VDC
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- 1,000-hour saltwater spray test
- IPX3 rainproof water protection level
- OPTIONS: pulse and lock rotor sensors



SAN ACE MC Note for Notebooks: Exclusive Fan/Heatsink Construction

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- OPTION: pulse sensor



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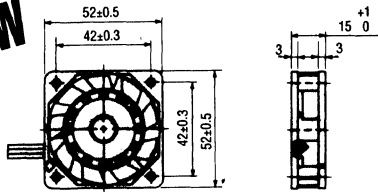
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Thermal Control Fans

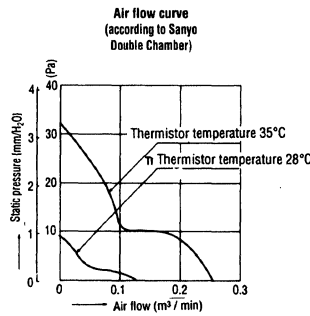
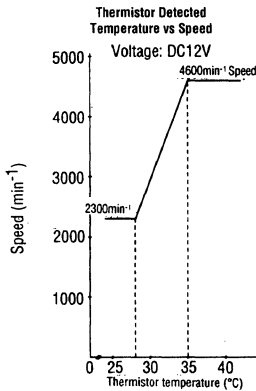
NEW



Note: Available
 1. Control range from low to high speed
 2. Other temperature ranges

Model No.	Rated voltage V	Working voltage range V	Rated current A	Rated input W	Rated speed min ⁻¹ (rpm)	Maximum air capacity m ³ /min	Maximum static pressure Pa (mm/H ₂ O)	Noise dB(A)	Weight g
109P0512T17H12	12	10.2-13.8	0.13	1.56	4,600	0.255	31.9 (3.25)	27	55
109P0612T17H12			0.12	1.08	2,300	0.13	8.8 (0.9)	17	
109P0612T16H12			0.12	1.44	4,100	0.4	38.2 (3.9)	32	60
109P0812T16H12			0.08	0.96	2,050	0.2	9.3 (0.95)	18	
109P0612T16H12			0.15	1.8	4,200	0.42	31.9 (3.25)	31	90
109R0612T14H12			0.1	1.2	2,100	0.21	8.8 (0.9)	21	
109P0812T14H12			0.13	1.56	3,800	0.53	40.2 (4.1)	28	90
109R0812T14H12			0.1	1.2	1,900	0.26	9.8 (1.0)	15	
109P0812T16H12			0.18	2.16	2,900	0.84	29.4 (3.0)	31	100
109R0812T14H12			0.1	1.2	1,450	0.42	7.4 (0.75)	18	
109P0912T14H12			0.14	1.68	2,900	1.03	35.3 (3.6)	29	110
109R0912T14H12			0.09	1.08	1,450	0.51	8.8 (0.9)	14	
109P0912T14H12	0.2	2.4	2,850	1.45	45.1 (4.6)	33	150		
109P1212T14H12	0.1	1.2	1,400	0.71	11.3 (1.15)	18			
109P1212T14H12	0.55	6.6	2,800	2.5	53.9 (5.5)	40	210		
109R1212T14H12	0.22	2.64	1,400	1.25	13.7 (1.4)	25			
109R1212T14H12	0.48	5.75	2,600	2.9	64.7 (6.6)	39	260		
109R1212T14H12	0.23	2.76	1,300	1.4	16.2 (1.65)	24			

Note 1: The higher values are at a thermistor temperature of 40°C while the lower ones are at 30°C.
 Note 3: Noise was measured at 30 cm from the fans and converted to that at 1m away.



Thermistor Mounting Method 1. Lead Wire Type 2. On PC Board Type 3. U.S. Patent No. 4-659-290 and No. 4-722-669

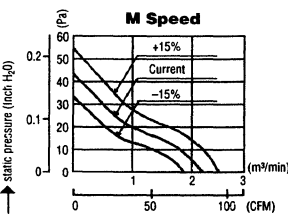
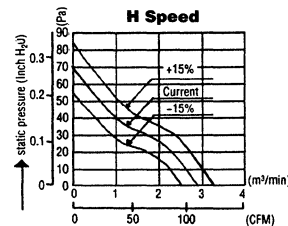
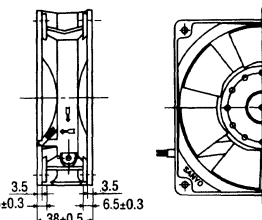
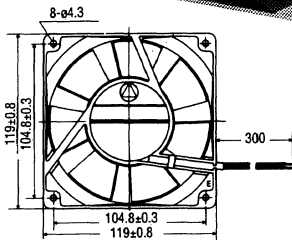
DC San Ace
Long Life
200K
Hours



Model No.	Voltage (V)	Applicable V. Range (V)	Current (A)	Input (W)	Speed min ⁻¹ (r.p.m.)	Air Volume m ³ /min (CFM)	Static Pressure Pa (mm/H ₂ O)	Noise dB(A)	Weight (g)
109L1212H102	12	10.2-13.8	0.4	4.8	2850	3.0 (106)	70.5 (7.2)	41	320
109L1212M102			0.22	2.64	2150	2.25 (79.4)	41.1 (4.2)	34	
109L1221H102	21	17.8-24.2	0.24	5.04	2850	3.0 (106)	70.5 (7.2)	41	
109L1224H102			0.21	5.04	2850	3.0 (106)	70.5 (7.2)	41	
109L1224M102	24	20.4-27.6	0.1	2.4	2150	2.25 (79.4)	41.1 (4.2)	34	
109L1248H102			0.12	5.76	2850	3.0 (106)	70.5 (7.2)	41	
109L1248M102	48	40.8-55.2	0.06	2.88	2150	2.25 (79.4)	41.1 (4.2)	34	

Ratings (With Speed detection sensor)

109L1221H182	21	17.8-24.2	0.24	5.04	2850	3.0 (106)	70.5 (7.2)	41	380
109L1248H182	48	40.8-55.2	0.12	5.76	2850	3.0 (106)	70.5 (7.2)	41	



Method Relay output
 Detective Speed 1700min⁻¹ (r.p.m.) ±10%
 Relay capacity 10VA AC, 10WDC
 0.5A MAX, 100V MAX
 Response time Starting delay time: 9 sec
 Detection delay time: 0.5 sec
 Output signal DC power off: BREAK OFF
 DC power on: Below detective speed; MAKE ON
 Exceeding detective speed; BREAK OFF

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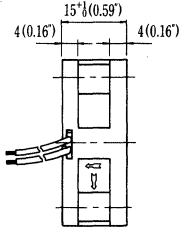
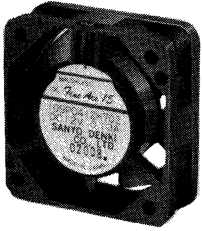
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WORLD

The Quietest and Longest Life Fan ...

DC FANS

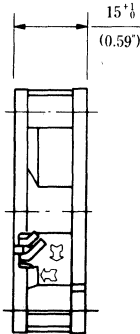
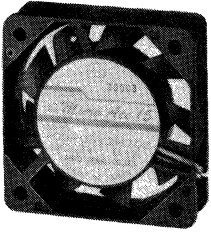
DC Fine Ace - 40 mm



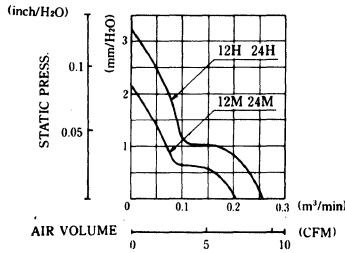
20mm & 28mm
Other Thickness Also Available

Model No.	Voltage V	Applicable V. Range V	Current A	Input W	Speed r.p.m.	Air Volume		Static Pressure		Noise dB(A)	Weight g(oz)
						m ³ /min	CFM	mm/H ₂ O	inch/H ₂ O		
109P0412H702	12	10.2~13.8	0.13	1.56	8,300	0.18	6.4	7.7	0.30	31	32 (1.1)
109P0412M702			0.095	1.14	7,000	0.15	5.3	5.4	0.21	27	
109P0424H702	24	20.4~27.6	0.08	1.92	8,300	0.18	6.4	7.7	0.30	31	45 (1.6)
109P0412H602			0.11	1.32	8,000	0.225	8.0	6.7	0.26	33	
" F "	12	7~13.8	0.09	1.08	6,500	0.183	6.5	4.6	0.18	28	50 (1.7)
" M "			0.05	0.6	5,000	0.136	4.8	2.7	0.11	24	
109P0424H602	24	12~27.6	0.07	1.68	8,300	0.233	8.2	7.1	0.28	35	50 (1.7)
109P0412H302			0.195	2.34	8,700	0.32	11.4	10.5	0.40	39	
" F "	12	10.2~13.8	0.105	1.26	6,700	0.244	8.6	6.0	0.23	32	50 (1.7)
" M "			0.045	0.54	4,100	0.15	5.3	2.2	0.09	22	
109P0424H302	24	12~27.6	0.095	2.28	8,700	0.32	11.4	10.5	0.40	39	50 (1.7)
" F "			0.055	1.32	6,700	0.244	8.6	6.0	0.23	32	

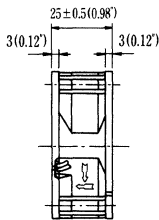
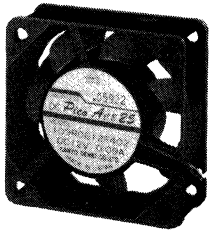
DC Micro Ace - 52 mm



Model No.	Voltage V	Applicable V. Range V	Current A	Input W	Speed r.p.m.	Air Volume		Static Pressure		Noise dB(A)	Weight g(oz)
						m ³ /min	CFM	mm/H ₂ O	inch/H ₂ O		
109P0512H702	12	7~13.8	0.10	0.12	4,600	0.255	7.94	3.25	0.13	27	55 (1.9)
" M "			0.07	0.84	3,700	0.205	7.24	2.18	0.09	22	
109P0524H702	24	14~27.6	0.05	1.20	4,600	0.255	7.94	3.25	0.13	27	55 (1.9)
" M "			0.04	0.96	3,700	0.205	7.24	2.18	0.09	22	



DC Pico Ace - 60 mm

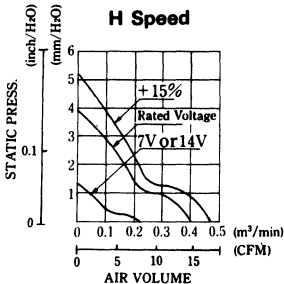


15mm & 20mm
Thickness Also Available

Model No.	Voltage V	Applicable V. Range V	Current A	Input W	Speed r.p.m.	Air Volume		Static Pressure		Noise dB(A)	Weight g(oz)
						m ³ /min	CFM	mm/H ₂ O	inch/H ₂ O		
109P0612H702	12	7~13.8	0.09	1.08	4,100	0.4	14.1	3.9	0.15	32	60 (2.1)
" M "			0.07	0.84	3,100	0.3	10.6	2.3	0.09	25	
109P0624H702	24	14~27.6	0.06	1.44	4,100	0.4	14.1	3.9	0.15	32	60 (2.1)
" M "			0.04	0.96	3,100	0.3	10.6	2.3	0.09	25	
109P0612H602	12	10.2~13.8	0.13	1.56	4,200	0.42	14.8	3.25	0.13	31	80 (2.8)
" M "			0.09	1.08	3,200	0.3	10.6	1.92	0.08	25	
" W "	12	6~16	0.13	1.56	4,200	0.42	14.8	3.25	0.13	31	80 (2.8)
" M "			0.05	0.6	2,600	0.36	12.7	2.0	0.08	20	
109P0624H602	24	20.4~27.6	0.07	1.68	4,200	0.42	14.8	3.25	0.13	31	80 (2.8)
" M "			0.05	0.6	2,600	0.36	12.7	2.0	0.08	20	
" W "	24	12~30	0.07	1.68	4,200	0.42	14.8	3.25	0.13	31	80 (2.8)
" M "			0.06	0.72	2,600	0.36	12.7	2.0	0.08	20	
109R0612H402 (4021)*	12	6~13.8	0.11	1.32	3,800	0.53	18.7	4.1	0.16	28	90 (3.15)
" F " (") *			0.09	1.08	3,200	0.44	15.5	3.0	0.19	24	
" M " (") *			0.06	0.72	2,600	0.36	12.7	2.0	0.08	20	
109R0624H402 (4021)*	24	12~27.6	0.06	1.44	3,800	0.53	18.7	4.1	0.16	28	87 (3.05)
" F " (") *			0.05	1.20	3,200	0.44	15.5	3.0	0.19	24	
" M " (") *			0.04	0.96	2,600	0.36	12.7	2.0	0.08	20	

Note W: Wide Range

Note* () : Without rib type.

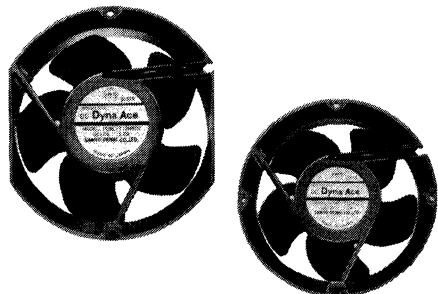


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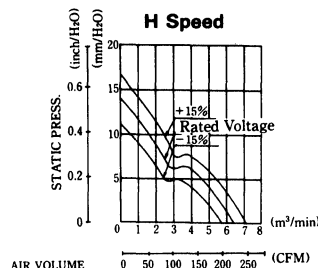
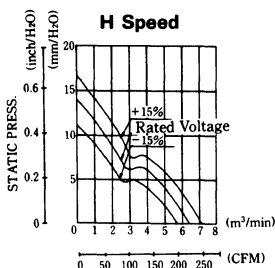
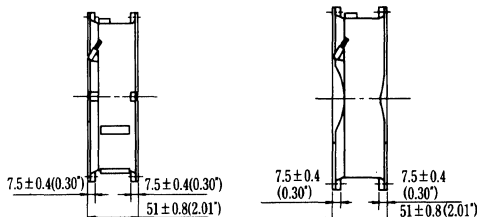
LEADER

SANYO DENKI AMERICA, INC.

DC Dyna Ace - 172 mm

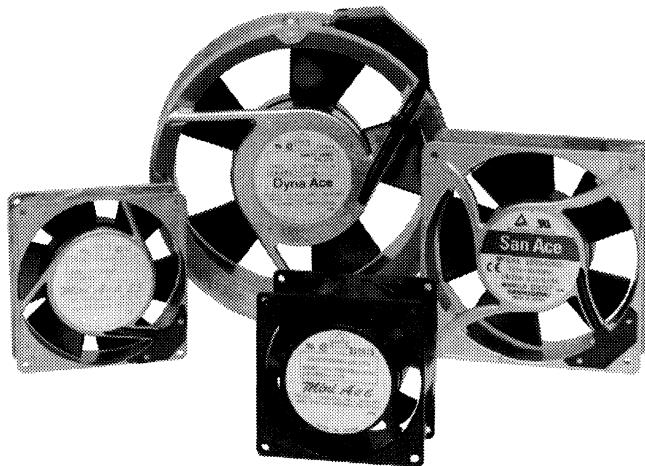


Model No.	Voltage V	Applicable V. Range V	Current A	Input W	Speed r.p.m.	Air Volume		Static Pressure		Noise dB(A)	Weight g(oz)
						m ³ /min	CFM	mm/H ₂ O	inch/H ₂ O		
109E1712H502	12	10.2-13.8	1.2	14.4	3,050	6.4	226.0	14	0.55	47	780 (27.5)
" M "		10.2-13.8	0.48	5.76	2,000	4.2	148.3	6.9	0.27	36	
109E1724H502	24	20.4-27.6	0.58	13.92	3,050	6.4	226.0	14	0.55	47	
" M "		20.4-27.6	0.2	4.8	2,000	4.2	148.3	6.9	0.27	36	
109E1748H502	48	40.8-55.2	0.28	13.44	3,050	6.4	226.0	14	0.55	47	
" M "		40.8-55.2	0.11	5.28	2,000	4.2	148.3	6.9	0.27	36	
109E5712H502	12	10.2-13.8	1.2	14.4	3,050	6.4	226.0	14	0.55	52	760 (26.8)
" M "		10.2-13.8	0.48	5.76	2,000	4.2	148.3	6.9	0.27	41	
109E5724H502	24	20.4-27.6	0.58	13.92	3,050	6.4	226.0	14	0.55	52	
" M "		20.4-27.6	0.2	4.8	2,000	4.2	148.3	6.9	0.27	41	
109E5748H502	48	40.8-55.2	0.28	13.44	3,050	6.4	226.0	14	0.55	52	
" M "		40.8-55.2	0.11	5.28	2,000	4.2	148.3	6.9	0.27	41	



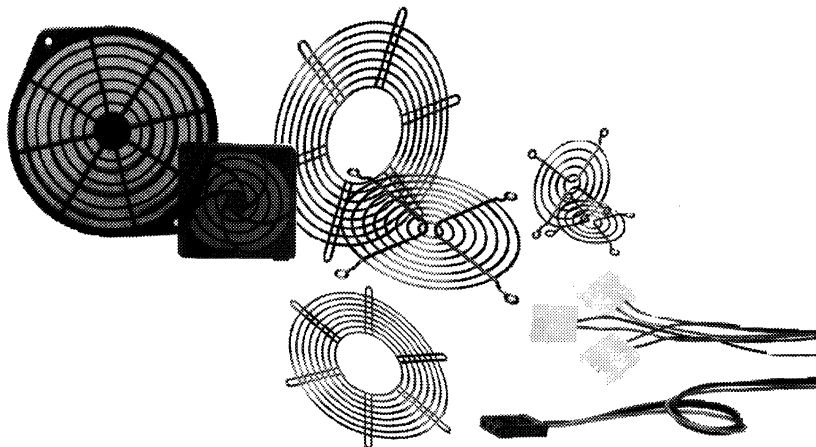
AC Fans

- APPLICATIONS: factory automation, overhead projection systems, data communications equipment and more
- SIZES: 60, 80, 92, 119, 150, 160 and 172 mm
- VOLTAGES: 100, 115, 200, 230 and 240 VAC
- Sturdy all-aluminum construction
- OPTION: TTL-compatible sensor



Accessories

Sanyo Denki also offers a complete selection of accessories, including precision finger guards in a variety of sizes, power cords and filters.



Assembly Services

- Connector/wire harness assembly
- Fan tray assembly
- All of the assembly is performed in the United States and Japan

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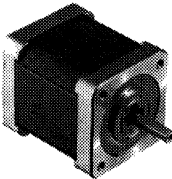
Motion Control Solutions at a Higher Level of Performance ...

Sanyo Denki has long been a leader in precision stepping motors, with over 70 years experience. You can always rely on Sanyo Denki motion control products to perform

even the most exacting motor requirements. Our goal is to continually supply our customers with world beating quality and performance.

StepSyn Size

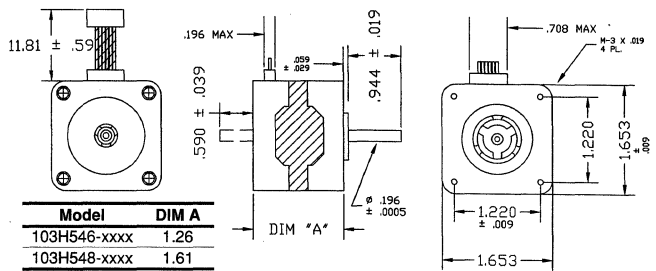
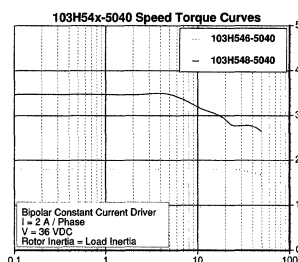
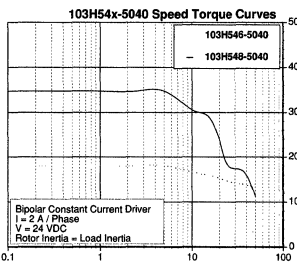
17



SIZE 17, 1.65" MOUNTING FACE, 1.8 DEGREE PER STEP

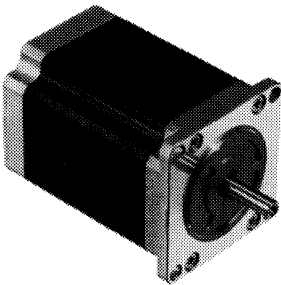
Single Shaft	Double Shaft	Holding Torque	Motor Length	Rotor Inertia	Amps Phase	Volts Phase	Ohms Phase	mH Phase	Weight	Lead Config.
103H546-0440	103H546-0410	20.8	1.26	0.16	1	3.15	3.15	2.80	0.44	1
103H546-4940	103H546-4910	20.8	1.26	0.16	1	1.60	1.60	2.80	0.44	2
103H546-5040	103H546-5010	20.8	1.26	0.16	2	1.20	0.60	0.70	0.44	2
103H548-0440	103H548-0410	38.0	1.61	0.32	1.2	3.60	3.00	4.30	0.62	1
103H548-4940	103H548-4910	31.3	1.61	0.32	1	1.60	1.60	4.30	0.62	2
103H548-5040	103H548-5010	38.0	1.61	0.32	2	1.60	0.80	1.50	0.62	2

Holding Torque = oz-in, Length = inches, Rotor Inertia = oz-in², Weight = pounds, Lead Config. #1 = Unipolar, Lead Config. #2 = Bipolar (see page 6 for wiring diagram)



StepSyn Size

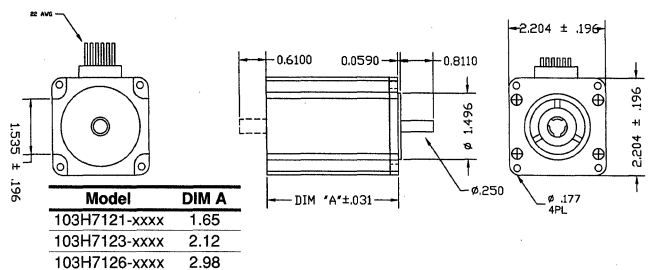
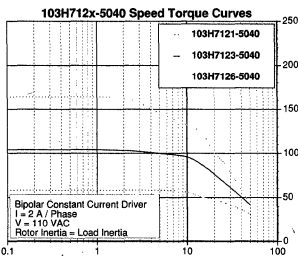
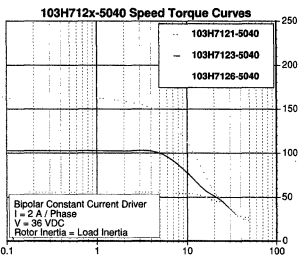
23



SIZE 23, 2.22" MOUNTING FACE, 1.8 DEGREE PER STEP

Single Shaft	Double Shaft	Holding Torque	Motor Length	Rotor Inertia	Amps Phase	Volts Phase	Ohms Phase	mH Phase	Weight	Lead Config.
103H7121-0140	103H7121-0110	55.5	1.65	0.55	1	4.80	4.80	9.30	1.03	1
103H7121-0440	103H7121-0410	55.5	1.65	0.55	2	2.50	1.25	1.90	1.03	1
103H7121-0740	103H7121-0710	55.5	1.65	0.55	3	1.80	0.60	0.80	1.03	1
103H7121-4940	103H7121-4910	55.5	1.65	0.55	1	2.40	2.40	8.00	1.03	2
103H7121-5040	103H7121-5010	55.5	1.65	0.55	2	1.30	0.65	1.90	1.03	2
103H7123-0140	103H7123-0110	118.0	2.12	1.15	1	6.70	6.70	15.00	1.43	1
103H7123-0440	103H7123-0410	118.0	2.12	1.15	2	3.20	1.60	3.80	1.43	1
103H7123-0740	103H7123-0710	118.0	2.12	1.15	3	2.30	0.77	1.58	1.43	1
103H7123-4940	103H7123-4910	118.1	2.12	1.15	1	3.20	3.20	15.00	1.43	2
103H7123-5040	103H7123-5010	118.0	2.12	1.15	2	1.60	0.80	3.80	1.43	2
103H7126-0140	103H7126-0110	180.5	2.98	1.97	1	8.60	8.60	19.00	2.16	1
103H7126-0440	103H7126-0410	180.5	2.98	1.97	2	4.00	2.00	4.50	2.16	1
103H7126-0740	103H7126-0710	180.5	2.98	1.97	3	2.75	0.90	2.20	2.16	1
103H7126-4940	103H7126-4910	180.5	2.98	1.97	1	4.30	4.30	19.00	2.16	2
103H7126-5040	103H7126-5010	180.5	2.98	1.97	2	2.10	1.05	4.50	2.16	2

Holding Torque = oz-in, Length = inches, Rotor Inertia = oz-in², Weight = pounds, Lead Config. #1 = Unipolar, Lead Config. #2 = Bipolar (see page 6 for wiring diagram)



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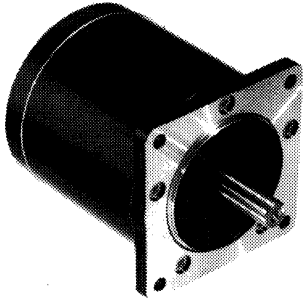
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LEADER

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StepSyn Size

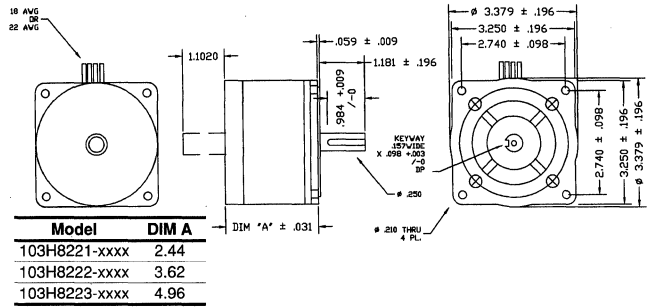
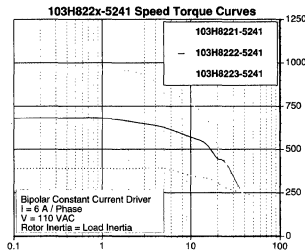
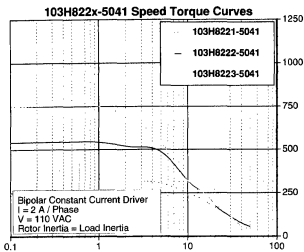
34



SIZE 34, 3.38" MOUNTING FACE, 1.8 DEGREE PER STEP

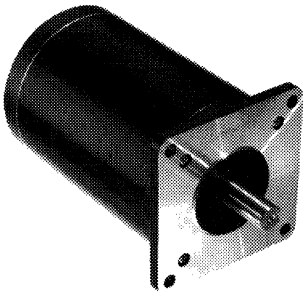
Single Shaft	Double Shaft	Holding Torque	Motor Length	Rotor Inertia	Amps Phase	Volts Phase	Ohms Phase	mH Phase	Weight	Lead Config.
103H8221-0441	103H8221-0411	305	2.44	7.92	2	5.00	2.50	7.20	3.30	1
103H8221-0941	103H8221-0911	305	2.44	7.92	4	2.50	0.62	1.80	3.30	1
103H8221-5041	103H8221-5011	389	2.44	7.92	2	4.60	2.30	14.00	3.30	2
103H8221-5141	103H8221-5111	389	2.44	7.92	4	2.40	0.60	3.50	3.30	2
103H8221-5241	103H8221-5211	389	2.44	7.92	6	1.80	0.30	1.65	3.30	2
103H8222-0441	103H8222-0411	611	3.62	15.8	2	8.00	4.00	15.00	5.50	1
103H8222-0941	103H8222-0911	611	3.62	15.8	4	3.90	0.97	3.60	5.50	1
103H8222-5041	103H8222-5011	694	3.62	15.8	2	5.40	2.70	23.00	5.50	2
103H8222-5141	103H8222-5111	694	3.62	15.8	4	2.80	0.70	5.70	5.50	2
103H8222-5241	103H8222-5211	722	3.62	15.8	6	2.10	0.35	2.70	5.50	2
103H8223-0441	103H8223-0411	889	4.96	19.1	2	11.20	5.60	24.00	7.70	1
103H8223-0941	103H8223-0911	889	4.96	19.1	4	5.40	1.35	5.60	7.70	1
103H8223-5041	103H8223-5011	972	4.96	19.1	2	7.20	3.60	32.50	7.70	2
103H8223-5141	103H8223-5111	972	4.96	19.1	4	3.60	0.90	8.10	7.70	2
103H8223-5241	103H8223-5211	1,055	4.96	19.1	6	2.70	0.45	3.40	7.70	2

Holding Torque = oz-in, Length = inches, Rotor Inertia = oz-in², Weight = pounds, Lead Config. #1 = Unipolar, Lead Config. #2 = Bipolar (see page 6 for wiring diagram)



StepSyn Size

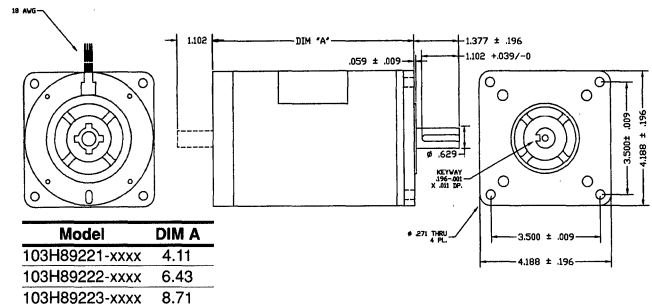
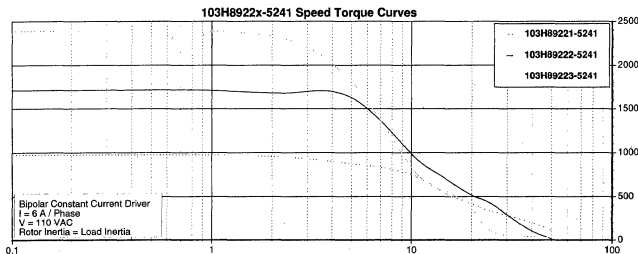
42



SIZE 42, 4.19" MOUNTING FACE, 1.8 DEGREE PER STEP

Single Shaft	Double Shaft	Holding Torque	Motor Length	Rotor Inertia	Amps Phase	Volts Phase	Ohms Phase	mH Phase	Weight	Lead Config.
103H89221-5241	103H89221-5211	972	4.11	43.10	6	2.40	0.40	4.30	9.24	2
103H89222-0941	103H89222-0911	1,527	6.43	79.70	4	3.90	0.98	6.30	16.50	1
103H89222-5241	103H89222-5211	1,666	6.43	79.70	6	2.50	0.42	5.40	16.50	2
103H89223-0941	103H89223-0911	2,194	8.71	120.10	4	5.60	1.40	9.70	23.10	1
103H89223-5241	103H89223-5211	2,361	8.71	120.10	6	3.90	0.65	0.85	23.10	2

Holding Torque = oz-in, Length = inches, Rotor Inertia = oz-in², Weight = pounds, Lead Config. #1 = Unipolar, Lead Config. #2 = Bipolar (see page 6 for wiring diagram)



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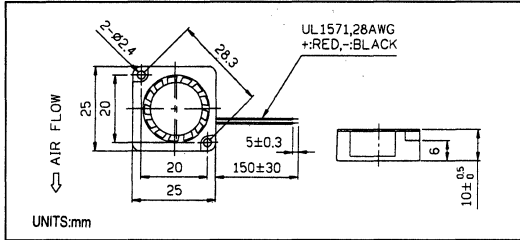
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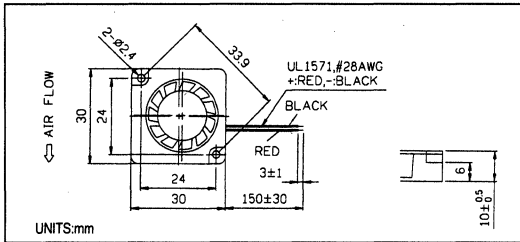
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25 x 25 x 10mm Aluminum/Plastic



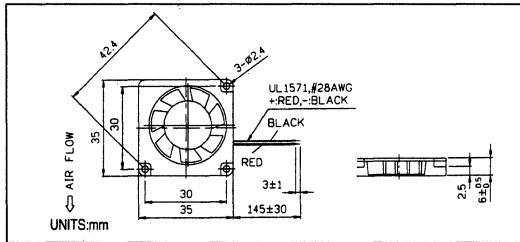
Model	Rated Voltage (VDC)	Starting Voltage (VDC)	Operating Voltage (VDC)	Rated Current (AMP)	Power Consumption (WATTS)	Speed (Reference) (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dBA)
25 x 25 x 10									
B0502PFB1-8	5	4	4-6	0.18	0.9	12000	0.9	0.36	25
B0502PFB2-8	5	4	4-6	0.125	0.65	10000	0.7	0.23	24
B0502AFB1-8	5	4	4-6	0.18	0.9	12000	0.9	0.36	25
B0502AFB2-8	5	4	4-6	0.125	0.65	10000	0.7	0.23	24

30 x 30 x 10mm Aluminum/Plastic



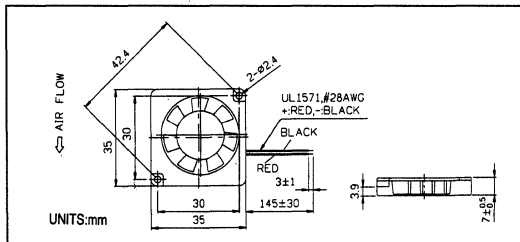
Model	Rated Voltage (VDC)	Starting Voltage (VDC)	Operating Voltage (VDC)	Rated Current (AMP)	Power Consumption (WATTS)	Speed (Reference) (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dBA)
30 x 30 x 10									
B0503PFB1-8	5	4	4-6	0.19	0.95	8500	1.2	0.32	22.5
B0503PFB2-8	5	4	4-6	0.125	0.65	8000	1.1	0.27	20.5
B0503AFB1-8	5	4	4-6	0.19	0.95	8500	1.2	0.32	22.5
B0503AFB2-8	5	4	4-6	0.125	0.65	8000	1.1	0.27	20.5

35 x 35 x 6mm Aluminum/Plastic



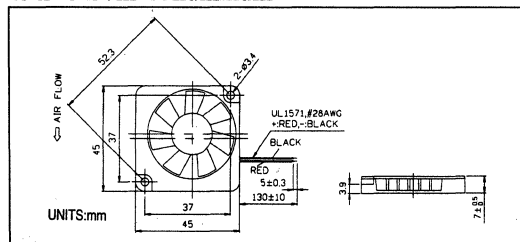
Model	Rated Voltage (VDC)	Starting Voltage (VDC)	Operating Voltage (VDC)	Rated Current (AMP)	Power Consumption (WATTS)	Speed (Reference) (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dBA)
35 x 35 x 6									
B0535PEB1-8	5	4	4-6	0.14	0.7	8500	0.9	0.17	25
B0535PEB2-8	5	4	4-6	0.09	0.45	7000	0.7	0.14	23
B0535AEB1-8	5	4	4-6	0.14	0.7	8500	0.9	0.17	25
B0535AEB2-8	5	4	4-6	0.09	0.45	7000	0.7	0.14	23

35 x 35 x 7mm Aluminum



Model	Rated Voltage (VDC)	Starting Voltage (VDC)	Operating Voltage (VDC)	Rated Current (AMP)	Power Consumption (WATTS)	Speed (Reference) (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dBA)
35 x 35 x 7									
B0535ADB1-8	5	4	4-6	0.14	0.7	8500	0.9	0.17	25
B0535ADB2-8	5	4	4-6	0.09	0.45	7000	0.7	0.14	23

45 x 45 x 7mm Aluminum



Model	Rated Voltage (VDC)	Starting Voltage (VDC)	Operating Voltage (VDC)	Rated Current (AMP)	Power Consumption (WATTS)	Speed (Reference) (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dBA)
45 x 45 x 7									
B0545ADB1-8	5	4	4-6	0.15	0.7	5000	1.1	0.12	25
B0545ADB2-8	5	4	4-6	0.105	0.55	3800	0.8	0.08	21

All Specifications subject to change without notice



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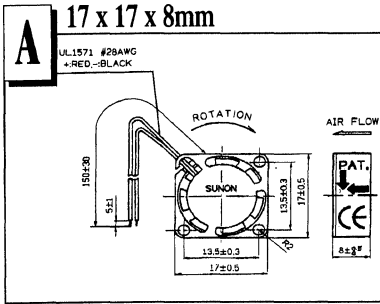
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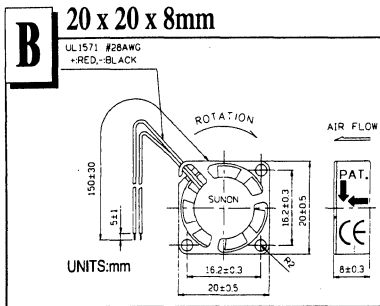
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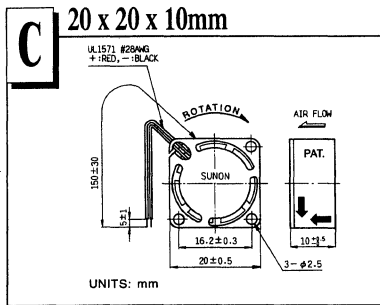
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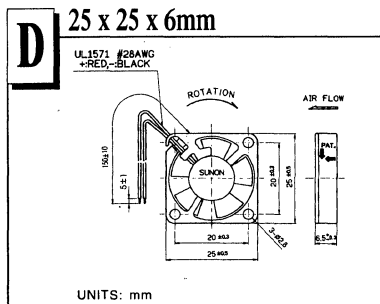
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
17 x 17 x 8 KDE0517PDB2-8	5	0.7	0.9	.45	12000	25	●



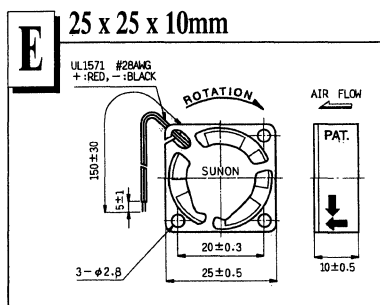
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
20 x 20 x 8 KDE0501PDB1-8	5	1.3	0.11	0.55	15000	27.5	●
KDE0501PDB2-8	5	1.0	0.09	0.45	12000	26.5	●
KDE0501PDB3-8	5	0.7	0.05	0.25	9000	24	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
20 x 20 x 10 KDE0501PFB2-8	5	0.65	0.10	0.5	14000	25.5	●
KDE0501PFB3-8	5	0.43	0.06	0.3	8500	21	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
25 x 25 x 6 KDE0502PEB1-8	5	1.60	0.12	0.60	13000	29	●
KDE0502PEB2-8	5	1.20	0.08	0.40	10000	21	●
KDE0502PEB3-8	5	0.75	0.05	0.25	7000	11	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
25 x 25 x 10 KDE0502PFB1-8	5	2.4	0.17	0.9	13000	25.5	●
KDE0502PFB2-8	5	2.0	0.12	0.6	10000	24	●
KDE0502PFB3-8	5	1.3	0.06	0.3	7000	23	●
KDE1202PFB1-8	12	2.4	0.08	0.94	13000	25.5	●
KDE1202PFB2-8	12	2.0	0.06	0.72	10000	24	●
KDE1202PFB3-8	12	1.3	0.05	0.60	7000	23	●



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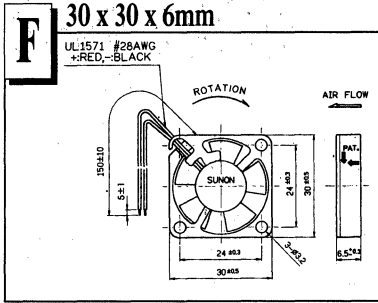
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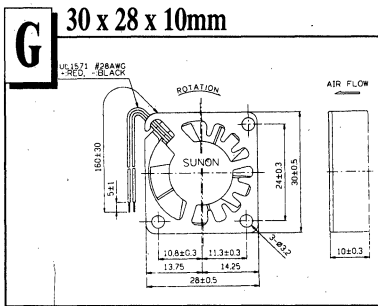
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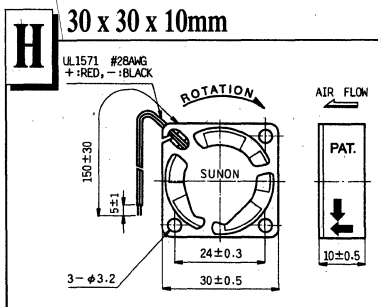
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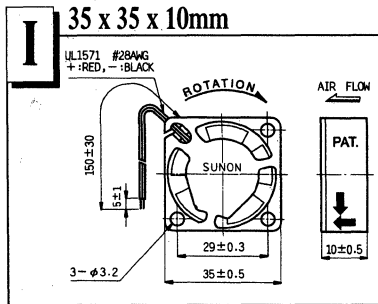
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
30 x 30 x 6							
KDE0503PEB1-8	5	3.0	0.13	0.65	9500	25	●
KDE0503PEB2-8	5	2.4	0.09	0.45	7500	20	●
KDE0503PEB3-8	5	1.9	0.05	0.30	5500	13	●



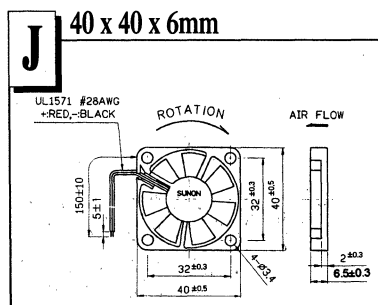
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
30 x 28 x 10							
KDE0528AFB1-8	5	2.6	0.17	0.9	13000	33	●
KDE0528AFB2-8	5	2.3	0.12	0.6	10000	29	●
KDE0528AFB3-8	5	1.8	0.06	0.3	9000	26	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
30 x 30 x 10							
KDE0503PFB1-8	5	3.5	0.18	0.9	9500	22.5	●
KDE0503PFB2-8	5	3.0	0.12	0.6	8000	20.5	●
KDE0503PFB3-8	5	2.3	0.06	0.3	5500	18.5	●
KDE1203PFB1-8	12	3.5	0.08	0.96	9500	22.5	●
KDE1203PFB2-8	12	3.0	0.07	0.84	8000	20.5	●
KDE1203PFB3-8	12	2.3	0.05	0.60	5500	18.5	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
35 x 35 x 10							
KDE0535PFB1-8	5	5.2	0.19	1.0	7000	22.5	●
KDE0535PFB2-8	5	4.5	0.13	0.7	6000	21	●
KDE0535PFB3-8	5	3.2	0.07	0.3	4500	18	●
KDE1235PFB1-8	12	5.2	0.08	0.96	7000	22.5	●
KDE1235PFB2-8	12	4.5	0.07	0.86	6000	21	●
KDE1235PFB3-8	12	3.2	0.05	0.60	4500	18	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
40 x 40 x 6							
KDE0504PEB1-8	5	5.50	0.14	0.7	6000	26	●
KDE0504PEB2-8	5	4.35	0.10	0.5	5000	22	●
KDE0504PEB3-8	5	3.50	0.06	0.3	4000	16	●



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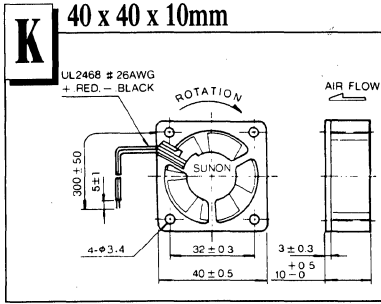
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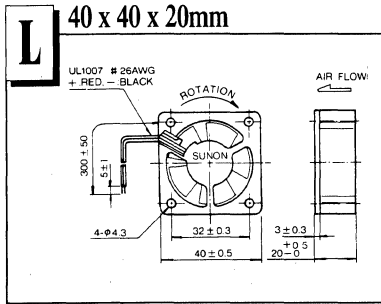
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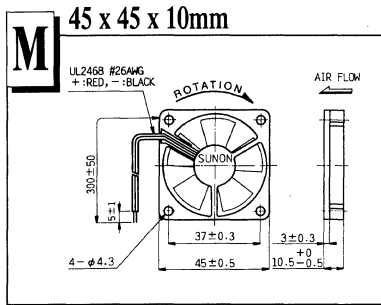
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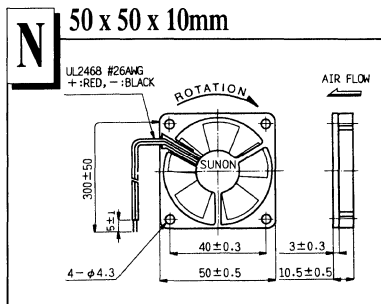
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
40 x 40 x 10							
KDE0504PFS1-8	5	6.6	0.15	0.7	7000	25	○
KDE0504PFS2-8	5	5.6	0.11	0.6	6000	24	○
KDE0504PFS3-8	5	4.5	0.08	0.4	4500	22.8	○
KDE1204PFS1-8	12	6.6	0.06	0.7	7000	25	○
KDE1204PFS2-8	12	5.6	0.05	0.6	6000	24	○
KDE1204PFS3-8	12	4.5	0.04	0.5	4500	22.8	○
KDE0504PFB1-8	5	6.9	0.15	0.7	7300	25.5	●
KDE0504PFB2-8	5	6.2	0.11	0.6	6500	24.5	●
KDE0504PFB3-8	5	4.8	0.08	0.4	5300	23.5	●
KDE1204PFB1-8	12	6.9	0.06	0.7	7300	25.5	●
KDE1204PFB2-8	12	6.0	0.05	0.6	6500	24.5	●
KDE1204PFB3-8	12	4.8	0.04	0.5	5300	23.5	●



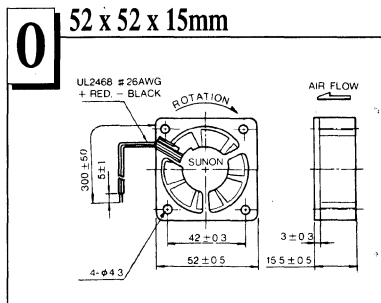
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
40 x 40 x 20							
KDE0504PKS2	5	6.5	0.21	1.0	6000	22.5	○
KDE0504PKS3	5	5.2	0.14	0.7	4500	22.8	○
KDE1204PKS2	12	6.5	0.07	0.9	6000	25.5	○
KDE1204PKS3	12	5.2	0.05	0.6	4500	22.8	○
KDE0504PKB2	5	7.0	0.21	1.0	6500	26.5	●
KDE0504PKB3	5	6.2	0.14	0.7	5300	24.0	●
KDE1204PKBX-8	12	10	.09	1.1	7800	29.4	●
KDE1204PKB2	12	6.8	0.07	0.9	6400	26.5	●
KDE1204PTB3	12	6.0	0.05	0.6	5000	23.5	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
45 x 45 x 10							
KDE0545PFS1-8	5	0.16	0.16	0.8	6000	28.5	○
KDE0545PFS2-8	5	0.12	0.12	0.6	5200	27	○
KDE0545PFS3-8	5	0.09	0.09	0.4	4000	23	○
KDE1245PFS1-8	12	0.07	0.07	0.8	6000	28.5	○
KDE1245PFS2-8	12	0.06	0.06	0.7	5200	27	○
KDE1245PFS3-8	12	0.04	0.04	0.5	4000	23	○
KDE0545PFB1-8	5	0.16	0.16	0.8	6300	29	●
KDE0545PFB2-8	5	0.12	0.12	0.6	5500	28	●
KDE0545PFB3-8	5	0.09	0.09	0.4	4500	26	●
KDE1245PFB1-8	12	0.07	0.07	0.8	6300	29	●
KDE1245PFB2-8	12	0.06	0.06	0.7	5500	28	●
KDE1245PFB3-8	12	0.04	0.04	0.5	4500	26	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
50 x 50 x 10							
KDE0505PFS1-8	5	9.6	0.17	0.9	5100	30.5	○
KDE0505PFS2-8	5	8.0	0.13	0.6	4300	29	○
KDE0505PFS3-8	5	7.0	0.09	0.4	3500	21	○
KDE1205PFS1-8	12	9.6	0.07	0.9	5100	30.5	○
KDE1205PFS2-8	12	8.0	0.06	0.7	4300	29	○
KDE1205PFS3-8	12	7.0	0.04	0.5	3500	21	○
KDE0505PFB1-8	5	10.2	0.17	0.9	5400	31.5	●
KDE0505PFB2-8	5	9.2	0.13	0.6	4700	30	●
KDE0505PFB3-8	5	7.2	0.09	0.4	3800	22	●
KDE1205PFB1-8	12	10.2	0.07	0.9	5400	31.5	●
KDE1205PFB2-8	12	9.2	0.06	0.7	4700	30	●
KDE1205PFB3-8	12	7.2	0.04	0.5	3800	22	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
52 x 52 x 15							
KDE0505PHS2	5	12.4	0.38	1.9	5000	27	○
KDE0505PHS3	5	7.6	0.24	1.2	4000	24	○
KDE1205PHS2	12	12.4	0.14	1.7	5000	27	○
KDE1205PHS3	12	7.6	0.08	0.9	4000	24	○
KDE0505PHB2	5	12.7	0.38	1.9	5300	27.8	●
KDE0505PHB3	5	8.5	0.24	1.2	4300	25.4	●
KDE1205PHB2	12	12.7	0.14	1.7	5300	27.8	●
KDE1205PHB3	12	8.5	0.08	0.9	4300	25.4	●



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BRUSHLESS DC FANS

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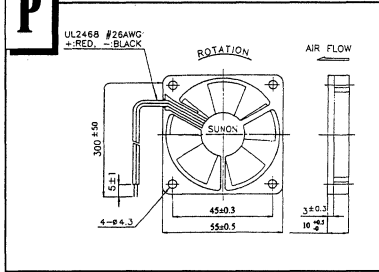


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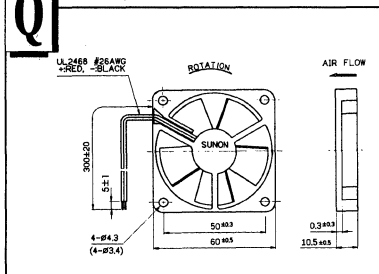
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P 55 x 55 x 10mm



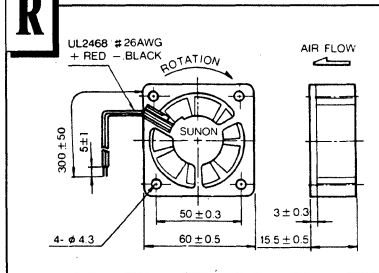
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
55 x 55 x 10							
KDE1255PFS1-8	12	13.0	0.08	1.0	5400	31	○
KDE1255PFS2-8	12	11.5	0.06	0.7	4700	30	○
KDE1255PFS3-8	12	10.3	0.05	0.6	4200	26	○
KDE1255PFB1-8	12	13.5	0.08	1.0	5600	32	●
KDE1255PFB2-8	12	12.0	0.06	0.7	5000	31	●
KDE1255PFB3-8	12	10.6	0.05	0.6	4500	27	●

Q 60 x 60 x 10mm



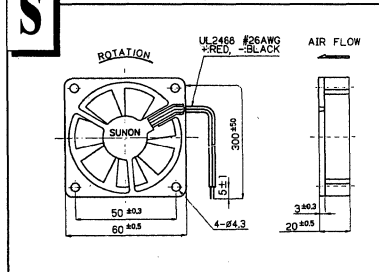
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
60 x 60 x 10							
KDE1206PFS1-8	12	16.5	0.17	2.0	5000	31	○
KDE1206PFS2-8	12	13.9	0.10	1.2	4200	29	○
KDE1206PFS3-8	12	12.0	0.07	0.8	3500	26	○
KDE1206PFB1-8	12	17.3	0.17	2.0	5200	31.5	●
KDE1206PFB2-8	12	14.5	0.10	1.2	4400	29.4	●
KDE1206PFB3-8	12	12.7	0.07	0.8	3700	26.3	●

R 60 x 60 x 15mm



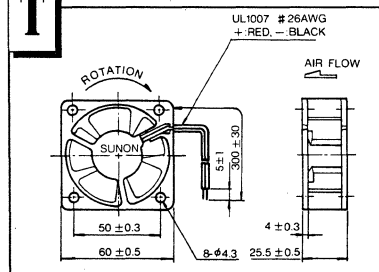
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
60 x 60 x 15							
KDE0506PHS2	5	17.8	0.39	1.9	4000	31	○
KDE0506PHS3	5	14.8	0.24	1.2	3300	26	○
KDE1206PHS2	12	17.8	0.16	1.9	4000	31	○
KDE1206PHS3	12	14.8	0.09	1.2	3300	26	○
KDE1206PHB1	12	20.0	0.22	2.64	4700	35	●
KDE1206PHB2	12	18.5	0.16	1.9	4200	31.5	●
KDE1206PHB3	12	15.2	0.09	1.2	3500	26.5	●

S 60 x 60 x 20mm



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
60 x 60 x 20							
KDE1206PKS1	12	18.2	0.21	2.5	4800	34	○
KDE1206PKS2	12	16.5	0.15	1.8	4200	31	○
KDE1206PKS3	12	13.9	0.09	1.1	4200	26.7	○
KDE1206PKB1	12	18.6	0.21	2.5	5100	34.3	●
KDE1206PKB2	12	17.8	0.15	1.8	4600	31.3	●
KDE1206PKB3	12	14.7	0.09	1.1	3800	27	●

T 60 x 60 x 25mm



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
60 x 60 x 25							
KDE1206PTS1	12	21.7	0.19	2.3	4500	34	○
KDE1206PTS2	12	17.6	0.13	1.6	3800	31	○
KDE1206PTS3	12	15.9	0.09	1.1	3300	26.7	○
KDE2406PTS1	24	21.7	0.11	2.6	4500	34	○
KDE2406PTS2	24	17.6	0.08	1.9	3800	31	○
KDE2406PTS3	24	15.9	0.06	1.4	3300	26.7	○
KDE1206PTB1	12	22.1	0.19	2.2	5100	34.3	●
KDE1206PTB2	12	18.0	0.12	1.4	4300	31.3	●
KDE1206PTB3	12	16.2	0.09	1.1	3600	27	●



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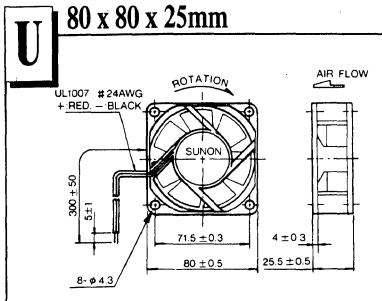
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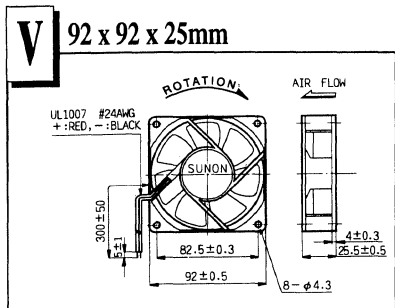
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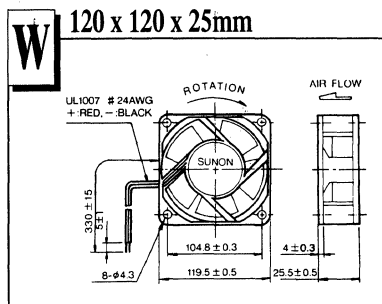
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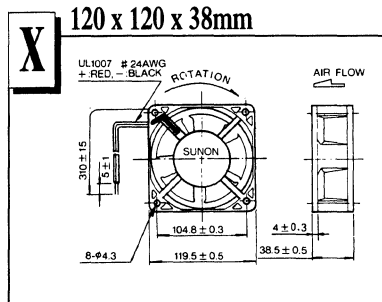
MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
80 x 80 x 25							
KDE1208PTS1-6	12	41.7	0.22	2.6	3000	34	○
KDE1208PTS2-6	12	34.4	0.16	2.0	2650	30	○
KDE1208PTS3-6	12	29.4	0.12	1.4	2200	24.5	○
KDE2408PTS1-6	24	41.7	0.12	2.9	3000	34	○
KDE2408PTS2-6	24	34.4	0.10	2.4	2650	30	○
KDE2408PTS3-6	24	29.4	0.07	1.7	2200	24.5	○
KDE1208PTB1-6	12	42.5	0.22	2.6	3200	36.5	●
KDE1208PTB2-6	12	35.0	0.16	2.0	2800	32.5	●
KDE1208PTB3-6	12	30.0	0.12	1.4	2500	28.5	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
92 x 92 x 25							
KDE1209PTS1-6	12	50	0.23	2.8	2800	35	○
KDE1209PTS2-6	12	44	0.18	2.1	2500	33	○
KDE1209PTS3-6	12	39	0.13	1.6	2100	27	○
KDE2409PTS1-6	24	50	0.12	2.9	2800	35	○
KDE2409PTS2-6	24	44	0.09	2.2	2500	33	○
KDE2409PTS3-6	24	39	0.07	1.7	2100	27	○
KDE1209PTB1-6	12	51	0.23	2.8	3000	37	●
KDE1209PTB2-6	12	45	0.18	2.1	2600	34	●
KDE1209PTB3-6	12	40	0.13	1.6	2300	28	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
120 x 120 x 25							
KDE1212PTS1-6A	12	88	0.45	5.4	3000	44	○
KDE1212PTS2-6A	12	78	0.30	3.6	2700	40	○
KDE1212PTS3-6A	12	67	0.20	2.4	2300	35	○
KDE2412PTS1-6A	24	88	0.25	6.0	3000	44	○
KDE2412PTS2-6A	24	78	0.20	4.8	2700	40	○
KDE2412PTS3-6A	24	67	0.13	3.1	2300	35	○
KDE1212PTB1-6A	12	90	0.45	5.4	3100	44.5	●
KDE1212PTB2-6A	12	80	0.30	3.6	2800	41	●
KDE1212PTB3-6A	12	69	0.20	2.4	2400	35.5	●
KDE2412PTB1-6A	24	90	0.25	6.0	3100	44.5	●
KDE2412PTB2-6A	24	80	0.20	4.8	2800	41	●
KDE2412PTB3-6A	24	69	0.13	3.1	2400	35.5	●



MODEL	VOLTAGE VDC	AIR FLOW CFM	CURRENT AMP	INPUT WATTS	SPEED RPM	NOISE dB(A)	BEARING SYSTEM ○ Sleeve ● Ball
120 x 120 x 38							
KDE1212PMSX-6A	12	119	0.63	7.6	3100	45	○
KDE1212PMS1-6A	12	107	0.57	6.8	3000	41	○
KDE1212PMS2-6A	12	97	0.43	5.1	2700	36	○
KDE1212PMS3-6A	12	83	0.27	3.2	2300	34	○
KDE2412PMSX-6A	24	119	0.33	7.9	3100	45	○
KDE2412PMS1-6A	24	107	0.31	7.4	3000	41	○
KDE2412PMS2-6A	24	97	0.23	5.5	2700	36	○
KDE2412PMS3-6A	24	83	0.17	4.0	2300	34	○
KDE1212PMBX-6A	12	120	0.63	7.6	3150	46.5	●
KDE1212PMB1-6A	12	108	0.57	6.8	3100	42	●
KDE1212PMB2-6A	12	98	0.43	5.1	2800	36.5	●
KDE1212PMB3-6A	12	84	0.27	3.2	2400	35	●
KDE2412PMBX-6A	24	120	0.33	7.9	3150	46.5	●
KDE2412PMB1-6A	24	108	0.31	7.4	3100	42	●
KDE2412PMB2-6A	24	98	0.23	5.5	2800	36.5	●
KDE2412PMB3-6A	24	84	0.17	4.0	2400	35	●



SUNON FAN & MOTOR

AC FANS

Represented in North America by



EME FAN & MOTOR

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General Data

Motor: Reliable Shaded-Pole Motor Construction

Frame: Die-Cast aluminum painted black for moisture and corrosion resistance

Impeller: Injection molded non-flammable black thermoplastic UL 94 V-O Rating

Bearing: Precision, life-lubricated ball bearing system, precision, oil-impregnated sintered sleeve bearing system

Insulation: Class B integral ground system rated @ 120°C

Insulation Resistance: 100 Megohms minimum at 500VDC

Dielectric Strength: 1500VAC for one minute

Safety Protection: Impedance protected

Storage Temperature: -40 to +75°C

A 120 x 120 x 38mm
117 CFM

UL
C
TUV
VDE

ROTAION AIR FLOW

TERMINAL TYPE 6.9 (THICK0.5)

104.8 ± 0.3
119.5 ± 0.5
4 ± 0.3
38.5 ± 0.5
8-φ4.3

UNITS: mm Super Air Version

B 120 x 120 x 38mm
107 CFM

UL
C
TUV
VDE

ROTAION AIR FLOW

TERMINAL TYPE 6.9 (THICK0.5)

104.8 ± 0.3
119.5 ± 0.5
4 ± 0.3
38.5 ± 0.5
8-φ4.3

UNITS: mm High Speed Version

C 120 x 120 x 38mm
78 CFM

UL
C
TUV
VDE

ROTAION AIR FLOW

TERMINAL TYPE 6.9 (THICK0.5)

104.8 ± 0.3
119.5 ± 0.5
4 ± 0.3
38.5 ± 0.5
8-φ4.3

UNITS: mm Low Speed Version

D 92 x 92 x 25mm
37 CFM

UL
C
TUV
VDE

UL1007 #24AWG

310 2WIRES
6 ± 1

ROTAION AIR FLOW

TERMINAL TYPE 6.9 THICK 0.5

82.5 ± 0.3
92 ± 0.5
25 ± 0.3
3.5 ± 0.3
8-φ4.3

UNITS: mm

E 80 x 80 x 38mm
31 CFM

UL
C
TUV
VDE

UL1007 #24AWG

330 2WIRES
6 ± 1

ROTAION AIR FLOW

8-φ4.3

71.5 ± 0.3
80 ± 0.5
4 ± 0.3
38.5 ± 0.5

UNITS: mm 2 GROUND LUG

F 80 x 80 x 25mm
22 CFM

UL
C
TUV
VDE

UL1007 #24AWG

330 2WIRES
6 ± 1

ROTAION AIR FLOW

8-φ4.3

71.5 ± 0.3
80 ± 0.5
3.7 ± 0.3
25 ± 0.3

UNITS: mm GROUND LUG +3.9

UNIT: mm



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AC FANS

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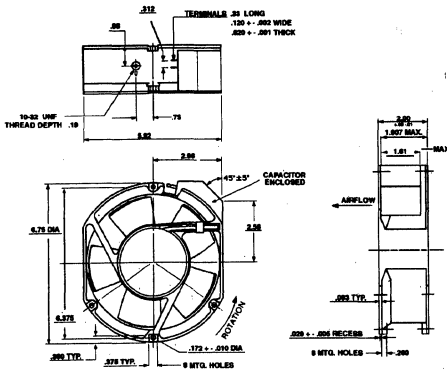
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DIMENSIONS mm	MODEL	TERMINAL Part No.	LEAD WIRE Part No.	BEARING SYSTEM ○ Sleeve ● Ball	VOLTAGE VAC	AIR FLOW		NOISE dBa	FIGURE		
						CFM	ms/min				
120x120x38	SP100A'	1123XST	1123XSL	○	115	95/115	2.68/3.24	44/49	A		
		1123XBT	1123XBL	●		97/117	2.73/3.29	45/50			
	DP200A'	2123XST	2123XSL	○	220/240	95/115	2.68/3.24	44/49		B	
		2123XBT	2123XBL	●		97/117	2.73/3.29	45/50			
	SP101A'	1123HST	1123HSL	○	115	85/105	2.39/2.96	43/48			C
		1123HBT	1123HBL	●		87/107	2.45/3.01	44/49			
	DP201A'	2123HST	2123HSL	○	220/240	85/105	2.39/2.96	43/48	D		
		2123HBT	2123HBL	●		87/107	2.45/3.01	44/49			
	SP103A'	1123LST	1123LSL	○	115	70/76	1.97/2.14	36/38		E	
		1123LBT	1123LBL	●		72/78	2.02/2.19	37/39			
	DP203A'	2123LST	2123LSL	○	220/240	70/76	1.97/2.14	36/38			F
		2123LBT	2123LBL	●		72/78	2.02/2.19	37/39			
92x92x25	SF11592A'	1092HST	1092HSL	○	115	29/36	0.82/1.02	36/39	D		
		1092HBT	1092HBL	●		30/37	0.85/1.04	37/40			
	SF23092A'	2092HST	2092HSL	○	220/240	29/36	0.82/1.01	36/39			
		2092HBT	2092HBL	●		30/37	0.85/1.04	37/40			
80x80x38	SF11508A'	1083HSL	1083HSL	○	115	23/30	0.65/0.85	31/35	E		
		1083HBL	1083HBL	●		24/31	0.67/0.87	32/36.5			
	SF23080A'	2083HSL	2083HSL	○	220/240	23/30	0.65/0.85	31/35			
		2083HBL	2083HBL	●		24/31	0.67/0.87	32/36.5			
80x80x25	SF11580AT'	1082HSL	1082HSL	○	115	17/21	0.48/0.59	29/33	F		
		1082HBL	1082HBL	●		18/22	0.51/0.62	30/34.5			
	SF23080AT'	2082HSL	2082HSL	○	220/240	17/21	0.48/0.59	29/33			
		2082HBL	2082HBL	●		18/22	0.51/0.62	30/34.5			

AA 6" AC Fan 172 x 150 x 51mm
250 & 238 CFM

EME FAN & MOTOR

Part Numbers - P1175H & P2175H



MODEL NUMBER	RATED VOLTAGE 50/60 Hz	RATED CURRENT (A)	INPUT POWER (W)	AIR FLOW CFM	AIR PRESSURE (MM-H ₂ O)	NOISE (dBa)	RPM's	WEIGHT (g)
P1175H	120	0.3	36	250	19.8	55	3200	875
P2175H	230	0.11	24	238	19.5	53	3000	875

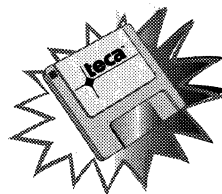
Features

- Durable Die Cast Aluminum Frame
- Bearings: Stainless steel ball bearings
- Storage Temperature -30 to +70°C
- Operating Temperature -20 to +70°C
- MTBF 100,000 Hrs at 25°C, 5,000 Hrs at 60°C
- UL/CSA File number E167880
- TUV Approved

- Thermoplastic PBT blade (UL 94-VO)
- Insulation Class B, Independence Protected
- Insulation Resistance: 500 VAC. 100m Ohms between Housing and Terminals
- 100% dielectric tested at 1500 VAC/1 min. Ambient Temperature.

Solid-State Cooling

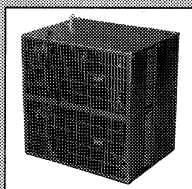
For Harsh and Hazardous Environments



AIR CONDITIONERS

Thermoelectric air conditioners are a solid-state method of cooling, eliminating the need of a compressor, refrigerant fluids or piping. The only moving parts are highly reliable fans used to dissipate output heat to ambient air.

Applications include:
Chemical Plants,
Steel & Paper Mills,
Outdoor Installations.

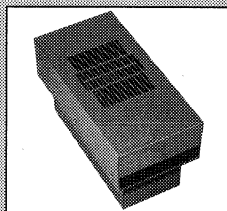


Flush Mount
(FHP Series)

Mounts Externally to maintain Nema-12 integrity
500-2000 Btu/Hr

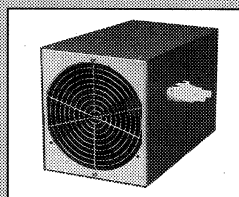
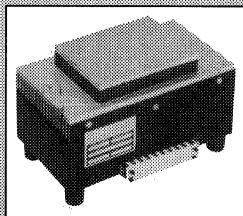
Harsh/Hazardous
(X & XP Series)

Nema-4X & Class 1
Division 2, Groups (A-D)
500-1000 Btu/Hr



Cold Plate
(CP Series)

Direct Contact Cooling
Air & Liquid Cooled Models
125-1500 Btu/Hr

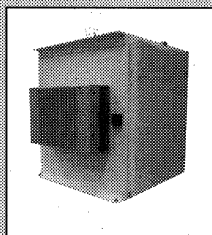


Liquid Chiller
(ALC or TLC Series)

Liquid Cooling
600-1350 Btu/Hr

Custom Series

Complete Systems built to your specifications



Features

- No Filters, Low Maintenance
- No CFC's or fluorocarbons
- Heat/Cool Models
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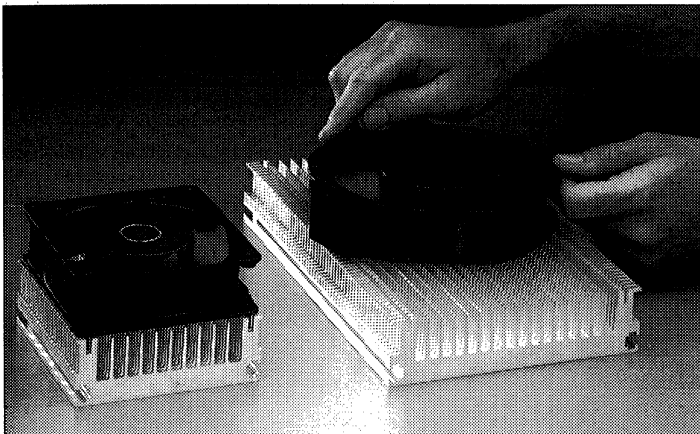


by Thermalloy

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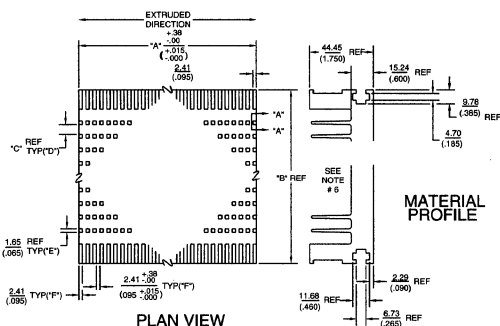
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The Powergain® Series Innovative New Cooling for Power Modules



Efficient cooling of power modules with pin fin heat sink and fan. From left: part number 2451L-115VPG (uses fan 1), and 2462L-115VPG (uses fan 2).

- High volume fan attached to a Thermalloy pin fin heat sink provides efficient cooling for power modules.
- Achieve higher performance compared to old-style fan-cooled bonded fin type modules while occupying approximately one-third the volume, resulting in decreased weight and cost.
- Pin fins result in thinner boundary layers than exist in longitudinal flow along the straight fins.
- Extruded slots in the sides accommodate easy mounting to a cabinet.



Notes:

1) Powergain part numbering system example:

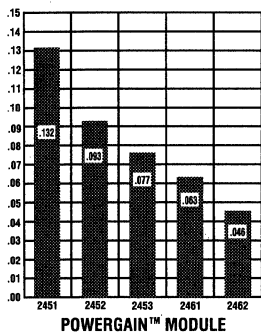
Heat Sink	Finish* (Dash)	Fan Voltage	Powergain
2451	L	115V	PG

i.e.: 2451L-115VPG

Note: fans are available for both the 2451, 2452, 2453, 2461, and 2462 in 230VAC, 115VAC, 48VDC, and 12VDC.

*L designates clear chromate finish.

2) Thermalloy is continually adding products to the Powergain series. Additional products not shown here are available to dissipate from 20 to 2,500 watts. Please contact the factory.



Model	Weight Grams (lbs.)	Dimension: mm (inches)						Fan
		A	B	C	D	E	F	
2451	904.46 (1.994)	123.06 (4.845)	120.65 (4.750)	7.72 (304)	8	9	25	1
2452	1330.39 (2.933)	180.98 (7.125)	120.65 (4.750)	7.72 (304)	8	9	37	1
2453	1791.69 (3.950)	248.54 (9.785)	120.65 (4.750)	7.72 (304)	8	9	50	1
2461	1905.54 (4.201)	176.15 (6.935)	176.53 (6.950)	7.19 (283)	14	15	36	2
2462	2845.39 (6.273)	263.32 (10.355)	176.53 (6.950)	7.19 (283)	14	15	54	2

Fan	Fan Data	
	1	2
Fan Size: (mm)	119.13 x 119.13 x 38.1	150.11 x 171.96 x 38.1
inches	(4.69 x 4.69 x 1.5)	(5.91 x 6.77 x 1.5)
Air Flow	110 CFM	220 CFM
Static Pressure	.39 in. H ₂ O	.95 in. H ₂ O
Noise	56 dBA	56 dBA
Rated Current	.205 A	.360 A
Voltage	115 V	115 V
Watts	17.0 W	32 W
Bearings	Sealed Ball Bearings	Sealed Ball Bearings
Terminals (inches)	.120	.120
Speed	3300 RPM	3200 RPM

Note: Fan data obtained from manufacturer's literature.

U.S. Patent Nos. 5,486,980, 4,879,891 and 4,884,331; French Patent No. 2 703 443; U.K. Patent No. 2,204,181. Additional patents applied for in: U.S., U.K., Germany, France, Italy, Japan, Taiwan



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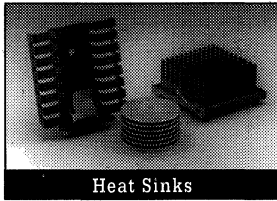
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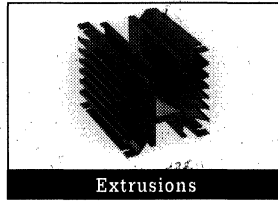
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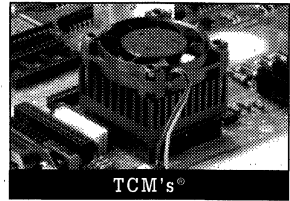
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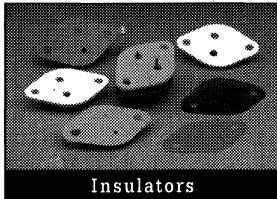
Heat Sinks



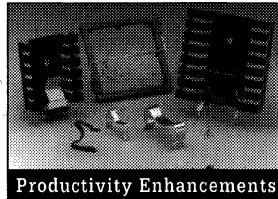
Extrusions



TCM's®



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Plastics/Accessories

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Extensive stocked selection of:

- Extruded
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Custom design—excellent engineering support available

EXTRUSIONS

- Over 725 extrusion shapes tooled, many normally stocked

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- Thermasil™ (silicone rubber)
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- Mica
- Aluminum Oxide Ceramic
- Beryllium Oxide Ceramic
- Hard Anodized Aluminum
- Insul-Cote™ (packaged, pre-coated insulators for easy installation)

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(Thermalloy Cooling Modules)

- Pin fin heat sink with attached DC fan. Ball bearing fan has life expectancy of 50,000 + hours.

PRODUCTIVITY ENHANCEMENTS

- Spring clips & heat sink/clip combinations for use with LIF and ZIF sockets
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- PGA E-Z Mount™
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- Clinch nuts

PLASTICS/ACCESSORIES

- Card guides, snap-on ejectors and pullers
- Mounting pads & Stanchion pads
- Transistor sockets
- Shoulder washers
- Bushings
- TO-3 insulating covers
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 Certificate No. 030678

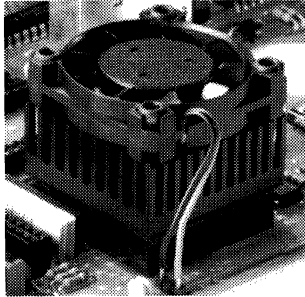
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*Thermattach is a registered trademark of the Chomerics company.

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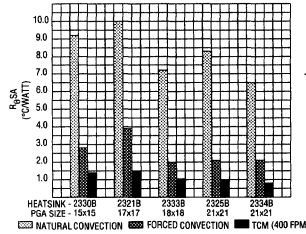
TCM®: THERMALLOY COOLING MODULES FOR MICROPROCESSORS

Innovative TCM®: High performance pin fin heat sink with DC fan attached



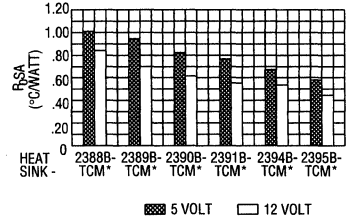
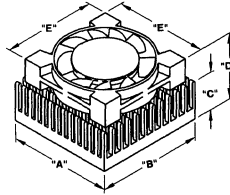
- Efficient cooling of microprocessors including Pentium® Pro, Pentium®, i486, PowerPC®, etc.
- Variety of attachment options.
- High quality DC brushless, ball-bearing fan (5 or 12 volts) has life expectancies of 50,000+ hours.

Note: Fan placement may be asymmetrical on heat sink.

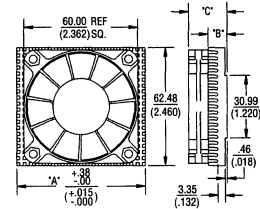


Note: The TCM® thermal performance shown is for the 12-volt 40mm fan. TCM® performance using the 5-volt 40mm fan is 5-10% lower as verified by test data. The fan cfm varies directly as a cube root of the input horsepower. (Test data is available from the factory.) For further information on basic TCM® performance, please request EIR #91-1002.

▼ FIGURE 1



▼ FIGURE 2



TCM's®						
Base Model	Figure	Nominal Dimensions: mm (inches)				PGA Size
		A	B	C	D		E
Fan Size: 40mm x 40mm x 10mm						
2330B-TCM	1	37.97 (1.495)	38.10 (1.500)	16.51 (0.650)	26.54 (1.045)	40.00 (1.575) 15 x 15
2321B-TCM *	1	41.28 (1.625)	43.18 (1.700)	8.89 (0.350)	18.92 (0.745)	40.00 (1.575) 17 x 17 and 18 x 18
2333B-TCM **	1	44.58 (1.755)	45.72 (1.800)	16.51 (0.650)	26.54 (1.045)	40.00 (1.575) 17 x 17 and 18 x 18
2325B-TCM ***	1	51.18 (2.015)	53.34 (2.100)	10.16 (0.400)	20.19 (0.795)	40.00 (1.575) 21 x 21
2334B-TCM ***	1	51.18 (2.015)	53.34 (2.100)	16.51 (0.650)	26.54 (1.045)	40.00 (1.575) 21 x 21
Fan Size: 60mm x 60mm x 10mm						
2388B-TCM ****	2	67.56 (2.660)	8.89 (.350)	19.30 (.760)		24 x 24
2389B-TCM ****	2	80.90 (3.185)	8.89 (.350)	19.30 (.760)		24 x 24
2390B-TCM ****	2	67.56 (2.660)	11.43 (.450)	21.84 (.860)		24 x 24
2391B-TCM ****	2	80.90 (3.185)	11.43 (.450)	21.84 (.860)		24 x 24
2394B-TCM ****	2	67.56 (2.660)	16.51 (.650)	16.97 (.668)		24 x 24
2395B-TCM ****	2	80.90 (3.185)	16.51 (.650)	16.97 (.668)		24 x 24

Patent Numbers on pin fin heat sinks: U.S. Patent Nos. 4,879,891 and 4,884,331, U.K. Patent No. 2204181 Additional Patents Pending.

Fan Data					
FAN SIZE: 40MM X 40MM X 10MM					
Fan Voltage	Rated Current (A)	Air Volume m ³ /min (cfm)	Static Pressure mm/H ₂ O (In. H ₂ O)	Noise dBA @ 1m	Weight grams (Lbs.)
12 volt	0.09	0.12 (4.24)	3.2 (0.126)	26	21 (0.046)
5 volt	0.19	0.12 (4.24)	3.0 (0.118)	23	18 (0.040)
FAN SIZE: 60MM X 60MM X 10MM					
12 volt	0.15	0.40 (14.1)	3.0 (0.118)	38	27 (0.060)
5 volt	0.18	0.30 (10.6)	1.7 (0.067)	28	27 (0.060)

- * Cools Intel i486, i860, i960, AMD AM29000, & Motorola 68040
- ** Cools Motorola 68040
- *** Cools Intel Pentium® processor 21 x 21 pin size (Pentium is a trademark of Intel Corporation)
- **** Cools Intel Pentium® Pro processor and other 24 x 24 pin PGA's.



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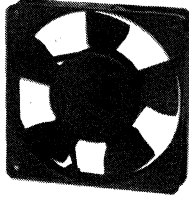


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USTF 120 SERIES - AC

Models USTF 12038 & USTF 12025



Sizes:

USTF 12038 - 4.69" sq. x 1.50" thk.
(119 mm x 38 mm)
USTF 12025 - 4.69" sq. x 1.0" thk.
(119 mm x 25 mm)

Airflow:

USTF 12038 - 54 to 112 CFM (4 speeds)
USTF 12025 - 56 to 77 CFM (4 speeds)

Acoustical Noise:

USTF 12038 - 28 to 41dB(A)
USTF 12025 - 30 to 38dB(A)

Voltage: 115 or 230 VAC

Termination: Terminals (standard)

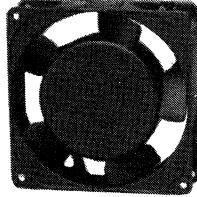
Materials: Frame - Aluminum
Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 073720

USTF92 SERIES - AC

Model USTF9225



Size: 3.62" sq. x 1.0" thk.
(92 mm x 25 mm)

Airflow: 30 to 35 CFM (2 speeds)

Acoustical Noise: 35 to 39 dB(A)

Voltage: 115 or 230 VAC

Termination: Terminals (standard)

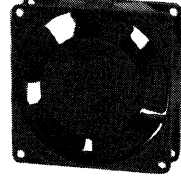
Materials: Frame - Aluminum
Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 073720
VDE No. 16599

USTF80 SERIES - AC

Models USTF8038 & USTF8025



Sizes:

USTF8038 - 3.15" sq. x 1.5" thk.
(80 mm x 38 mm)
USTF8025 - 3.15" sq. x 1.0" thk.
(80 mm x 25 mm)

Airflow:

USTF8038 - 34 CFM
USTF8025 - 20 CFM

Acoustical Noise:

USTF8038 - 38 dB(A)
USTF8025 - 33 dB(A)

Voltage: 115 or 230 VAC

Termination: Terminals (standard)

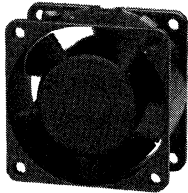
Materials: Frame - Aluminum
Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 073720

USTF60 SERIES - AC

Model USTF6030



Size: 2.36" sq. x 1.18" thk.
(60 mm x 30 mm)

Airflow: 11 CFM

Acoustical Noise: 29 dB(A)

Voltage: 115 VAC (only)

Termination: Lead Wires (only)

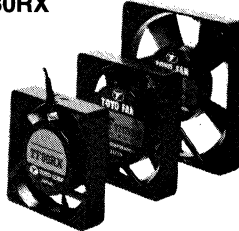
Materials: Frame - Aluminum
Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 073720

TF RX SERIES - AC

Models TF120RX, TF92RX & TF80RX



Sizes:

TF120RX - 4.70" sq. x .78" thk.
(119 mm x 20 mm)
TF92RX - 3.62" sq. x .78" thk.
(92 mm x 20 mm)
TF80RX - 3.15" sq. x .78" thk.
(80 mm x 20 mm)

Airflow: TF120RX - 64 CFM
TF92RX - 30 CFM
TF80RX - 18 CFM

Acoustical Noise:

TF120RX - 44 dB(A)
TF92RX - 39 dB(A)
TF80RX - 36 dB(A)

Voltage: 115 or 230 VAC

Termination: Lead Wires (only)

Materials: Frame - Aluminum
Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 073720

TF 345 SERIES - AC

DUAL VOLTAGE

Models TF120345, TF92345 & TF80345



Sizes:

TF120345 - 4.70" sq. x 1.50" thk.
(119 mm x 38 mm)
TF92345 - 3.62" sq. x .98" thk.
(92 mm x 25 mm)
TF80345 - 3.15" sq. x 1.50" thk.
(80 mm x 38 mm)

Airflow:

TF120345 - 81 - 109 CFM (3 speeds)
TF92345 - 27 - 34 CFM (2 speeds)
TF80345 - 32 CFM

Acoustical Noise:

TF120345 - 40 to 50 dB(A)
TF92345 - 36 to 42 dB(A)
TF80345 - 40 dB(A)

Voltage: 115 & 230 VAC dual

Termination: Lead Wires (4)

Materials: Frame - Aluminum
Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 073720

ADDED VALUE OPTIONS ON REQUEST:

Connector termination • special wire leads & harnessing • captive mounting hardware • finger guards & air filters • in addition to many other options • available on all models



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USTF120 SERIES - DC

Models USTF12038 & USTF12025



Sizes:

USTF12038 - 4.69" sq. x 1.50" thk.
(119 mm x 38 mm)

USTF12025 - 4.69" sq. x 1.0" thk.
(119 mm x 25 mm)

Airflow:

USTF12038 - 85 to 108 CFM (3 speeds)
USTF12025 - 72 to 87 CFM (2 speeds)

Acoustical Noise:

USTF12038 - 34 to 41 dB(A)
USTF12025 - 34 to 38 dB(A)

Voltage: 12 or 24 VDC (Both Models)
48 VDC (USTF12038 only)

Termination: Lead Wires (only)

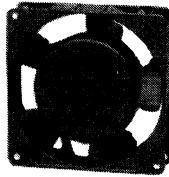
Materials: Frame & Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 074205
VDE No. 16599

USTF92 SERIES - DC

Model USTF9225



Size: 3.62" sq. x 1.0" thk.
(92 mm x 25 mm)

Airflow: 37 to 50 CFM (2 speeds)

Acoustical Noise: 26 to 35 dB(A)

Voltage: 12 or 24 VDC

Termination: Lead Wires (only)

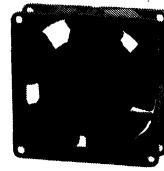
Materials: Frame & Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 074205
VDE No. 16599

USTF80 SERIES - DC

Model USTF8025



Size: 3.15" sq. x 1.0" thk.
(80 mm x 25 mm)

Airflow: 29 to 36 CFM (2 speeds)

Acoustical Noise: 25 to 29 dB(A)

Voltage: 12 or 24 VDC

Termination: Lead Wires (only)

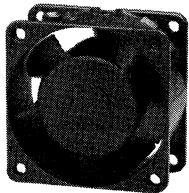
Materials: Frame & Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 074205
VDE No. 16599

USTF60 SERIES - DC

Models USTF6025 & USTF6020



Sizes: USTF6025 - 2.36" sq. x 1.00" thk.
(60 mm x 25 mm)

USTF6020 - 2.36" sq. x 0.79" thk.
(60 mm x 20 mm)

Airflow: USTF6025 - 15 to 19 CFM
(3 speeds)

USTF6020 - 15 to 18 CFM
(2 speeds)

Acoustical Noise:

USTF6025 - 25 to 30 dB(A)
USTF6020 - 26 to 30 dB(A)

Voltage: 12 or 24 VDC

Termination: Lead Wires (only)

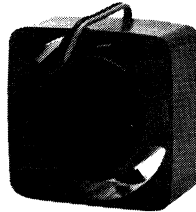
Materials: Frame & Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 074205
VDE No. 16599

USTF4020 SERIES

Model USTF4020 & USTF4010



Sizes: USTF4020 - 1.58" sq. x 0.79" thk.
(40 mm x 20 mm)

USTF4010 - 1.58" sq. x 0.39" thk.
(40 mm x 10 mm)

Airflow: USTF4020 - 7 to 9 CFM
(2 speeds)

USTF4010 - 4 to 5 CFM
(2 speeds)

Acoustical Noise:

USTF4020 - 26 to 29 dB(A)
USTF4010 - 25 to 28 dB(A)

Voltage: 12 VDC (Both models)
24 VDC (USTF4020 only)

Termination: Lead Wires (only)

Materials: Frame & Impeller-PBT,
Bearings - Sealed Ball

Safety: Impedance Protected

Approvals: UL No. E106227
CSA No. 074205
VDE No. 16599

USTF5010 SERIES DC

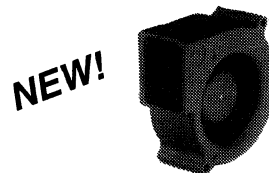


NEW!

1.97"(50mm) sq. x 39"(10mm) thk.
5 & 12 VDC - 10.2CFM - 34dB(A)
Available in 3 speeds

USTF7530 SERIES DC

**HIGH PERFORMANCE
MINIATURE BLOWER**



NEW!

2.98"(75.7mm) sq. x 1.18"(30mm)thk.
12 & 24 VDC - 11.3 CFM - 40dB(A)

ADDED VALUE OPTIONS ON REQUEST:

Connector termination • special wire leads & harnessing • captive mounting hardware • finger guards & air filters • in addition to many other options • available on all models

WE Wakefield Engineering

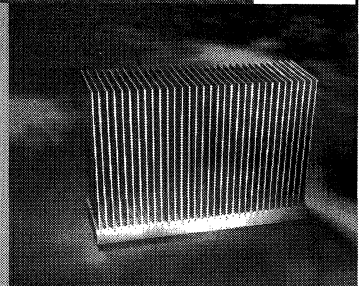
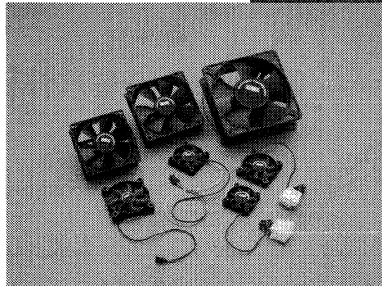
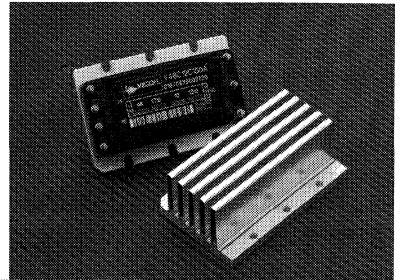
Innovative Thermal Management Solutions

Wakefield Engineering's design, manufacture, and fabrication expertise offers a wide range of standard and custom heat dissipation products and accessories providing innovative thermal management solutions for a diverse range of commercial, industrial, and military applications.

Products and Services

Full Range of Heat Sink Products

- Extruded and cross cut heat sinks
- Microprocessor heat sinks
- Board level heat sinks
- Convoluted fin assemblies (Hexfin™)
- Liquid cooled solutions
- Bonded fin assemblies
- Compression clamp cooling systems
- Interface materials and accessories
- Attachment hardware

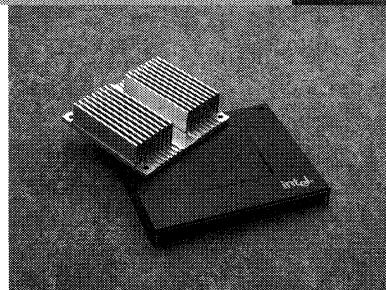


DC Fans

Extrusions

Thermal Engineering Services

- Application and design engineering
- Computational Fluid Dynamics modeling
- Consulting services



Manufacturing Capabilities

Extruding
Prototyping
CNC machining

Value added assembly
Anodizing
Brazing

Cross cutting
Bonding
High Volume Automated Assembly



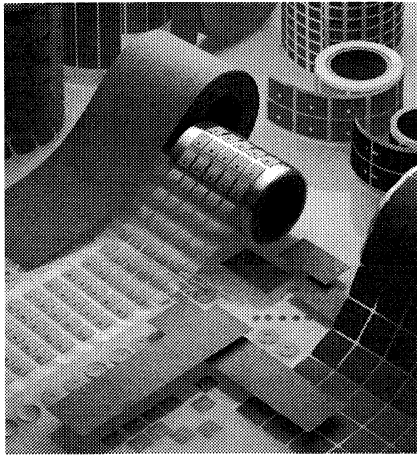
E-mail: info@wakefield.com

www.wakefield.com

100 Cummings Center, Suite 157H, Beverly, MA 01915

tel: (781) 406-3000 • fax: (781) 406-3002

Bergquist is the World Leader in Thermal Management Products



When you choose an interface material look at the whole picture. Some materials will solve one problem very well but cause other problems. Wax and grease are a perfect example of this. They have excellent thermal resistance properties but they're messy.

The Bergquist Company is the world leader in thermal management materials beginning with the Sil-Pad line. Now there are several hundred different materials manufactured for many different applications.

The Bergquist Company has also taken the lead in developing new materials for the fast changing electronics industry. On these pages you'll see detailed descriptions of the **Gap Pad V0™** line of materials, **Softface™**, **Hi-Flow™** and **Flexible Hi-Flow™** to name a few.

Thermal Properties

The selection of a thermal interface material is very dependent on the thermal performance of the material. Discrete Semiconductors, under normal operating conditions, dissipate waste power which raises the junction temperature of the device. Unless sufficient heat is conducted out of the device, its electrical performance and parameters are changed. *A 10°C rise in junction temperature can reduce the mean-time-to-failure of a device by a factor of two.* Also, above 25°C, the semiconductor's total power handling capability will be reduced by a derating factor inherent to the device.

Bergquist Sil-Pad Product Summary

Sil-Pad 400®

Thermal Resistance .45 °C/W-in²
Breakdown Voltage, 4500 V min. (9mil)

Sil-Pad 400 is the original Sil-Pad material and still the most widely used. Sil-Pad 400 is a composite of silicone rubber and fiberglass. Primary use is to electrically isolate power sources from heat sinks. SP400 is non-toxic, flame retardant, resists damage from cleaning agents and actually improves its thermal resistance with age.

Sil-Pad 1000®

Thermal Resistance .35 °C/W-in²
Breakdown Voltage, 4500 Volts min.

Sil-Pad 1000 is a composite of silicone rubber and fiberglass. It is specially filled and offers low thermal resistance. SP1000 has the same excellent mechanical and physical characteristics of our Sil-Pad 400 material while offering a 35% reduction in thermal resistance.

Sil-Pad 2000® High Thermal Performance

Thermal Resistance .20 °C/W-in²
Breakdown Voltage, 4000 Volts min.

Sil-Pad 2000 is Bergquist's high performance, high reliability thermally conductive insulator. Sil-Pad 2000 is designed for demanding military / aerospace and commercial applications. In these applications SP2000 complies with military standards.

SIL-PAD K-4®

Thermal Resistance .40 °C/W-in²
Breakdown Voltage, 6000 Volts min.

Sil-Pad K-4 combines the thermal transfer properties of well-known Sil-Pad rubber with a high dielectric, physically tough film carrier. The result is a durable insulator that withstands high voltages, requires no thermal grease to transfer heat, is available in customized shapes and sizes, and saves time and costs while increasing productivity.

SIL-PAD K-6®

Thermal Resistance .30 °C/W-in²
Breakdown Voltage, 6000 Volts min.

Bergquist Sil-Pad K-6 is a medium performance film based thermally conductive insulator. The thermally conductive dielectric film is coated with a specially filled silicone elastomer to deliver high thermal performance.

SIL-PAD K-10®

Thermal Resistance .20 °C/W-in²
Breakdown Voltage, 6000 Volts min.

Bergquist Sil-Pad K-10 is Bergquist's high performance thermally conductive insulator. K-10 combines a special dielectric film with specially filled silicone rubber. The result is a product with good cut-through properties and excellent thermal performance. K-10 is designed to replace ceramic insulators such as Beryllium Oxide, Boron Nitride and Alumina.

Q-Pad II®

Thermal Resistance .10 °C/W-in² w/o ac
.20 °C/W-in² w/ ac

Q-Pad II is a composite of .0015" aluminum foil coated both sides with .0025" thick thermally / electrically conductive Sil-Pad rubber. It is designed for those applications where maximum heat transfer is needed and electrical insulation is not required. Q-Pad II is the ideal thermal interface material to replace messy thermal grease compounds.

U2-HT™ / U5-HT™

Thermal Resistance .2 °C/W-in²

Bergquist U2-HT is a thermally conductive unreinforced pressure sensitive film. The product consists of a high performance thermally conductive acrylic adhesive, double lined with protective release coated films.

A slightly thicker version of the U2-HT where .005" of adhesive is required to displace air in the interface.

Look at the Whole Picture When Choosing a Thermal Interface Material

Q-Pad 3®

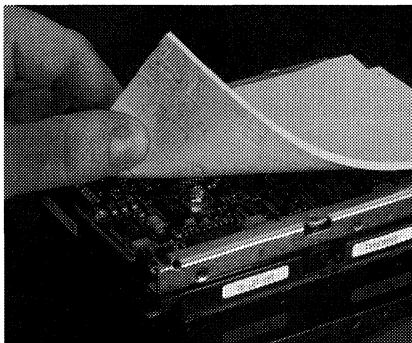
Thermal Resistance .10 °C/W-in²

Q-Pad 3 thermally conductive pad consists of graphite embedded in a polymer matrix that is elastomeric on one side, with a pressure sensitive adhesive on the opposite side. It is designed for those applications where maximum heat transfer is needed and electrical insulation is not required. Q-Pad 3 eliminates problems associated with grease such as contamination of reflow solder or cleaning operations.

CPU-HT Pad®

Thermal Resistance .30 °C/W-in²

CPU Pad is a thermally conductive, electrically insulating, double coated tape. This tape consists of a high performance acrylic, pressure sensitive adhesive, on both sides of a film carrier. CPU Pad is typically used to adhere a heat sink to the top of a CPU or other heat generating component on the PC board.



GAP PAD V0®

Thermal Impedance, 2.0 °C/watt in² (.040 Thickness)

Gap Pad V0 is a thermally conductive material that acts as a thermal interface between a heat sink and an electronic device. The conformable nature of Gap Pad allows the pad to fill in air gaps between PC boards and heat sinks or a metal chassis. Gap Pad is a specially filled, highly conformable silicone polymer. The material is available in thicknesses from .020" to .160". Gap Pad is available with or without adhesive and can be supplied aluminum backed.

GAP PAD V0 Soft®

Thermal Impedance, 2.0 °C/watt in² (.040 Thickness)

Gap Pad V0 Soft is recommended for low stress applications. These include applications where the material is used as an interface and one side is in contact with a leaded device.

SOFTFACE®

Thermal Resistance 5 mil .06 °C/W-in²

The new Bergquist Softface is supplied as a coating onto polyester film. The material is then hotstamped onto a heat sink or semiconductor using commercial hot-stamping equipment. Softface eliminates problems associated with thermal grease such as contamination of electronic assemblies and reflow solder baths. Softface is available as an electrically insulating and non-insulating material.

POLY-PAD®

For Silicone Sensitive Applications

Polyester based, thermally conductive insulators from Bergquist provide a complete family of materials for silicone-sensitive applications. Poly-Pads are ideally suited for applications requiring conformal coatings or applications where silicone outgassing is a concern (telecommunications). Poly-Pads are constructed with specially filled polyester resins coating either side of a fiberglass carrier or a film carrier. The Poly-Pad family offers a complete range of performance characteristics to match individual applications.

POLY-PAD 400®

**Thermal Impedance, 0.4 °C/watt in²
Breakdown Voltage, 4500 Volts min.**

POLY-PAD 1000®

**Thermal Impedance, 0.3 °C/watt in²
Breakdown Voltage, 2500 Volts min.**

POLY-PAD K4® & K10®

**Thermal Impedance, PPK4, 0.4 °C/watt in²
Thermal Impedance, PPK10, 0.2 °C/watt in²
Breakdown Voltage, 6000 Volts min.**

PPK4 is an economical insulator and the film carrier provides excellent dielectric and physical strength. PPK10 offers superior thermal performance for your most critical applications.

Hi-Flow®

Thermal Resistance .05 °C/W-in²

Bergquist Hi-Flow is the new "phase change" material designed specifically to replace grease. Bergquist Hi-Flow is a filled polymer which is applied to your heat sink, chassis or heat spreader. With low pressure the material changes from a solid and flows at approx. 43C, thereby assuring total wet-out of the interface.

Flexible Hi-Flow®

Thermal Resistance .05 °C/W-in²

Flexible Hi-Flow is made in a pad form for easier handling and installation. At 65C the material changes from a solid and flows (phase change temperature) assuring total wet-out of the interface.

ORDERING INFORMATION

Contact the factory for a free Sil-Pad Design Guide which includes all the standard configurations available.

SPECIAL SHAPES:

We produce thousands of specials. Tooling charges are about \$150 to \$200 for simple parts. Increased complexity or tighter tolerances increase tooling charges.

TOLERANCES:

.015 inches are held on width, length and hole location.

SHEETS:

6" x 6", 6" x 12", 8" x 8", 10" x 10", or 12" x 12" sheets in stock.

ROLLS:

Many Sil-Pad materials are available in roll form. Contact the factory. Sil-Pad 400, Sil-Pad 1000 and Sil-Pad 2000 are covered by Mil spec. numbers;

Mil-M-38527/8A	Mil-I-49456
Mil-I-49456	Mil-I-49456 & 49466
U.L. File Number E59150	

Call Bergquist today for your free copy of the Sil-Pad Design Guide. Toll Free: 1-800-347-4572.

THE BERGQUIST COMPANY

5300 Edina Industrial Boulevard
Minneapolis, Minnesota, 55439
Tel: (612) 835-2322
Fax: (612) 835-4156
www.bergquistcompany.com

Sil-Pad® Thermally Conductive Insulator Selection Guide

	Sil-Pad 400 .007 in	Sil-Pad 400 .009 in	Sil-Pad 600	Sil-Pad 1000	Sil-Pad 1500	Sil-Pad 2000	Test Method
Color	Gray	Gray	Green	Pink	Green	White	Visual
Thickness Inches (mm)	.007 ± .001 (.18 ± .025)	.009 ± .001 (.23 ± .025)	.009 ± .001 (.23 ± .025)	.009 ± .001 (.23 ± .025)	.010 ± .001 (.25 ± .025)	.015 ± .001 (.38 ± .025)	ASTM D 374
Thermal Resistance, C-in ² /W	.45	.50	0.35	0.35	0.23	0.2	ASTM D5470
Thermal Conductivity W/m-K nominal	0.9	0.9	1.0	1.2	2.0	3.5	ASTM D 5470
Voltage Breakdown	3500	4500	4500	4500	4000	4000	ASTM D 149
Continuous Use Temperature °C	-60 to 180	-60 to 180	-60 to 180	-60 to 180	-60 to 180	-60 to 200	
Construction	Silicone/ Fiberglass	Silicone/ Fiberglass	Silicone/ Fiberglass	Silicone/ Fiberglass	Silicone/ Fiberglass	Silicone/ Fiberglass	

	Sil-Pad K-4	Sil-Pad K-6	Sil-Pad K-10	Q-Pad II	Q-Pad 3	Poly-Pad 400	Test Method
Color	Gray	Bluegreen	Beige	Black	Black	Mauve	Visual
Thickness Inches (mm)	.006 ± .001 (.15 ± .025)	.006 ± .001 (.15 ± .025)	.006 ± .001 (.15 ± .025)	.006 ± .001 (.15 ± .025)	.005 (.15 mm) .0055 w/ac	.009 ± .001 (.23 ± .025)	ASTM D 374
Thermal Resistance, C-in ² /W	.40	.30	0.2	0.1	0.1	0.4	ASTM D5470
Thermal Conductivity W/m-K nominal	0.9	1.1	1.3	2.5	2.0	0.9	ASTM D 5470
Voltage Breakdown	6000	6000	6000	N/A	N/A	4500	ASTM D 149
Continuous Use Temperature °C	-60 to 180	-60 to 180	-60 to 180	-60 to 180	-60 to 180	-20 to 150	
Construction	Silicone/ Film	Silicone/ Film	Silicone/ Film	Silicone/ Alum Foil	Silicone/ Fiberglass	Polyester/ Fiberglass	

Sil-Pad[®] Thermally Conductive Insulator Selection Guide

	Poly-Pad 1000	Poly-Pad K-4	Poly-Pad K-10	CPU Pad	Sil-Pad 800-S	Sil-Pad 900-S	Test Method
Color	Yellow	Mauve	Yellow	Tan	Gold	Mauve	Visual
Thickness Inches (mm)	.009 ± .001 (.23 ± .025)	.006 ± .001 (.15 ± .025)	.006 ± .001 (.15 ± .025)	.005 ± .001	.005 ± .001 (.15 ± .025)	.009 ± .001 (.15 ± .025)	ASTM D 374
Thermal Resistance, C-in ² /W	0.3	0.4	0.2	0.3	0.1	0.2	ASTM D 5470
Thermal Conductivity W/m-K nominal	1.2	0.9	1.3	0.6	1.6	1.6	ASTM D 5470
Voltage Breakdown	2500	6000	6000	N/A	1.7 kVa-c	5.5 kVa-c	ASTM D 149
Continuous Use Temperature °C	-20 to 150	-20 to 150	-20 to 150		--	--	
Construction	Polyester/ Fiberglass	Polyester/ Film	Polyester/ Film	Filled Polymer			

New Products

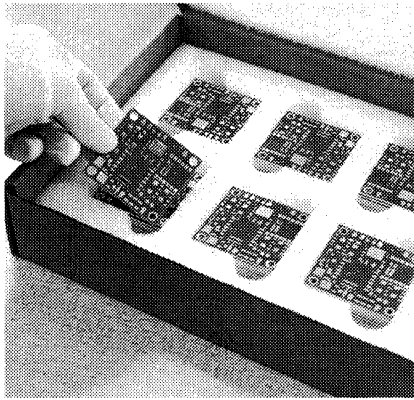
	Gap Pad V0	Gap Pad V0 Soft	Pre-Applied Hi-Flow	Machine Pre-Applied Hi-Flow White	Machine Pre-applied Softface White	U2-HT	Test Method
Color	Yellow/Pink	Mauve/Pink	Yellow	White	White	White	Visual
Thickness Inches (mm)	.020" to .160"	.020" to .160"	.004"	.0015"	.005 & .008	.002"	ASTM D374
Thermal Resistance, C-in ² /W	1.0 (.020" thickness)	1.0 (.020" thickness)	0.05	< 0.05	0.06 / .09	0.2	ASTM D5470 ASTM E1530
Thermal Conductivity W/m-K nominal	0.8 @ 10 psi	0.8 @ 10 psi	1	220 (W-m ² K ⁻¹)	3.5	0.6	ASTM D5470
Dielectric Breakdown Voltage KV-AC	>6	>6	--	--	500 V/mil	1 KVAC	ASTM D 149
Continuous Use Temperature °C	-60 to +200C	-60 to +200C	150 max.		--	--	
Construction	Silicone/ Carrier	Silicone/ Carrier		Avail in parts			

Call Bergquist today for your free copy of the Sil-Pad Design Guide. Toll Free: 1-800-347-4572.

THE BERGQUIST COMPANY

5300 Edina Industrial Boulevard
Minneapolis, Minnesota, 55439
Tel: (612) 835-2322
Fax: (612) 835-4156
www.bergquistcompany.com

THERMAL CLAD IMS[®], Thermal Management Substrate



TWO LAYER THERMAL CLAD

Get maximum thermal performance with two layer THERMAL CLAD[®] (IMS[™]). This version provides shielding and improved circuit density for surface mount and direct die attach power requirements.

STANDARD THERMAL CLAD MATERIALS (see table)

16" X 19" or 18" X 24" Sheets
Usable area: subtract one inch

Please contact The Bergquist Company @ 1-800 347-4572 to receive a copy of our THERMAL CLAD design guide or to receive answers to any questions.

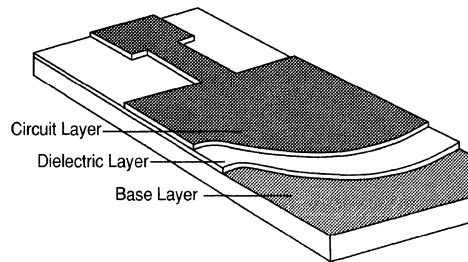
**THE
BERGQUIST
COMPANY**

5300 Edina Industrial Blvd.
Minneapolis, MN 55439
Tel: (612) 835-2322
Fax: (612) 835-0430
www.bergquistcompany.com

THERMAL CLAD IMS[®] is used as a substrate, heat sink, and/or a printed circuit material. THERMAL CLAD has several properties that may be used to advantage in design. In the design phase, the engineer considering the use of THERMAL CLAD will see these benefits:

- Improve product thermal and physical performance
- Combine power and control
- Improve durability
- Use surface mount technology
- Replace heat sinks and other hardware
- Reduce printed circuit board real estate / interconnects
- Replace fragile ceramic substrates
- Cost effectively design "odd shaped" parts

THERMAL CLAD IMS[®], is an **Insulated Metal Substrate**, copper clad material that may be used as a single sided replacement for ceramic substrate or printed wiring board material. It is a unique material, offering superior heat transfer to help cool components while eliminating the breakage problems associated with fragile ceramics.



THERMAL CLAD utilizes a unique, ceramic-filled polymer, and the technology of insulated metal copper clad boards. THERMAL CLAD is normally purchased in one of the standard constructions in the table below. Special materials available are also listed.

LAYER	MATERIAL	THICKNESS	REMARKS
Circuit Layer	ED Copper	1 oz. (.0014") 2 oz. (.0028") 3 oz. (.0042") 4 oz. (.0056")	
Dielectric Layer Proprietary	BERGQUIST	.003"	
Base Layer	Aluminum	.040", .062", .080", .125"	6061 T6 or 5052 H 34
	Copper	.040", .062", .080", .093"	C11000 Alloy

Surface Finish, Aluminum: Aluminum alloys may be supplied with commercial quality anodization on the exposed surface. Clear, black, blue, and red may be used. Masking is required to prevent attack on the anodized finish by caustic printed circuit process chemicals (i.e. caustic strippers, benzimidazole antioxidants). Anodizing is performed to the standards of Mil-A-8625, Type 2.

ELECTRICAL CHARACTERISTICS OF THERMAL CLAD	PROPERTY	ENGLISH	METRIC
	Dielectric Breakdown	6000 Volts (AC)	6000 Volts
	Volume Resistivity	10 ¹⁴ ohms • m	10 ¹⁴ ohms • m
	Surface Resistivity	10 ¹³	10 ¹³ ohms/SQ
	Permittivity	5.5-6.0	5.5-6.0
	Capacitance	450 pF/in ²	70 pF/cm ²

Now Available in Finished Circuits for Custom Applications

Prescott Operations To support THERMAL CLAD Bergquist has installed a completely new circuit processing facility in Prescott, WI. This center for Process Technology of Thermal Clad IMS Circuits uses the latest in technology for environmental clean room control, surface finishing, coating and lamination. Ask for a copy of the new TClad (IMS) Circuits Brochure.

SARCON® THERMAL MANAGEMENT COMPONENTS

More power and light weight. In the past, these two characteristics in electronics were mutually exclusive. Now, micro-electronics are just that, and in addition, need thermal management components to further complement these objectives.

SARCON® is an advanced silicone rubber with high thermal conductivity and superior flame-retardancy. By combining the inherent silicone rubber properties of heat resistance, electrical insulation and long-term aging into one compound, this universally applicable material can be made in an unlimited number of thermal management configurations.



AVAILABLE CONFIGURATIONS:

Sheets, Rolls, Die-cuts, Sleeves, Gel, Extrusions, Moldings

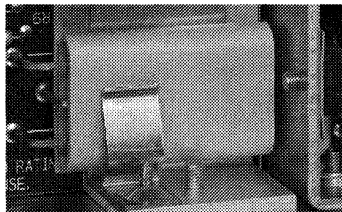
APPLICATIONS:

- Thermal conductive insulators for semiconductors
- Compression jointing materials for thermistors and temperature sensors
- Thermal conductive material for all types of heaters

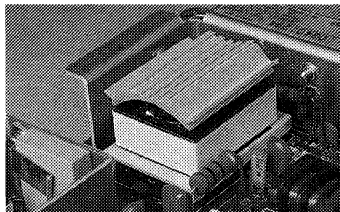
THERMAL CONDUCTIVITY CONVERSION TABLE

Thermal Conductivity	BTU-in/hrft²F	Cal/cm • °C • sec	Watt/m • K
BTU-in / hrft²F	1	3.4x10 ⁻⁴	0.14
Cal / cm • sec • °C	2.9x10 ³	1	4.2x10 ³
Watt / m • K	6.9	2.4x10 ⁻³	1

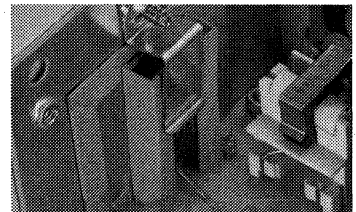
PC Board Components



Power Supplies, Transformers



Heat Sink Bridges



FORMULATIONS: Eight SARCON® compounds are available for a wide range of performance requirements.

SARCON® Type	Application Guidelines	Thermal Conductivity	
		Cal/cm • sec • °C	W/m • K
SARCON® TR	General purpose for moldings and extrusions	2.9x10 ⁻³	1.20
SARCON® HR	High heat conductivity	4.1x10 ⁻³	1.70
SARCON® GTR	General purpose extrusion with 0.05 mm glass cloth reinforcement	2.2x10 ⁻³	0.90
SARCON® GHR	High heat conductivity with 0.05mm glass cloth reinforcement	3.4x10 ⁻³	1.40
SARCON® GSR	Highest heat conductivity with 0.05mm glass cloth reinforcement	7.0x10 ⁻³	2.90
SARCON® UR	Very high heat conductivity	6.2x10 ⁻³	2.60
SARCON® QR	Low hardness with high heat conductivity	2.6x10 ⁻³	1.10
SARCON® GR-a	Soft hardness	3.6x10 ⁻³	1.50
Mica	<i>Shown for comparison purposes only</i>	1.4x10 ⁻³	0.59
Polyester	<i>Shown for comparison purposes only</i>	.34x10 ⁻³	0.14

All dimensions in millimeters

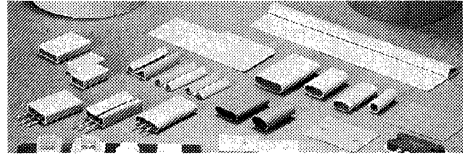


America Corporation

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 tel: 908-298-3850 • fax: 908-298-1232 • e-mail: fujipoly@aol.com • web site: www.fujipoly.com

SARCON® THERMAL MANAGEMENT COMPONENTS

SARCON® TECHNICAL INFORMATION



TYPICAL MATERIAL PROPERTIES

Test Properties		SARCON® TR			SARCON® HR			SARCON® UR			SARCON® QR		
Physical properties	Color	Green			Brown			Gray			Black		
	Hardness (Shore A)	75			92			79			55		
	Tensile strength (kg/cm ²)	55			50			26			23		
	Elongation (%)	100			60			110			250		
Heat aging (Aging test by heating in air, to 200° C)	Tear Strength (kg/cm)	9B			7B			8B			13B		
	Change in hardness (Point)	3 days	10 days	20 days	3 days	10 days	20 days	3 days	10 days	20 days	3 days	10 days	20 days
	Change in tensile strength (%)	±0	±5	+9	+1	+1	+3	+8	+11	+15	±0	+1	+5
	Change in elongation (%)	-16	-26	-34	-18	-24	-35	-46	-49	-49	-7	-15	-27
Electrical properties	Volume resistivity (Ω-cm)	1.2 x 10 ¹⁵			2.4 x 10 ¹⁵			3.9 x 10 ¹⁵			7 x 10 ¹⁵		
	Dielectric breakdown strength (kV/mm)	20			19			17			22		
	Dielectric constant	50Hz	10 ³ Hz	10 ⁶ Hz	50Hz	10 ³ Hz	10 ⁶ Hz	50Hz	10 ³ Hz	10 ⁶ Hz	50Hz	10 ³ Hz	10 ⁶ Hz
	Dielectric dissipation factor	0.002	0.001	0.002	0.004	0.002	0.002	0.0026	0.0014	0.0010	0.0031	0.0015	0.0008
Thermal properties	Thermal conductivity (cal/cm ² sec ² °C)	2.9 x 10 ⁻⁴ (1.20W/m ² K)			4.1 x 10 ⁻⁴ (1.70W/m ² K)			6.2 x 10 ⁻⁴ (2.60W/m ² K)			2.6 x 10 ⁻³ (1.10W/m ² K)		
	Flame retardant (UL94)	V-0			V-0			V-0			V-0		

TYPICAL PRODUCT PROPERTIES

Properties	Unit	SARCON® TR			SARCON® HR			SARCON® UR			SARCON® QR		
		30T	45T	85T	30H	45H	85H	30U	45U	85U	30Q	45Q	85Q
Color		Green			Brown			Gray			Black		
Thickness	mm	0.30 ^(±0.1) / ₀	0.45±0.05	0.85±0.05	0.30 ^(±0.1) / ₀	0.45±0.05	0.85±0.05	0.30 ^(±0.1) / ₀	0.45±0.05	0.85±0.05	0.30 ^(±0.1) / ₀	0.45±0.05	0.85±0.05
Material	Binder	Silicone			Silicone			Silicone			Silicone		
	Filler	Alumina			Alumina+ALN			Alumina			Alumina		
	Reinforcement	n/a			n/a			n/a			n/a		
Thermal Resistance w/ PSA	°C/W	0.40	0.43	0.65	0.18	0.32	0.52	0.10	0.15	0.42	0.33	0.48	0.98
	°C/W	n/a			n/a			n/a			n/a		
Specific Gravity	g/cm ³	2.29			2.44			2.57			2.20		
Hardness	Shore A (JIS-A)	75 (75)			91 (92)			79 (79)			55 (55)		
Tensile Strength	Psi (kg/cm ²)	714 (50)			714 (50)			371 (26)			714 (50)		
Elongation	%	100			60			110			250		
Tear Strength	lb/in (kg/cm)	50 (9)			39 (7)			45 (8)			73 (13)		
Volume Resistivity	Ω-cm	2.9x10 ¹⁵	2.1x10 ¹⁵	6.7x10 ¹⁵	2.8x10 ¹⁵	1.8x10 ¹⁵	1.0x10 ¹⁵	9.5x10 ¹⁴	7.7x10 ¹⁴	7.7x10 ¹⁴	5.6x10 ¹⁴	4.1x10 ¹⁴	4.6x10 ¹⁴
Withstand Voltage	kV	7	8	10	6	7	10	6	8	11	7	8	11
Dielectric Constant	IKHz	4.4	4.5	4.9	4.9	4.5	5.7		5.3			4.6	
Maximum Use Temperature	°C	-60°C - 180°C			-60°C - 180°C			-60°C - 180°C			-60°C - 180°C		
Adhesive coating		n/a			n/a			n/a			n/a		

Properties	Unit	SARCON® GTR					SARCON® GHR			SARCON® GSR			
		15GTR	18GTR	20GTR	23GTR	30GTR	15GHR	20GHR	30GHR	20GSR	30GSR	45GSR	85GSR
Color	-	Green					Brown			White			
Thickness	mm	0.15 ^(±0.02) / _{0.04}	0.18 ^(±0.03)	0.20 ^(±0.02) / _{0.03}	0.23 ^(±0.02) / _{0.04}	0.30 ^(±0.05) / ₀	0.15 ^(±0.02) / _{0.04}	0.20 ^(±0.02) / _{0.03}	0.30 ^(±0.05) / ₀	0.20 ^(±0.03)	0.30 ^(±0.05)	0.45 ^(±0.05)	0.85 ^(±0.05)
Material	Binder	Silicone					Silicone			Silicone			
	Filler	Alumina					Alumina+ALN			Boron Nitride			
	Reinforcement	Fiberglass					Fiberglass			Fiberglass			
Thermal Resistance w/ PSA	°C/W	0.26	0.44	0.28	0.48	0.50	0.16	0.16	0.25	0.10	0.10	0.16	0.33
	°C/W	0.54	0.91	0.55	0.99	0.86	0.39	0.41	0.56	0.24	0.25	0.30	0.48
Specific Gravity	g/cm ³	2.18					2.36	2.36	2.38	1.71	1.69	1.68	1.68
Hardness	Shore A (JIS-A)	88(87)	88(87)	88(87)	88(87)	90(92)	87(86)	87(86)	90(92)	90(90)			
Tensile Strength	Psi (kg/cm ²)	11	9	11	9	11	11			11			
Elongation	%	2	2	2	2	2	2			2			
Tear Strength	lb/in (kg/cm)	-					-			-			
Volume Resistivity	Ω-cm	5.7x10 ¹⁵	1.0x10 ¹⁵	1.1x10 ¹⁵	1.1x10 ¹⁵	1.3x10 ¹⁵	1.6x10 ¹⁵	3.2x10 ¹⁵	2.5x10 ¹⁵	2.9x10 ¹⁵	2.5x10 ¹⁵	3.3x10 ¹⁵	2.1x10 ¹⁵
Withstand Voltage	kV	4	6	7	5	7	2	4	8	3	5	7	10
Dielectric Constant	IKHz	2.5	2.7	3.2	3.2	3.5	3.0	3.3	3.9	2.6	2.97	3.22	3.67
Maximum Use Temperature	°C	-60°C to +180°C					-60°C to +180°C			-60°C to +180°C			
Adhesive coating	-	Available					Available			Available			

All dimensions in millimeters * Test method: JIS C2367



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SARCON® THERMAL GAP FILLER PADS

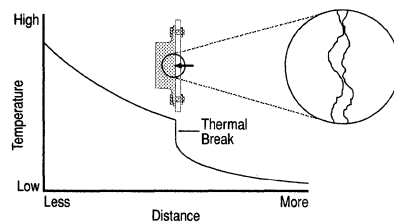
TYPICAL PRODUCT PROPERTIES

Properties	Unit	SARCON® GR-a										SARCON® GR-Ha			SARCON® GR-Fa		SARCON® GR-HFa				
Cross Section	Composition																				
		GR-a Material										GR-a Material			GR-a Material		GR-a Material				
Series	Identifier	Test Method	50GR-a	100GR-a	150GR-a	200GR-a	250GR-a	300GR-a	320GR-a	400GR-a	500GR-a	100GR-Ha	200GR-Ha	300GR-Ha	100GR-Fa	200GR-Fa	300GR-Fa	100GR-HFa	200GR-HFa	300GR-HFa	
Thickness	mm	Fujipoly	0.5 ^{±0.1}	1.0 ^{±0.2}	1.5 ^{±0.2}	2.0 ^{±0.3}	2.5 ^{±0.3}	3.0 ^{±0.3}	3.2 ^{±0.3}	4.0 ^{±0.3}	5.0 ^{±0.3}	1.0 ^{±0.2}	2.0 ^{±0.3}	3.0 ^{±0.3}	1.0 ^{±0.2}	2.0 ^{±0.3}	3.0 ^{±0.3}	1.0 ^{±0.2}	2.0 ^{±0.3}	3.0 ^{±0.3}	
Thermal Resistance	°C/W	Fujipoly	.38	.78	1.12	1.45	1.76	2.01	2.05	3.10	3.40	0.78	1.50	2.05	0.80	1.50	2.12	0.82	1.52	2.20	
Color	Visual	Fujipoly	Dark Gray										Dark Gray			Dark Gray		Dark Gray			
Thermal Conductivity	Cal/cm·Sec·°C (watt/mk)	ASTM D5470	3.6x10 ⁻³ (1.50)										3.6x10 ⁻³ (1.50)			3.6x10 ⁻³ (1.50)		3.6x10 ⁻³ (1.50)			
Volume Resistivity	Ω-cm	ASTM D257	1.0x10 ¹³										1.0x10 ¹³			1.0x10 ¹³		1.0x10 ¹³			
Withstand Voltage	kV·AC	ASTM D149	>10										>10			>10		>10			
Specific Gravity	gr/cm ³	ASTM D792	2.40										2.40			2.40		2.40			
Hardness	Shore A	ASTM D2240	< 5										< 5			< 5		< 5			
Extractable Volatiles	Content %	Fujipoly	D4-D10 <0.0010 wt%										D4-D10 <0.0010 wt%			D4-D10 <0.0010 wt%		D4-D10 <0.0010 wt%			
	Cyclodimethyl		D11-D20 <0.0043 wt%										D11-D20 <0.0043 wt%			D11-D20 <0.0043 wt%		D11-D20 <0.0043 wt%			
	Siloxane		D4-D20 <0.0043 wt%										D4-D20 <0.0043 wt%			D4-D20 <0.0043 wt%		D4-D20 <0.0043 wt%			
Elongation	%	ASTM D412	340										270			100		80			
Continuous Use	°C (°F)	Fujipoly	120 (250)										120 (250)			120 (250)		120 (250)			
Flame Retardance	UL-94V standard	UL	VO										VO			VO		VO			
Compression	Kg/in ² @ 10%	Fujipoly	15.5	16.2	14.0	8.0	5.5	5.0	3.5	8.1	7.3	21.5	11.9	8.5	18.4	12.4	10.3	23.8	16.2	9.3	
	20%		22.6	35.9	24.6	15.9	11.7	10.2	7.5	18.0	15.5	46.5	20.5	15.3	50.2	30.9	21.9	57.3	34.2	21.7	
	30%		44.5	49.7	34.2	22.9	17.3	15.7	12.2	31.8	27.2	72.1	31.5	24.9	78.1	53.6	35.5	89.3	56.1	38.2	
	40%		68.7	64.5	47.7	33.1	25.7	23.5	18.8	50.5	46.4	104.4	47.4	39.4	108.8	82.1	48.7	124.7	82.6	60.6	
	50%		92.5	85.3	66.7	48.2	38.2	35.2	28.1	78.0	70.3	142.1	70.8	61.4	142.8	114.1	63.0	164.1	101.2	79.7	
Dimensions Available	Thickness (mm)	Fujipoly	0.5 ^{±0.1}	1.0 ^{±0.2}	1.5 ^{±0.2}	2.0 ^{±0.3}	2.5 ^{±0.3}	3.0 ^{±0.3}	3.2 ^{±0.3}	4.0 ^{±0.3}	5.0 ^{±0.3}	1.0 ^{±0.2}	2.0 ^{±0.3}	3.0 ^{±0.3}	1.0 ^{±0.2}	2.0 ^{±0.3}	3.0 ^{±0.3}	1.0 ^{±0.2}	2.0 ^{±0.3}	3.0 ^{±0.3}	
	Width (mm)	Fujipoly	180 maximum										180 maximum			180 maximum		180 maximum			
	Length (mm)	Fujipoly	280 maximum										280 maximum			280 maximum		280 maximum			
Packaging	Standard	Fujipoly	Each Sheet is placed between top and bottom film liners for die cutting handling ease.																		

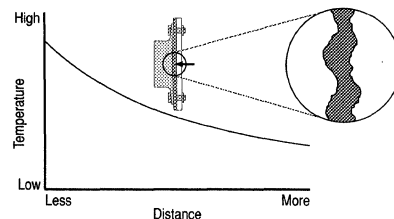
All dimensions in millimeters

Series	Construction	Application Guidelines
GR-a	Silicone compound	Between chassis wall and other surface Between CPU and heat sink Between semiconductor and heat sink Large area heat transfer to heat spreader
GR-Ha	Silicone compound with hardened top surface	Same as above, except hardened top surface facilitates handling and installation during complex assemblies
GR-Fa	Silicone compound with mesh embedded overall	Same as GR-a, except stiffer due to nylon mesh reinforcement to prevent stretching, i.e. elongation of die-cut holes
GR-HFa	Silicone compound with hardened top surface and mesh embedded overall	Same as GR-a, except hardened top surface facilitates handling and installation during complex assemblies; nylon mesh reinforcement prevents stretching, i.e. elongation of die-cut holes

All dimensions in millimeters



Thermal impedance of semiconductor mounted to substrate is appreciably increased at junction of porous surfaces.



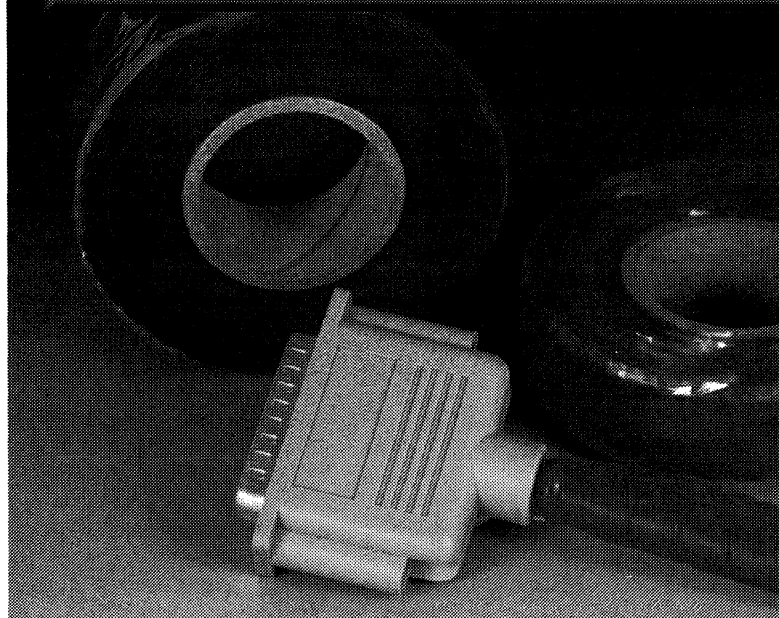
Thermal impedance of semiconductor mounted to substrate with gap filler pad is eliminated yielding higher temperature gradient.



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INSULATION FUSIBLE SILICONE RUBBER TAPE



Self-fusing silicone rubber general purpose class H electrical tape.

Ideal for applications where a quick, reliable weather-resistant electrical or hydraulic leak seal is required. The highly elastic material wraps around problem areas, immediately conforming to the applied surface with a tight fitting adhesion.

SPECIFICATION: MIL-I-46852C

APPLICATIONS:

- Electrical, electronic and general use
- Replacement for over-moldings, pottings
- Replacement of die-cuts
- Replacement of custom insulator pads

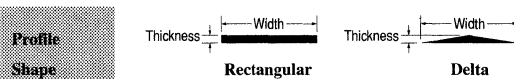
By spiral wrapping each successive layer slightly over the previous one, the tape fuses to itself over the component. Bonding only to itself, the permanent fusion begins within three minutes after contact.

Once the amalgamation is cured, the protected area withstands exposure to moisture, electrical and mechanical shock, temperature extremes, UV and ozone without degradation. Accordingly, its use in a wide range of situations, not normally handled by a tape product, is extremely feasible and offers a considerable cost reduction versus otherwise common or alternate methods.

Can be substituted anywhere other forms of insulating materials are used; such as, in place of custom die-cut pads, potting compounds and even over-moldings. Aesthetically pleasing appearance permits wide application potential even where it may be visible on finished products. Ideal for many cost-effective short run solutions.

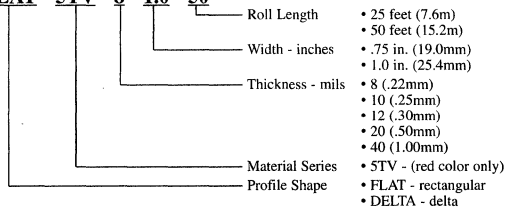
Resiliency and long-term aging properties are excellent. The application temperature range is very broad at -45° to +250°C (-49° to +480°F).

Two profiles are available, rectangular and delta shaped. The rectangular is a typical tape shape used universally for most applications; the delta shape facilitates spiral wrapping around cables and harnesses by way of its natural tendency to conform in a helix.



PART NUMBER NOMENCLATURE:

FLAT - STV - 8 - 1.0 - 50



Part Number	Hardness (Shore A)	Tensile Strength (Kg)	Elongation (%)	Tear Strength (%)	Adhesive Force (gr)	Withstand Voltage (AC KV)	Volume Resistivity (Ω-cm) Normal	Volume Resistivity (Ω-cm) Moist	Thermal Weight Loss (%)	Content Siloxane (wt.%)
FLAT-STV-8-75	50±5	> 1.1	> 400	> 100	> 300	> 4.0	1.0x10 ¹⁵	1.0x10 ¹⁹		
FLAT-STV-8-1.0	50±5	> 1.5	> 400	> 100	> 400	> 4.0	1.0x10 ¹⁵	1.0x10 ¹⁹		
FLAT-STV-16-75	50±5	> 1.8	> 400	> 100	> 300	> 4.2	1.0x10 ¹⁵	1.0x10 ¹⁹		
FLAT-STV-16-1.0	50±5	> 2.5	> 400	> 100	> 400	> 4.2	1.0x10 ¹⁵	1.0x10 ¹⁹	6.20% @ 225°C (440°F) x24 Hrs.	D ₄ -D ₁₀ =0.27 D ₁₁ -D ₂₀ =0.40 total=0.67
FLAT-STV-12-75	50±5	> 2.7	> 400	> 100	> 300	> 4.5	1.0x10 ¹⁵	1.0x10 ¹⁹		
FLAT-STV-12-1.0	50±5	> 3.5	> 400	> 100	> 400	> 4.5	1.0x10 ¹⁵	1.0x10 ¹⁹		
FLAT-STV-20-75	50±5	> 4.5	> 400	> 100	> 300	> 5.0	1.0x10 ¹⁵	1.0x10 ¹⁹		
FLAT-STV-20-1.0	50±5	> 6.0	> 400	> 100	> 400	> 5.0	1.0x10 ¹⁵	1.0x10 ¹⁹		
DELTA-STV-26-1.0	50±5	> 2.8	> 400	> 100	> 400	> 4.0	1.0x10 ¹⁵	1.0x10 ¹⁹		
DELTA-STV-46-1.0	50±5	> 5.6	> 400	> 100	> 400	> 6.0	1.0x10 ¹⁵	1.0x10 ¹⁹		

All dimensions in inches



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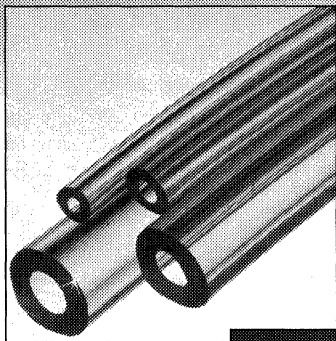
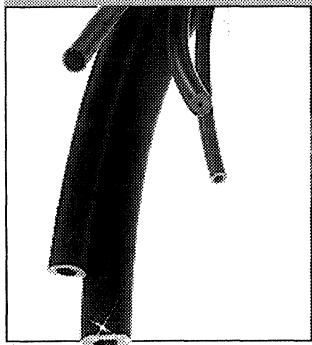
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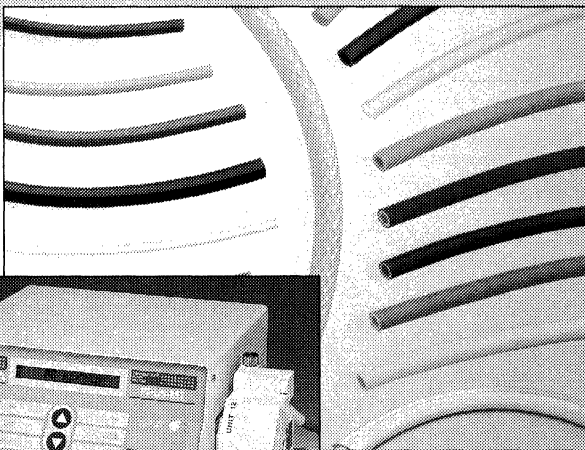
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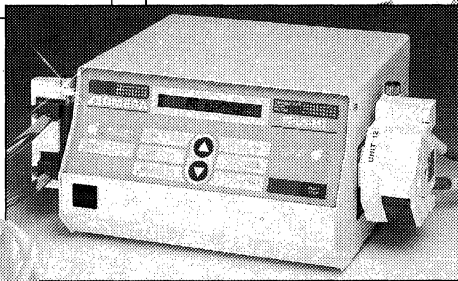
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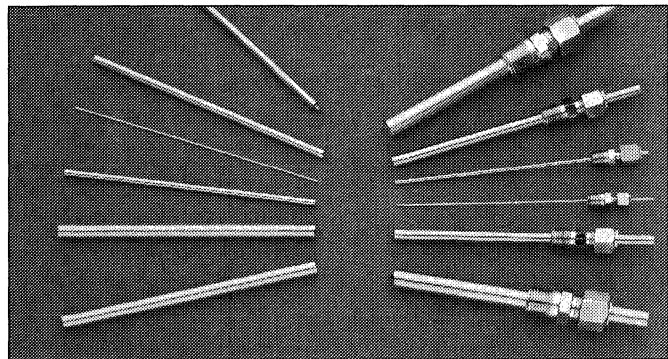
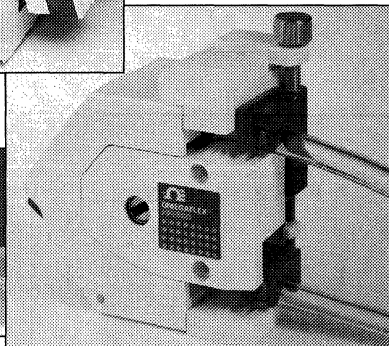
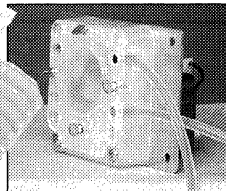
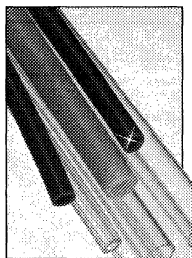
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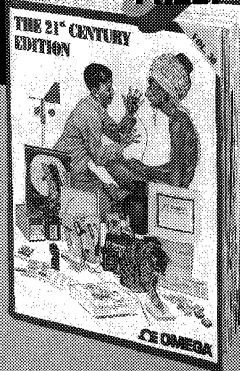


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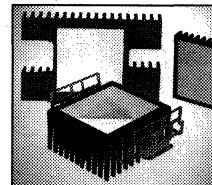
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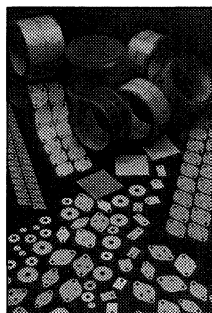
Thermal Management Materials **SELECTOR GUIDE**

Phase Change Thermal Interface Materials (THERMFLOW™)

Material	Thickness, in. (mm) Carrier	Fiberglass Reinforcing Carrier	Thermal Impedance	Comments
T710	.0055 (0.14)	Yes	0.08°C-in ² /W (@ 5 psi)	For microprocessors and ICs
NEW T310	.007 (0.18)	Yes	0.17°C-in ² /W (@ 300 psi)	For DC/DC converters and power modules



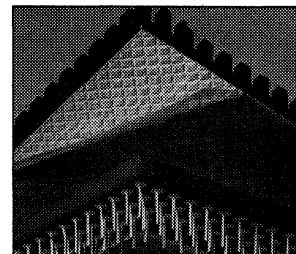
Thermally Conductive Insulators (CHO-THERM®)



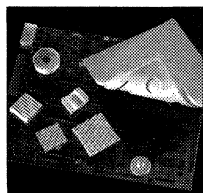
Material	Dielectric Strength (VAC)	Color	Thickness, in. (mm)	Thermal Impedance	Comments
NEW T441	11,400	Pink	.008, .013, .018	0.56°C-in ² /W	High dielectric at high humidity
NEW T609	4,000	Lt. Blue	.0095 (0.24)	0.32°C-in ² /W	Intermediate performance
1674	2,500	Blue	.010 (0.25)	0.40°C-in ² /W	Most economical
1680	6,000	White/Gold	.007 (0.18)	0.40°C-in ² /W	High dielectric (Kapton) film
1671	4,000	White	.015 (0.38)	0.23°C-in ² /W	High thermal performance & good cut-thru resistance
1678	2,500	Pink	.010 (0.25)	0.20°C-in ² /W	Med. cost, high thermal performance
T500	5,000	Green	.010 (0.25)	0.15°C-in ² /W	Best thermal performance

Thermally Conductive Adhesive Tapes (THERMATTACH®)

Material	Thickness, in. (mm)	Thermal Impedance	Comments
T404	.005 (0.13)	0.60°C-in ² /W	Kapton carrier, electrically insulating
T405	.006 (0.15)	0.50°C-in ² /W	Aluminum carrier
T412	.009 (0.23)	0.25°C-in ² /W	Expanded aluminum carrier
T413	.007 (0.18)	0.65°C-in ² /W	Ionically clean, Fiberglass reinforced
T414	.005 (0.13)	0.60°C-in ² /W	Ionically clean, Kapton elect. insulating
NEW T410	.007 (0.18)	1.10°C-in ² /W	Attaches heat sinks to plastic packages



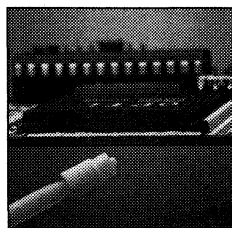
Thermally Conductive Gap Fillers (THERM-A-GAP™)



Material	Color	Thickness, in. (mm)	Thermal Impedance @10psi	Comments
THERM-A-GAP™ 174	Lt. Purple	.040 (1.02)*	1.7°C-in ² /W	Flat sheets only
THERM-A-GAP™ 274	Green	.040 (1.02)*	2.0°C-in ² /W	Ribbed, flat, moldable
THERM-A-GAP™ A574	Lt. Gray	.040 (1.02)*	1.1°C-in ² /W	Best thermal, softest
NEW V-THERM™	Blue	.040 (1.02)	0.4°C-in ² /W	High thermal conductivity

*Also available in .020 in. (.51 mm), .070 in. (1.78 mm), .100 in. (2.54 mm), .130 in. (3.30 mm), .160 in. (4.06 mm), .200 in. (5.08 mm) thicknesses.

Thermally Conductive Silicone Compounds



Compounds	Thermal Conductivity	Comments
1641	0.90 W/m-K	1-part, adhesive, encapsulant
1642	0.95 W/m-K	2-part, encapsulant
T642	1.2 W/m-K	2-part, form-in-place
T644	1.2 W/m-K	2-part, form-in-place, softest
NEW T646	1.0 W/m-K	2-part, low cost, form-in-place

Heat Spreader (T-Wing™)

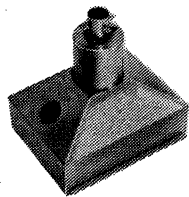


Contact Chomerics for evaluation samples and information on all thermal management materials.
Tel: (781) 935-4850 ■ Fax: (781) 933-4318 ■ www.chomerics.com

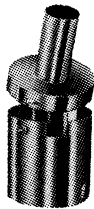
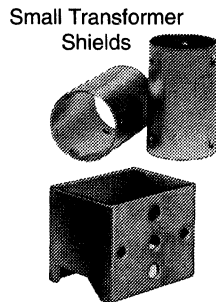
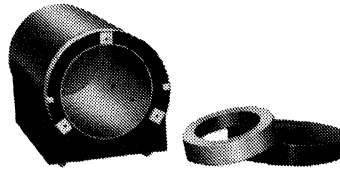
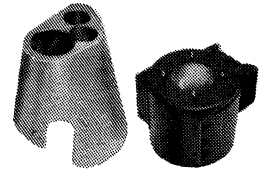
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Magnetic Shields Any Size or Shape, Already Tooled-Up...No Tooling Costs For You

Ad-Vance Magnetics is tooled for hundreds of magnetic shields components. Take advantage of the immense quantity of tooling available. We keep it all on hand to help reduce your costs and to serve you faster. Only a few of the hundreds of pre-tooled shields can be shown because of space limitations.



CRT Shield

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Yoke & Neck
Shield
("L" locking)Small Transformer
ShieldsMagnetic Isolation
ChamberHydroformed
CRT Shield & Storage
Tube Shield

AD-MU Alloys Protect Permanently

1. AD-MU alloys will not saturate when properly used.
2. No excessive loss of permeability from shock.
3. Relatively stable permeability characteristics are exhibited after final anneal avoiding the expense and inconvenience of regularly repeated annealings.
4. Minimal retentivity is displayed by AD-MU alloys for any alloy of a given permeability.

Electrical Characteristics

Typical DC Magnetic Properties for AD-MU Shielding Alloys

	Material	Initial Permeability at 40 gauss	Permeability at 100-200 gauss	Maximum Permeability	Saturation Induction gauss	Coercive Force oersteds
High Permeability	AD-MU-80	75,000	100,000	300,000	8,000	0.015
	AD-MU-78	60,000	43,000	250,000	7,600	0.01
Med. Permeability	AD-MU-48	11,500	20,000	130,000	15,500	0.05
Low Permeability	AD-MU-00	*300	1,300	3,000	22,000	1.00

*Unannealed State

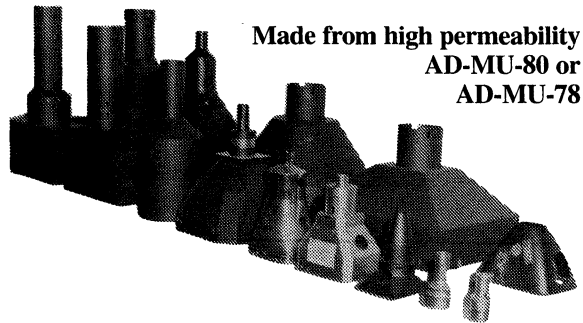
Typical Physical Properties of AD-MU Alloys

(Forming Temper - Not Annealed)

	AD-MU-80	AD-MU-78	AD-MU-48	AD-MU-00
Density (lb/in ³)	0.316	0.305	0.294	0.283
Thermal Expansion Coefficient/°F(68°-212°F)	7.0x10 ⁻⁶	7.5x10 ⁻⁶	4.6x10 ⁻⁶	7.6x10 ⁻⁶
Thermal Conductivity (BTU/in/ft ² /hr/°F)	136	115	90	-
Electrical Resistivity (ohm-cir mil/ft)	349	331	290	-
Curie Temperature (F)	845	761	932	-

Custom Fabricated CRT Shields

Made from high permeability
AD-MU-80 or
AD-MU-78



Typical Mechanical Properties of AD-MU Alloys

(Forming Temper - Not Annealed)

	AD-MU-80	AD-MU-78	AD-MU-48	AD-MU-00
Tensile Strength (lbs/in ² ×10 ³)	90	85	85	45
Yield Strength (lbs/in ² ×10 ³)	35	30	40	30
Modulus of Elasticity (lbs/in ² ×10 ³)	32.0	30.0	24.0	29.5
Elongation in 2" (%)	40	30	25	30
Hardness (rockwell B)	62/75	64/74	59/68	65

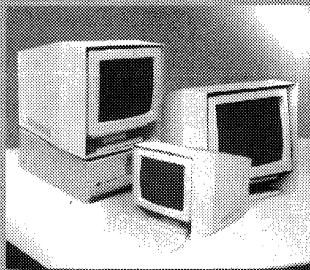
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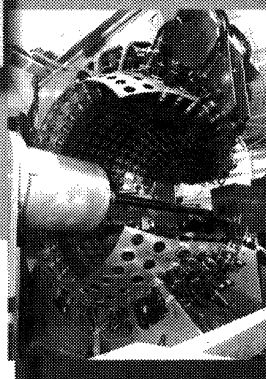
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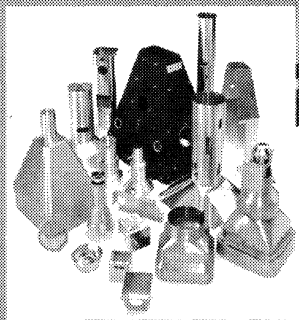
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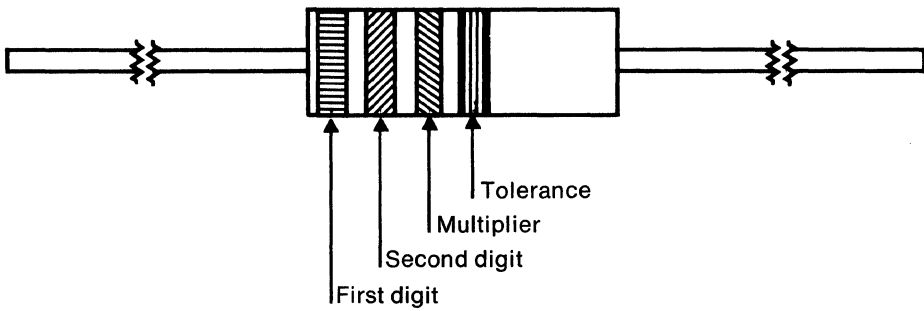
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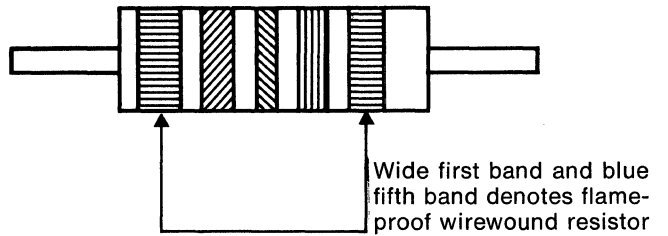
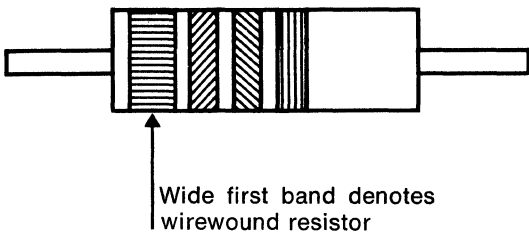
MINIGLOSSARY

RESISTOR COLOR CODES

EIA/MIL Resistor Color Codes



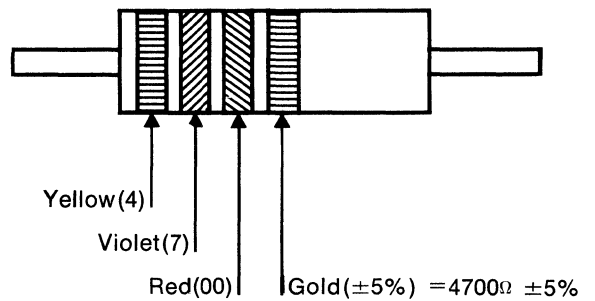
Color code for general-purpose industrial resistors



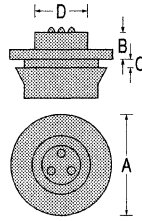
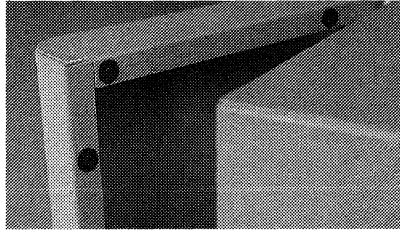
Color code for general-purpose wirewound resistors

Color	Significant digit	Multiplier	Tolerance
Black	0	1	—
Brown	1	10	± 1%
Red	2	100	± 2%
Orange	3	1000	± 3%
Yellow	4	10,000	± 4%
Green	5	100,000	—
Blue	6	1,000,000	—
Violet	7	10,000,000	—
Gray	8	—	—
White	9	—	—
Gold	—	0.1	± 5%
Silver	—	0.01	± 10%
No color	—	—	± 20%

Example:



RFI/EMI SHIELDING AND ESD GROUNDING

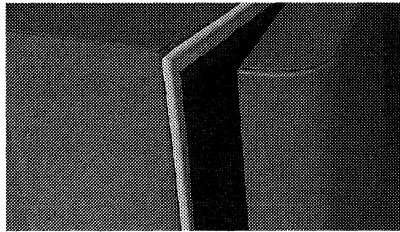


POP-UP CONDUCTIVE CONTACTS

Conductive silicone rubber contact mounts easily by pressing into appropriate size hole in electronic cabinets or anywhere two surfaces must be joined. The center "pop-up" section engages the opposing mating surface, providing electrical continuity to reduce the slot-length effect, limiting the passage of RFI frequencies. Very low closure force as opposed solid strip gaskets.

Two sizes accommodate most panel section widths and thicknesses. Omni-directional engagement makes it an excellent shielding method for electronic enclosure doors and panels. Mounts on any surface for ESD grounding applications as well.

Part Number	A		B		C		D		Mounting Hole Dia.	Color
PC095	12.4	.490	4.0	.157	2.0	.079	5.0	.197	9.5 .375	Black
PC190	24.9	.980	4.0	.157	2.0	.079	10.0	.394	19.0 .750	Black



See installation suggestions on page 29.

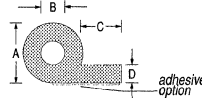
100dB SHIELDING MICRO-GASKETS

Highly conductive continuous lengths in five general purpose profiles. Excellent for a wide variety of applications including enclosure doors, panels and bezels.

Installation mounting options include conductive or non-conductive pressure sensitive adhesive, or mechanical fastening by way of screws or press-fitting into appropriate grooves. Available in standard 7.6 meter (25 ft.) coils.

Attenuation over 100dB up to 1 GHz. Quick turn-around for custom shapes. Available in silver, silver-carbon, nickel-graphite and carbon compositions to meet a wide range of shielding requirements.

P-PROFILE



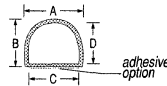
Part Number	A		B		C		D	
0501	5.08	.200	2.03	.080	6.99	.275	1.60	.062
0502	5.08	.200	2.03	.080	16.51	.650	1.60	.062
0503	6.35	.250	3.18	.125	6.35	.250	1.60	.062
0504	6.35	.250	3.18	.125	9.53	.375	1.60	.062
0505	6.35	.250	3.18	.125	15.89	.625	1.60	.062
0506	7.92	.312	4.75	.187	14.30	.563	1.60	.062
0508	9.14	.360	6.48	.255	10.67	.420	1.60	.070

U-PROFILE



Part Number	A		B		C		D	
0601	2.54	.100	2.54	.100	0.86	.034	0.84	.033
0602	3.20	.126	2.79	.110	0.66	.026	1.27	.050
0603	3.20	.126	5.72	.225	0.51	.020	1.90	.075
0604	3.96	.156	3.96	.156	1.60	.062	1.19	.047
0605	4.45	.175	3.96	.156	1.19	.047	1.19	.047
0606	4.45	.175	3.96	.156	1.19	.047	1.91	.075
0607	8.31	.327	5.97	.235	1.60	.062	2.92	.115

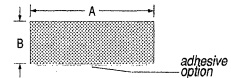
D-PROFILE



Part Number	A		B		C		D	
0401	3.96	.156	1.14	.045	1.98	.078	1.14	.045
0402	3.96	.156	1.98	.078	1.98	.078	1.14	.045
0403	4.75	.187	2.36	.093	2.36	.093	1.27	.050
0404	6.35	.250	3.18	.125	3.18	.125	1.65	.065
0405	7.94	.312	3.96	.156	3.96	.156	1.60	.062
0408	12.37	.487	6.20	.244	6.20	.244	2.03	.080
0409	7.94	.312	5.08	.200	2.84	.112	1.60	.062

All dimensions in millimeters

RECTANGULAR



Part Number	A		B	
0314	0.80	.032	0.80	.032
0301	1.60	.063	1.07	.042
0302	2.41	.095	1.60	.062
0303	3.05	.120	1.90	.075
0304	3.18	.125	1.60	.062
0305	3.96	.156	1.60	.062
0306	6.35	.250	1.60	.062
0307	12.70	.500	1.90	.075
0308	12.70	.500	3.18	.125
0309	12.70	.500	4.78	.188
0310	19.10	.750	1.60	.062

TUBE



Part Number	A		B	
0226	1.78	.070	0.64	.025
0227	2.36	.093	0.89	.035
0228	2.62	.103	1.02	.040
0230	3.18	.125	1.14	.045
0229	3.18	.125	1.60	.062
0221	3.96	.156	1.27	.050
0230	4.50	.177	2.01	.079
0222	6.35	.250	3.18	.125

ADHESIVE OPTION - The P-shape, D-shape and Rectangular gaskets are available with a pressure sensitive adhesive mounting option. Temperature range performance is -46°C to +149°C (-50°F to +300°F). Simply remove the protective liner and press into position to attach.

To specify, add the suffix AD to the part numbers shown above; for example 0501-AD.



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CONDUCTIVE RFI/EMI/ESD FUSIBLE SILICONE RUBBER TAPE

Handy self-fusing silicone rubber tapes in conductive carbon loaded formulations.

By spiral wrapping each successive layer slightly over the previous one, the tape fuses to itself over the wrapped component for a permanent bond.

Originally developed for advanced military applications, and now available for general commercial use.

SPECIFICATION: MIL-1-46852C

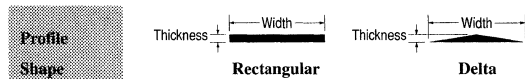
APPLICATIONS:

- RFI/EMI shielding of cables
- Custom RFI/EMI shielding gaskets
- Electrostatic discharge control
- Cables
- Enclosures
- PC boards
- Components
- Connectors
- Displays

Conductive fusible tapes are versatile Class H (specified to 180°C/360°F) electrical tapes which are self-amalgamating. Conductive properties are derived from loading of the silicone rubber base material with either standard or high density carbon. Resiliency and long-term aging properties are excellent; applicable in a very wide temperature range from -45° to +250°C (-49° to +480°F).

Shielding effectiveness in RFI/EMI applications is very high and is especially useful on irregular surfaces where costly custom shielding solutions may otherwise be necessary.

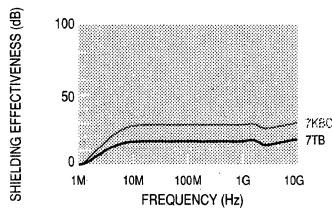
Two profiles are available, rectangular and delta shaped. The rectangular is a typical tape shape used universally for most applications; the delta shape facilitates spiral wrapping around cables and harnesses by way of its natural tendency to conform in a helix.



PART NUMBER NOMENCLATURE:

FLAT - 7KBC - 10 - 1.0 - 50

- Roll Length
 - 25 feet (7.6m)
 - 50 feet (15.2m)
- Width - inches
 - 0.5 (12.7mm)
 - 1.0 (25.4mm)
 - 1.5 (38.1mm)
- Thickness - mils
 - 10 (.25mm)
 - 20 (.50mm)
 - 40 (1.00mm)
- Material Series
 - 7KBC - high density carbon
 - 7TB - standard density carbon
- Profile Shape
 - FLAT - rectangular
 - DELTA - delta



Part Number	Hardness (Shore A)	Tensile Strength (Kg)	Elongation (%)	Tear Strength (%)	Adhesive Force (gr)	Shielding Effectiveness 100MHz	Shielding Effectiveness 1GHz	Thermal Weight Loss (%)	Content Siloxane (wt.%)
FLAT-7KBC-10-0.5	68±5	0.80 min.	>150	>75	100 min.	30dB	30dB	5.0% @ 225°C(440°F) x24 Hrs.	D ₄ -D ₁₀ =0.20 D ₁₁ -D ₂₀ =0.41 total=0.61
FLAT-7KBC-10-1.0	68±5	1.50 min.	>150	>75	200 min.	30dB	30dB		
FLAT-7KBC-10-1.5	68±5	2.00 min.	>150	>75	250 min.	30dB	30dB		
FLAT-7KBC-20-0.5	68±5	1.20 min.	>150	>75	100 min.	30dB	30dB		
FLAT-7KBC-20-1.0	68±5	2.00 min.	>150	>75	200 min.	30dB	30dB		
FLAT-7KBC-20-1.5	68±5	2.80 min.	>150	>75	250 min.	30dB	30dB		
DELTA-7KBC-10-1.0	68±5	2.00 min.	>150	>75	200 min.	30dB	30dB	6.0% @ 225°C(440°F) x24 Hrs.	D ₄ -D ₁₀ =0.24 D ₁₁ -D ₂₀ =0.41 total=0.65
DELTA-7TB-10-0.5	68±5	0.80 min.	>150	>100	100 min.	17dB	17dB		
FLAT-7TB-10-1.0	68±5	1.50 min.	>150	>100	200 min.	17dB	17dB		
FLAT-7TB-10-1.5	68±5	2.00 min.	>150	>100	250 min.	17dB	17dB		
FLAT-7TB-20-0.5	68±5	1.00 min.	>150	>100	100 min.	17dB	17dB		
FLAT-7TB-20-1.0	68±5	2.00 min.	>150	>100	200 min.	17dB	17dB		
FLAT-7TB-20-1.5	68±5	2.80 min.	>150	>100	250 min.	17dB	17dB		
DELTA-7TB-40-1.0	68±5	2.00 min.	>150	>100	200 min.	17dB	17dB		

All dimensions in inches



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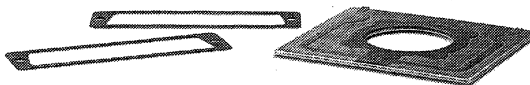
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EMI Gasketing*

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*Printed Conductive
Elastomer Gaskets*

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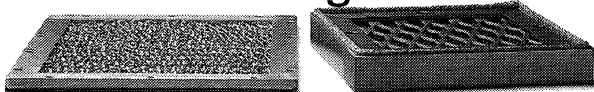
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*Electro Pad Fabric
Over Foam Gasketing*

and again...

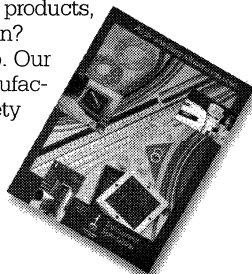


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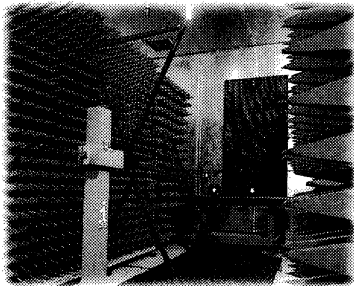
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World Compliance Center: Tel: 717-424-8510 Fax: 717-421-4227

Placentia, CA: Tel: 714-579-7100 Fax: 714-579-7105
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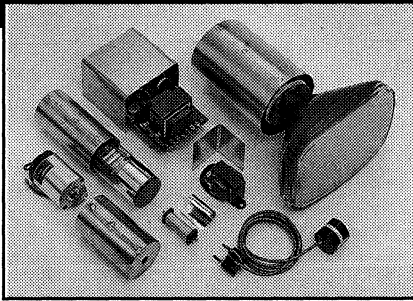
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Instrument Specialties Europe Ltd. • East Kilbride, Scotland: Tel: +44 1355 248 248 Fax: +44 1355 244 344

* Sites are registered to ISO 9001

MAGNETIC SHIELDING PRODUCTS

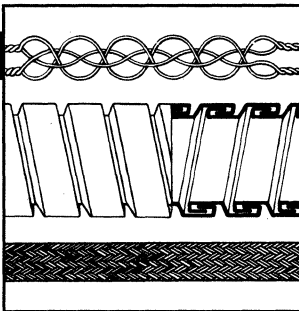
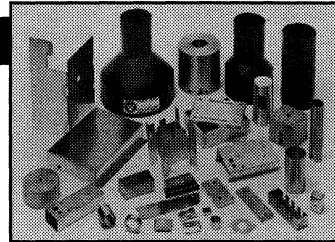
LAB KITS & PROBES



Lab Kit contains assorted CO-NETIC and NETIC shielding alloys, double-faced pressure sensitive tape for shield construction and 20 millivolts/gauss A.C. magnetic pickup probe, LK-120 ... \$129.00
 Alloys only (less probe) LK-110 \$79.50
 AC Probe only, 20 mV/gauss, axial, EP-101A..... \$50.00
 AC Probe, 60 mV/gauss, axial or transverse, EP-102A or T .. \$79.50
 Request Lab Kit catalog LK-2, Probe catalog EP-4. See Lab Kit details at www.magnetic-shield.com.

CUSTOM SHIELDS

Full time engineering staff available for consultation on shielding problems. Magnetic Shield Corporation is also the preferred source for custom shields to your specifications. Extensive standard and special tooling provide fast shipment. Call for design assistance or fax a print for prompt quotation.

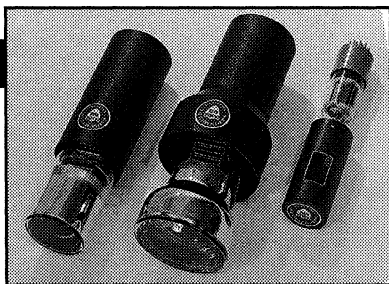
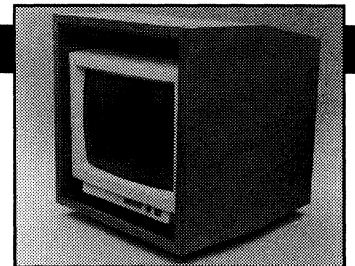


CABLE, CONDUIT & SLEEVING

Our patented, Inter-8 Weave configuration of four #24 AWG wires provides superior attenuation over twisted pair. Insulation choice is PVC or ETFE. Available unshielded or with braided CO-NETIC for magnetic shielding. SPIRA-SHIELD Flexible Conduit stocked in 3/8" and 3/4" I.D., CO-NETIC Braided Sleeving stocked in 1/4", 1/2", and 3/4" I.D., CO-NETIC wire stocked in #36 AWG and #22 AWG. Request catalog WC-2.

MONITOR ENCLOSURES

CO-NETIC magnetic shield enclosures protect CRT monitors from magnetic fields (DC to 100 kHz) that cause shimmy or jitter of the display. Image distortions are often caused by high current industrial or electric power equipment, particularly in color and high resolution monitors. Engineering provided by specification guide CM-3. See details on pre-engineered enclosures at www.magnetic-shield.com



PHOTOMULTIPLIER SHIELDS

CO-NETIC magnetic shields improve the amplification characteristics of photomultiplier tubes by providing significant attenuation of magnetic fields. Effective shielding is ensured over a wide range of field intensities. When grounded, the shields provide protection against electrostatic interference. Catalog lists many current photomultiplier tubes and recommended shields. Custom shields available. Request catalog PM-6.

MAGNETIC SHIELD CORPORATION

Perfection Mica Company

750 North Thomas Drive
 Bensenville, Illinois 60106-1643 U.S.A.
 FAX: 630-766-2813 Phone: 630-766-7800
 Toll-Free 800-304-5665 (in U.S.)



The items above are only examples of our capabilities. Please contact us for further information. Magnetic Shield Corporation originated in 1941 as Perfection Mica Company. We evolved with the electronic industry to become the recognized authority in our field. Today we offer a variety of services as well as products and materials ranging from laboratory instruments to magnetically-shielded rooms. Our alloys are known and specified for many demanding shielding applications. We invite your inquiry.

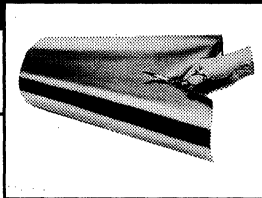
Solve Interference Problems with

CO-NETIC[®] & NETIC[®]

Magnetic Shielding Alloys

FOIL STOCK

**STANDARD COILS
50 & 100 LINEAR FEET**



All foil is Perfection

Annealed for maximum attenuation. All sizes available with double-faced pressure sensitive tape and release coated liner. Standard widths shipped immediately from stock. Foils can be slit to a minimum width of 1/4", with or without backing. Slit foils shipped within 5 days after receipt of order.

Standard Thickness (INCH)	CO-NETIC Perfection Annealed WIDTH (INCH)	NETIC Perfection Annealed WIDTH (INCH)
.002	4	-
.004	4 & 15	4 & 15
.006	4 & 15	-
.010	4 & 15	-

SHEET STOCK

(STANDARD WIDTH 30".)
SHIPPED IMMEDIATELY FROM STOCK.

**STANDARD THICKNESS:
(INCH)**

.014
.020
.025
.030
.040
.050
.062

CO-NETIC AA Alloy Perfection

Annealed High permeability characteristics. Perfection annealed for optimum magnetic shielding properties. No further annealing after fabrication is necessary if severe forming is avoided. Maximum length 59".

CO-NETIC AA Alloy Stress

Annealed High permeability characteristics. Stress annealed for ease of fabrication. Must be final annealed for maximum attenuation. Also stocked in .100". Maximum length 120".

NETIC S3-6 High saturation capability. Also stocked in .095". Maximum length 120".

L I T E R A T U R E A V A I L A B L E

CATALOG

DESCRIPTION

MG-6	Material & Fabrication Guide
CM-3	Enclosures for CRT Monitors
CV-1	Cryogenic and Vacuum Magnetic Shields
EP-4	A. C. Magnetic Field Evaluator Probe
HC-1	Helmholtz Coil Assembly
IG-3	ImageGuard II Magnetic Shields for CRT Monitors
LK-2	Lab Kit
PM-6	Magnetic Shields, Photomultiplier Tubes
RE-1	Magnetic Shield Rooms and Enclosures
SW-2	AdjustaShield, Adjustable Magnetic Shield
TP-8	Magnetic Media Preservers
WC-2	Wire, Cable, Conduit, and Sleeving
ZG-2	Zero Gauss Chambers

Call, fax or write to request technical literature or application assistance.

Find us on the Web at

www.magnetic-shield.com

e-mail: shields@magnetic-shield.com

USE OUR LAB KIT TO ELIMINATE MAGNETIC SHIELDING PROBLEMS



ORDER: LK-120 \$129.00

**MAGNETIC SHIELD
CORPORATION**

Perfection Mica Company

750 North Thomas Drive
Bensenville, Illinois 60106-1643 U.S.A.
FAX: 630-766-2813 Phone: 630-766-7800
Toll-Free 800-304-5665 (in U.S.)



Do you need magnetic shielding as good as M μ Shield[®]?

Only if you need optimum attenuation.

Unless your design calls for magnetic shielding that meets the most stringent specs, you may not need to consider M μ Shield materials.

But, if you need custom shielding with maximum attenuation or tubing with totally uniform permeability, you do need M μ Shield. And you can get M μ Shield materials only from M μ Shield, a company with more than 35 years of experience.

The M μ Shield Company can satisfy the most demanding applications — aerospace, nuclear and electronic — with a wide variety of custom shields, materials, and services.

M μ Shield cathode ray tube shields.

Assure high resolution. For use in special military applications. Also suitable for commercial, industrial, and laboratory applications.

M μ Shield photomultiplier tube shields.

Ideal for electro-optical devices of all kinds, CAT- and PET-scan machines, and TV cameras.

M μ Shield custom electronic components shields.

For use in computer-related technology such as disk drives, printed circuits, and PC terminals.

M μ Shield special application shields.

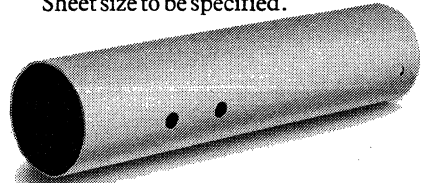
Nuclear Magnetic Resonance Imaging. Electron microscopes. X-ray spectrography. Wide area shielding in laboratories and sensitive areas.

Coils, sheets and tubing in stock

- High saturation shielding. Permeability ranges from 200 to 50,000. Saturation point between 18,000 and 20,000 gauss.
- Medium permeability shielding. Permeability from 12,500 to 150,000. Saturation point approximately 15,000 gauss.
- High permeability shielding. Permeability from 80,000 (at B-40) to 350,000. Saturation point approximately 7,500 gauss.
- Dimensions:
Coils — .004", .006", .010" thickness; 8" and 15" widths. Minimum order \$100.

Sheets — Cold rolled annealed, .015" to .060" thickness. Full sheet 30" × 10". Minimum order 30" × 36".

Hot rolled, .090" to .265" thickness. Sheet size to be specified.



M μ Shield is the only supplier of this seamless magnetic shield tubing. The unique manufacturing process eliminates the non-uniformity of permeability inherent in welded tubing.

Tubing — .10" to 2.00 ID. Wall thicknesses .010" to .060". Lengths to 20'.

Heat treating service.

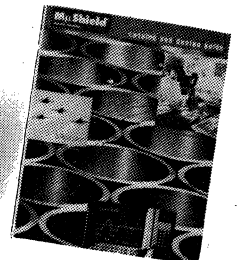
Gives magnetic materials optimum permeability with low shock-sensitivity. Permeability and uniformity of M μ Shield-fabricated parts are guaranteed.

Special consultation services.

We'll do more than just give you a quote. We'll do everything from on-site input meetings to prototyping, testing, and manufacturing. When your designs require optimum shielding, send us your specs and we'll be happy to review your application.

Now when you need magnetic shielding as good as M μ Shield, you don't need to worry.

Call or write The M μ Shield Company, 5 Spring field Road, Goffstown, NH 03045.
Toll-Free: 888/669-3539.
Fax 800/666-4013.
e-mail: mushield@aol.com
www.mushield.com



Ask for our new catalog.

M μ Shield[®]

Magnetic Shielding



MuShield®
Magnetic Shielding

**The
GB ENCLOSURE
resolves the
problem of
magnetic
interference
that causes
your
monitor
to distort or
oscillate
without
compromising
the
aesthetics of
your work
environment.**

This innovative product encases your existing shield in a protective shield that reduces the electromagnetic interference (EMI) from nearby transformers, power lines or motors — frequently the cause of distortions you see on the screen. Even better, the easy-to-install shield has been designed to look like the outside of a monitor, so no unsightly boxes or gadgetry mar the appearance of your workstation.

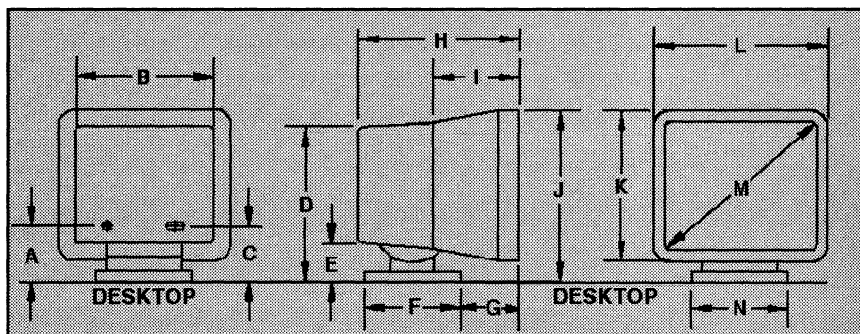


Additional benefits of the GB ENCLOSURE:

- provides an aesthetically pleasing solution to computer screen interference
- an optional glare guard made of tempered glass (*shown*) eliminates up to 95% of the glare and gives the housing a finished look
- designed to be easy to install
- eliminates ELF (extremely low frequency) emissions from your computer monitor

Enjoy the benefits immediately.

We ship standard GB ENCLOSURES upon receipt of orders. And you won't experience any downtime at work because you don't have to send in your monitor for the enhancement and once you receive it, you can install it in less than one minute — without the use of any tools.



BACK

SIDE

FRONT

Custom design service is available, simply FAX us the dimensions needed from the above schematic and we'll create a perfect fit for your monitor. FAX: 800-666-4013.

FOR QUICK DELIVERY: A series of sizes to accommodate most monitors are available and ready for shipping.

MuShield®
Magnetic Shielding

TO INQUIRE:

1-888-669-3539

The MuShield Company, Inc. / 5 Springfield Road / PO Box 439 / Goffstown, NH 03045
e-mail: mushield@aol.com www.mushield.com

SCHLEGEL® EMI Shielding Gaskets

<p>PROFILE E03</p> <p>1 x 4 MM</p>	<p>PROFILE E04</p> <p>.130 x .190 MM</p>
<p>PROFILE E05</p> <p>7.5 x 15 MM</p>	<p>PROFILE E06</p> <p>1 x 7 MM</p>
<p>PROFILE E07</p> <p>.079 x 1.62 MM</p>	<p>PROFILE E08</p> <p>2 x 10 MM</p>
<p>PROFILE E09</p> <p>.079 x 1.125 MM</p>	<p>PROFILE E10</p> <p>.079 x 1.125 MM</p>
<p>PROFILE E11</p> <p>1 x 10 MM</p>	<p>PROFILE E12</p> <p>1 x 5 MM</p>
<p>PROFILE E13</p> <p>5.5 x 12 MM</p>	<p>PROFILE E14</p> <p>5.08 x 5.08 MM</p>
<p>PROFILE E16</p> <p>ASTRAGAL</p>	<p>PROFILE E18</p> <p>3 x 3 MM</p>
<p>PROFILE E25</p> <p>.25 x .5 MM</p>	<p>PROFILE E23</p> <p>77 SEAL</p>
<p>PROFILE E28</p> <p>.125 x .5 MM</p>	<p>PROFILE E27</p> <p>.638 x .23 MM</p>
<p>PROFILE E29</p> <p>.04 x 1.00 MM</p>	<p>PROFILE E32</p> <p>ASTRAGAL</p>
<p>PROFILE E41</p> <p>T - SLOT</p>	<p>PROFILE E49</p> <p>17 x 17 MM</p>
<p>PROFILE E47</p> <p>.18 x 1.625 MM</p>	

Not actual size. Call us for drawings.

Use SCHLEGEL EMI shielding gaskets for excellent mechanical performance and highly efficient shielding. Made of highly conductive fabric bonded to urethane foam, these gaskets are flexible, and easy to apply. The polyether polyurethane foam is made in a high resiliency formula for low closing force. Many profiles can be specified with a resilient fire retardant (FR) foam, which may be recognized UL94 V ϕ under the component program of Underwriters' Laboratories, Inc.

Finishing options are as varied as the gaskets to provide flexibility in the design process. Self-mounting, rivet, Rapid Release™ adhesive liner or clip attachment options are available. Schlegel specializes in cut-to length, mitering or forming to finished shape. Most gaskets are also available reeled in continuous lengths for on-site processing. We've worked with customers on thousands of design concepts, and would be happy to work with you, too, on the perfect fit for your application.

<p>PROFILE E86</p> <p>POCKET</p>	<p>PROFILE E98</p> <p>7.5 x 15 MM</p>
<p>PROFILE E96</p> <p>.314 KNIFE EDGE</p>	

Call us for drawings and test information.

<p>PROFILE E53</p> <p>T - SLOT</p>	<p>PROFILE E58</p> <p>2 x 21 MM</p>
<p>PROFILE E60</p> <p>P-SHAPE</p>	<p>PROFILE E62</p> <p>.125 x .375 MM</p>
<p>PROFILE E63</p> <p>.375 x .375 MM</p>	<p>PROFILE E65</p> <p>3.7 x 21 MM</p>
<p>PROFILE E66</p> <p>.25 x .375 MM</p>	<p>PROFILE E67</p> <p>KNIFE EDGE</p>
<p>PROFILE E68</p> <p>.375 x .5 MM</p>	<p>PROFILE E70</p> <p>.125 x .25 MM</p>
<p>PROFILE E71</p> <p>HOOK SEAL</p>	<p>PROFILE E72</p> <p>SEAL WITH MAGNET</p>
<p>PROFILE E73</p> <p>5 x 8 MM</p>	<p>PROFILE E74</p> <p>.130 x .190 MM</p>
<p>PROFILE E75</p> <p>.625 x 1.00 MM</p>	<p>PROFILE E76</p> <p>15 x 51 MM</p>
<p>PROFILE E77</p> <p>2 x 7 MM</p>	<p>PROFILE E78</p> <p>4 x 15 MM</p>
<p>PROFILE E79</p> <p>6 x 6 MM</p>	<p>PROFILE E80</p> <p>10.5 x 11.5 MM</p>
<p>PROFILE E81</p> <p>2 x 4 MM</p>	<p>PROFILE E85</p> <p>.465 C - FOLD</p>
<p>PROFILE E90</p> <p>BIG D - SHAPE</p>	

Not all profiles are shown here.



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Schlegel Systems, Inc.

P.O. Box 23197

Rochester, NY 14692-3197

1-800-204-0863

Fax: +1-716-472-9993

E-mail: EMIproducts@schlegel.com

www.schlegel.com

SCHLEGEL® EMI Shielding Gaskets

Conductive Materials

1. Materials

Foam Formulations:

The core of SCHLEGEL shielding gaskets is open-celled polyether polyurethane foam in a high resiliency (HR) formula. Many profiles are available with resilient fire retardant (FR) foam and may be recognized UL94 V0 under the Component Program of Underwriters Laboratories, Inc.

Claddings:

- Silver C²
- Silver PBN II C³⁺
- Copper PBN II C³⁺
- Nickel/Copper PBN II C³⁺

2. Surface Resistivity*

≤0.5 Ω/■ and CpK ≥ 2.0, silver claddings
 ≤0.09 Ω/■ and CpK ≥ 2.0, copper cladding
 ≤0.09 Ω/■ and CpK ≥ 2.0, nickel-copper cladding

3. Shielding Effectiveness

Shielding performance of 1/4" x 3/8" gasket per MIL-G 83528B in frequencies of 20 MHz to 10 GHz.

- 95 dB for Silver C² (average)
- 90 dB for Silver PBN II C³⁺ (average)
- 105 dB for Copper PBN II C³⁺ (average)
- 95 dB for Nickel/Copper PBN II C³⁺ (average)

Gasket geometry and application determine actual shielding effectiveness.

Shielding performance of fabric of Mil-Std-285 in frequencies of 30 MHz to 1 GHz.

- 60 dB plus for Silver C²
- 60 dB plus for Silver PBN II C³⁺
- 70 dB plus for Copper PBN II C³⁺
- 80 dB plus for Nickel/Copper PBN II C³⁺

4. Contact Resistance*

Silver - <1.0 Ω-inch at 1 Kg load/inch
Copper - <1.0 Ω-inch at 1 Kg load/inch
Nickel/Copper - <1.0 Ω-inch at 1 Kg load/inch

5. Abrasion Resistance*

No change in surface resistivity:
 800,000 cycles Silver C²
 600,000 cycles Silver PBN II C³⁺
 600,000 cycles Copper PBN II C³⁺
 1,000,000 cycles Nickel/Copper PBN II C³⁺

6. Service Temperature

-40°C (-40°F) to 70°C (158°F)

7. Compression Set*


Of foam which is encapsulated
 1% @ ambient temperature; <5% @ 70°C (158°F) at 50% compression for 22 hours.

8. Pressure Sensitive Tape

Shelf life of standard p.s.a. tape is twelve (12) months from receipt when under recommended storage of 72°F (22°C), 50% RH.

*Item 2 to ASTM D991 modified. Item 4 to Schlegel LP-3001. Item 5 to ASTM D3886 modified. Item 7 to ASTM D3574.

CpK is a measure of dispersion and centeredness. CpK of 2.0 means the average is 6 standard deviations from the specific limit and the 6 Sigma tolerance limit.

 and UL is a registered trademark of Underwriters Laboratories, Inc.



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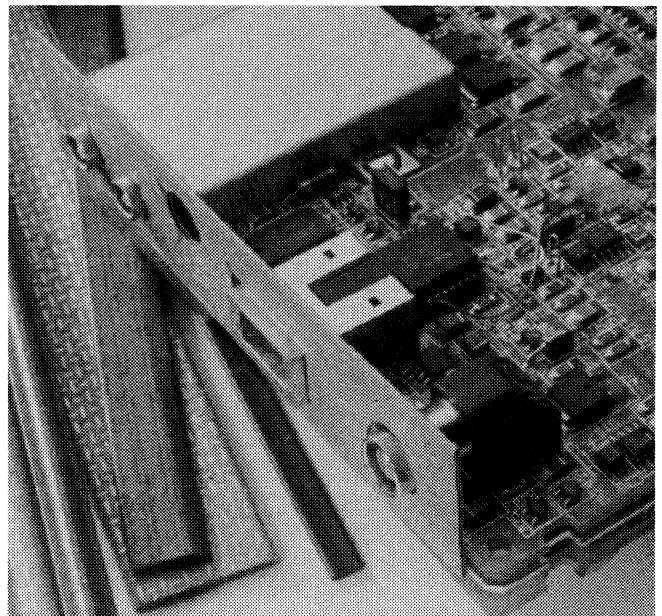
www.schlegel.com

SCHLEGEL® EMI Shielding Gaskets

I/O Shielding Gaskets: The Perfect Fit

Replace sharp, unreliable and expensive stamped metal shielding with Schlegel Corporation's unique combination of conductive fabric and resilient urethane foam. I/O Shielding Gaskets fit snugly around the connector shell with no sharp edges. They're lightweight and flexible, with millions of contact points.

- A choice of four metalized fabrics and many standard gasket profiles, including E07, E08, E09, E29, E47, E58, E65, E71 and E76.
- Most I/O shielding gaskets can be formulated to meet UL 94 recognition programs.
- Fast, easy and safe to install.
- No size limitations - from laptops to large rack-mounted units.
- Prototypes available quickly.

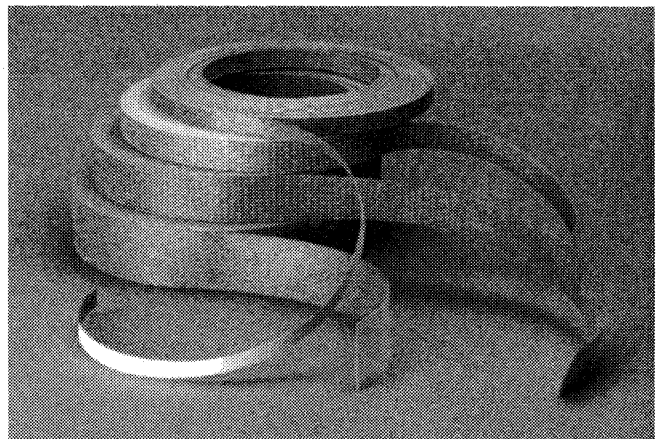


Conductive Fabric Tapes

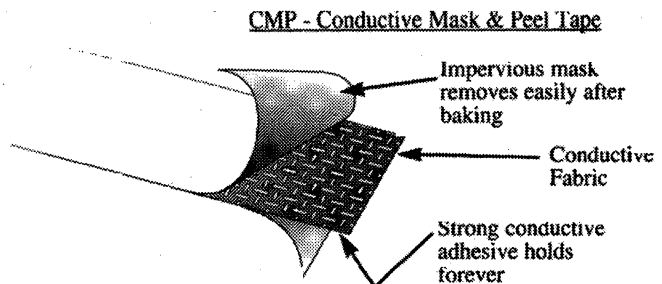
Conductive Fabric Tape from Schlegel Corporation. Shielding effectiveness is an average of 60dB in the range of 30 MHz to 1 GHz. Schlegel's unique silver to silver metal combination offers perfect galvanic compatibility. Corrosion resistance and high peel strength mean reliability for shielding cabinets, hinged areas and narrow apertures. Available in .5" and 1.0" widths in 18 yard rolls. Other sizes can be custom cut.

CMP Conductive Mask & Peel tape eliminates extra steps in the manufacture of painted enclosures. CMP's Press, Paint and Peel technology provides total coverage. Using the same fabric as SCHLEGEL's CFT tape, the mask prevents penetration of paint during the spraying or powder coat process, yet releases during baking to yield a safe, flexible conductive surface. Available in .5" and 1.0" widths in 18 yard rolls. Other sizes can be custom cut.

Application Note: The release liner is peeled off the back of CMP tape and applied to the specific areas. The cabinet can then be painted or powder coated and baked using normal manufacturing processes up to 150°C (482°F) for up to 3 minutes. Once the unit has cooled, the mask is removed easily and the highly conductive tape is left securely in place.



Excellent conductivity without the sharp edges

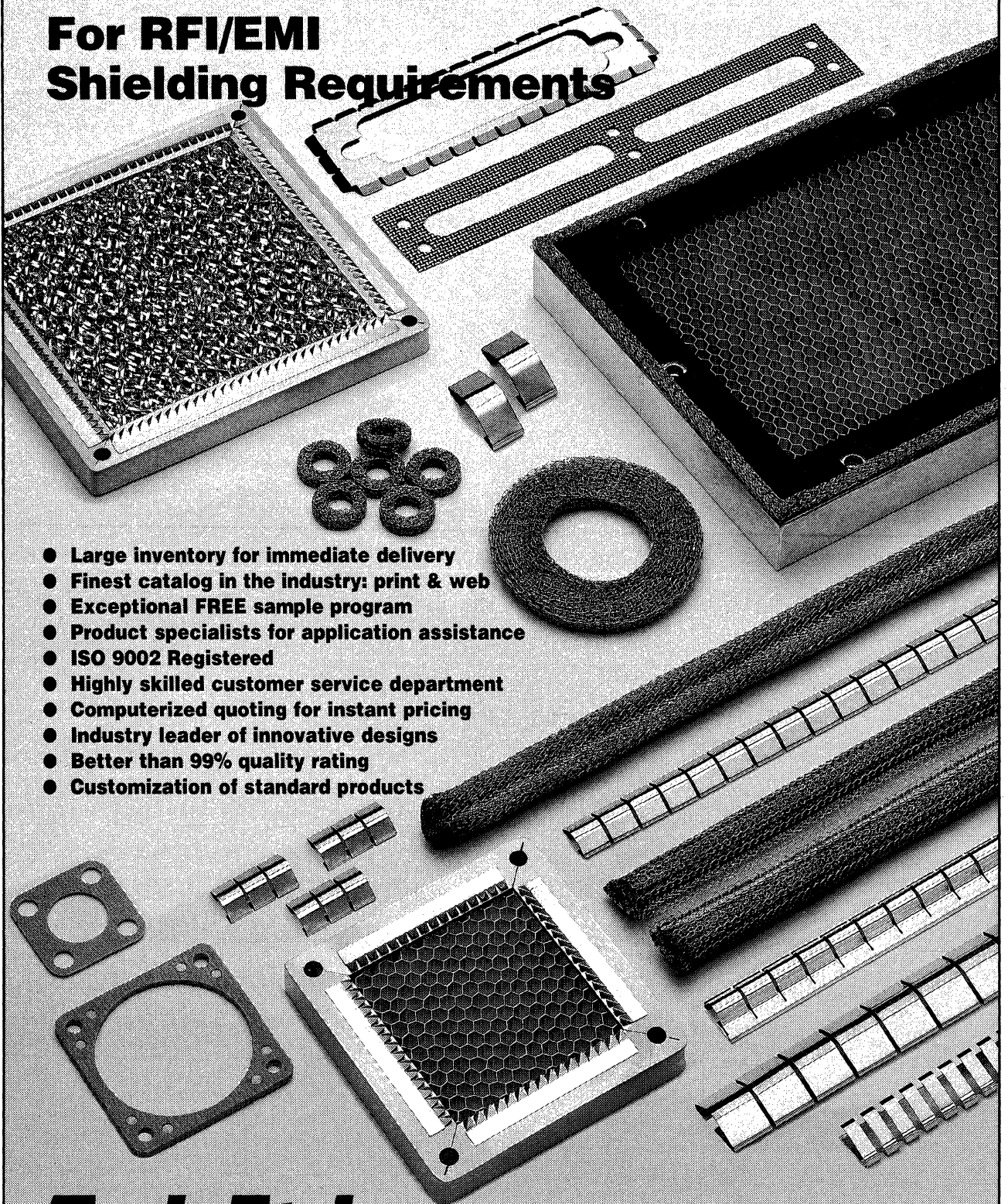


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Tecknit led the way with EMI shielding for defense...

Tecknit leads the way with EMI shielding for commercial electronics...

Tecknit will lead the way with EMI shielding for the future and beyond.

With the advent of global communications and advanced electronics, stringent compliance regulations have pushed shielding standards higher and higher. Design time is shorter. Cost pressure is greater. But Tecknit still leads the way with the widest range of cost effective shielding solutions, including our new Tecksof 2000 UL94 V-O

rated foam gaskets, NC-Consil nickel graphite elastomers and Teckbond-NC nickel coated, graphite filled one part RTV silicone adhesive.

With unmatched dedication, Tecknit will provide you with EMI shielding products that meet or exceed today's competitive commercial market demands.

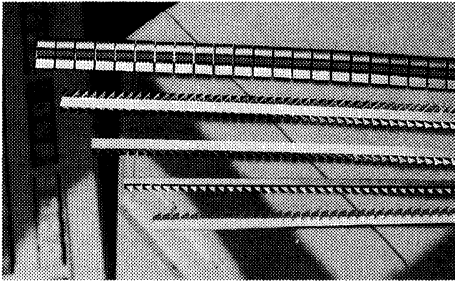
No matter how tough your EMI shielding problem is, just call Tecknit EMI Shielding Products at (908) 272-5500. For architectur-

al and X-Ray Shielding, call Tecknit Shielding Systems at (973) 778-6200. Tecknit people are ready to support you with product information, design help and cost effective solutions. On the internet we're located at <http://tecknit.com>. Now visit all our shielding facilities without leaving your office.



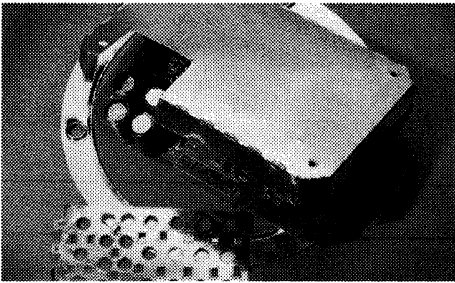
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Tecknit's EMI Shielding Products With Application Flexibility



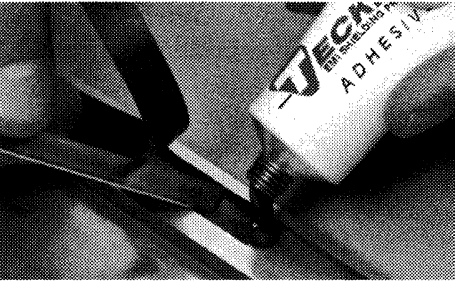
**LOW CLOSURE FORCE BERYLLIUM COPPER
EMI SHIELDING GASKETS.**

Tecknit Fingerstock is a durable gasket providing high shielding effectiveness in applications where low closure force is required. For extremely low closure forces, Tecknit offers SoftStock requiring 80% less force while delivering the same shielding effectiveness. Softstock and standard fingerstock are ideal when the closing force is "wiped" rather than perpendicularly compressed. Both are widely used in computers, telecommunications and medical devices.



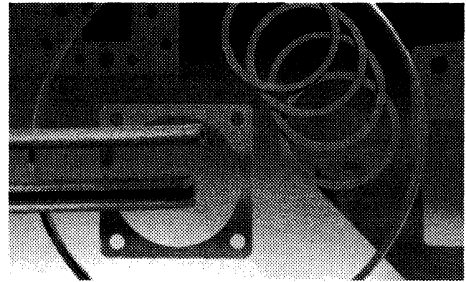
**LOW COST SHIELDING LAMINATES.
EASILY FORMED AND HIGHLY EFFECTIVE.**

Tecknit FOIL LAMINATES are available in a variety of foil (copper, aluminum, tinned-copper) and substrate combinations (PVC, Mylar, Kapton, Nomex). Easily die cut, scored, and formed, they are ideal for many applications: PCB's, medical devices, keyboards, monitors, computers, disk drives and communication equipment. Meeting FCC requirements, Tecknit shielding laminates perform in temperatures up to 150°C and can be supplied to meet UL-94.



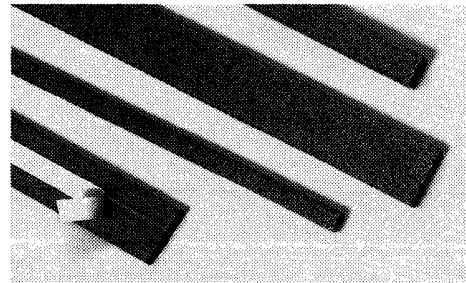
**NEW CONDUCTIVE ONE-PART NICKEL COATED
GRAPHITE FILLED SILICONE R.T.V. ADHESIVE**

TECKBOND-NC® is one part and is ready to use without mixing. It produces a bond that cures quickly at room temperature. The bond or seal is flexible, resilient, waterproof and conductive. This adhesive meets temperature requirements and is ideal for commercial applications. Teckbond-NC conductive adhesive-sealant is recommended for use with Tecknit NC-Consil or wherever a flexible bond is required in a metal-to-silicone gasket application.



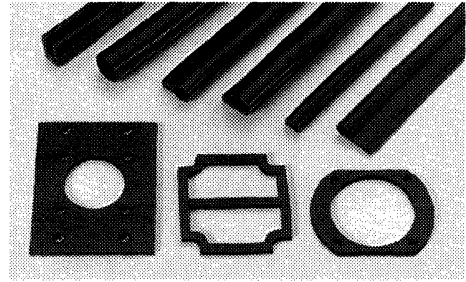
**NEW NICKEL COATED GRAPHITE ELASTOMER
FILLED WITH SILICONE**

NC-CONSIL® is a silicone elastomer filled with nickel coated graphite particles that provides a high degree of electrical conductivity, broadband shielding and environmental sealing. NC-Consil shielding is both reliable and cost effective. Designed for a wide range of commercial EMI applications, it is made in sheets, molded shapes, extruded profiles and die-cut gaskets. Hollow shapes are available for low closure force applications.



**NEW CONDUCTIVE FABRIC OVER
A UL94 V-O RATED NEOPRENE FOAM GASKET**

TECKSOF 2000® gaskets consists of conductive fabric over a foam core. Non conductive pressure sensitive adhesive (PSA) attachment strips are included. This gasket has been designed to meet today's commercial EMI shielding demands where wide tolerance gaps exist. The soft neoprene core is flexible and conformable, making it ideal for applications requiring low closure force and minimal compression set.



**NEW UL94 V-O RATED CARBON-FILLED
SILICONE ELASTOMER**

SC-CONSIL is a silicone elastomer filled with carbon particles. It provides superior shielding and a reliable environmental seal. The combination of carbon particles and silicone allows it to maintain its physical and electrical properties over an extremely wide temperature range. SC-CONSIL is manufactured in sheets, molded and continuously extruded strips, and die-cut gaskets. Tecknit is currently offering this elastomer with a UL94 V-O rating.

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TECKNIT
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North American and
International Cordage

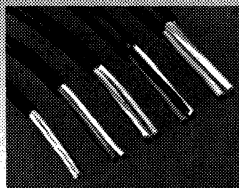


NEW!

New 8 page North American and International Cordage Brochure details Panel Components Corporation's wide range of cordage and value added cordage services. Cordage marking and packaging services also available. Call to receive your FREE copy.

North American and Harmonized cordage.... Simple Solutions for Your Power System Needs.

- 3-wire and 5-wire cordage
- PVC and rubber insulation available
- Metric sizes ranging from 0.75mm² to 35mm².



Provide power to your product worldwide with North American and Harmonized cordage. Panel Components Corporation offers a wide range of cordage, supplied on spools or in cut lengths that

can be stripped and terminated to customer specification with quick turnaround times. This value added service

- American Wire Gauge sizes ranging from 18 to 2 AWG
- North American and international shielded cable available.

allows the equipment manufacturer to eliminate inventory investments and scrap costs.

Cordage, power cords, and cordsets comply with foreign safety standards and carry all of the appropriate major testing authorities' approvals including UL/CSA and VDE. We also help to simplify your design process by providing you with ample technical support, which includes copies of agency approval documents, upon request.

SEE OUR PAGES IN THESE EEM SECTIONS:

- VOLUME A SECTION 5600, VOLUME B SECTION 4300
- VOLUME C SECTIONS 2100 & 6000
- VOLUME D SECTION 4050

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ABBREVIATIONS FOR WIRE & CABLE PRODUCT SELECTION GUIDE

CODE/EQUALS

AP Aluminized Polyester
 BC Bare Copper
 BCB Bare Copper Braid
 BCCS Bare Copper Coated Steel
 BTC Braided Tinned Copper
 DRN Drain Wire
 EPR Synthetic Rubber
 ETFE Tefzel
 FA Ferrite Absorptive
 FLR Filler
 FO Fiber Optic

CODE/EQUALS

FPE Foamed Polyethylene
 FRSR Fire Resistant Silicone Rubber
 GLS Glass
 HYFO Hybrid Fiber Optic
 IRPVC Irradiated PVC
 KYN Kynar
 MYL Mylar (DuPont™)
 NEO Neoprene
 NPC Nickel Plated Copper
 NYL Nylon
 PCA Polychloroalkene

CODE/EQUALS

PE Polyethylene
 POF Polyolefin
 POP Polypropylene
 PST Polyester
 PUR Polurethane
 PVC Polyvinylchloride
 REEL Cord on Reel
 RTCL Retractable Cord
 RUB Rubber
 SBR Synthetic Rubber

CODE/EQUALS

SHLD Shielded
 SPC Silver Plated Copper
 TC Tinned Copper
 TEF Teflon
 TFG Teflon/Fiberglass
 TPR Thermo Plastic Rubber
 XLP Cross Linked Polyethylene
 ** Specs Not Shown On Page
 - Not Applicable

MULTICONDUCTOR CABLE

Manufacturer	Starting EEM Page No.	Number of Conductors (range)	Conductor (AWG range)	Insulation (type)	
				Primary	Secondary
ABL Electronic Supply, Inc.	C-1586	2-102	38-10	PVC, PE, TEF, IRPVC, RUB	GLS, NED, NYL, PE, PVC, TEF, TFG
Alpha Wire Company	C-1594	1-100	10-28	PVC, POP, PE, Thermoplastic Elastomer, Plenum-rated PVC, NYL	PVC, PUR, Thermoplastic Elastomer, PE, Plenum-rated PVC
Bay Associates	C-1598	1-100	44-1/0	EXPTFE, FEP, FPE, PE, POP, RUB, TEF, XLP, TPR, PVC, IRPVC	EXPTFE, FEP, PE, POP, RUB, TEF, XLP, IRPVC, TPR, PVC
Brim Electronics	C-1604	1-202	38-10	PVC, TFE, PE, PP	PVC, TFE, TPE, FEP, PV
Caton Connector Corp.	C-1615	2+	22-8	PVC	
Consolidated Electronic Wire and Cable	C-1617	2-60	12-28	PVC, PE, EPR, FPE, TEF	PVC, PE, TFE, NEO, FPE
Daburn Electronics and Cable Corp.	C-1618	2-202	32-12	PVC, PE, NCD, FEP, TFE	PVC, PE, NEO, FEP, TEF
EMC EUPEN	C-1626	1-24	20-26	PVC	PVC
Galaxy Wire & Cable Inc.	C-1629	Any	30-2	ETFE, FPE, FRSR, IRRVC, KYN, NYL, PE, POF, POP, PVC, TEF, KAPTON	ETFE, FPE, NEO, PCA, SBR, XLP, TFG, TPR
Globtek, Inc.	C-1630	2-6	18-8	PVC, RUB	PVC, RUB
ISL Products Int'l, Limited	C-1633		18-30	PVC	Polypropylene
Judd Wire Inc.	C-1634	2-60	30-6	ETFE, IRPVC, PE, PCA, PVC, POP, PUR, XLP	ETFE, IRPVC, PVC, PUR, XLP
National Wire and Cable Corp.	C-1648	2-120	28-12	PVC	PVC
Omega Engineering	C-1673	2-24	56-8	EPR, FA, FO, GLS, PVC, TEF, TFG, MGO, Berrilium, Aluminum	BTC, DRN, EPR, GLS, REEL, RTIC, PVC, SHLD, TEF, TFG, Steal sheath, Inconel sheath
Phoenix Wire, Inc.	C-1687	2 and up	20-60	TEF	
Weico Wire & Cable, Inc.	C-1694	1-102	28-4	PVC, TFE, IRRPVC, POP, PE, FEP, Rubber, Neoprene, NYL	PVC, TFR, FRP, Rubber, Neoprene
Wiremax	C-1737	Any	28-20, 24-1, 24-10, 8-2	FRSR	
Y.C. Cable USA	C-1738	Any		TEF, IRPVC	

DATA CABLES

Manufacturer	Starting EEM Page No.	Number of Conductors	Conductor (AWG range)	Shielding Material (Type)	Insulation (type)	
					Primary	Jacket
ABL Electronic Supply, Inc.	C-1586	1-20	38-12	BCB, BCCS, BTS, AP w/Drain Wire	PVC, SRPVC, FPE, PE, TEF	PE, PVC, TEF
Bay Associates	C-1598	1-100	44-1/0	BCB, braid, served foils	ECTFE, ETFE, TEF, NYL, PE, POP, PVC, RUB, TPR, PUR, IRPVC	ECTFE, ETFE, TEF, NYL, PE, POP, PVC, RUB, TPR, PUR, IRPVC
Brim Electronics	C-1604	2-120	28-12	Spiral TC, Braided TC or SIL PL, Alum. Mylar Foil		
Consolidated Electronic Wire and Cable	C-1617	2-100	22-28	AP, BTC, DRM, MYL	PVC, PE, FPE, TEF	PVC, PE, TEF, PUR, TPE
Daburn Electronics and Cable Corp.	C-1618	2-60	32-16	Foil, Braid, BTC, AP, TC, TC spiral/braid	PVC, PC, FPE, TFE	PVC, PD, TEF, PUR, TPE

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National has over 5,500 different standard wires and multi-conductor cables to satisfy your design requirements. Plus a staff of engineers to help design custom wires and cables for special applications.

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DATA CABLES (cont'd.)

Manufacturer	Starting EEM Page No.	Number of Conductors	Conductor (AWG range)	Shielding Material (Type)	Insulation (type)	
					Primary	Jacket
EMC EUPEN	C-1626	1-12	26-24, 22-23	Copper-BTC (optimized braid)	PP (POP), PE, PVC	PP, PE, PVC
Galaxy Wire & Cable Inc.	C-1629	Any	30-2	AP, BCB, Braid, NPC, Aluminum Foil, Spiral	ETFE, FPE, FRFR, IRPVC, KYN, NYL, PE, POF, POP, PVC, TEF, KAPTON	ETFE, FPE, NEO, PCA, SBR, XLP, TFG, TPR
Globtek, Inc.	C-1630	1-24	28-18	Aluminum Foil, Copper Braid	PVC, TEF, PE	PVC, TEF, PE
Judd Wire Inc.	C-1634	2-50	30-18	AP, TBC, NPC, SPC, DRN	PE, FPE, POF,	PE, PVC
National Wire and Cable Corp.	C-1648	2-100	20-24	BTC	PE	PVC
Omega Engineering Inc.	C-1673	2-4	20-24		PVC, TEF	PVC, TEF
Weico Wire & Cable, Inc.	C-1694	1-102	28-4	BCB, BTC, AP/with drain, Spiral Wrap	PVC, TFE, IRRVC, POP, PE, FEP, Rubber, NYL, Neoprene	PVC, TFE, FEP, Rubber, Neoprene
Y.C. Cable USA	C-1738	Any	Any		TEF, IRPVC	

ACCESSORIES, HARDWARE, SERVICES

Manufacturer	Starting EEM Page No.	Clamps		Cable Ties	Tubing	Grommets	Other	Material	Approvals	Services
		Clamps	Ctips							
ABL Electronic Supply Inc.	C-1586	✓	✓	✓	✓	✓	Tubing-Heat shrink	PVC, TEF Polyolefin	UL, CSA	Engrave cut to length.
Bay Associates	C-1598			✓						
Brim Electronics	C-1604	✓	✓	✓	✓	✓	Lacing cords & tapes		MIL-I-45208A	Cutting, stripping, hot stamping, crimping assemblies
BTC Electronic Components	C-1614		✓		✓		✓			
Daburn Electronics and Cable Corp.	C-1618	✓	✓	✓	✓	✓	Lacing, cords & Tape, plugs, Binding posts, Porcelain Insulators, Shrink tubing & sleeving	Porcelain, PVC, TFE, NYL, PE, Fiberglass	Mil	Cut to length
EMC EUPEN	C-1626	✓	✓				Ferrite Tubing	SS		Testing
Galaxy Wire & Cable Inc.	C-1629			✓	✓		✓		OL, CSA, MIL Spec	Cut, Stamp, Cable Assemblies
Globtek, Inc.	C-1630	✓	✓	✓	✓	✓	Strain reliefs	PVC	UL/CSA	Design of wire harness
ISL Products Int'l, Limited	C-1633		✓							
M.M. Newman Corp.	C-1671			✓	✓					
Omega Engineering	C-1673	✓	✓	✓	✓		Strain relief, quick disconnect, low noise	Steel, Plasters, Thermocouple alloys, copper, NPC	UL	
Tyton Hellermann	C-1692	✓	✓	✓	✓	✓	ID Productivity, Wiring Duct	Nylon, PVC, Velcro®, others	UL, Mil Spec.	
Weico Wire & Cable, Inc.	C-1694				✓		Tubing, Heat shrink, Lacing tape	PVC, Polyolefin, Kynar, Neoprene, Teflon, (2:1, 3:1, 4:1)	UL, CSA, Mil	Cutting, Stripping, Tinning, Twisting, Marking, Striping

HOOKUP WIRE

Manufacturer	Starting EEM Page No.	Conductor (type)	Conductor (AWG range)	Insulation (type)	
				Primary	Secondary
ABL Electronic Supply, Inc.	C-1586	Solid Stranded, Bonded, BC,NPC,SPC,TC	38-4/0	PVC,IRPVC,TEF,KYN,NEO, RUB,XLP	GLS,NEU,NYL,PE,PVC, RUB,TEF,TFG
Bay Associates	C-1598	TC,BC,NPC,SPC,BCA	42-2000MCM	ETFE,FRSR,IRPVC,FPE,KYW, PE,POF,POP,XLP	
Brim Electronics	C-1604	Copper	38-00	PVC,TFE,FEP,PE,Silicone, Rubber,TPE,Kynar,Mica	NYLON Fiberglass brand
Consolidated Electronic Wire and Cable	C-1617	BC, TC, SPC	30-6	PVC, KYN, IRPVC, TEF, XLP, ETFE, EPR	PVC, NYL, TEF
Daburn Electronics and Cable Corp.	C-1618	Solid & Stranded TC,SPC	36-00	Silicone Rubber, Glass, PVC, KYN, TEF, Kapton, IRPVC	Nylon, Glass
EMC EUPEN	C-1626	CU (BC)	10-24	PVC	PVC
Galaxy Wire & Cable	C-1629	All	30-00	ETFE, FPE, PVC, KYN, NYL, PE, POF, POP, TEF, KAPTON, IRPVC, TPR, SR	NYL, GLS, XLP, RUB, ALL
Globtek, Inc.	C-1630	All	24-8	All	All
Judd Wire Inc.	C-1634	BC, TC	30-2	PVC, XLP, XLPVC, ETFE, PCA	PVC, PE
Magnet Wire, Inc.	C-1642	Solid Magnet wire, Buss wire; Litz wire	4-60 28-48	GLS, PST, PUR, SPC, TC, BC	
MWS Wire Industries	C-1644	Copper, Aluminum Magnet wire: ribbon, square, to 20 conductors, twisted, plated alloys	14, 16-52	One-to-four coats	"bondable overcoats" & solderable
National Wire and Cable Corp.	C-1648	Insulated Stranded Conductors MIL SPEC, UL, CSA	6-28	PVC	NYL
Omega Engineering	C-1673	Thermocouple, NPC	56-8	GLS, TEF, PVC	GLS, TEF, PVC
Phoenix Wire, Inc.	C-1687	BC, SPC, Customer's Choice	14-60	TEF	
Rowe Industries	C-1689	SPC	12-24	FEP Teflon	Extruded silicone coating
Weico Wire & Cable, Inc.	C-1694	BC, TC, SPC, Solid, Stranded	36-500MCM	PVC, TFE, IRRPVC, ETFE, XLPE, POP, PE, FEP, Rubber, Neoprene	Nylon

SINGLE CONDUCTOR COAXIAL

Manufacturer	Starting EEM Page No.	Impedance (ohms)	Conductor (AWG range)	Shielding Material (type)	Insulation (type)	
					Primary	Jacket
ABL Electronic Supply Inc.	C-1586	12-200	11-30	Foil and Braid-Copper Braid	PE,TEF,FPE	PVC,TFG,TEF
Bay Associates	C-1598	20-150	40-1AWG	served spiral, braid, foil	EXPTFE,FEP,FPE,PE, POP,PTFE	PU,PVC,TPE,flouropolymer
Brim Electronics	C-1604	50-52 75-78 93-95	18-30	Braided TC, Braided Sil PL copper, Al. mylar foil, Aluminum Braided	TFE,PE	TFE,FEP,PVC
Consolidated Electronic Wire and Cable	C-1617	50-125	30-8	BTC, BCB, SPC, Braid	PE, TEF, FEP, FPE	PVC, PE, TFE, FEP, TFG
Daburn Electronics and Cable Corp.	C-1618	50-95	30-1	BC, TC, AP, Alum.	PE, FEP, FPE, TFE	FEP, PTFE, PVC
EMC EUPEN	C-1626	50 and 75	26-20	Optimized braided CU	PVC	PVC
Galaxy Wire & Cable Inc.	C-1629	50, 75, etc.	30-8	Foil, Braid, Spiral	PE, TEF, FPE, TFE, FEP, PVC	PE, TEF, FPE, TFE, FEP, PVC
Globtek, Inc.	C-1630		40-6	Aluminum		
Judd Wire Inc.	C-1634	50-125	32-20	BTC, AP, SPC, Spiral TC	PE, FEP	PE, PVC
Rowe Industries	C-1689		8-22	Braid	Extruded Silicone	Silicone, neoprene or PVC
Weico Wire & Cable, Inc.	C-1694	50-125	4-30	BC, TC, SPC, Alum. foil	PVC, TFE, FEP, PE, FPE	PVC, TFE, FEP, PE

CABLE ASSEMBLIES

Manufacturer	Starting EEM Page No.	Subminiature "D" Assemblies						GPIB	Ethernet Transc.	Trunk	Parallel Interface	DIN Keyboard			Modular Keyboard	
		4 Pos.	15 Pos.	25 Pos.	37 Pos.	50 Pos.	3 Pos.					5 Pos.	8 Pos.	Straight	Retract.	
ABL Electronic Supply, Inc.	C-1586	✓	✓	✓	✓	✓	✓	✓	✓							
Applied Wiring Components	C-1596	✓	✓	✓	✓	✓	✓		✓							
Bay Associates	C-1598	✓	✓	✓	✓	✓	✓	✓								
Berg Electronics	C-1600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connector Technology	C-1616	✓	✓	✓	✓	✓	✓		✓							
Consolidated Electronic Wire and Cable	C-1617	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	
Daburn Electronics and Cable Corp.	C-1618													✓	✓	
EMC EUPEN	C-1626	✓	✓	✓	✓			✓	✓	✓						
Galaxy Wire & Cable	C-1629	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
Globtek, Inc.	C-1630	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	
Lynn Products Inc.	C-1625	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
LZR Electronics, Inc.	C-1637	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Power Dynamics Inc.	C-1688	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	
Shogyo International Corp.	C-1690	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	
Technical Devices of N.A., Inc.	C-1691	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Y.C. Cable USA	C-1738	✓	✓	✓	✓	✓	✓		✓							

POWER CORDS

Manufacturer	Starting EEM Page No.	3 Conductor		Detachable 3 Conductor		2 Conductor		Jumper	Retractable	Hospital	Extension
		Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded				
ABL Electronic Supply, Inc.	C-1586	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bay Associates	C-1598	✓	✓	✓	✓	✓	✓		✓	✓	✓
Bergquist Company	C-1602	✓	✓	✓	✓			✓		✓	
Brim Electronics	C-1604		✓						✓		✓
Consolidated Electronic Wire and Cable	C-1617	✓	✓	✓	✓		✓		✓	✓	✓
Daburn Electronics and Cable Corp.	C-1618		✓		✓		✓		✓		✓
EMC EUPEN	C-1626	✓	✓	✓	✓		✓	✓	✓	✓	✓
Galaxy Wire & Cable	C-1629	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Globtek, Inc.	C-1630	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
International Cord Sets Inc.	C-1632	✓	✓		✓		✓				
ISL Products Int'l, Limited	C-1633								✓	✓	
LZR Electronics, Inc.	C-1637	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Omega Engineering	C-1673	✓	✓	✓	✓	✓	✓				
Panel Components Corp.	C-1674							✓		✓	✓
Power Dynamics Inc.	C-1688	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shogyo International Corp.	C-1690	✓	✓	✓	✓	✓	✓	✓	✓		✓
Technical Devices of N.A., Inc.	C-1691	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weico Wire & Cable, Inc.	C-1694	✓	✓	✓	✓						✓

ABLE RATED™**LITERATURE BY FAX**

The below listed catalog pages and specifications are available by dialing **800-214-7914** from your fax machine and request the documents you require.

Document Number	Description
HOOK-UP AND LEAD WIRE	
100	PVC wire
105	Auto and Marine wire
110	Irradiated wire
120	Polyolefin wire
125	Aircraft wire
130	Extruded TEFLON wire
SINGLE SPECIALTY WIRES	
140	High temperature wire
145	High voltage wire
150	Ultra-flexible micro-min & Ex-flexible ground & power wire
160	Wire wrap, test lead
170	Shielded PVC & TEFLON
180	Welding cable
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195	Diesel locomotive
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206	Foil/Braid dual shield
208	Power Ltd. and fire alarm
209	Rubber insulated
MULTI PAIRED CABLE	
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212	Foil shielded
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305	Rope lay flexible cable
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600	PVC and Polyolefin
605	Teflon and Kynar
NON-SHRINK FLEXIBLE TUBINGS	
650	PVC tubing
655	Various sleeveings
CABLE TIES AND CLIPS	
700	Standard and Mounting ties
705	ID ties and ID Plates
710	Mounts and Tools
715	Adhesive retaining clips
RF CO-AXIAL JUMPERS	
750	Cable assemblies
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805	Mini connectors and within series adapters
810	Between series adapters
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Electronic Cable Hook Up Wire, Power Cords, Shrink and Flex Tubing, Cable Ties, Flat Ribbon Cable, Custom Assemblies, and Connectors, Coaxial Hi Temperature and Data Cable Braids and Ground Straps

EXTRA FLEXIBLE GROUND STRAPS

GS1-14 (INSULATED), GS-14 (NON-INSULATED)

Rope lay bare copper cable, where flexibility and extended flex-life is a primary consideration. Length and hole size are your options...



ABLE PART NO.	AWG	CIRCULAR MIL AREA	NO. OF WIRES/AWG	APPROX. AMPACITY	NOM. IN	DIAMETER MM
GS14-400	4/0	212,800	8512/36	350	.685	17.40
GS14-300	3/0	169,575	6783/36	315	.611	15.52
GS14-200	2/0	132,300	5292/36	252	.533	13.54
GS14-100	1/0	105,350	4214/36	214	.475	12.06
GS14-001	1	83,300	3332/36	183	.423	10.75
GS14-002	2	66,150	2646/36	160	.377	9.58
GS14-004	4	41,650	1666/36	114	.299	7.59
GS14-006	6	26,250	1050/36	80	.210	5.33
GS14-008	8	16,625	665/36	62	.167	4.24
GS14-010	10	10,325	413/36	46	.131	3.32
GS14-012	12	6,475	259/36	31	.104	2.64
GS14-014	14	4,200	168/36	25	.084	2.13
GS14-016	16	2,625	105/36	17	.067	1.70
GS14-018	18	1,575	63/36	13	.052	1.32
GS14-020	20	1,050	42/36	9	.042	1.07

Add Length in inches and hole size after part number
Options: (A) Insulated with yellow/green ground identification
(B) Insulated with waterproof insulation suitable for direct burial

GS1-15 (INSULATED), GS-15 (NON-INSULATED)

A flat braid has a specific current carrying capacity. High currents are easily carried at low voltages. Length and hole size are your options...

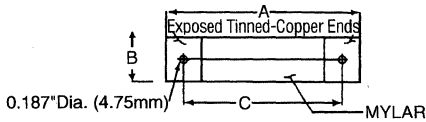


ABLE PART NO.	AWG	CIRCULAR MIL AREA	STRAND AWG./ NO. OF WIRES/AWG	APPROX. AMPACITY	NOM WIDTH IN/MM
GS15-400	4/0	225600	30/2256	390	3.00/76.2
GS15-300	3/0	153600	30/1536	290	2.00/50.8
GS15-200	2/0	124800	30/1248	250	1.75/44.45
GS15-100	1/0	105600	30/1056	235	1.38/35.05
GS15-001	1	76800	30/768	195	1.00/25.40
GS15-002	2	64800	30/576	150	.87/22.10
GS15-003	3	52800	30/528	145	1.50/38.10
GS15-004	4	38400	30/384	120	1.00/25.40
GS15-005	5	33600	30/336	100	1.38/35.05
GS15-006	6	24000	30/240	93	.50/12.70
GS15-007	7	20800	36/864	85	1.00/25.40
GS15-009	9	13200	36/528	62	.63/16.00

Direct current ratings are given for information only and are not requirements. Values shown are for uninsulated braid in free air at 30°C (80°F). Values should be derated if the braid is insulated or in close contact with other components.

GS-10 (3/8" WIDE), GS-11 (1/2" WIDE), GS-10 (1" WIDE) INSULATED GROUND STRAPS

(UL APPROVED) PASSES ALL REQUIREMENTS OF UL SPEC 94V0 Flexible Ground Straps, Double insulated laminates of Copper (inside) and Mylar® outside. The Ends Tinned and Prepunched for a No.10 Screw for ease of termination. These straps provide a low impedance ground path at R.F. reducing EMI problems caused by wire grounds. These ground straps are recommended whenever board to chassis or chassis to cabinet grounding is required.



PART NO.	NOMINAL DIMENSION, INCHES (MM)		
	A	B	C
GS-11-3	3.0(76.2)	0.500(12.7)	2.5(63.5)
GS-11-6	6.0(152.4)	0.500(12.7)	5.5(139.7)
GS-11-9	9.0(228.6)	0.500(12.7)	8.5(215.9)
GS-11-12	12.0(304.8)	0.500(12.7)	11.5(292.1)
GS-11-15	15.0(381.0)	0.500(12.7)	14.5(368.3)
GS-11-18	18.0(457.2)	0.500(12.7)	17.5(444.5)
GS-12-3	3.0(76.2)	1.000(25.4)	2.5(63.5)
GS-12-6	6.0(152.4)	1.000(25.4)	2.5(63.5)
GS-12-9	9.0(228.6)	1.000(25.4)	8.5(215.9)
GS-12-12	12.0(304.8)	1.000(25.4)	11.5(292.1)
GS-12-15	15.0(381.0)	1.000(25.4)	14.5(368.3)
GS-12-18	18.0(457.2)	1.000(25.4)	17.5(444.5)

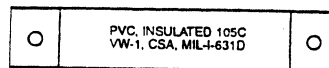
GS1-8 (INSULATED), GS-8 (NON-INSULATED)

Heavy duty copper strap (.015") thick, 1" wide. Tinned ends and punched holes. Length and hole size are your options...



GS1-9 (INSULATED), GS-9 (NON-INSULATED)

Heavy duty copper strap (.015") thick, 1" wide. Punched holes. Length and hole size are your options...



GS1-13 (INSULATED), GS-13 (NON-INSULATED)

Flat Ground Straps to efficiently provide static grounds. .009" thick x 3/8" wide tin plated steel & insulated with 105C PVC Jacket. Length & hole size your option...



GS1-16 (INSULATED), GS-16 (NON-INSULATED)

Flexible flat tinned copper ends, solder dipped with punched holes. Ampacity ratings as in the GS-15 chart. Length and hole size your option...



ALL LENGTHS ARE HOLE TO HOLE

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SHIELDING AND BONDING COPPER BRAID

TINNED COPPER FLAT BRAID



General Uses: Flat braid has a specific current carrying capacity. High currents are easily carried at low voltages. Typically used as a ground strap where flexibility, strange configuration and/or solderability are of prime importance...

ABLE PART NO.	APPROX AWG EQUIV.	WIDTH AND THICKNESS	APPROX CMA X 100	STRAND AWG/NO OF WIRES	APPROX AMP RATING	LBS PER M FT.	FEDERAL SPEC QQB 575
95070	24	.031 X .020	.400	36/16	6	4	-
95065	22	.046 X .020	.600	36/24	7	5	F36T031
95060	19	.093 X .020	1.200	36/48	11	7	F36T062
95055	18	.125 X .020	1.800	36/72	16	9	F36T078
95052	16	.156 X .020	2.400	36/96	19	11	F36T109
95050	15	.187 X .020	3.000	36/120	25	13	F36T125
95045	14	.250 X .030	4.200	36/168	32	18	F36T171
95043	12	.250 X .030	6.000	36/240	40	23	F36T156
95040	12	.375 X .030	7.200	36/288	40	28	-
95037	11	.281 X .030	7.630	36/312	46	28	F36T203
95035	10	.500 X .030	9.600	36/384	53	39	-
95030	10	.625 X .030	9.600	36/384	53	39	F36T375
95028	9	.625 X .045	12.060	30/120	60	47	-
95027	9	.625 X .035	13.200	36/528	62	50	F36T500
95025	7	.750 X .040	20.800	36/864	85	75	F36T781
95020	7	1.00 X .045	20.800	36/864	85	75	-
95019	6	.875 X .050	26.400	36/1056	105	95	-
95016	6	.500 X .080	24.000	30/240	93	83	F30T437
95015	5	1.37 X .060	33.600	30/336	100	129	F30T875
95014	5	.625 X .085	36.000	30/360	120	121	F30T500
95012	3	.75 X .110	48.000	3/480	145	170	-
95010	3	1.50 X .080	52.800	30/528	145	192	F30T1375
95009	2	.937 X .130	64.800	30/648	175	225	-
95008	1	1.00 X .140	76.800	30/768	195	270	-
95006	1/0	1.37 X .120	105.600	30/1056	235	362	-
95005	2/0	1.75 X .130	124.800	30/1248	250	430	-
95000	3/0	2.00 X .140	153.600	30/1536	290	530	-
95001	4/0	3.00 X .190	225.600	30/2256	390	780	-
95002	250MCM	2.500 X .190	249.600	30/2496	410	900	-

EXTRA FLEXIBLE GROUND CABLE



General Uses: Rope lay stranded bare copper cable are manufactured with fine strand wire to achieve the ultimate in flexibility where extended flex-life is a primary consideration. Excellent for shunts, grounds, leads and flexible jumpers. Available in tinned copper.

ABLE PART NO.	APPROX AWG EQUIV.	NOM OD IN/MM	APPROX CMA	STRAND AWG/NO OF WIRES	APPROX AMP RATING	LBS PER M FT.
97400	4/0	.685/17.40	212,800	36/8512	350	763
97300	3/0	.611/15.52	169,575	36/6783	315	605
97200	2/0	.533/13.54	132,300	36/5292	252	456
97100	1/0	.476/12.09	105,350	36/4214	214	363
97002	2	.377/9.58	66,150	36/2646	160	227
97004	4	.299/7.60	41,650	36/1666	114	142
97006	6	.210/5.33	26,250	36/1050	80	85
97008	8	.167/4.24	16,625	36/665	62	54
970081	8	.166/4.22	16,392	34/413	61	53
97010	10	.131/3.33	10,325	36/413	46	33
97012	12	.104/2.64	6,475	36/259	31	21
97014	14	.084/2.13	4,200	36/168	25	14
97016	16	.067/1.70	2,625	36/105	17	9
970181	18	.052/1.32	1,614	40/168	13	5
97018	18	.052/1.32	1,575	36/36	13	5

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TINNED COPPER TUBULAR BRAIDS



General Uses: Braid is formed to achieve a 90% shielding over the specified nominal diameters. 70% coverage for .078" and smaller. The individual tinned ends conform to the ASTM-B 33 specifications. Available in bare copper...

ABLE PART NO.	APPROX AWG EQUIV.	NOM. I.D. ROUNDED	APPROX CMA	AWG & # OF WIRES	APPROX AMP RATING	LBS PER M FT.	FEDERAL SPEC QQB 575
96020	1	0.656	77180	30X768	190	259	R30T656
96021	2	2.000	67200	30X672	180	230	R30T2000
96022	2	1.500	57600	30X576	165	200	R30T1500
96023	3	1.375	52800	30X528	150	185	R30T1375
96025	3	0.562	48240	30X480	145	156	R30T562
96000	4	1.125	43200	30X432	130	155	R30T1125
96005	4	1.000	38600	30X384	120	140	R30T1000
96010	5	0.875	33600	30X336	100	123	R30T875
96035	6	0.437	24000	30X240	90	85	R30T437
96015	7	0.781	21600	36X864	88	79	R36T781
96016	7	0.781	21000	34X528	85	77	R34T781
96019	9	0.500	13356	34X336	62	53	R34T500
96030	9	0.500	13200	36X528	62	53	R36T500
96045	9	0.281	12000	30X120	60	47	R30T281
96040	10	0.375	9600	36X384	53	40	R36T375
96050	11	0.250	9600	36X384	53	38	R36T250
96052	11	0.375	9540	34X240	52	38	R34T375
96054	11	0.203	7800	36X312	46	31	R36T203
96055	11	0.203	7630	34X192	48	31	R34T203
96065	12	0.156	6000	36X240	40	24	R36T156
96062	14	0.171	4770	34X120	36	20	R34T171
96060	14	0.171	4200	36X168	32	17	R36T171
96070	15	0.125	3000	36X120	25	14	R36T125
96063	16	0.125	2860	34X72	19	13	R34T125
96075	16	0.109	2400	36X96	19	11	R36T109
96080	18	0.078	1800	36X72	16	9	R36T078
96085	19	0.062	1200	36X48	11	9	R36T062
96086	19	0.062	1192	36X32	11	7	R36T062
96090	22	0.031	600	36X24	7	5	R36T031

SILVER PLATED BRAID SHIELDING

Wires have min. of 40 micro-inches silver. For use where the shieldings are subjected to temperatures exceeding 200 deg. C. or if special corrosion resistance is required.

NICKEL PLATED BRAID SHIELDING

Wires have min. of 50 micro-inches nickel. For use where the shieldings are subjected to temperatures up to 400 deg. C. or if special corrosion resistance is required.

STAINLESS STEEL PLATED BRAID SHIELDING

Wires conform to MIL-W-423, composition 304. For use where shieldings are subjected to temperatures up to 650 deg. C. or where mechanical strength and shield protection are important considerations.

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ABLE RATED MULTI-SPEC HOOK-UP WIRE MEETS OR EXCEEDS THE ELECTRICAL CHARACTERISTICS OF THE FOLLOWING STYLES

UL ATYLE 1061 300V 80C
 CSA TYPE SRPVC, T2 300V 80C
 MIL-W-76, TYPE LW 300V 80C
 M16878/1, TYPE B 300V 105C

UL STYLE 1007/1569 300V 80/105C
 CSA TYPE TR64, T1 300V 90C
 MIL-W-76, TYPE MW 1000V 80C
 M16878/2, TYPE C 1000V 105C



LIGHT WALL PVC INSULATION

PART NO.	INSULATION THICKNESS	NOMINAL OD.	GAUGE (AWG)	STRANDING NO X AWG
11132	.010	.028	28	7 X 40
11130	.010	.032	30	7 X 38
11128	.010	.037	28	7 X 36
11328	.010	.036	28	SOLID
11126	.010	.038	26	7 X 34
11326	.010	.036	26	SOLID
11024	.010	.044	24	19 X 36
11124	.010	.044	24	7 X 32
11224	.010	.044	24	BONDED
11324	.010	.042	24	SOLID
11022	.010	.051	22	19 X 34
11122	.010	.051	22	7 X 30
11222	.010	.051	22	BONDED
11322	.010	.049	22	SOLID
11020	.010	.058	20	19 X 32
11120	.010	.058	20	7 X 28
11220	.010	.058	20	BONDED
11320	.010	.055	20	SOLID
11018	.010	.068	18	19 X 30
11118	.010	.068	18	7 X 26
11218	.010	.068	18	BONDED
11318	.010	.066	18	SOLID
11016	.010	.077	16	19 X 29
11014	.010	.091	14	19 X 27*

MEDIUM WALL PVC INSULATION

PART NO.	INSULATION THICKNESS	NOMINAL OD.	GAUGE (AWG)	STRANDING NO X AWG
11430	.016	.045	30	7 X 38
11428	.016	.048	28	7 X 36
11426	.016	.052	26	7 X 34
11626	.016	.050	26	SOLID
11424	.016	.057	24	7 X 32
11524	.016	.058	24	BONDED
11624	.016	.055	24	SOLID
11422	.016	.063	22	7 X 30
11522	.016	.064	22	BONDED
11622	.016	.061	22	SOLID
11420	.016	.069	20	10 X 30
11520	.016	.070	20	BONDED
11620	.016	.067	20	SOLID
11418	.016	.081	18	16 X 30
11518	.016	.082	18	BONDED
11618	.016	.078	18	SOLID
11416	.016	.093	16	26 X 30
11616	.016	.091	16	SOLID
11414	.016	.107	14	41 X 30
11412	.016	.128	12	65 X 30
11410	.016	.150	10	105 X 30

All colors and strips available.
 All put-ups available.

*not ul or csa

HEAT SHRINKABLE INSULATIONS

SHRINK RATIO 3:1

Yellow/Green Striped Tubing

PRODUCT DESCRIPTION

Unique yellow/green striped flexible polyolefin. Heat shrinking tubing with hi-expansion ratio. Meets all the requirements of mil-spec M23053/5.



Outdoor Or Direct Burial

PRODUCT DESCRIPTION

Providing complete waterproofing for direct burial and contains carbon black to protect it from ultra violet light.



ABLE PART NO. NOMINAL SIZE	MINIMUM I.D. AS SUPPLIED		MAXIMUM I.D. AFTER SHRINKING		NOM. WALL THK. AFTER SHRINKING	
	IN.	MM.	IN.	MM.	IN.	MM.
SA650-3/16	.187	4,8	.062	1,6	.020	0,51
SA650-3/8	.375	9,5	.125	3,2	.025	0,64
SA650-1/2	.500	12,7	.185	4,7	.028	0,71
SA650-3/4	.750	19,0	.250	6,4	.030	0,76
SA650-1	1.00	26,0	.512	13,0	.035	0,89

ABLE PART NO. NOMINAL SIZE	MINIMUM I.D. AS SUPPLIED		MAXIMUM I.D. AFTER SHRINKING		NOM. WALL THK. AFTER SHRINKING	
	IN.	MM.	IN.	MM.	IN.	MM.
SA700-04	.40	10,2	.15	3,8	.06	1,5
SA700-07	.75	19,0	.22	5,6	.08	2,0
SA700-11	1.10	28,0	.37	9,5	.08	2,0
SA700-15	1.50	38,1	.50	12,7	.09	2,3
SA700-20	2.05	52,1	.72	18,2	.09	2,3
SA700-27	2.75	70,0	1.00	25,5	.09	2,3
SA700-35	3.54	90,0	1.18	30,0	1.00	2,5

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CABLES FOR THE EUROPEAN MARKET

TRIPLE APPROVAL CONTROL CABLE, UL, SEV + VDE

PVC control cable unshielded or shielded with tinned copper braid. The three approvals offer many applications for use almost world wide. Used as control, data-processing, connecting cables in electric and electronic equipment. Outer PVC oil and chemical resistant gray jacket. Available with up to 60 conductors in 5 different AWG sizes.

VOLTAGE RATING:

VDE + SEV; 300/500 V
UL (0.5-1.5 / 2.5MM²) 300/600V

TEST VOLTAGE: 3000 V

CONDUCTOR STRANDING:

Fine strands of copper wire according to VDE 0295 Class 5

CONDUCTOR INSULATION:

Pvc Y12 according to VDE 0207 Section 4

OUTER JACKET:

Pvc YM2 according to VDE 0207 Section 5

TEMPERATURE RANGE:

VDE + SEV; -5 to +70 Deg. C.
UL; -5 to +80 Deg. C.

BENDING RADIUS: Unshielded—Shielded

Static; 6 X Cable Diameter.—10 x D
Flexing; 15 X Cable Diameter—20 x D

COLOR CODE:

Black wires numbered consecutively.
3 or more conductors have a green/yellow conductor in the cable.

APPROVALS:

VDE: 0250, Section 405.
SEV: 1080 + 1081 Td. oilres.
UL: AWM Style 2464 from 0.5 to 1.5mm²
AWM Style 2563 at 2.5 mm².

VDE APPROVED SHIELDED CONTROL CABLE

This VDE control cable, NYSLYCYOE-J is suitable as data, control, monitoring and connection cable in electric and electronic applications. Constructed with pvc insulation over the conductors then braided shield overall and a gray pvc jacket over braid. The application range includes equipment where shielded cables counterbalance interference fields to enable an unbiased transmission of signal.

Available with up to 60 conductors in 5 AWG sizes.

VOLTAGE RATING: 300/500 V

TEST VOLTAGE: 2000 V

CONDUCTOR STRANDING:

Fine stands of copper wire according to VDE 0295, Class 5.

CONDUCTOR INSULATION:

PVC model Y12 according to VDE 0207 section 4.

INNER JACKET:

PVC model YM2 according to VDE 0207, section 5.

OUTER JACKET:

PVC model YM2 according to VDE 0207, section 5.
Color gray according to RAL 7001.

TEMPERATURE RANGE:

Static, -30 to +80 deg C.
Flexing, -5 to +70 deg C.

BENDING RADIUS:

Static, 10 x cable diameter.
Flexing, 20 x cable diameter.

COLOR CODE:

Black with consecutive numbers.
3 or more conductors have a green/yellow conductor in the cable.

APPROVALS:

VDE 0250, section 405/10.81

COMPUTER CABLE WITH TRIPLE PROTECTION

Computer cable type CY PIMF is used for data/signal transmission in EDP and control equipment. Constructed with individual shielded isolated pairs with drain wire and overall braid shield. Triple protection cable offers the following securities;

- Polyethylene insulated pairs ensure protection against inductions.
- Foil shielded pairs ensure protection against electrostatic fields.
- Overall copper braid ensures protection against electric interferences.

Thanks to the paired twisting, a high cross-talk attenuation between all pairs are achieved.

Available with up to 50 conductors in 3 awg sizes.

VOLTAGE RATING: 500 V peak

TEST VOLTAGE: 1200 V

CONDUCTOR STRANDING:

Fine strands of copper wire according to VDE 0295, Class 5.

OUTER JACKET:

Gray thermoplastic according to RAL 7001.

TEMPERATURE RANGE: Static, -30 to +80 Deg C.

BENDING RADIUS: Static, 10 x Cable diameter.

COLOR CODE: Yellow and Red pairs with consecutive numbers.

For complete specifications for the cables on this page, please dial our Literature by FAX number from your fax machine, 1-800-214-7914 and ask for document 275.

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Cable Ties, Flat Ribbon Cable, Custom Assemblies, and Connectors
Coaxial Hi Temperature and Data Cable, Braids and Ground Straps**

MULTI CONDUCTOR, ULTRA-FLEXIBLE MICRO MINIATURE LEAD WIRE

PRODUCT DESCRIPTION

Fine stranding soft bare annealed copper insulated with soft pvc. For internal wiring where maximum flexibility and miniature sizes are required. Used in biomedical instruments, gyroscopes, silicon and other specialized electronic applications. Available in silicon rubber and FEP teflon.


ABLE ULTRA FLEX-MICRO MINIATURE

ABLE PART NO.	CONDUCTOR		INSUL. THICKNESS		NOM. DIAMETER		MAX. VOLTAGE
	AWG.	STRAND	IN.	MM.	IN.	MM.	
16138	38	7 x 46	.005	0.127	.015	0.381	200
16136	36	7 x 44	.005	0.127	.016	0.406	200
16134	34	10 x 44	.005	0.127	.017	0.432	200
16132	32	18 x 44	.007	0.178	.023	0.584	300
16130	30	28 x 44	.010	0.254	.030	0.762	600
16129	29	51 x 46	.010	0.254	.033	0.838	600
16128	28	41 x 44	.010	0.254	.035	0.899	600
16127	27	48 x 44	.010	0.254	.037	0.940	600
16126	26	66 x 44	.010	0.254	.042	1.067	600
16124	24	105 x 44	.015	0.381	.058	1.473	600
16122	22	168 x 44	.015	0.381	.064	1.626	600
16120	20	259 x 44	.010	0.254	.061	1.549	600
16120HW	20	105 x 40	.032	0.812	.100	2.540	600
16118	18	413 x 44	.010	0.254	.072	1.829	600

PART NO	NO OF COND.	CONDUCTOR AWG x STRAND	NOM OD IN MM	BRAID CONSTRUCTION	NOM OD IN MM	PART NO
6238-2	2	38 / 16 x 50	048 1,22	44awg / 12 x 6	057 1,45	6338-2
6238-3	3	38 / 16 x 50	050 1,27	44awg / 12 x 6	059 1,50	6338-3
6238-4	4	38 / 16 x 50	054 1,37	44awg / 16 x 5	063 1,60	6338-4
6238-5	5	38 / 16 x 50	058 1,47	44awg / 16 x 6	067 1,70	6338-5
6236-2	2	36 / 25 x 50	052 1,32	44awg / 16 x 5	061 1,55	6336-2
6236-3	3	36 / 25 x 50	054 1,37	44awg / 15 x 5	063 1,60	6336-3
6236-4	4	36 / 25 x 50	059 1,50	44awg / 16 x 6	068 1,73	6336-4
6236-5	5	36 / 25 x 50	063 1,60	44awg / 16 x 6	072 1,83	6336-5
6234-2	2	34 / 40 x 50	056 1,42	44awg / 16 x 5	065 1,65	6334-2
6234-3	3	34 / 40 x 50	059 1,50	44awg / 16 x 6	068 1,73	6334-3
6234-4	4	34 / 40 x 50	063 1,60	44awg / 16 x 6	072 1,83	6334-4
6234-5	5	34 / 40 x 50	069 1,75	44awg / 16 x 7	078 1,98	6334-5
6232-2	2	32 / 65 x 50	060 1,52	44awg / 16 x 6	069 1,75	6332-2
6232-3	3	32 / 65 x 50	063 1,60	44awg / 16 x 6	072 1,83	6332-3
6232-4	4	32 / 65 x 50	068 1,73	44awg / 16 x 7	077 1,96	6332-4
6232-5	5	32 / 65 x 50	074 1,88	44awg / 16 x 7	083 2,11	6332-5
6230-2	2	30 / 40 x 46	064 1,63	44awg / 16 x 6	073 1,85	6330-2
6230-3	3	30 / 40 x 46	067 1,70	44awg / 16 x 7	076 1,93	6330-3
6230-4	4	30 / 40 x 46	073 1,85	44awg / 16 x 7	082 2,08	6330-4
6230-5	5	30 / 40 x 46	079 2,01	44awg / 16 x 8	088 2,24	6330-5

MULTI CONDUCTOR, ULTRA-FLEXIBLE MICRO MINIATURE CABLE

PRODUCT DESCRIPTION

Fine strand conductors insulated with soft pvc. Shielded cables constructed with an extremely fine tinned copper braid. Used in various electronic instruments where miniature size & maximum flexibility is required.

INSULATION THICKNESS .005"

JACKET THICKNESS .010"

RATINGS, 300V, 90 DEG. C


ABLE ULTRA FLEX-MICRO MINIATURE

SINGLE CONDUCTOR, EXTRA-FLEXIBLE GROUND AND POWER CABLE

PRODUCT DESCRIPTION

Fine strand pvc insulated. For applications requiring high current carrying capacity and maximum flexibility. Rated at 300V, 80 deg. C. Available in silicon rubber and FEP teflon.


ABLE HI-FLEX GROUND & POWER CABLE

ABLE PART NO.	CONDUCTOR		NO. OF ENDS	Circular MILS	Insulation Thickness IN.	Nominal Diameter IN.	Nominal AMPS
	AWG.	STRAND					
16518	18	7 x 9 x 46	63	1,575	.015"	.084"	12
16516	16	7 x 15 x 36	105	2,625	.015"	.099"	16
16514	14	7 x 24 x 36	168	4,200	.020"	.129"	20
16512	12	7 x 37 x 36	259	6,475	.020"	.149"	25
16510	10	7 x 59 x 36	413	10,325	.020"	.177"	40
16508	08	7 x 95 x 36	665	16,625	.030"	.230"	55
16506	06	7 x 150 x 36	1050	26,250	.045"	.305"	85
16504	04	7x7x37x36	1666	41,650	.045"	.409"	105
16502	02	7x7x54x36	2646	66,150	.045"	.474"	140
165010	1/0	7x7x86x36	4214	105,350	.060"	.600"	205
165020	2/0	7x7x108x36	5292	132,300	.060"	.662"	225
165030	3/0	7x7x137x36	6713	167,800	.060"	.724"	260
165040	4/0	19x7x64x36	8512	212,800	.060"	.814"	300

For Literature by FAX, check the documents you want and call 1-800-214-7914 from your fax machine

www.ablewire-cable.com

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11 South Broad St., Peekskill, NY 10566

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International: 1-914-736-1010

FAX 1-800-932-9225
FAX 1-914-736-1899

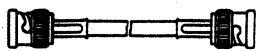
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Electronic Cable Hook Up Wire, Power Cords, Shrink and Flex Tubing, Cable Ties, Flat Ribbon Cable, Custom Assemblies, and Connectors, Coaxial HI Temperature and Data Cable, Braids and Ground Straps

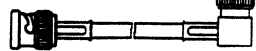
CO-AXIAL CABLE ASSEMBLIES

BNC TO BNC

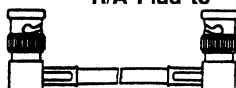
Plug to Plug



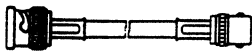
Plug to R/A Plug



R/A Plug to



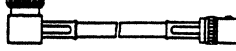
Plug to Jack



Plug to Bulkhead Jack



R/A Plug to Jack

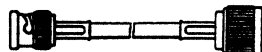


Jack to Jack



BNC TO N

Plug to Plug



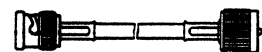
BNC TO TNC

Plug to Plug



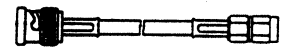
BNC TO UHF

Plug to Plug

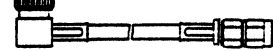


BNC TO SMA

Plug to Plug

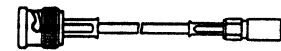


R/A Plug to Plug



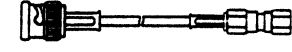
BNC TO SMB

Plug to Plug



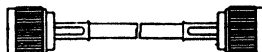
BNC TO SMC

Plug to Plug

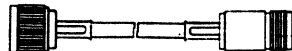


N TO N

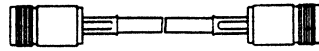
Plug to Plug



Plug to Jack

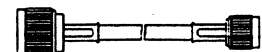


Jack to Jack



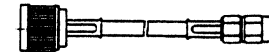
N TO TNC

Plug to Plug



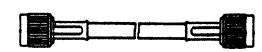
N TO SMA

Plug to Plug



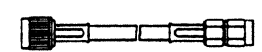
TNC TO TNC

Plug to Plug



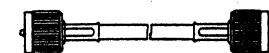
TNC TO SMA

Plug to Plug



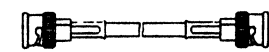
UHF TO UHF

Plug to Plug



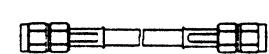
MHV TO MHV

Plug to Plug

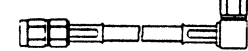


SMA TO SMA

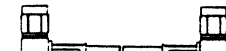
Plug to Plug



Plug to R/A Plug

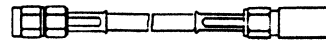


R/A Plug to R/A Plug

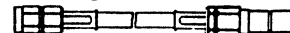


SMA TO SMB

Plug to Plug

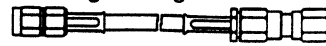


Plug to Jack

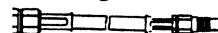


SMA TO SMC

Plug to Plug

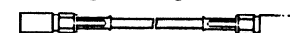


Plug to Jack

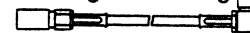


SMB TO SMB

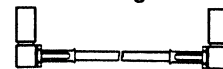
Plug to Plug



Plug to R/A Plug



R/A Plug to R/A Plug



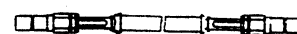
Plug to Jack



Plug to Bulkhead Jack

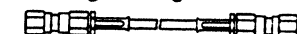


Jack to Jack

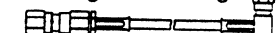


SMC TO SMC

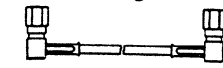
Plug to Plug



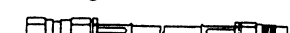
Plug to R/A Plug



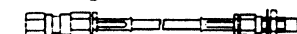
R/A Plug to R/A Plug



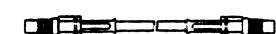
Plug to Jack



Plug to Bulkhead Jack



Jack to Jack



This is a partial listing of our line of co-ax jumpers. For complete information on your choice of cables and other items available, please call our lit-by-fax and pick document 750.

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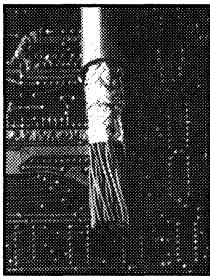
HIGH PERFORMANCE ELECTRONIC CABLES

In today's world of sophisticated electronics, every application is critical! Computers efficiently monitor and control multi-million dollar production lines and processes.

The integrity of your system is only as solid as the electronic cable on which the control signals are communicated. If the cable fails, your system is down. Production time...efficiency...profits...lost. If you think that wire and cable is just wire and cable...think again.

The cable you install must be capable of efficient signal transmission while it withstands the environmental abuses of heat or cold, intermittent or continuous motion, abrasion, immersion in oils or EMI/RFI interference.

XTRA-GUARD® cables are "hazard-matched" to survive in the most demanding environments. A wide range of designs are available including our newest design... XTRA-GUARD® Flexible Cables. Remember, a cable is not just a cable.



XTRA-GUARD® 1

Extra-Premium Grade
PVC Jacket For
Extended Cable Life



LISTED



Certified
Canadian Standards Association



Passes
UL VW-1 Flame Test
Underwriters Laboratories Inc.

SPECIFY AND CHOOSE XTRA-GUARD®1 FOR:

- A General Purpose Electronic Cable for Internal or External Wiring of OEM Equipment
- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- Fully Color-coded, Tinned Copper Conductors
- Premium Grade PVC Insulation and Jacket
- Jacket Colors: Gray and Black
- UL Recognition and CSA Certification
- Available in Both 300 Volt and 600 Volt Cable Styles
- In Stock - Immediate Availability

Alpha's FIT® Shrinkable Tubing Recommendation:

- FIT-221 - Flexible Polyolefin (indoor) or FIT-321 - Adhesive-lined Polyolefin (outdoor)



XTRA-GUARD® 2

Industrial Strength,
Extra-Rugged
Polyurethane Jacket



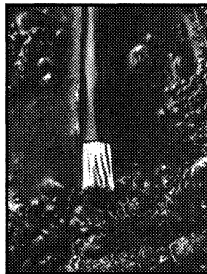
Recognized
Component



Underwriters Laboratories Inc.



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UL VW-1 Flame Test
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XTRA-GUARD® 3

Extra-Durable
Outdoor
Direct-Burial Jacket



Suitable for
Direct Burial

SPECIFY AND CHOOSE XTRA-GUARD®2 FOR:

- Unmatched Resistance to Oils, Fuels, Solvents and Water
- Twice the Tensile Strength of PVC
- Three-times the Tear and Abrasion Resistance of PVC
- Applications Requiring Ultraviolet Light Stability and Fungus Resistance
- Superior Low-temperature Operation to -20°C
- Fully Color-coded PVC Insulated Tinned Copper Conductors With a Specially Formulated Extra-rugged Polyurethane Jacket
- Jacket Colors: Yellow, Orange, Blue, Green, Red, Black, White and Gray
- UL Recognition and CSA Certification
- Available in Both 300 Volt and 600 Volt Cable Styles

Alpha's FIT® Shrinkable Tubing Recommendation:

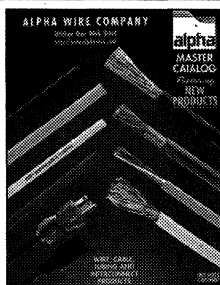
- FIT-750 - Adhesive-lined Polyolefin

SPECIFY AND CHOOSE XTRA-GUARD®3 FOR:

- Direct Burial Applications in Wet Earth Without the Costly Use of Conduit
- Five-times the Water Resistance of Conventional PVC
- A Specially Formulated Ethylene Propylene Copolymer Jacket for Outstanding Service Life in Outdoor Use
- Unmatched Ultraviolet Light Stability
- Available in Both 300 Volt and 600 Volt Cable Styles
- Jacket Color: Black

Alpha's FIT® Shrinkable Tubing Recommendation:

- FIT-700 - Adhesive-lined Polyolefin



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**Extra-Protection,
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TPE Jacket**



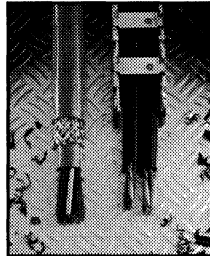
Pennsylvania Bureau of Deep Mine
Safety Approved P-MWMS-1-85

SPECIFY AND CHOOSE XTRA-GUARD® 4 FOR:

- Unmatched Cable Performance in Both High and Low Temperature Cable Applications from -60°C to +125°C
- Three-times the Low-temperature Flexibility of PVC
- Outstanding Resistance to Oils, Fuels, Solvents and Water
- Low HCL Content for Safety
- Fully Flame-resistant Color-coded TPE (thermoplastic elastomer) Insulated Conductors and a TPE Jacket
- Passes the 210,000 BTU Flame Test
- Available in Both 300 Volt and 600 Volt Cable Styles
- UL Rated type TC (600 Volt) and Type PLTC (300 Volt) for Cable Tray Applications
- Pennsylvania Bureau Deep Mine Safety Approved (P-MWMS-1-85) for Mine-wide Monitoring Systems
- Ultraviolet Light Stability (in all colors)
- Jacket Colors: Yellow, Orange, Blue, Green, Red, Black, White and Gray
- UL Recognition and CSA Certification

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-600** -Low Temp, Flexible Elastomer or
- **FIT-400** -Heat/Chemical Resistant FEP Teflon®



XTRA-GUARD® Flexible Cables

THE AVAILABLE
ALTERNATIVESM



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Component
Underwriters Laboratories Inc.

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Canadian Standards Association

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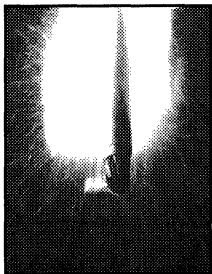
- General Purpose Electronic Cables where Flexibility is Required, Providing Three-times the Flexibility of Ordinary PVC Cable
- Outstanding Oil and Chemical Resistant Jacket That Meets the Stringent Requirements of the VDE 0472, Section 803 Oil Test
- Black Numbered Conductors and Standard Green/Yellow Ground Conductor on the Outer Layer
- NOT FOR USE IN CABLE TRACK
- Stocked in 600 Volt Shielded and Unshielded Constructions

SPECIFY AND CHOOSE XTRA-GUARD® CONTINUOUS USE FLEXIBLE CABLES FOR:

- Unmatched Flexibility and Durability in Continuous Motion Cable Track Applications
- Twice the Flexibility of Ordinary PVC Cable
- Super-flexible Cables Which Have Been Tested to MIL-C-13777G for Flex Life
- For Prolonged Use in Heavy-duty, High Speed Cable Track Applications
- Red Numbered Conductors and Standard Green/Yellow Ground Conductor on the Outer Layer
- Stocked in 600 Volt Shielded and Unshielded Constructions

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-FLEX** -Highly Flexible Silicone Rubber or
- **FIT-650** -Oil Resistant Viton



XTRA-GUARD® 5

**Extra High-Temperature/
Chemical-Resistant FEP
Teflon® Jacket**



Pennsylvania Bureau of Deep Mine
Safety Approved P-MWMS-1-85

SPECIFY AND CHOOSE XTRA-GUARD® 5 FOR:

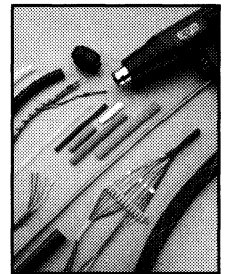
- FEP Teflon® Cables for Unmatched Performance at Temperatures from -80°C to +200°C
- 100% Impervious to All Chemicals, Acids, Fuels, Solvents and Water
- 20-30% Smaller Cable Diameter than Conventional Cables
- Extremely Low Friction Jacket for Ease of Cable Routing
- Excellent Ampacity Rating
- Low Dielectric Constant of 2.1
- Plenum-rated Applications
- Pennsylvania Bureau Deep Mine Safety Approved (P-MWMS-1-85) for Mine-Wide Monitoring Systems
- Jacket Color: Translucent/Tan
- UL Recognition and CSA Certification
- Available in 300 Volt Cable Styles

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-650** -High/Low Temperature Viton or
- **FIT-400** -FEP Teflon®

Teflon is a registered trademark of E.I. DuPont Co.

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Environmental
Cable/Connector
Sealing and Protection!**



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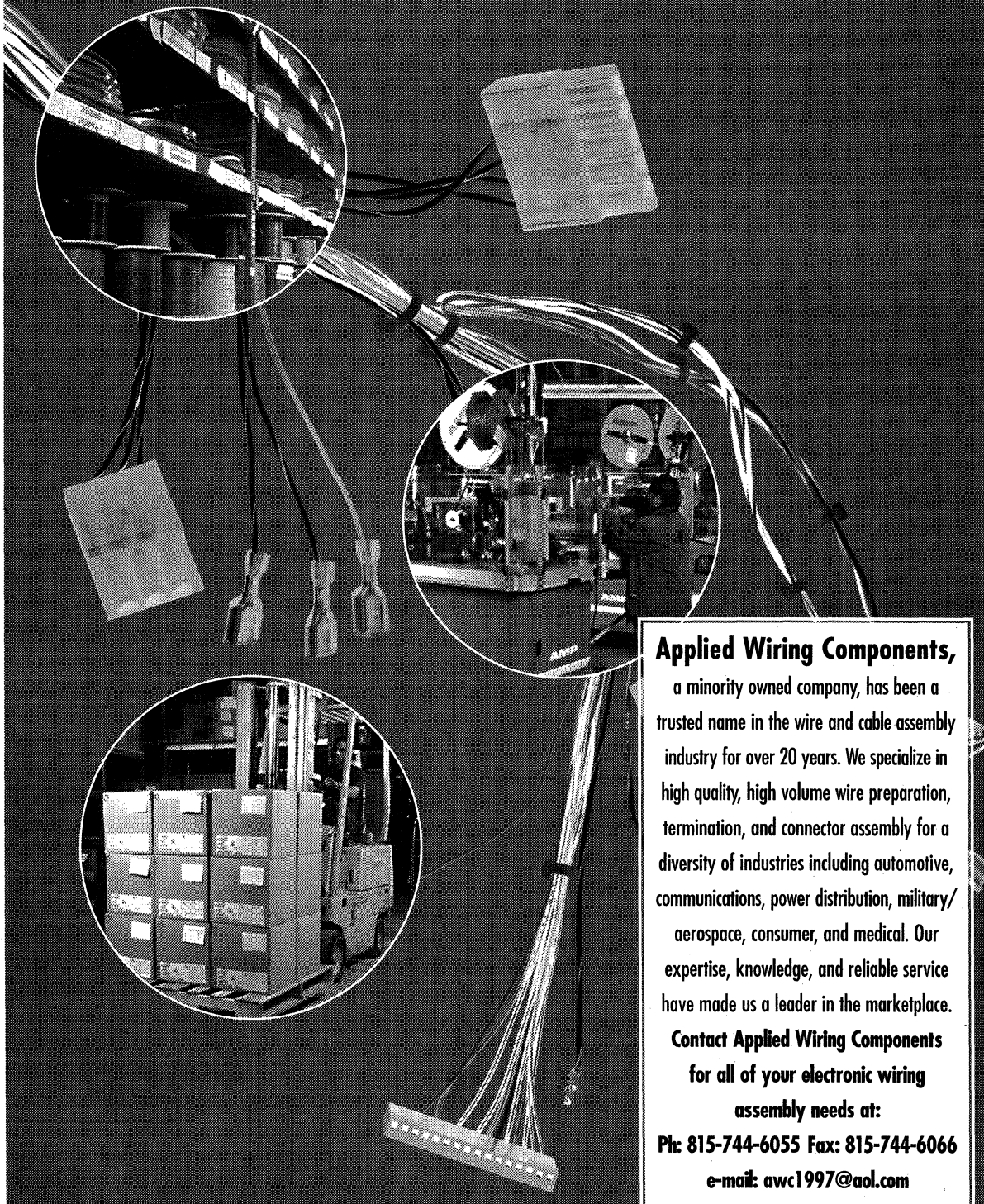
To make this selection process easier, a suitable **FIT** Shrinkable Tubing product has been recommended for every **XTRA-GUARD** cable type.



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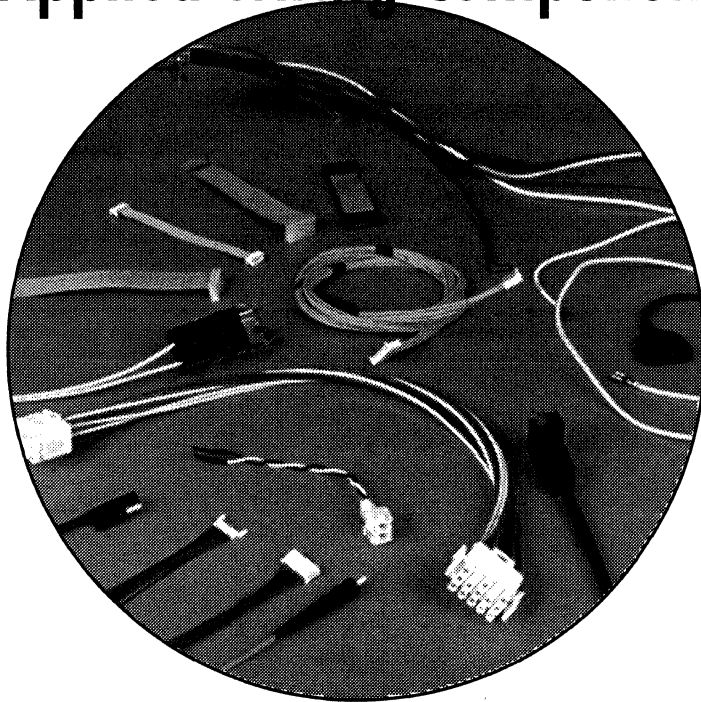
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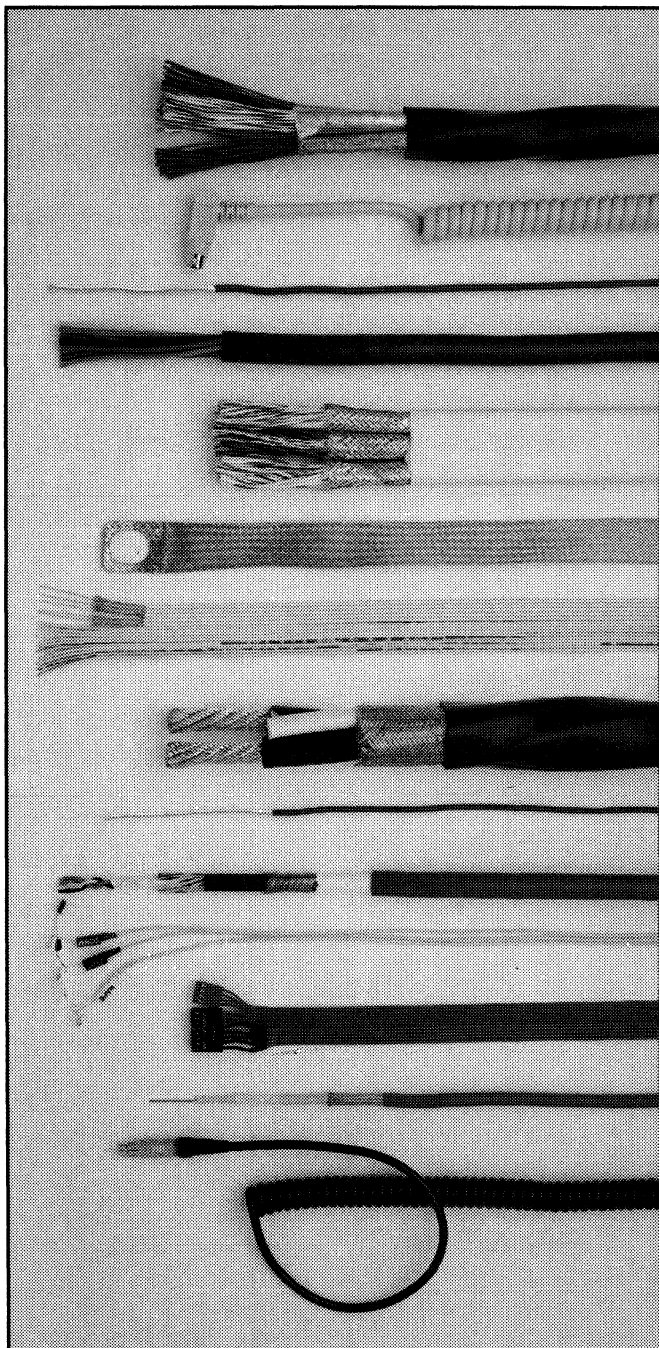
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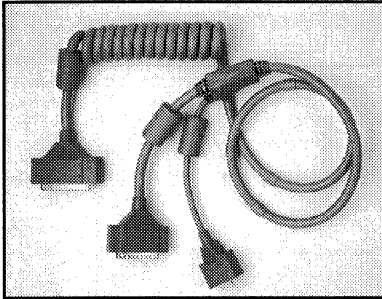
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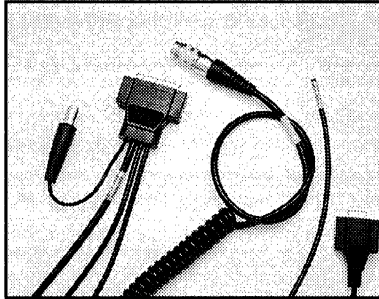
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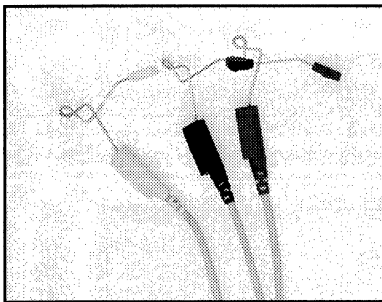
INTERCONNECTS



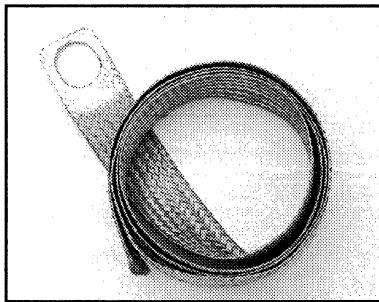
Combining a video cable and data cable into one, Bay's design features shielding to eliminate crosstalk and highly recoverable coiled cords for application reliability.



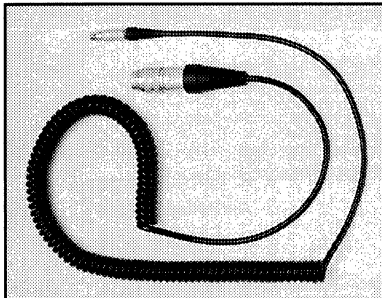
Unique cable configuration combines five different connectors for accurate signal routing. Custom conductors, shielding and jacketing for small size, maximum performance.



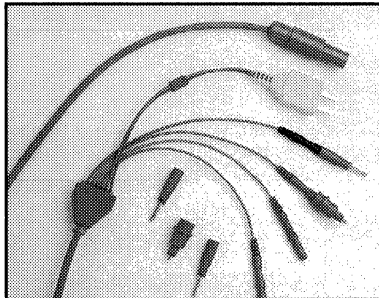
A Bay designed and manufactured cable with custom connectors. EMI shielding provides the maximum electrical performance necessary for medical applications.



Bay's innovative, custom-designed braided ground cable with integrated connection provides a low cost solution with significant space savings.



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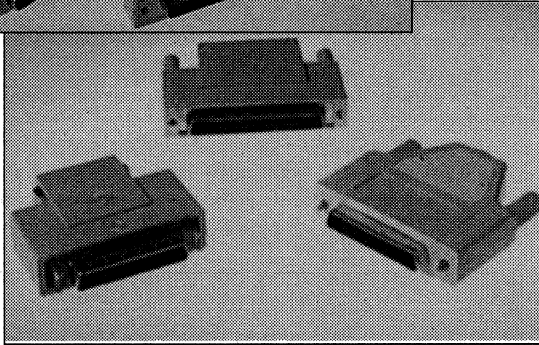
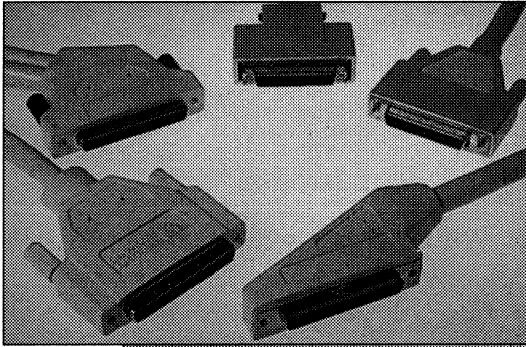
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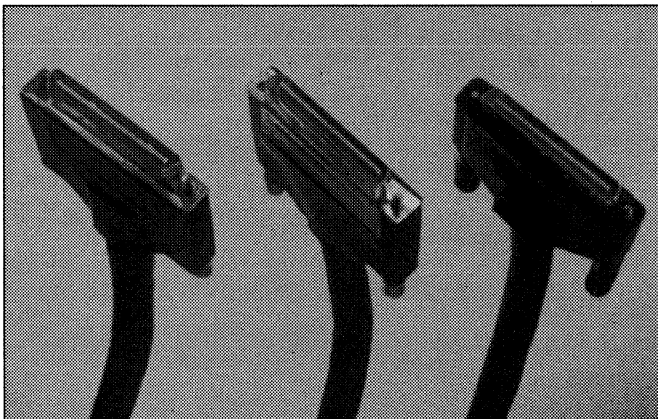
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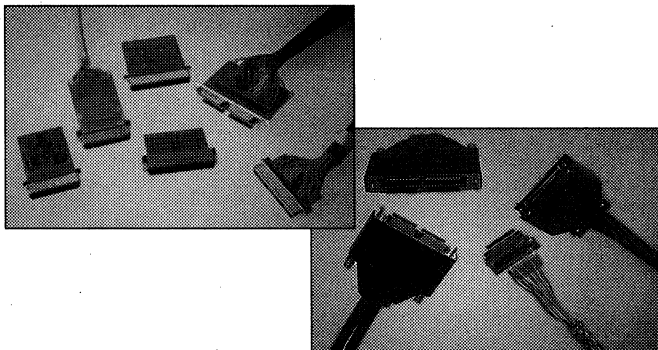
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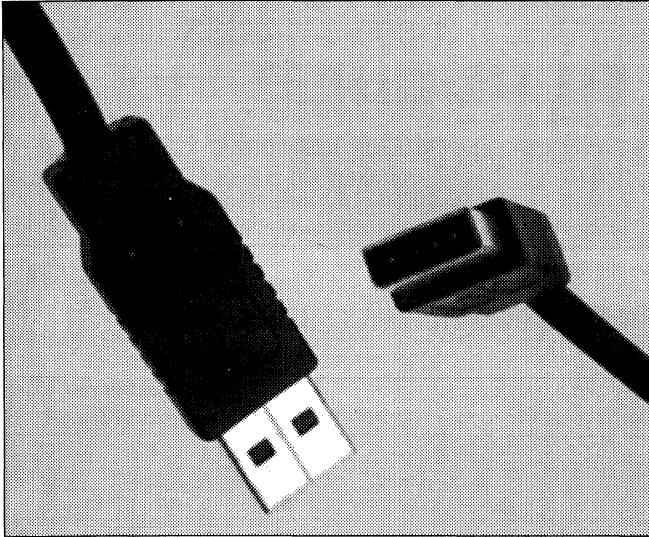
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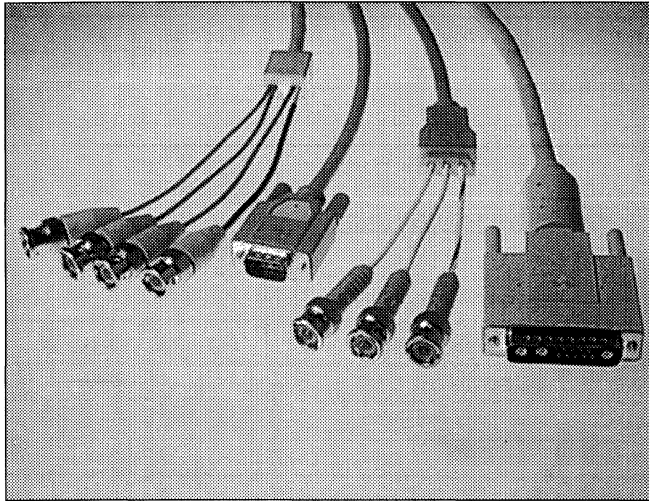
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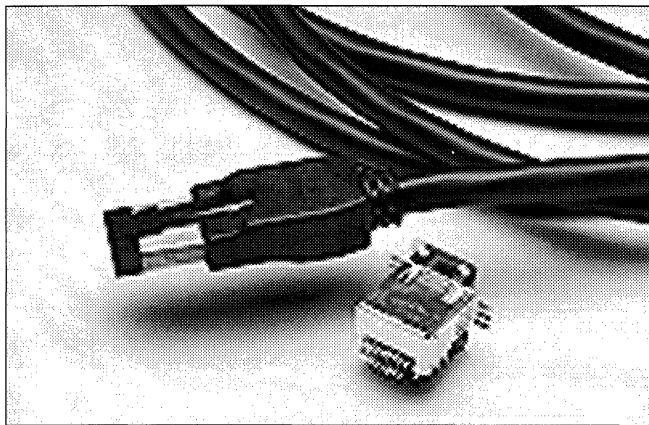
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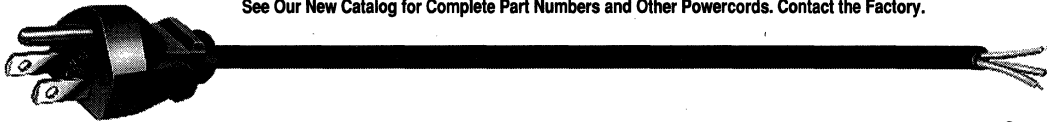
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UL, CSA



Nondetachable with NEMA 5-15P Grounding Plug Aluminum Foil Shielded (Power Supply Cords, 3 Conductor, PVC Jacket)

Outer Jacket Removed 2" Conductors Stripped 5/8"

Part No.	Cord Length		Conductor		Nominal O.D.		Power Rating	Cord Type / Temp.	Plug No.		Color		Jacket Color
	ft.	m	AWG	Strand	Inch	mm			Male	Fem.	Code	Color	
IPC-64001A	6'7"	2	18	41 x 34	.260	6.6	1250 Watts 10A @ 125V	SVT/Alum. Foil Shield / 60°C	LP-31	--	NA	Black	
IPC-64012A	6'7"	2	18	41 x 34	.330	8.4	1250 watts 10A @ 125V	SJT/Alum. Foil Shield / 60°C	LP-31	--	NA	Black	
Unshielded													
IPC-65001A	6'7"	2	18	41x34	.250	6.4	1250 Watts 10A @ 125V	SVT / 60°C	LP-30	--	NA	Black	
IPC-65019A	6'7"	2	18	41x34	.320	8.2	1250 Watts 10A @ 125V	SJT / 60°C	LP-30	--	NA	Black	
IPC-65029A	6'7"	2	16	67x34	.345	8.8	1625 Watts 13A @ 125V	SJT / 60°C	LP-31	--	NA	Black	
IPC-65032A	9'10"	3	14	41x30	.380	9.7	1875 Watts 15A @ 125V	SJT / 60°C	LP-31	--	NA	Black	



UL, CSA

Detachable with Nema 5-15P Grounding Plug & IEC Female Connector, Aluminum foil Shield (Power Supply Cords, 3 Conductor, PVC Jacket)

IPC-64007A	6'7"	2	18	41x34	.260	6.6	1250 Watts 10A @ 125V	SVT/Alum. Foil Shield / 60°C	LP-31	LS-13	NA	Black	
IPC-64009A	6'7"	2	18	41x34	.330	8.4	1250 Watts 10A @ 125V	SJT/Alum. Foil Shield / 60°C	LP-31	LS-13	NA	Black	
Unshielded													
IPC-65010A-00	6'	1.83	18	41x34	.250	6.4	1250 Watts 10A @ 125V	SVT / 60°C	LP-30	LS-13	NA	Black	
IPC-65008A	6'7"	2	18	41x34	.320	8.2	1250 Watts 10A @ 125V	SJT / 60°C	LP-31	LS-13	NA	Black	
IPC-65027A	6'7"	2	16	65x34	.345	8.8	1625 Watts 13A @ 125V	SJT / 60°C	LP-31	LS-13	NA	Black	



UL, CSA

Electronic Jumper Cord with IEC Male and Female, Aluminum Foil Shielded (Power Supply Cords, 3 Conductor, PVC Jacket)

IPC-64011A	3'3"	1	18	41x34	.260	6.6	1250 Watts 10A @ 125V	SVT/Alum. Foil Shield / 60°C	LS-14	LS-13	NA	Black	
IPC-64018A	3'3"	1	18	41x34	.330	8.4	1250 Watts 10A @ 125V	SJT/Alum. Foil Shield / 60°C	LS-14	LS-13	NA	Black	
Unshielded													
IPC-65036A	1'8"	.50	18	41x34	.320	8.2	1250 Watts 10A @ 125V	SJT / 60°C	LS-14	LS-13	NA	Black	
IPC-65011A	3'3"	1	18	41x34	.320	8.2	1250 Watts 10A @ 125V	SJT / 60°C	LS-14	LS-13	NA	Black	



UL, CSA

SPT Nondetachable with NEMA 1-15P, Unshielded (Power Supply Cords, 2 Conductor, PVC Jacket)

Conductors Split 1 1/2", stripped 5/8"

IPC-65012A	6'	1.83	18	41x34	.110 x .215	2.8 x 5.5	1250 Watts 10A-125V	SPT-1 / 60°C	LP-5W Polarized	--	NA	Black
IPC-65059A	6'	1.83	18	41x34	.135 x .270	3.45 x 6.9	1250 Watts 10A-125V	SPT-2 / 60°C	LP-5W Polarized	--	NA	Black
IPC-65061A	6'	1.83	16	65x34	.145 x .290	3.7 x 7.4	1625 Watts 13A-125V	SPT-2 / 60°C	LP-5W Polarized	--	NA	Black



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Nondetachable , 3 Conductor with Straight Dual Earthing Plug, Unshielded (Standard European Power Supply Cords, Jacket removed 30mm, conductors stripped 7mm)

Part No.	Cord Length		Conductor mm ²	Nominal O.D.		Power Rating	Cord Type / Temp.	Plug No.			Jacket Color
	Ft	M		Inch	mm			Male	Fem.	Color Code	
IPC-66013A	6'7"	2	1.00	.295	7.5	10A @ 250V	HO5VVF3 / 70°C	LP-34A	—	CEE	Black



Nondetachable , 3 Conductor with IEC Straight Female, Unshielded (Standard European Power Supply Cords, PVC Jacketed) Jacket removed 30mm, conductors stripped 7mm

IPC-66043A	6'7"	2	1.00	.295	7.5	10A @ 250V	HO5VVF3 / 70°C	--	LS-13	CEE	Black
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Nondetachable, 3 Conductor with IEC Male Plug, Unshielded (Standard European Power Supply Cords, PVC Jacketed) Jacket removed 30mm, conductors stripped 7mm

IPC-66049A	1'8"	.50	1.00	.295	7.5	10A @ 250V	HO5VVF3 / 70°C	LS-14	--	CEE	Black
IPC-66050A	3'3"	1	1.00	.295	7.5	10A @ 250V	HO5VVF3 / 70°C	LS-14	--	CEE	Black
IPC-66051A	6'7"	2	1.00	.295	7.5	10A @ 250V	HO5VVF3 / 70°C	LS-14	--	CEE	Black



Detachable, 3 Conductor with Straight Dual Earthing Plug & IEC Straight Female (Standard European Power Supply Cords, PVC Jacketed)

IPC-66021A	6'7"	2	1.00	.295	7.5	10A @ 250V	HO5VVF3 / 70°C	LP-34A	LS-13	CEE	Black
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Jumper Cord, 3 Conductor with IEC Male Plug and IEC Female Connector (Standard European Power Supply Cords, PVC Jacketed)

IPC-66037A	1'8"	.5	1.00			10A @ 250V	HO5VVF3 / 70°C	LS-14	LS-13	CEE	Black
IPC-66038A	3'3"	1	1.00			10A @ 250V	HO5VVF3 / 70°C	LS-14	LS-13	CEE	Black



Detachable with Male Grounding Plug and IEC Straight Female Connector (Power Supply Cords, 3 Conductor, PVC Jacket for use in Australia)

IPC-66078A	6'7"	2	.75	.248	6.3	7.5A @ 250V	Light Duty LFC3R / 70°C	LP-23	LS-13	CEE	Black
IPC-66011A	6'7"	2	.75	.280	7.2	7.5A @ 250 V	Ordinary Duty GFC3R / 70°C	LP-23	LS-13	CEE	Black

BRIM WIRE — CABLE — TUBING — HARDWARE

BRIM ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

BRIM CHV CORONA RESISTANT HIGH VOLTAGE TEFLON* CABLE

BRIM CHV eliminates the need for bulky, thick insulation, as used with silicone rubber high voltage cables, and provides high temperature resistance not available with polyethylene insulated high voltage cables, plus the added benefit of retarding and deterring corona discharges. Even under severe stress, including mechanical strain, moisture, corona or chemical, or high temperature conditions, there is no cracking of the insulation. Cable construction meets and exceeds MIL-W-16878D.

OPERATING VOLTAGE: Voltage capabilities are based on the thickness of the jacket.

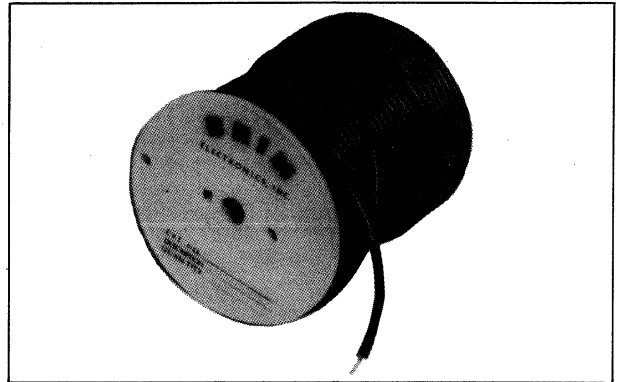
OPERATING TEMPERATURE: -90°C to +250°C

DESCRIPTION: Silver plated copper conductor, per QQ-W-343, special corona retarding insulation, TFE tape wrap insulation, & a color coded jacket overall.

STD. COLORS: Red, White, Black, Green, Blue, Yellow, Orange, Brown, Purple, Gray. Striped colors are also available.

STD. P-U: 250', 500', 1000'.

* DuPont



Brim No.	AWG	Strand.	Volt Rating		Nom. O.D.
			DC	AC	
CHV26-2	26	7/34	10000	2500	.074"
CHV26-2.5	26	7/34	12500	3800	.084"
CHV26-3	26	7/34	15000	4500	.094"
CHV26-3.5	26	7/34	17500	5400	.104"
CHV26-4	26	7/34	20000	6000	.114"
CHV26-5	26	7/34	25000	7500	.134"
CHV26-6.5	26	7/34	32500	10000	.164"
CHV26-8	26	7/34	40000	12000	.194"
CHV24-2	24	19/36	10000	2500	.080"
CHV24-2.5	24	19/36	12500	3800	.090"
CHV24-3	24	19/36	15000	4500	.100"
CHV24-3.5	24	19/36	17500	5400	.110"
CHV24-4	24	19/36	20000	6000	.120"
CHV24-5	24	19/36	25000	7500	.140"
CHV24-6.5	24	19/36	32500	10000	.170"
CHV24-8	24	19/36	40000	12000	.200"
CHV24-10	24	19/36	50000	15000	.240"
CHV22-2	22	19/34	10000	2500	.086"
CHV22-2.5	22	19/34	12500	3800	.096"
CHV22-3	22	19/34	15000	4500	.106"
CHV22-3.5	22	19/34	17500	5400	.116"
CHV22-4	22	19/34	20000	6000	.126"
CHV22-5	22	19/34	25000	7500	.146"
CHV22-6.5	22	19/34	32500	10000	.176"
CHV22-8	22	19/34	40000	12000	.206"
CHV22-10	22	19/34	50000	15000	.246"
CHV20-2	20	19/32	10000	2500	.094"
CHV20-2.5	20	19/32	12500	3800	.104"
CHV20-3	20	19/32	15000	4500	.114"
CHV20-3.5	20	19/32	17500	5400	.124"
CHV20-4	20	19/32	20000	6000	.134"
CHV20-5	20	19/32	25000	7500	.154"
CHV20-6.5	20	19/32	32500	10000	.184"
CHV20-8	20	19/32	40000	12000	.214"
CHV20-10	20	19/32	50000	15000	.254"
CHV18-2	18	19/30	10000	2500	.103"
CHV18-2.5	18	19/30	12500	3800	.113"

CONSTRUCTION VARIATIONS AVAILABLE TO ORDER.

Brim No.	AWG	Strand.	Volt Rating		Nom. O.D.
			DC	AC	
CHV18-3	18	19/30	15000	4500	.123"
CHV18-3.5	18	19/30	17500	5400	.133"
CHV18-4	18	19/30	20000	6000	.143"
CHV18-5	18	19/30	25000	7500	.163"
CHV18-6.5	18	19/30	32500	10000	.193"
CHV18-8	18	19/30	40000	12000	.223"
CHV18-10	18	19/30	50000	15000	.263"
CHV16-2	16	19/29	10000	2500	.112"
CHV16-2.5	16	19/29	12500	3800	.122"
CHV16-3	16	19/29	15000	4500	.132"
CHV16-3.5	16	19/29	17500	5400	.142"
CHV16-4	16	19/29	20000	6000	.152"
CHV16-5	16	19/29	25000	7500	.172"
CHV16-6.5	16	19/29	32500	10000	.202"
CHV16-8	16	19/29	40000	12000	.232"
CHV16-10	16	19/29	50000	15000	.272"
CHV14-2	14	19/27	10000	2500	.127"
CHV14-2.5	14	19/27	12500	3800	.137"
CHV14-3	14	19/27	15000	4500	.147"
CHV14-3.5	14	19/27	17500	5400	.157"
CHV14-4	14	19/27	20000	6000	.167"
CHV14-5	14	19/27	25000	7500	.187"
CHV14-6.5	14	19/27	32500	10000	.217"
CHV14-8	14	19/27	40000	12000	.247"
CHV14-10	14	19/27	50000	15000	.287"
CHV12-2	12	19/25	10000	2500	.147"
CHV12-2.5	12	19/25	12500	3800	.157"
CHV12-3	12	19/25	15000	4500	.167"
CHV12-3.5	12	19/25	17500	5400	.177"
CHV12-4	12	19/25	20000	6000	.187"
CHV12-5	12	19/25	25000	7500	.207"
CHV12-6.5	12	19/25	32500	10000	.237"
CHV12-8	12	19/25	40000	12000	.267"
CHV12-10	12	19/25	50000	15000	.307"
CHV10-2	10	37/26	10000	2500	.169"
CHV10-2.5	10	37/26	12500	3800	.179"
CHV10-3	10	37/26	15000	4500	.189"
CHV10-3.5	10	37/26	17500	5400	.199"

BRIM HIGH TEMPERATURE LEAD WIRE

These small diameter high temperature lead wires allow unique constructions. The basic wire conforms to MIL-W-3861-stranded nickel plated copper; when shielded, nickel plated copper shielding is per MIL-N-46026A. Rated for 100 Volts RMS.*

Type 1: 800°F High Temperature Rating — Suitable for aircraft, or missile lead wire, heaters, furnaces, ovens and kilns for operations between 500°F to 800°F. Cond. insulation: Fiberglass braid, impregnated with a silicone varnish, over a stranded nickel plated conductor.

Type 2: 1500°F High Temperature Rating — Suitable as a radiation resistant aircraft, or missile lead wire, furnaces, ovens and kilns for operations between 800°F to 1500°F. Cond. insulation: Inorganic braid over a stranded nickel plated copper conductor.

Type 3: 2000°F High Temperature Rating — Suitable as a radiation resistant aircraft or missile lead wire for operations between 1500°F to 2000°F. Cond. Insulation: special formulated ceramic braid over a stranded nickel plated copper conductor, and a nickel plated braided shield overall.

* For dry locations.

600 V RMS is available to order.

CONSTRUCTION VARIATIONS ARE AVAILABLE TO ORDER

UNSHIELDED



Brim No.		AWG	Strand.	Nom. O.D.	Std. P-U
Type 1	Type 2				
2101/22	2102/22	22	19/34	.070"	500', 1000'
2101/20	2102/20	20	19/32	.075"	500', 1000'
2101/18	2102/18	18	19/30	.085"	500', 1000'

SHIELDED



Brim No. Type 3	AWG	Strand.	Nom. O.D.	Std. P-U
2103/22	22	19/34	.108"	500', 1000'
2103/20	20	19/32	.112"	500', 1000'
2103/18	18	19/30	.122"	500', 1000'

BRIM WIRE — CABLE — TUBING — HARDWARE

BRIM ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

TFE & FEP TEFLON SHIELDED CABLES • BRIMCROM • BRIMFLYX • STAINLESS STEEL TUBULAR BRAID
TEFLON IMPREGNATED BRAID OVER SHIELD PER MIL-W-16878 • SHIELDED RETRACTILE CORD



DESCRIPTION: One to five twisted conductors of Type E extruded TFE* insulation (.010" wall), over a stranded silver plated copper conductor. If shielded, braided silver plated shield with a min. coverage of 90% over the conductor(s). When jacketed, either a fused double reversed TFE tape wrap jacket, a Teflon* impregnated fiberglass braided jacket, or an extruded FEP jacket. Cables are fungus, solvent, flame, acid, alkali, and oil resistant. Rated for 600 Volts. Stranding: 26 AWG - 7 strands, 24 AWG - 16 AWG - 19 strands. Color code: 1-White, 2-Black, 3-Red, 4-Green, 5-Yellow. Jacket color: White. OPER.TEMP.: TFE -90°C to +200°C. FEP: -65°C to +200°C.

Brim No.	No. Cond.	AWG	Nom. O.D.	Brim No.	No. Cond.	AWG	Nom. O.D.
1751	1	26	.067"	1754/2	2	20	.157"
1751/2	2	26	.115"	1754/3	3	20	.167"
1752	1	24	.080"	1754/4	4	20	.182"
1752/2	2	24	.126"	1754/5	5	20	.200"
1752/3	3	24	.133"	1755	1	18	.110"
1752/4	4	24	.150"	1755/2	2	18	.175"
1752/5	5	24	.161"	1755/3	3	18	.187"
1753	1	22	.086"	1755/4	4	18	.205"
1753/2	2	22	.138"	1755/5	5	18	.225"
1753/3	3	22	.146"	1756	1	16	.118"
1753/4	4	22	.159"	1756/2	2	16	.188"
1753/5	5	22	.177"	1756/3	3	16	.205"
1754	1	20	.098"	1756/4	4	16	.225"

STD. P-U: 250', 500', 1000'

TEFLON TAPE WRAP JACKET OVER SHIELD



Brim No.	No. Cond.	AWG	Nom. O.D.	Brim No.	No. Cond.	AWG	Nom. O.D.
1761	1	26	.076"	1764/2	2	20	.158"
1761/2	2	26	.119"	1764/3	3	20	.170"
1762	1	24	.087"	1764/4	4	20	.182"
1762/2	2	24	.131"	1764/5	5	20	.198"
1762/3	3	24	.138"	1765	1	18	.113"
1762/4	4	24	.155"	1765/2	2	18	.183"
1762/5	5	24	.165"	1765/3	3	18	.196"
1763	1	22	.094"	1765/4	4	18	.215"
1763/2	2	22	.145"	1765/5	5	18	.230"
1763/3	3	22	.153"	1766	1	16	.120"
1763/4	4	22	.166"	1766/2	2	16	.201"
1763/5	5	22	.183"	1766/3	3	16	.213"
1764	1	20	.100"	1766/4	4	16	.230"

STD. P-U: 250', 500', 1000'

FEP TEFLON CABLES — SHIELDED — 600 VOLTS



Brim No.	No. Cond.	AWG	Strand.	Nom. O.D.	Std. P-U
1791	1	24	19/36	.087"	500', 1000'
1791/2	2	24	19/36	.130"	500', 1000'
1791/3	3	24	19/36	.136"	500', 1000'
1791/4	4	24	19/36	.153"	500', 1000'
1792	1	22	19/34	.092"	500', 1000'
1792/2	2	22	19/34	.148"	500', 1000'
1792/3	3	22	19/34	.155"	500', 1000'
1792/4	4	22	19/34	.168"	500', 1000'
1793	1	20	19/32	.100"	500', 1000'
1793/2	2	20	19/32	.163"	500', 1000'
1793/3	3	20	19/32	.172"	500', 1000'
1793/4	4	20	19/32	.193"	500', 1000'
1794	1	18	19/30	.110"	500', 1000'
1794/2	2	18	19/30	.182"	500', 1000'
1794/3	3	18	19/30	.200"	500', 1000'
1794/4	4	18	19/30	.217"	500', 1000'
1795	1	16	19/29	.118"	500', 1000'
1795/2	2	16	19/29	.203"	500', 1000'
1795/3	3	16	19/29	.215"	500', 1000'
1795/4	4	16	19/29	.233"	500', 1000'

OTHER COLOR CODES, JACKET COLORS OR CABLE CONSTRUCTIONS ARE AVAILABLE TO ORDER. * DuPont

BRIMCROM™



MICROMINIATURE TEFLON* HOOK-UP WIRE

Conductors are silver plated copper dip coated with TFE Teflon* insulation. Rated for 300 Volts, -90°C to +250°C. BRIMCROM is highly flexible, chemically inert, weather resistant, nonflammable. Suitable wherever high temperatures and lack of space are absolutely critical, such as aircraft, missiles, medical, and microminiaturized electronic components, and system designs. STD. P-U: 1000'

Brim No.	AWG	Strand.	Nom. Wall	Nom. O.D.
1729/30	30	7/38	.0035"	.0188"
1729/32	32	7/40	.0030"	.0153"
1729/34	34	7/42	.0027"	.0129"
1729/36	36	7/44	.0020"	.0101"
1729/38	38	7/46	.0019"	.0086"

STD. COLORS: WHITE, RED, BLACK, GREEN. * DuPont
OTHER COLORS AVAILABLE TO ORDER. OTHER CONSTRUCTION AVAILABLE TO ORDER.

TWO AND THREE CONDUCTOR LAMINATED RIBBON CABLES USING BRIMCROM CONDUCTORS ARE AVAILABLE TO ORDER.

BRIMFLYX™ ULTRA-FLEXIBLE WIRE



DESCRIPTION: Soft bare copper conductor, insulated with a special flexible PVC formulation to minimize kinking & allow for ultra-low bending torque.

Designed for use where wires encounter continuous flexing, such as in data processing equipment, mercury thermostats, magnetic drums, and rotating servo platforms.

OPER. TEMP.: -40°C to +80°C. STD. P-U: 1000 FT.
STD. COLORS: WHITE, BLACK, RED, GREEN. OTHER COLORS ARE AVAILABLE TO ORDER.
200°C SILICONE RUBBER INSULATION AND UL 1095 & UL 1568 AVAILABLE TO ORDER.

BRIM OVERALL SHIELDED RETRACTILE COMMUNICATION CORDS — UL APPROVED

RETRACTED LENGTHS: 1, 2, 3, 4 FT.
EXTENDED LENGTHS: 5, 10, 15, 20 FT.

DESCRIPTION: 1 to 7 color coded conductors of 23 AWG 21/36 TC, spiral wrapped TC shield over the conductors, Black "BRYON" jacket overall. UL approved for 1 AMP & 300V max.

OPER. TEMP.: -20°C to +80°C.
STD. PKG.: 6



BRIM CAT. No.				No. Cond.	Nom. Coil O.D.	Nom. Cord O.D.
4 ft.	3 ft.	2 ft.	1 ft.			
135-4	135-3	135-2	135-1	1	11/16"	.190"
135/2-4	135/2-3	135/2-2	135/2-1	2	11/16"	.200"
135/3-4	135/3-3	135/3-2	135/3-1	3	3/4"	.210"
135/4-4	135/4-3	135/4-2	135/4-1	4	13/16"	.230"
135/5-4	135/5-3	135/5-2	135/5-1	5	7/8"	.235"
135/6-4	135/6-3	135/6-2	135/6-1	6	7/8"	.240"
135/7-4	-	135/7-2	135/7-1	7	1"	.245"

Brimflyx No.	AWG	Strand.	Nom. Wall	Max. Volt.	Nom. O.D.
1250/38	38	7/48	.005"	200	.015"
1250/36	36	7/44	.005"	200	.016"
1250/34	34	10/44	.005"	200	.018"
1250/32	32	18/44	.007"	300	.023"
1250/30	30	28/44	.010"	600	.031"
1250/29	29	51/46	.010"	600	.032"
1250/28	28	41/44	.010"	600	.035"
1250/27	27	48/44	.010"	600	.037"
1250/26	26	66/44	.010"	600	.042"
1250/24	24	105/44	.010"	600	.049"
1251/24	24	105/44	.015"	1000	.059"
1250/22	22	168/44	.010"	600	.054"
1251/22	22	168/44	.015"	1000	.064"
1250/20	20	259/44	.010"	600	.061"
1250/18	18	413/44	.010"	600	.072"
1250/16	16	665/44	.010"	600	.087"
1251/14	14	1050/44	.015"	1000	.115"

BRIM ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

WIRE — CABLE — TUBING — HARDWARE

UL & CSA POWER RETRACTILE CORDS



RETRACTED LENGTHS: 1 ft., 2 ft., 3 ft., 4 ft. EXTENDED LENGTHS: 6 ft., 11 ft., 22 ft. BRIM retractile cords are long lasting, and useful where cords must change their length or position. Our cords will extend to approximately six times their retracted length, and will return to their original shape and length, when they are released. Retractable cords eliminate tangles, twists, knots. OPER. TEMP.: -20°C to +60°C. COND. COLOR CODE: 1-Black, 2-White, 3-Red, 4-Green, 5-Orange, 6-Blue, 7-Yellow, 8-Red/Black. VOLTAGE RATING: SVO SJO SVT & SJT—300V; SO & ST—600V.

UL APPROVED RETRACTILE POWER CORD SETS

RETRACTED: 18". EXTENDS TO APPX.: 9 ft.

300V

SVT and SJT Plastic, SVO and SJO Neoprene jacketed cord sets with a molded plug on one end, other end, jacket stripped and cond. exposed for easy termination. For mobile office equipment and tools. OPER. TEMP.: -20°C to +60°C (SVO, SJO), +80°C (SVT, SJT) STD. PKG.: 6

Brim No.	No. Cond.	AWG	Strand.	UL Ty.	Coil O.D.	Cord O.D.
120/3	3	18	41/34	SVO	1"	.275"
121/3	3	18	41/34	SJO	1 3/8"	.345"
122/3	3	16	65/34	SJO	1 7/8"	.385"
123/3	3	18	41/34	SVT	7/8"	.260"
124/3	3	18	41/34	SJT	1 3/8"	.330"

BRIM MINIATURE COMMUNICATION CORDS - UL

RETRACTED: 1, 2 & 4 ft. EXTENDED: 5, 10 & 20 ft. Miniature in size. Suitable for compact equipment. All cond. 28 AWG 19/40 T.C. 1/2 AMP rating. Black "Bryon" jacket overall.† OPER. TEMP.: -20°C to +80°C. 100V

BRIM CAT. NO. Retracted Lengths			No. Cond.	AWG	Cond. Strand.	Nom. Coil O.D.	Nom. Cord O.D.
4 ft. +	2 Ft.	1 ft.					
118-4†	118-2††	118-1†	2	28	19/40	1/2"	.150"
118/3-4†	118/3-2††	118/3-1†	3	28	19/40	1/2"	.160"
119-4†	119-2††	119-1†	4	28	19/40	1/2"	.170"
124-4†	125-2††	125-1†	5	28	19/40	9/16"	.180"
125/6-4†	125/6-2††	125/6-1†	6	28	19/40	9/16"	.185"
125/7-4†	125/7-2††	125/7-1†	7	28	19/40	5/8"	.190"
126-4†	126-2††	126-1†	8	28	19/40	5/8"	.200"
—	127-2	—	9	28	19/40	3/4"	.220"
—	127/10-2	—	10	28	19/40	3/4"	.230"
—	127/11-2	—	11	28	19/40	3/4"	.240"
—	127/12-2	—	12	28	19/40	7/8"	.250"
—	127/13-2	—	13	28	19/40	7/8"	.260"
—	127/15-2	—	15	28	19/40	1"	.270"
—	127/17-2	—	17	28	19/40	1"	.280"

† are UL approved.

STD. PKG.: 6

BRIM MINIATURE SHIELDED COMMUNICATION CORDS

1 FT. RETRACTED FOR 5 FT., EXTENDED

Miniature in size. Suitable for compact equipment, such as FCC prequalified shielded cords for computers or other interfaced devices. All conductors are 28 AWG 19/40 TC, with an aluminum mylar foil shield (foil out), a spiral TC shield, & then a Black Byron VW-1 vinyl jacket overall. 18" & 2" straight ends, cut blunt. Long lasting. OPER. TEMP.: -20°C to +80°C



Brim No.	Cord Length	No. of Cond.	AWG	Cond. Strand.	Coil O.D.	Cord O.D.
170/2-1*	1 Ft.	2	28	19/40	3/8"	.170"
170/4-1*	1 Ft.	4	28	19/40	3/8"	.185"
170/5-1*	1 Ft.	5	28	19/40	3/8"	.200"
170/6-1*	1 Ft.	5	28	19/40	3/8"	.210"
170/7-1*	1 Ft.	7	28	19/40	3/8"	.220"
170/8-1*	1 Ft.	8	28	19/40	3/8"	.230"
170/9-1	1 Ft.	9	28	19/40	3/8"	.240"
170/10-1*	1 Ft.	10	28	19/40	3/8"	.250"

MODULAR PLUGS ARE AVAILABLE FOR SOME OF THESE CABLES.

STD. PKG.: 25 *STD. PKG.: 6

†FCC DOCKET NO. 20780.

RETRACTILE TEST LEAD WIRE: 1 FT. & 2 FT.

Stretch these coiled test lead wire/cordes repeatedly without fear of kinks. 1 ft. extends to appx. 6 ft., 2 ft. to appx. 12 ft. One cond. 20 AWG flexible stranded soft T.C., TPR insulation, for 5000V, 4 AMPS working. STD. COLORS: Black, Red. OPER. TEMP.: -20°C to +105°C.

Brim No.	Cord Lgth.	AWG	Strand.	Nom. Coil O.D.	Nom. Cond. O.D.
114T	12"	20	41/36	5/8"	.165"
115T	24"	20	41/36	5/8"	.165"

STD. PKG.: 6

PVC test lead wire available to order.

NEOPRENE

BRIM CAT. NO. Retracted Lengths				No. Cond.	Size	Strand.	UL/CSA Type	Amps	Nom. Coil O.D.	Nom. Cord O.D.
4 Ft.	3 Ft.	2 Ft.	1 Ft.							
151-4	151-3	151-2	151-1	2	18	41/34	SVO	7	7/8"	.260"
151/3-4	151/3-3	151/3-2	151/3-1	3	18	41/34	SVO	7	1"	.275"
152-4	152-3	152-2	152-1	2	18	41/34	SJO	7	1 3/16"	.320"
152/3-4	152/3-3	152/3-2	152/3-1	3	18	41/34	SJO	7	1 3/8"	.350"
152/4-4	152/4-3	152/4-2	152/4-1	4	18	41/34	SJO	5.6	1 7/16"	.385"
152/5-4	—	152/5-2	—	5	18	41/34	SJO††	5.6	1 5/8"	.440"
152/7-4	—	152/7-2	—	7	18	41/34	SJO†	5	1 7/8"	.500"
152/15-4	—	—	—	15	18	41/34	SVO†	4.7	2 1/8"	.575"
156/3-4	—	—	—	3	18	41/34	SO	7	1 9/16"	.425"
156/4-4	—	—	—	4	18	41/34	SO	5.6	1 5/8"	.465"
156/10-4	156/10-3	156/10-2	156/10-1	10	18	41/34	SO	5	2 3/8"	.650"
153-4	153-3	153-2	153-1	2	16	65/34	SJO	10	1 3/8"	.360"
153/3-4	153/3-3	153/3-2	153/3-1	3	16	65/34	SJO	10	1 7/16"	.390"
153/4-4	153/4-3	153/4-2	153/4-1	4	16	65/34	SJO	8	1 1/2"	.425"
157/3-4	157/3-3	157/3-2	157/3-1	3	16	65/34	SO	10	13/16"	.470"
157/4-4	157/4-3	157/4-2	—	4	16	65/34	SO	8	1 7/8"	.500"
157/5-4	157/5-3	157/5-2	157/5-1	5	16	65/34	SO	8	2 1/8"	.540"
157/6-4	—	157/6-2	—	6	16	65/34	SO	7	2"	.545"
157/7-4	157/7-3	157/7-2	157/7-1	7	6/16	65/34	SO†	7	2 1/4"	.600"
157/8-4	—	—	—	8	16	65/34	SO	7	2 1/2"	.625"
154-4	154-3	154-2	154-1	2	14	41/30	SO	15	2 1/8"	.540"
154/3-4	154/3-3	154/3-2	154/3-1	3	14	41/30	SO	15	2 1/8"	.560"
154/4-4	154/4-3	154/4-2	154/4-1	4	14	41/30	SO	12	2 1/4"	.600"
154/7-4	154/7-3	154/7-2	154/7-1	7	14	41/30	SO	10	2 7/8"	.720"
155-4	—	155-2	—	2	12	65/30	SO	20	2 1/4"	.600"
155/3-4	155/3-3	155/3-2	155/3-1	3	12	65/30	SO	20	2 3/8"	.635"
155/4-4	155/4-3	155/4-2	155/4-1	4	12	65/30	SO	16	2 7/16"	.675"
155/7-4	—	155/7-2	—	7	12	65/30	SO	16	2 5/8"	.775"
158/4-4	—	—	—	4	10	104/30	SO	20	2 3/4"	.745"

PLASTIC

BRIM CAT. NO. Retracted Lengths				No. Cond.	Size	Strand.	UL/CSA Type	Amps	Nom. Coil O.D.	Nom. Cord O.D.
4 ft. +	3 Ft.	2 Ft.	1 ft.							
165-4	165-3	165-2	165-1	2	18	41/34	SVT*	7	3/4"	.250"
165/3-4	165/3-3	165/3-2	165/3-1	3	18	41/34	SVT*	7	3/4"	.260"
166-4	166-3	166-2	166-1	2	18	41/34	SJT*	7	1"	.295"
166/3-4	166/3-3	166/3-2	166/3-1	3	18	41/34	SJT*	7	1 1/8"	.330"
166/4-4	166/4-3	166/4-2	166/4-1	4	18	41/34	SJT*	5.6	1 1/8"	.350"
167-4	167-3	167-2	167-1	2	16	65/34	SJT*	10	1 1/8"	.315"
167/3-4	167/3-3	167/3-2	167/3-1	3	16	65/34	SJT*	10	1 1/8"	.355"
167/4-4	167/4-3	167/4-2	167/4-1	4	16	65/34	SJT*	8	1 1/8"	.410"

STD. PKG.: 6

When UL Type show, cord is also CSA Approved.

Other Constructions available to order. † Non-UL †† Non-CSA *UL only

RETRACTILE COMMUNICATION CORDS

UL APPROVED RETRACTED LENGTHS: 1, 2, 3, 4 ft.

EXTENDED LENGTHS: 6, 11, 16, and 22 ft. OPER. TEMP.: -20°C to +80°C

DESCRIPTION: Cords are composed of multicond. 23 AWG 21/36 soft tinned copper for longer flex life. Cords are jacketed for a long service life, in either TPR or special vinyl-Byron™-formulation. These cords are suitable for communication equipment, such as ham operations, head sets, radio equipment, telephone car carriers, etc. 300V working. 1 AMP carrying capacity. Nom. cond. resistance .022 ohms per linear foot, .185 ohms per retracted foot. †Stocked in Byron only. STD. PKG.: 6

BRIM CAT. No. Retracted Lengths				No. Cond.	Nom. Coil O.D.	Nom. Cord O.D.
4 ft.	3 ft. +	2 ft. +	1 ft. +			
132-4	132-3	132-2	132-1	2	5/8"	.185"
132/3-4	132/3-3	132/3-2	132/3-1	3	11/16"	.195"
132/4-4	132/4-3	132/4-2	132/4-1	4	11/16"	.205"
132/5-4	132/5-3	132/5-2	132/5-1	5	3/4"	.220"
132/6-4	132/6-3	132/6-2	132/6-1	6	7/8"	.230"
132/7-4	132/7-3	132/7-2	132/7-1	7	7/8"	.240"
132/8-4	132/8-3	132/8-2	132/8-1	8	1"	.250"
132/10-4	132/10-3	132/10-2	132/10-1	10	1"	.285"
132/12-4	132/12-3	132/12-2	132/12-1	12	1 1/8"	.290"
132/15-4	132/15-3	132/15-2	132/15-1	15	1 1/4"	.315"

COND. COLOR CODE: 1-Black, 2-White, 3-Red, 4-Green, 5-Orange, 6-Blue, 7-Yellow, 8-Brown, 9-Gray, 10-Pink, 11-Violet, 12-Tan, 13-Wh/Blk, 14-Red/Blk, 15-Grn/Blk

SHIELDED RETRACTILE COMMUNICATION CORDS

RETRACTED LENGTHS: 1, 2 and 4 ft. EXTENDED LENGTHS: 6, 11 and 22 ft.

DESCRIPTION: Single and multi-cond. spiral shielded communication cables, jacketed in TPR or "Byron" plastic. Shielded conductors are individually shielded. Shield can be pigtailed for soldering. Safe and reliable as a mike cord.

OPER. TEMP.: -20°C to +80°C.

BRIM CAT. No.	Retracted Lengths			No. Cond.	Size	Coil Strand.	Nom. Volt. O.D.	Rating	Capacitance	
	4 ft.	2 ft. +	1 ft. +						Linear	Ret'd
146-4T	—	—	—	1	23	21/36	1/2"	.150"	300	440
143-4	143-2	143-1	—	3	2-23	21/36	7/8"	.205"††	300	450
144-4T	—	—	—	2	23(S) 2-23(S)*	21/36	7/8"	.250"	300	450
145-4T	—	—	—	4	2-23	21/36	1 1/8"	.280"	300	450
147-4	147-2	147-1	—	2	23(S) 2-23(S)**	21/36	7/8"	.210"	300	450
148-4	148-2	148-1	—	2	2-23(S)** 2-23	21/36	1 1/8"	.230"	300	450

*Individual conductors are shielded and jacketed. †Stocked in Byron only.

**Individually shielded only. ††The nom. coil and cord. O.D.'s for TPR cables are slightly smaller.

STD. PKG.: 6

BRIM ELECTRONICS, INC., DEPT. EM, P.O. BOX 336E, FAIR LAWN, NJ 07410 (201) 796-2886 FAX 973-778-2792

WRITE FOR FREE CATALOG

BRIM WIRE — CABLE — TUBING — HARDWARE

BRIM MINIATURE CABLES • COMMERCIAL RG59/U CABLE

BRIM COMMERCIAL RG 59/U CO-AX

DESCRIPTION: A type RG 59/U construction, composed of 22(1) bare Copperweld, .055" wall of cellular Polyethylene dielectric, 4x28 AWG drain wires over an Aluminum Polypropylene tape shield, for 100% coverage, and a Black* PVC jacket overall. MAX. OPER. VOLT-AGE: 500V RMS. Dielectric Strength: 1000V RMS. OPER. TEMP.: 80°C STD. P-U: 1000'

ATTENUATION RATINGS FOR BC-59/U

83 MHz CH. 6	211 MHz CH. 13
2.3/100 ft.	4.0/100 ft.

BRIM No.	AWG	% of Shield	Nom. Imp.	Nom. Vel. of Prop.	Nom. Cap. Pf/ft.	Wall Thck.	Jck. Thck.	Nom. O.D.
BC-59/U	22(1)	100%	75 Ohms	81%	17	.058"	.042"	.242"

HI-FI STEREO CABLE

DESCRIPTION: Stranded tinned copper conductors, special soft PVC insulation, twisted, shielded or unshielded. Designed for low hum & noise pickup. Very flexible. OPER. VOLTAGE: 200V OPER. TEMP.: -40°C to +80°C.

BRIM No.	Cond.	AWG	Strand.	Nom. Wall	Nom. O.D.
UNSHIELDED					
1542	2	32	7/40	.010"	.047"
1543	3	32	7/40	.010"	.053"
1544	4	32	7/40	.010"	.061"
SHIELDED					
1545	1	32	7/40	.010"	.040"
1546	2	32	7/40	.010"	.067"
1547	3	32	7/40	.010"	.073"
1548	4	32	7/40	.010"	.081"
1551*	2	32	7/40	.010"	.080"

STD. P-U: 500', 1000' * Individually shielded.
COLOR CODE: 1-White, 2-Red, 3-Black, 4-Green.

MINIATURE UNSHIELDED HI-FI & STEREO CABLE

DESCRIPTION: 2 to 4 conductors of MIL-W-16878D Type B, twisted, no jacket. OPERATING VOLTAGE: 600V. OPERATING TEMPERATURE: -55°C to +105°C.

BRIM No.	AWG	Cond.	Strand.	Wall	Nom. O.D.
1605/2	30	2	7/38	.010"	.058"
1605/3	30	3	7/38	.010"	.064"
1605/4	30	4	7/38	.010"	.072"

STD. P-U: 500', 1000'. COLOR CODE: 1-Black, 2-White, 3-Red, 4-Green.

MINIATURE CABLES — SHIELDED, UNSHIELDED, JACKETED, UNJACKETED 105°C—600V.

DESCRIPTION: 2 to 4 conductors of MIL-W-16878D Type B, twisted, shielded or unshielded, jacketed or unjacketed.

BRIM No.	AWG	No. Cond.	Strand	Nom. Wall	Nom. Jck.	Nom. O.D.
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UNSHIELDED, CLEAR PVC JACKET						
1610/2	28	2	7/36	.010"	.010"	.090"
1610/3	28	3	7/36	.010"	.010"	.096"
1610/4	28	4	7/36	.010"	.010"	.105"

SHIELDED, UNJACKETED						
1615/2	28	2	7/36	.010"	—	.093"
1615/3	28	3	7/36	.010"	—	.099"
1615/4	28	4	7/36	.010"	—	.108"

SHIELDED, CLEAR PVC JACKET						
1618/2	28	2	7/36	.010"	.010"	.113"
1618/3	28	3	7/36	.010"	.010"	.119"
1618/4	28	4	7/36	.010"	.010"	.128"

COLOR CODE: 1-Black, 2-White, 3-Red, 4-Green.
STD. P-U: 500', 1000'

MINIATURE ZIP CORD

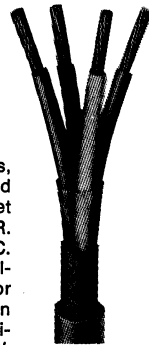
DESCRIPTION: 2 conductors of 28 AWG stranded tinned copper, insulated with 80°C PVC, extruded into a parallel or miniature zip cord. Polarity Identification. 300V internal, 30V external.

BRIM No.	AWG	Strand.	Cond.	Nom. O.D.	STD. P-U
1528	28	7/36	2	.040 x .082"	1000'
1529	28	19/40	2	.040 x .082"	1000'

STD. COLORS: White, Black.

MINIATURE SHIELDED CONTROL AND INSTRUMENTATION CABLES — 600V 105°C MIL-W-16878D TYPE B

DESCRIPTION: Stranded tinned copper conductors, .010" wall PVC, cabled, mylar binder, braided tinned copper shield, 90% min. coverage, gray PVC jacket overall. All material pass UL VW-1 test. OPER. VOLT.: 600 Volts. OPER. TEMP.: -55°C to +105°C. PVC is resistant to acid, fungus, oils, moisture, solvents, flame. Used as an interconnecting cable for electronic equipment, control and instrumentation cable telemetry and remote control cable for sensitive recording instruments. STD. P-U: 500', 1000'.



Brim No.	Conductor			Nom. Wall	Nom. Jck.	Nom. O.D.
	No.	AWG	Strand.			
1202/2	2	B-28	7/36	.010"	.010"	.115"
1202/3	3	B-28	7/36	.010"	.012"	.125"
1202/4	4	B-28	7/36	.010"	.012"	.132"
1202/6	6	B-28	7/36	.010"	.015"	.160"
1202/8	8	B-28	7/36	.010"	.015"	.175"
1202/10	10	B-28	7/36	.010"	.018"	.200"
1202/12	12	B-28	7/36	.010"	.018"	.215"
1202/15	15	B-28	7/36	.010"	.020"	.230"
1202/20	20	B-28	7/36	.010"	.022"	.245"
1202/25	25	B-28	7/36	.010"	.025"	.270"
1202/30	30	B-28	7/36	.010"	.028"	.301"

COLOR CODE: 1-White, 2-Black, 3-Red, 4-Green, 5-Orange, 6-Lt. Blue, 7-Wh/Black, 8-Red/Black, 9-Green/Blk, 10-Orange/Blk, 11-Blue/Blk, 12-Black/Wh, 13-Red/Wh, 14-Green/Wh, 15-Blue/Wh, 16-Black/Red, 17-White/Red, 18-Orange/Red, 19-Blue/Red, 20-Red/Green, 21-Org./Green, 22-Blk/Wh/Red, 23-Wh/Blk/Red, 24-Red/Blk/Wh, 25-Grn/Blk/Wh, 26-Org/Blk/Wh, 27-Blu/Blk/Wh, 28-Blk/Red/Grn, 29-Wh/Red/Grn, 30-Red/Blk/Grn.

BRIM MINIFLYX™ SUBMINIATURE ULTRA-FLEXIBLE INSTRUMENTATION CABLES

DESCRIPTION: Ultra-flexible stranded bare copper conductors, .005" wall of soft flexible PVC, braided shield, White .010" soft flexible PVC jacket overall. Suitable as an instrumentation cable where Ultra-flexibility & sub-miniaturization are essential, in low voltage applications. For example: bio-medical instruments, missiles, computer, miniature relays, disc drives, servo systems, recorders. OPERATING TEMPERATURE: -40°C to +90°C. OPERATING VOLTAGE: 200 Volts.

BRIM No.	No. Cond.	AWG	Strand.	Nom. Wall	Nom. Jck.	Nom. O.D.	Std. P-U
1210/2	2	30	40/46	.005"	.010"	.073"	1000'
1210/3	3	30	40/46	.005"	.010"	.076"	1000'
1210/4	4	30	40/46	.005"	.010"	.082"	1000'
1210/5	5	30	40/46	.005"	.010"	.088"	1000'
1211/2	2	32	65/50	.005"	.010"	.069"	1000'
1211/3	3	32	65/50	.005"	.010"	.072"	1000'
1211/4	4	32	65/50	.005"	.010"	.077"	1000'
1211/5	5	32	65/50	.005"	.010"	.083"	1000'
1212/2	2	34	40/50	.005"	.010"	.065"	1000'
1212/3	3	34	40/50	.005"	.010"	.068"	1000'
1212/4	4	34	40/50	.005"	.010"	.072"	1000'
1212/5	5	34	40/50	.005"	.010"	.078"	1000'
1213/2	2	36	25/50	.005"	.010"	.061"	1000'
1213/3	3	36	25/50	.005"	.010"	.063"	1000'
1213/4	4	36	25/50	.005"	.010"	.068"	1000'
1213/5	5	36	25/50	.005"	.010"	.072"	1000'
1214/2	2	38	16/50	.005"	.010"	.057"	1000'
1214/3	3	38	16/50	.005"	.010"	.059"	1000'
1214/4	4	38	16/50	.005"	.010"	.063"	1000'
1214/5	5	38	16/50	.005"	.010"	.067"	1000'

COLOR CODE: 1-White, 2-Black, 3-Red, 4-Green, 5-Yellow.



BRIM

WIRE — CABLE — TUBING — HARDWARE
ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

BRAIDED TC SHIELDED CONTROL — INSTRUMENTATION — MICROPHONE CABLES

UL SHIELDED COMPUTER AND CONTROL CABLES

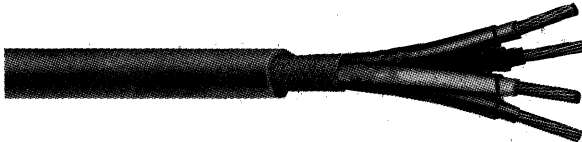


DESCRIPTION: Each conductor UL Type 1061, 24 AWG 7/32 T.C., UL VW-1. Conductors are paired, cabled, mylar wrap, braided tinned copper shield, chrome PVC jacket overall. Color coded. Shielding coverage a minimum of 85%. Cable meets UL Styles 2343 & 2344. Suitable as a control cable, computer cable, shielded audio cable. OPERATING VOLTAGE: 300V UL. OPERATING TEMPERATURE: -40°C to +80°C. STD. P-U: 500', 1000'.

Brim No.	No. of Pairs	AWG	Strand.	Nom. Wall	Nom. Jack.	Nom. O.D.
1886/5	5	24	7/32	.009"	.062"	.355"
1886/7	7	24	7/32	.009"	.062"	.375"
1886/12	12	24	7/32	.009"	.062"	.460"
1886/15	15	24	7/32	.009"	.062"	.510"
1886/19	19	24	7/32	.009"	.062"	.530"
1886/27	27	24	7/32	.009"	.062"	.620"
1886/37	37	24	7/32	.009"	.062"	.690"
1886/48	48	24	7/32	.009"	.062"	.775"
1886/60	60	24	7/32	.009"	.062"	.845"

See color code for paired cables. OTHER CONSTRUCTIONS AVAILABLE TO ORDER.

MIL-W-16878D TYPE BN SHIELDED CABLES

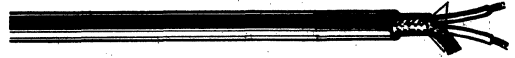


DESCRIPTION: One to four conductors, stranded tinned copper, Tyne BN insulation — .010" wall PVC, clear nylon jacket — conductors are cabled, braided tinned copper shield, white PVC jacket overall. Cable components meet UL VW-1 vertical flame test requirements, and is resistant to oils, acids, solvents, alkalis, moisture, fungus. OPERATING VOLTAGE: 600V. OPERATING TEMPERATURE: -55°C to +105°C. STD. P-U: 500', 1000'.

Brim No.	No. Cond.	AWG-Strand.	PVC Wall	Nylon Jack.	Nom. Jack.	Nom. O.D.
1450	1	26-7/34	.010"	.003"	.010"	.087"
1450/2	2	26-7/34	.010"	.003"	.014"	.138"
1450/3	3	26-7/34	.010"	.003"	.014"	.142"
1450/4	4	26-7/34	.010"	.003"	.016"	.162"
1451	1	24-19/36	.010"	.003"	.010"	.092"
1451/2	2	24-19/36	.010"	.003"	.016"	.155"
1451/3	3	24-19/36	.010"	.003"	.016"	.162"
1451/4	4	24-19/36	.010"	.003"	.017"	.172"
1452	1	22-19/34	.010"	.003"	.010"	.100"
1452/2	2	22-19/34	.010"	.003"	.016"	.170"
1452/3	3	22-19/34	.010"	.003"	.016"	.180"
1452/4	4	22-19/34	.010"	.003"	.019"	.194"
1453	1	20-19/32	.010"	.003"	.010"	.108"
1453/2	2	20-19/32	.010"	.003"	.019"	.190"
1453/3	3	20-19/32	.010"	.003"	.019"	.200"
1453/4	4	20-19/32	.010"	.003"	.021"	.216"
1454	1	18-19/30	.010"	.003"	.012"	.122"
1454/2	2	18-19/30	.010"	.003"	.021"	.210"
1454/3	3	18-19/30	.010"	.003"	.021"	.225"
1454/4	4	18-19/30	.010"	.003"	.023"	.250"
1455	1	16-19/29	.010"	.003"	.016"	.137"
1455/2	2	16-19/29	.010"	.003"	.023"	.236"
1455/3	3	16-19/29	.010"	.003"	.023"	.242"
1455/4	4	16-19/29	.010"	.003"	.025"	.267"
1456	1	14-19/27	.010"	.004"	.020"	.150"
1456/2	2	14-19/27	.010"	.004"	.027"	.266"

COLOR CODE: 1-White, 2-Black, 3-Red, 4-Green.

SHIELDED MICROPHONE CABLES



DESCRIPTION: 2 Cond. stranded tinned copper .016" wall polyethylene, fillers, mylar wrap, tinned copper shield, .030" Hi-gloss Black PVC jacket overall. OPER. VOLT.: 1000V. COLOR CODE: 1-Black, 2-Red. OPERATING TEMPERATURE: -20°C to +80°C. Nom. Cap./ft. between one cond. remaining cond. connected to shield: 1884/24—38MMF, 1884/22—31MMF.

BRIM No.	No. Cond.	AWG-Strand	Shield	Nom. Wall	Nom. O.D.
1884/24	2	24-10/34	Spiral	.016"	.190"
1884/22	2	22-16/34	Braid	.025"	.240"

MICROPHONE — REMOTE-CONTROL CABLES

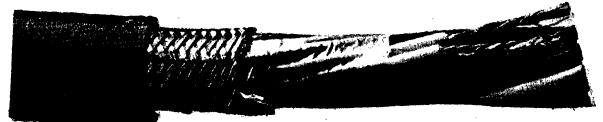


DESCRIPTION: Each conductor stranded TC .014" wall polyethylene, cabled with fillers, mylar wrap, braided TC shield, chrome PVC jacket overall. OPER. VOLT.: 1000V. COLOR CODED. OPERATING TEMPERATURE: -20°C to +80°C.

BRIM No.	No. Cond.	AWG	Strand	Nom. Wall	Nom. Jack.	Nom. O.D.
1883/2	2	20	26/34	.014"	.030"	.245"
1883/3	3	20	26/34	.014"	.035"	.250"
1883/4	4	20	26/34	.014"	.035"	.260"
1883/5	5	20	26/34	.014"	.035"	.275"
1883/6	6	20	26/34	.014"	.035"	.295"
1883/8	8	20	26/34	.014"	.035"	.325"
1883/10	10	20	26/34	.014"	.035"	.370"
1883/12	12	20	26/34	.014"	.035"	.380"
1883/15	15	20	26/34	.014"	.035"	.405"
1883/20	20	20	26/34	.014"	.035"	.445"

STD. P-U: 500', 1000'

HEAVY DUTY SHIELDED CONTROL CABLES MIL-W-16878D TYPE C-18 1000V



DESCRIPTION: MIL-W-16878D Ty C-18, 19/30 TC conductors, twisted, mylar wrap braided tinned copper shield — 90% minimum coverage — chrome PVC jacket overall. Color coded. Cable resistant to acids, oils, moisture, solvents, alkalis, fungus. Cable meets UL VW-1 vertical flame test requirements. OPERATING VOLTAGE: 1000V. OPERATING TEMPERATURE: -55°C to +105°C. Suitable as an interconnecting cable for electronic equipment, instrumentation, control, telemetry data, and remote control of sensitive recording instruments.

STD. P-U: 500', 1000'.

Brim No.	No. Cond.	AWG	Strand.	Nom. Wall	Nom. Jack.	Nom. O.D.
3019/5	5	C-18	19/30	.016"	.025"	.302"
3019/10	10	C-18	19/30	.016"	.035"	.407"
3019/15	15	C-18	19/30	.016"	.040"	.472"
3019/20	20	C-18	19/30	.016"	.045"	.555"
3019/30	30	C-18	19/30	.016"	.055"	.651"

OTHER CONSTRUCTIONS AVAILABLE TO ORDER.

COLOR CODE FOR 3019 SERIES: 1-Black, 2-White, 3-Red, 4-Green, 5-Orange, 6-Blue, 7-White/Black, 8-Red/Black, 9-Green/Black, 10-Orange/Black, 11-Blue/Black, 12-Black/White, 13-Red/White, 14-Green/White, 15-Blue/White, 16-Black/Red, 17-White/Red, 18-Orange/Red, 19-Blue/Red, 20-Red/Green, 21-Orange/Green, 22-Black/White/Red, 23-White/Black/Red, 24-Red/Black/White, 25-Green/Black/White, 26-Orange/Black/White, 27-Blue/Black/White, 28-Black/Red/Green, 29-White/Red/Green, 30-Red/Black/Green.

BRIM WIRE — CABLE — TUBING — HARDWARE

BRIM ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

ALUMINUM MYLAR FOIL SHIELDED CABLES

ALUMINUM MYLAR FOIL SHIELDED CABLE — INSTRUMENTATION CABLES



DESCRIPTION: Stranded TC conductors, polyethylene insulation, conductors twisted, an aluminum mylar foil shield, foil out, TC drain wire, gray PVC jacket overall. Color coded. Suitable as a light weight shielded instrumentation cable. Shield provides 100% coverage, and drain wire provides quick and easy grounding. OPERATING VOLTAGE: 400V. OPERATING TEMPERATURE: -20°C to +80°C. COLOR CODE 1-Black, 2-Red, 3-White, 4-Green.

BRIM No.	No. Cond.	AWG	Strand	Nom. Wall	Nom. Jck.	Nom. O.D.
1639	2	24	7/32	.015"	.020"	.155"
1639/3	3	24	7/32	.015"	.020"	.172"
1639/4	4	24	7/32	.015"	.020"	.195"
1640	2	22	7/30	.015"	.020"	.165"
1640/3	3	22	7/30	.015"	.020"	.182"
1640/4	4	22	7/30	.015"	.020"	.205"
1641	2	20	10/30	.015"	.020"	.184"
1641/3	3	20	10/30	.015"	.020"	.202"
1641/4	4	20	10/30	.015"	.020"	.221"
1642	2	18	16/30	.017"	.020"	.215"
1642/3	3	18	16/30	.017"	.020"	.233"
1642/4	4	18	16/30	.017"	.020"	.258"
1643	2	16	26/30	.017"	.020"	.250"
1643/3	3	16	26/30	.017"	.020"	.273"
1644	2	14	41/30	.017"	.025"	.295"
1644/3	3	14	41/30	.017"	.025"	.315"

STD. P-U: 500', 1000'

ALUMINUM MYLAR FOIL SHIELDED CABLES — MINIATURE CABLE



DESCRIPTION: 2 conductors 22 AWG SOLID or STRANDED TC, .008" wall of polypropylene, aluminum mylar foil shield, foil out, TC drain wire, chrome PVC jacket overall. Suitable for miniature instrumentation. OPERATING VOLTAGE: 200V. OPERATING TEMPERATURE: -40°C to +105°C. COLOR CODE: 1-Red, 2-Black, 3-White, 4-Green.

BRIM No.	No. Cond.	AWG	Strand.	Nom. Wall	Nom. Jck.	Nom. O.D.
1636	2	22	1	.008"	.018"	.126"
1637	2	22	7/30	.008"	.020"	.134"
1637/2*	4	22	7/30	.008"	.020"	.165"

STD. P-U: 500', 1000'

* Common drain wire, and common axis.

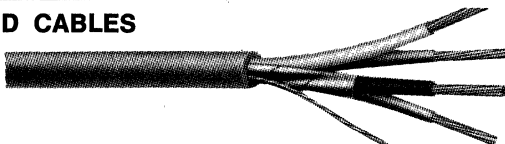
MULTIPLE PAIRED COMMUNICATION CABLES

DESCRIPTION: 22 AWG SOLID TC conductors, .008" wall polypropylene, or .010" wall PVC, color coded, conductors are twisted into pairs, the pairs are cabled, an aluminum mylar foil shield over all pairs, foil out, a stranded TC drain wire, chrome PVC jacket overall. Suitable for communication telephone and sound systems, control and instrumentation cable. OPERATING VOLTAGE: 200V. OPERATING TEMPERATURE: -40°C to +105°C.

BRIM NO.	NO. PAIRS	AWG	INSULA.	NOM. WALL	NOM. JCK.	NOM. O.D.
1633/38	38	22-1	Polyprop.	.008"	.045"	.575"
1633/51	51	22-1	PVC	.010"	.050"	.686"

STD. P-U: 500', 1000' SEE FIGURE 1

SOUND CABLES



DESCRIPTION: Four conductors, stranded TC, .009" wall polypropylene, two conductors inside an aluminum mylar foil shield, foil out, a stranded TC drain wire and two conductors outside of shield, chrome PVC jacket overall. Polypropylene insulation is used because of its mechanical toughness and excellent high frequency properties. OPERATING VOLTAGE: 300V. OPERATING TEMPERATURE: -40°C to +105°C. COLOR CODE: Shielded: 1-Black, 2-Red. Unshielded: 3-Green, 4-White.

BRIM No.	No. Cond.	AWG/Strand.	No. Shid.	Nom. Wall	Nom. Jck.	Nom. O.D.
1620/4	4	20-7/28	2	.009"	.020"	.185"
1622/4	4	22-7/30	2	.009"	.020"	.167"
1624/4	4	24-7/32	2	.009"	.020"	.150"

STD. P-U: 500', 1000'.

ALUMINUM MYLAR FOIL SHIELDED CABLES

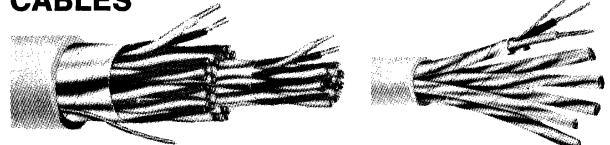


FIGURE 1

FIGURE 2

INDIVIDUALLY SHIELDED PAIRS — 22 and 18 AWG — POLYETHYLENE

DESCRIPTION: 22 AWG 7/30 TC or 18 AWG 16/30 TC wall of polyethylene insulated conductors, conductors are twisted into pairs, an aluminum mylar foil shield with a stranded TC drain wire over each pair, the shielded pairs are cabled, chrome PVC jacket overall. Color coded. Nom. Cap. between conductors: 25PF/Ft. Nom. Cap. between one conductor and remaining conductor connected to shield: 45PF/Ft. Suitable for audio, R.F. data and pulse applications requiring superior circuit isolation.

OPERATING VOLTAGE: 300V.

OPERATING TEMPERATURE: -20°C to +80°C

22 AWG 7/30

Brim No.	No. Pairs	No. Cond.	Nom. Wall	Nom. Jck.	Nom. O.D.
1630/3	3	6	.010"	.025"	.255"
1630/6	6	12	.010"	.030"	.345"
1630/9	9	18	.010"	.035"	.410"
1630/11	11	22	.010"	.040"	.460"
1630/15	15	30	.010"	.045"	.535"
1630/19	19	38	.010"	.050"	.575"
1630/27	27	54	.010"	.055"	.690"

18 AWG 16/30

Brim No.	No. Pairs	No. Cond.	Nom. Wall	Nom. Jck.	Nom. O.D.
1632/3	3	6	.016"	.035"	.375"
1632/6	6	12	.016"	.045"	.555"
1632/9	9	18	.016"	.055"	.620"
1632/11	11	22	.016"	.060"	.745"
1632/15	15	30	.016"	.065"	.820"
1632/19	19	38	.016"	.075"	.870"
1632/27	27	54	.016"	.085"	.995"

STD. P-U: 500', 1000'. CONSTRUCTION VARIATIONS TO ORDER.

SEE FIGURE 2

INDIVIDUALLY SHIELDED PAIRS — 22 AWG STRANDED — POLYPROPYLENE

DESCRIPTION: 22 AWG 7/30 TC conductors, .010" wall polypropylene, conductors are twisted into pairs, pairs are cabled, an aluminum mylar foil shield with a stranded TC drain wire over each twisted pair, chrome PVC jacket overall. Jacket passes UL VW-1 vertical flame test. For audio, pulse, data, and RF applications requiring superior circuit isolation. Polypropylene is used for its mechanical toughness and high frequency properties. OPER. VOLT.: 300V. OPER. TEMP.: -55°C to +105°C. STD. P-U: 500', 1000'.

Brim No.	No. Pairs	No. Cond.	Strand.	Nom. Wall	Nom. Jck.	Nom. O.D.
1638/3	3	6	7/30	.010"	.025"	.255"
1638/6	6	12	7/30	.010"	.030"	.345"
1638/9	9	18	7/30	.010"	.035"	.410"
1638/11	11	22	7/30	.010"	.040"	.460"
1638/15	15	30	7/30	.010"	.045"	.535"
1638/19	19	38	7/30	.010"	.050"	.575"
1638/27	27	54	7/30	.010"	.055"	.690"

SEE FIGURE 2

INDIVIDUALLY SHIELDED PAIRS — 22 AWG SOLID

DESCRIPTION: 22 AWG SOLID T.C. conductors, .013" wall PVC, conductors are twisted into pairs, an aluminum mylar foil shield with a TC drain wire over each pair, the pairs are cabled, chrome PVC jacket overall. Color coded. Suitable for audio, pulse, R.F., data applications requiring superior circuit isolation. OPER. VOLT.: 300V. OPERATING TEMPERATURE: -20°C to +80°C

SEE FIGURE 2

Brim No.	No. Pairs	No. Cond.	AWG/Strand.	Nom. Wall	Nom. Jck.	Nom. O.D.
1635/3	3	6	22-1	.013"	.035"	.275"
1635/6	6	12	22-1	.013"	.037"	.395"
1635/9	9	18	22-1	.013"	.040"	.440"
1635/11	11	22	22-1	.013"	.045"	.485"
1635/15	15	30	22-1	.013"	.045"	.540"
1635/19	19	38	22-1	.013"	.055"	.660"
1635/27	27	54	22-1	.013"	.070"	.800"

STD. P-U: 500', 1000'. CONSTRUCTION VARIATIONS TO ORDER.

BRIM WIRE — CABLE — TUBING — HARDWARE

ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

CONTROLLED IMPEDANCE CABLE — ELECTRONIC LACING CORDS & TAPES

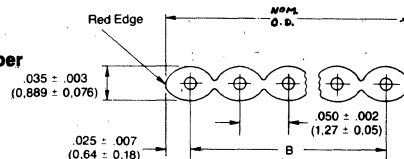
BRIM BRIBBON™ 100 OHM CONTROLLED IMPEDANCE CABLE — UL 2651 & MIL-C-49055/1

DESCRIPTION: Flexible .010" UL VW-1 PVC insulation over 28 AWG 7/36 TC conductors, laid parallel. All conductors are colored Gray, with one edge Red for polarity identification. MEETS UL 2651.

BRIBBON™ cables are designed for fast, mass termination to all standard .050" IDC connectors. Double contour allows reverse plane terminations. Easy conductor separation for circuit routing, and uniform breakouts for harness production.

BRIBBON™ cables replace bulky round twisted paired cables, providing easy routing & greater space utilization within confined chassis. Precise spacing for controlled electrical characteristics — controlled crosstalk thru precisely controlled impedance and capacitance.

CONDUCTORS:
28 AWG (7/36)
Stranded Tinned Copper



Dimensions and characteristics subject to change without notice.

OPER. TEMP.: 105°C — OPER. VOLTAGE: 300V — OPER. CURRENT: 1 AMP nom. — OPER. IMPEDANCE: 105 Ohms nom.* — OPER. CAPACITANCE: 15 pf/ft. nom.* — OPER. PROPAGATION DELAY: 1.4 ns/ft. nom. — INSULATION RESISTANCE: >1,000 mΩ/ft. — CONDUCTOR RESISTANCE: 67.5 Ohms/Mft.

BRIM No.	No. Cond.	AWG (Str.)	Cond. to Cond. Spacing	Nom. Wall	Nom. O.D.	Dim. B
2828/9	9	28 (7/36)	.050"	.010"	.035"x .450"	.400"
2828/10	10	28 (7/36)	.050"	.010"	.035"x .500"	.450"
2828/14	14	28 (7/36)	.050"	.010"	.035"x .700"	.650"
2828/15	15	28 (7/36)	.050"	.010"	.035"x .750"	.700"
2828/16	16	28 (7/36)	.050"	.010"	.035"x .800"	.750"
2828/20	20	28 (7/36)	.050"	.010"	.035"x1.000"	.950"
2828/24	24	28 (7/36)	.050"	.010"	.035"x1.200"	1.150"
2828/25	25	28 (7/36)	.050"	.010"	.035"x1.250"	1.200"

STD. P-U: 100 ft.

BRIM No.	No. Cond.	AWG (Str.)	Cond. to Cond. Spacing	Nom. Wall	Nom. O.D.	Dim. B
2828/26	26	28 (7/36)	.050"	.010"	.035"x1.300"	1.250"
2828/34	34	28 (7/36)	.050"	.010"	.035"x1.700"	1.650"
2828/37	37	28 (7/36)	.050"	.010"	.035"x1.850"	1.800"
2828/40	40	28 (7/36)	.050"	.010"	.035"x2.000"	1.950"
2828/50	50	28 (7/36)	.050"	.010"	.035"x2.500"	2.450"
2828/60	60	28 (7/36)	.050"	.010"	.035"x3.000"	2.950"
2828/64	64	28 (7/36)	.050"	.010"	.035"x3.200"	3.150"

* Measured Ground-Signal-Ground-Signal, etc., with all grounds common.

NYLON FLAT BRAIDED LACING TAPE MIL-T-43435 TYPE I FINISH B

Nylon flat braid treated with a microcrystalline fungicidal wax finish. Stays flat, flexible, and creates a wider contact to distribute stress. Won't slip when tied. Resistant to fungus, flame, abrasion, and acids.



BRIM No.	Color	Size	Nom. Width	Nom. Thick.	Tensile Strength	Std. P-U
800	White	1	.200"	.016"	135	250 yards
800B	Black	1	.200"	.016"	135	250 yards
801	White	2	.110"	.015"	80	250 yards
801B	Black	2	.110"	.015"	80	250 yards
802	White	3	.085"	.014"	50	500 yards
802B	Black	3	.085"	.014"	50	500 yards
803	White	4	.060"	.012"	25	500 yards
803B	Black	4	.060"	.012"	25	500 yards
804	White	5	.050"	.010"	15	500 yards
804B	Black	5	.050"	.010"	15	500 yards

DACRON FLAT BRAIDED LACING TAPE MIL-T-43435 TYPE II FINISH B

Dacron flat braid treated with a microcrystalline fungicidal wax finish to help prevent slipping when tying knots, resists fungus and mildew. Won't cut or damage items being held together. Stays flat. Superior to nylon in resistance to acids, and elongation.



BRIM No.	Color	Size	Nom. Width	Nom. Thick.	Tensile Strength	Std. P-U
819	White	2	.110"	.015"	80#	250 yards
819B	Black	2	.110"	.015"	80#	250 yards
820	White	3	.085"	.014"	50#	500 yards
821	White	4	.060"	.012"	25#	500 yards
822	White	5	.050"	.010"	15#	500 yards
822B	Black	5	.050"	.010"	15#	500 yards

TEFLON FIBERGLASS FLAT BRAIDED LACING TAPE — MIL-T-43435 TYPE IV

OPERATING TEMPERATURE: -100°F TO +450°F. Highly resistant to fluids, fuels and chemicals. Won't outgas under critical vacuum conditions.



BRIM No.	Color	Size	Nom. Width	Nom. Thick.	Tensile Strength	Std. P-U
808	Brown	2	.120"	.011"	30#	250 yards
809	Brown	4	.065"	.011"	15#	500 yards

TEFLON FIBERGLASS FLAT BRAIDED LACING TAPE — MIL-T-43435 TYPE IV

OPERATING TEMPERATURE: -103°F to +800°F FINISH D. Teflon impregnated fiberglass braided flat, gives high temperature performance, and strength. Stays flat. Teflon finish adds strength and abrasion protection. Will not cut or damage item tied.



BRIM No.	Color	Size	Nom. Width	Nom. Thick.	Tensile Strength	Yds./Tube
805	White	1	.225"	.016"	200#	250
806	White	2	.110"	.016"	100#	250
807	White	3	.085"	.016"	75#	500

TYPE V NOMEX AVAILABLE TO ORDER.

ROUND TWISTED NYLON LACING TAPE MIL-T-713D TYPE P

Round twisted nylon treated with a microcrystalline fungicidal wax to resist mildew, fungus, and help in tying. OPERATING TEMPERATURE: -67°F to +250°F. P-U: 1# tubes.

BRIM No.	Color	Class	Tensile Strength	Nom. O.D.	Yds./Tube
810	White	1	70#	.039"	550
810B	Black	1	70#	.039"	550
811	White	2	48#	.029"	750
811B	Black	2	48#	.029"	750
812	White	3	32#	.025"	1100
812B	Black	3	32#	.025"	1100
813	White	—	20#	.020"	2400
813B	Black	—	20#	.020"	2400

ROUND TWISTED LINEN LACING CORD MIL-T-713 TYPE N

Mfg. from pure flax and treated with a microcrystalline fungicidal wax finish to resist fungus, mildew, and aid in tying. MIL-T-713E TyN. OTHER SIZES AND FINISHES ARE AVAILABLE TO ORDER. P-U: 1# tubes.

BRIM No.	Natural	Black	Class	Ply	Nom. O.D.	Tensile Strength	Yds./Tube
814	814B	—	4	.036"	22#	850	
815	815B	3	6	.044"	32#	600	
816	816B	2	8	.051"	48#	450	
817	817B	—	9	.054"	56#	400	
818	818B	1	12	.063"	70#	300	



WIRE — CABLE — TUBING — HARDWARE
ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

FLAT BRAIDED TINNED COPPER SHIELDING —
TUBULAR BRAID PER QQ-B-575R

FLAT BRAIDED TINNED COPPER

TINNED COPPER FLAT shielded braid, woven then rolled flat. Conductors are annealed for flexibility. Used as grounding cable, bonding strap for aircrafts, marine equipment, vehicles, etc., to eliminate ignition interference. Easily slides over wire and cables. Also used as a high current conductor at low voltages.



BRIM No.	Construction	Flat-ened I.D.	Flat-ened O.D.	Appx. AWG Equiv.	Nom. CMA	Current Carrying Cap.* Amps	Std. P-U	BRIM No.	Construction	Flat-ened I.D.	Flat-ened O.D.	Appx. AWG Equiv.	Nom. CMA	Current Carrying Cap.* Amps	Std. P-U
1110-1/32	12x 2 of #36	1/32"	3/16"	#22	600	7	100', 1000'	1110-3/4	48x11 of #36	3/4"	1 1/8"	# 9	13200	62	100', 500'
1110-3/64	12x 2 of #36	3/64"	1/16"	#22	600	7	100', 1000'	1110-25/32	48x19 of #36	2 1/2"	2 7/8"	# 7	22800	88	100', 250'
1110-1/16	16x 3 of #36	1/16"	3/8"	#19	1200	11	100', 1000'	1110-1	48x19 of #36	1"	1 1/8"	# 7	22800	88	100', 250'
1110-3/32	16x 3 of #36	3/32"	1/8"	#17	1200	11	100', 1000'	1110-1-3/8	48x19 of #36	1 3/8"	1 3/4"	# 7	22800	88	50', 100'
1110-1/8	24x 5 of #36	1/8"	5/16"	#15	3000	20	100', 1000'	1110-1-1/2	48x19 of #36	1 1/2"	1 3/4"	# 7	22800	88	50', 100'
1110-3/16	24x 5 of #36	3/16"	3/2"	#15	3000	20	100', 1000'	1110-1-3/4	48x27 of #30	1 3/4"	1 7/8"	#00	129600	230	50', 100'
1110-1/4	24x 7 of #36	1/4"	3/2"	#14	4200	25	100', 1000'	1110-2	48x32 of #30	2"	2 1/4"	#000	153600	270	50', 100'
1110-3/8	48x 4 of #36	3/8"	1 1/2"	#13	4800	35	100', 500'	1110-2-1/4	48x35 of #30	2 1/4"	2 1/2"	#000	168000	300	50', 100'
1110-1/2	48x 7 of #36	1/2"	1 3/2"	#11	8400	50	100', 500'	1110-2-1/2	48x45 of #30	2 1/2"	2 3/4"	#0000	216000	320	50', 100'
1110-5/8	48x 8 of #36	5/8"	2 1/2"	#10	9600	53	100', 500'	1110-3	48x64 of #30	3"	3 1/4"	300MCM	307200	430	50', 100'

* Values are based on copper in free air at 65°F — intended as a guide only.

TUBULAR BRAID PER QQ-B-575R

TINNED COPPER TUBULAR shielded braid mfg. round per MIL Spec. QQ-B-575R. Shielding coverage of 95% or more. Used in military or critical commercial applications where maximum shielding coverage is required against electrostatic interference. Also useful as grounding wire/cable, bonds, leads, flexible connectors, and protection against mechanical abrasion and stresses for wires/cables. Each wire is soft drawn tinned copper.



BRIM No.	Nom. I.D. Round	No. of Wires	Const.	Indiv. Wire AWG	Appx. AWG Equiv.	Nom. CMA	Current Carrying Cap.* Amps	Std. P-U	BRIM No.	Nom. I.D. Round	No. of Wires	Const.	Indiv. Wire AWG	Appx. AWG Equiv.	Nom. CMA	Current Carrying Cap.* Amps	Std. P-U
1100-1/32	1/32"	24	24-1	36	#22	600	7	100', 1000'	1100-1/2	1/2"	528	48-11	36	# 9	13200	62	100', 500'
1100-1/16	1/16"	48	24-2	36	#19	1200	11	100', 1000'	1100-9/16	9/16"	528	48-11	36	# 9	13200	62	100', 250'
1100-5/64	5/64"	72	24-3	36	#17	1800	15	100', 1000'	1101-9/16	9/16"	480	48-10	30	# 3	48000	145	100', 250'
1100-7/64	7/64"	96	24-4	36	#16	2400	17	100', 1000'	1101-21/32	21/32"	788	48-16	30	# 1	77180	190	100', 250'
1100-1/8	1/8"	120	24-5	36	#15	3000	20	100', 1000'	1100-11/16	11/16"	720	48-15	36	# 8	18000	70	100', 250'
1100-5/32	5/32"	240	24-10	36	#12	6000	40	100', 1000'	1100-25/32	25/32"	864	48-18	36	# 7	21600	88	100', 250'
1100-11/64	11/64"	168	24-7	36	#14	4200	32	100', 1000'	1100-13/16	13/16"	864	48-18	36	# 7	21600	88	100', 250'
1100-3/16	3/16"	192	24-8	36	#13	4800	33	100', 1000'	1101-7/8	7/8"	336	48-7	30	# 5	33600	100	50', 100'
1100-13/64	13/64"	312	24-13	36	#11	7800	46	100', 1000'	1101-1	1"	384	48-8	30	# 4	38400	120	50', 100'
1100-1/4	1/4"	384	24-16	36	#10	9600	53	100', 1000'	1101-1-1/8	1 1/8"	432	48-9	30	# 4	43200	130	50', 100'
1101-9/32	9/32"	120	24-5	30	# 9	12000	60	100', 500'	1101-1-1/4	1 1/4"	480	48-10	30	# 3	48000	145	50', 100'
1100-3/8	3/8"	384	48-8	36	#10	9600	53	100', 500'	1101-1-3/8	1 3/8"	528	48-11	30	# 3	52800	150	50', 100'
1101-7/16	7/16"	240	24-10	30	# 6	24000	90	100', 500'	1101-1-1/2	1 1/2"	576	48-12	30	# 3	57600	165	50', 100'

Larger sizes, and construction variations available to order. All of the above available in bare copper or silver plated copper.

*Values based on copper in free air at 65°F. OVAL & FLAT BRAID PER QQ-B-575F IS AVAILABLE.

STAINLESS STEEL TUBULAR

Shielded braid mfg. with type 304 soft drawn Stainless Steel. Used where higher temperatures and/or greater mechanical strength is needed.



NON-MAGNETIC. STD. P-U 100 feet

BRIM No.	Nom. I.D. When Rounded	Total No. of Wires	Construction	AWG of Indiv. Wires	AWG Equiv.	Nom. CMA	BRIM	Nom. I.D. When Rounded	Total No. of Wires	Construction	AWG of Indiv. Wires	AWG Equiv.	Nom. CMA
1150-1/32	1/32"	48	16-3	#36	#19	1200	1150-3/8	3/8"	336	48-7	#36	#11	8400
1150-1/16	1/16"	48	24-2	#36	#19	1200	1150-7/16	7/16"	384	48-8	#36	#10	9600
1150-5/64	5/64"	72	24-3	#36	#17	1800	1150-1/2	1/2"	432	48-9	#36	#10	10800
1150-7/64	7/64"	96	24-4	#36	#16	2400	1150-5/8	5/8"	528	48-11	#36	# 9	13200
1150-1/8	1/8"	120	24-5	#36	#15	3000	1150-3/4	3/4"	720	48-15	#36	# 8	18000
1150-3/16	3/16"	192	24-8	#36	#13	4800	1150-1	1"	336	48-7	#30	# 5	33600
1150-7/32	7/32"	240	24-10	#36	#12	6000	1150-1-1/2	1-1/2"	480	48-10	#30	# 3	48000
1150-1/4	1/4"	312	24-13	#36	#11	7800							

OTHER CONSTRUCTIONS AVAILABLE TO ORDER.

TY 430 MAGNETIC BRAID - AVAILABLE TO ORDER.

BRIM ELECTRONICS, INC. FAIR LAWN, N.J. 201-796-2886

HEAT SHRINKABLE TUBINGS: BRIFLON™ TEFLON — SILICONE RUBBER TUBING

SH200, SH250, SH254 & SHTF tubings have excellent resistance to weathering, chemicals (oils, fuels, solvents, acids, alkalis, fluids), & fungus, are non-corrosive, low water absorption (.01%), will not burn nor support combustion, have hi dielectric strength (850V/MIL dry), low dielectric constant, & a very low coefficient of friction. Hi mechanical strength yet flexible. (Low temp. flexibility —67°C). Their excellent electrical characteristics remain stable throughout their electrical range. Longitudinal change with full shrinkage: FEP —15% TFE —20%. Color: Natural (FEP-transparent; TFE-translucent).



SH200 (FEP) MIL-I-23053/11

SH200: an extruded modified FEP (Fluorinated-Ethylene-Propylene) Teflon™ tubing, with a continuous Oper. Temp. of +205°C (400°F). SH200 completely shrinks at 384°F. Shrinkage ratio — 1.3:1. It melts at 525-563°F so it can be used to encapsulate. Now many sensitive components, parts, devices, etc. can be protected with Teflon™. Fills void between the hi temp. of TFE, and low temp. of PVC and polyolefin tubings.

Briflon No.	Min. Exp. I.D.	Max. Rec. Dimen.**		±Wall Toler.
		I.D.	Wall	
SH200-24	.031"	.027"	.008"	.002"
SH200-22	.036"	.032"	.008"	.002"
SH200-20	.045"	.039"	.008"	.002"
SH200-18	.060"	.049"	.008"	.002"
SH200-16	.075"	.061"	.009"	.002"
SH200-14	.092"	.072"	.009"	.002"
SH200-12	.115"	.089"	.009"	.002"
SH200-10	.141"	.114"	.010"	.003"
SH200-9	.158"	.124"	.010"	.003"
SH200-8	.180"	.143"	.010"	.003"
SH200-7	.197"	.158"	.011"	.004"
SH200-6	.225"	.180"	.011"	.004"
SH200-5	.248"	.198"	.011"	.004"
SH200-4	.290"	.226"	.011"	.004"
SH200-3	.310"	.249"	.011"	.004"
SH200-2	.365"	.280"	.012"	.004"
SH200-1	.400"	.311"	.012"	.004"
SH200-0	.440"	.349"	.012"	.004"
SH200-3/8"	.500"	.383"	.015"	.004"
SH200-1/2"	.580"	.448"	.020"	.004"
SH200-1/4"	.666"	.510"	.020"	.004"
SH200-3/16"	.830"	.637"	.025"	.004"
SH200-1/8"	1.000"	.764"	.030"	.004"
SH200-3/32"	1.170"	.891"	.035"	.004"
SH200-1/16"	1.350"	1.020"	.035"	.004"
SH200-1/32"	1.650"	1.270"	.035"	.004"
SH200-1/64"	2.000"	1.520"	.035"	.004"

STD. P-U: 100', 4 foot minimum lengths. * DuPont.
** All dimensions are based on full recovery.

OTHER SIZES IN TFE AND FEP, AND COLOR ARE AVAILABLE TO ORDER. ETCHING FOR BONDING IS AVAILABLE TO ORDER.

BRIFLON SH206 HIGH SHRINK RATIO — 1.6:1 FEP TUBING



BRIFLON SH206 tubings are extruded modified FEP (Fluorinated-Ethylene-Propylene) Teflon™, with an operating temperature up to 205°C (400°F). It can completely shrink at 384°F, with partial shrinkage as low as 300°F. Suitable for those applications where 1.6:1 shrink capabilities are required (standard 1.3:1 shrinkage is insufficient). Sensitive components, parts, devices, etc. can be protected with Teflon™. Meets MIL-I-23053/11 Cl.2. Std. Color: Natural (Transparent).

Briflon No.	Min. Exp. I.D.	Max. Rec. I.D.	Nom. Rec. Wall	±Tolerance	Std. P-U
SH206-1/2"	.125"	.075"	.010"	.003"	100'
SH206-3/8"	.188"	.115"	.010"	.003"	100'
SH206-1/4"	.250"	.150"	.010"	.003"	100'
SH206-3/16"	.375"	.225"	.012"	.003"	100'
SH206-1/8"	.500"	.300"	.015"	.004"	100'
SH206-3/32"	.750"	.450"	.020"	.004"	100'
SH206-1/16"	1.000"	.600"	.025"	.005"	50'
SH206-1/32"	1.500"	.900"	.030"	.005"	50'
SH206-1/64"	2.000"	1.200"	.030"	.005"	50'

4 Ft. Min. Lengths. All dimensions are based on full recovery. *DuPont

SH250 (TFE) MIL-I-23053/12

SH250: an extruded modified TFE (PolyTetra-FluoroEthylene) Teflon™ tubing, with a continuous Operating Temperature of +250°C (550°F). SH250 will shrink when heated to 621°F. Shrinkage ratio — 2:1. Used wherever hi-temperature protection required. Applications: Protective covers in corrosive environments, protection for electronic components, cable jacketing, covers on immersion heaters, heat exchangers, light duty bearing surfaces, roll covers.

Briflon No.	Class	Min. Exp. I.D.	Max. Rec. Dimen.**		±Wall Toler.
			I.D.	Wall	
SH250-30	3	.034"	.015"	.009"	.002"
SH250-28	3	.038"	.018"	.009"	.002"
SH250-26	3	.046"	.022"	.010"	.002"
SH250-24	3	.050"	.027"	.010"	.002"
SH250-22	3	.055"	.032"	.012"	.003"
SH250-20	3	.060"	.039"	.012"	.003"
SH250-19	3	.065"	.043"	.012"	.003"
SH250-18	3	.076"	.049"	.012"	.003"
SH250-17	3	.085"	.054"	.012"	.003"
SH250-16	3	.093"	.061"	.012"	.003"
SH250-15	3	.110"	.067"	.012"	.003"
SH250-14	3	.120"	.072"	.012"	.003"
SH250-13	3	.140"	.080"	.012"	.003"
SH250-12	3	.150"	.089"	.012"	.003"
SH250-11	3	.170"	.101"	.012"	.003"
SH250-10	3	.191"	.112"	.012"	.003"
SH250-9	3	.205"	.124"	.015"	.004"
SH250-8	3	.240"	.141"	.015"	.004"
SH250-7	3	.270"	.158"	.015"	.004"
SH250-6	3	.302"	.178"	.015"	.004"
SH250-5	3	.320"	.198"	.015"	.004"
SH250-4	3	.370"	.224"	.015"	.004"
SH250-3	3	.390"	.249"	.015"	.004"
SH250-2	3	.430"	.278"	.015"	.004"
SH250-1	3	.450"	.311"	.015"	.004"
SH250-0	3	.470"	.347"	.015"	.004"
SH250-3/8"	2	.560"	.399"	.025"	.006"
SH250-1/2"	2	.750"	.524"	.025"	.006"
SH250-3/4"	2	.930"	.655"	.030"	.008"
SH250-5/8"	2	1.25"	.786"	.035"	.008"
SH250-3/2"	2	1.500"	1.036"	.035"	.008"

STD. P-U: 100', Sizes 26-14: 3 foot minimum lengths. 13-11' 1 foot minimum length. Sizes 30 to 0 are per class 3. Sizes 3/8" to 1" are per class 2.

SHTF SHRINKABLE TFE/FEP

SHTF is made with a combination of TFE and FEP Teflons™. The inner wall is made of FEP and the outer wall of TFE. When the tubing is heated, the TFE begins to shrink down tightly over the FEP. The FEP inner wall melts and flows-squeezes into and around the item covered, creating a solid or near solid encapsulation. The fit is so tight that it is safe against most environmental hazards, involving pull or vibrations. It can be used as a strain relief, or moisture-proof covering for wires, connectors, terminals, splices, electronic devices, etc. SHTF is non-flammable, non-corrosive, and offers all of the other outstanding electrical, chemical, and mechanical properties of Teflon™. Color: Natural (Transparent). OPERATING TEMPERATURE: —85°F to +450°F.

Briflon No.	Min. Exp. I.D.	Max. Rec. Dimen.**		Std. P-U+
		I.D.	Wall	
SHTF-1	.065"	.000"	.015"	100'
SHTF-2	.115"	.045"	.015"	100'
SHTF-3	.130"	.060"	.015"	100'
SHTF-4	.180"	.065"	.015"	100'
SHTF-5	.190"	.070"	.015"	100'
SHTF-6	.240"	.150"	.020"	100'
SHTF-7	.350"	.210"	.025"	100'
SHTF-8	.480"	.315"	.032"	100'
SHTF-9	.700"	.440"	.055"	100'
SHTF-10	1.000"	.700"	.045"	100'

** Fully closes off. + In random lengths of 1 foot to 3 feet. *DuPont

OTHER SIZES AND COLORS AVAILABLE TO ORDER.

BRIMFLEX BSR SILICONE RUBBER TUBING— ZZ-R-765/9 200°C



BRIMFLEX BSR Silicone Rubber tubing is an extremely elastic and stable high temperature and low temperature tubing. Besides being extremely flexible, it has excellent mechanical strength (tear resistance, tensile strength, elongation, and weather resistance), and outstanding dielectric strength, and corona resistance. BSR meets MIL-R-5847 and Fed. Spec. ZZ-R-765/9 Class 2b, STD. COLOR: WHITE. OPERATING VOLTAGE: 28 AWG-9# — 300V, 3/4"-1" — 600V.

Brimflex No.	Size	Nom. I.D.	Nom. Wall	Std. P.U.
BSR-28	28	.015"	.016"	1000'
BSR-26	26	.018"	.016"	1000'
BSR-24	24	.022"	.016"	1000'
BSR-22	22	.027"	.016"	1000'
BSR-20	20	.034"	.016"	1000'
BSR-19	19	.038"	.016"	1000'
BSR-18	18	.042"	.016"	1000'
BSR-17	17	.047"	.016"	1000'
BSR-16	16	.053"	.016"	1000'
BSR-15	15	.059"	.016"	500'
BSR-14	14	.066"	.016"	500'
BSR-13	13	.076"	.016"	500'
BSR-12	12	.085"	.016"	500'
BSR-11	11	.095"	.016"	500'
BSR-10	10	.106"	.016"	500'
BSR-9	9	.118"	.020"	500'
BSR-8	8	.133"	.020"	500'
BSR-7	7	.148"	.020"	500'
BSR-6	6	.166"	.020"	500'
BSR-5	5	.186"	.020"	250'
BSR-4	4	.208"	.035"	250'
BSR-3	3	.233"	.035"	250'
BSR-2	2	.262"	.035"	250'
BSR-1	1	.294"	.035"	250'
BSR-0	0	.329"	.035"	250'
BSR-3/8"	3/8"	.382"	.035"	250'
BSR-7/16"	7/16"	.446"	.035"	250'
BSR-1/2"	1/2"	.508"	.035"	250'
BSR-5/8"	5/8"	.636"	.040"	100'
BSR-3/4"	3/4"	.760"	.060"	100'
BSR-7/8"	7/8"	.895"	.070"	100'
BSR-1"	1"	1.010"	.080"	100'

SH254 4:1 SHRINKABLE TFE

SH254 tubing can recover to approximately 1/4 of its expanded size when heated to its "gel" point (621°F-625°F). Because of its exceptional shrinkage capability, it is recommended that the outside diameter of the object to be shrunk down upon should not be more than 50% of the expanded I.D. of the size of the tubing used. Many constructions conform to AMS 3584 and MIL-I-23053/12 class 5. SH254 is non-flammable, non-corrosive, and offers all of the other outstanding electrical, chemical, and mechanical properties of Teflon™. * DuPont

Briflon No.	Max. Exp. I.D.	Max. Rec. Dimen.**		±Wall Toler.
		I.D.	Wall	
SH254-3/8"	.078"	.025"	.009"	.002"
SH254-1/2"	.125"	.037"	.010"	.002"
SH254-3/4"	.187"	.050"	.012"	.003"
SH254-1/4"	.250"	.063"	.012"	.003"
SH254-3/16"	.312"	.079"	.012"	.003"
SH254-3/8"	.375"	.096"	.012"	.003"
SH254-1/2"	.438"	.112"	.012"	.003"
SH254-3/4"	.500"	.144"	.015"	.004"
SH254-1/4"	.562"	.155"	.015"	.004"
SH254-3/8"	.625"	.178"	.015"	.004"
SH254-1/4"	.687"	.198"	.015"	.004"
SH254-3/8"	.750"	.224"	.015"	.004"
SH254-1/2"	.875"	.244"	.015"	.004"
SH254-1/4"	1.000"	.278"	.015"	.004"
SH254-1/4"	1.250"	.347"	.015"	.004"

STD. P-U: 100', in 4 foot lengths. Std. Color: Natural (Clear)
* Per MIL-I-23053/12 Class 5.

E-TFE TEFLON™ SPAGHETTI TUBING IS AVAILABLE TO ORDER.
** O.D. of closest equivalent wire. *DuPont SHRINKABLE TUBINGS per MIL-I-23053/7 & 8 ARE AVAILABLE.

BRIM WIRE — CABLE — TUBING — HARDWARE

BRIMFLEX™ SHRINKABLE TUBINGS — SPIRAL WRAP TUBINGS

BRIFLEX™ SHRINKABLE PVC TUBINGS: MIL-I-23053/2B & HEAVY WALL PVC TUBING

SHRINKABLE IRRADIATED POLYOLEFIN: MIL-I-23053/5 — SPIRAL WRAP TUBING

BRIMFLEX™ POLYVINYLCHLORIDE SHRINKABLE TUBING — MIL-I-23053/2B & UL VW-1



SHRINK RATIO: 2:1 (50%) — OPERATING TEMPERATURE: -20°C TO +105°C
 BRIMFLEX™ SH105 is a flexible all purpose shrinkable PVC tubing that shrinks 50% of its expanded size when exposed to temperatures below 200°F (within one minute). SH105 meets MIL-I-23053/2B, Class 2†, and conforms to MIL-I-631D, Grade C. Longitudinal shrinkage: approximately 20%. SH105 is self-extinguishing, resistant to fungus, most oils, and chemicals, sunlight, moisture, and is non-corrosive. SH105 is suitable for insulating wires, cables, and electronic components, that vary in shapes, and dimensions. Produces a smooth snug flexible fit, in most applications — even around sharp bends. Dielectric Strength: 700V/MIL min., ASTM-D922. Tensile Strength: 2000PSI min. Suggested Storage Temperature: under 70°F for up to 10 months. UL Approved SH105 is available to order.
 STD. COLORS: Black, Clear, Red, White. Other colors and †Class 1 is available to order.

Brimflex No.	Min. Exp. I.D.	Recovered Dimen.*		±Wall Toler.	AWG**	Rec. M.M.	Std. P-U	
		I.D. Max.	Wall					
SH105-¼"	.046"	.023"	.020"	.003"	24-22	0.59	—	100'
SH105-⅜"	.063"	.031"	.020"	.003"	22-20	0.80	100'	500'
SH105-½"	.093"	.046"	.025"	.003"	18-16	1.19	100'	500'
SH105-⅝"	.125"	.063"	.025"	.003"	14	1.59	100'	500'
SH105-¾"	.187"	.093"	.025"	.003"	12-10	2.39	100'	500'
SH105-1"	.250"	.125"	.025"	.005"	8	3.18	100'	500'
SH105-1¼"	.312"	.156"	.028"	.005"	7	3.97	100'	500'
SH105-1½"	.375"	.187"	.028"	.005"	5	4.77	100'	500'
SH105-1¾"	.500"	.250"	.028"	.005"	2	6.35	100'	250'
SH105-2"	.750"	.375"	.033"	.005"	00	9.52	100'	250'
SH105-1"	1.000"	.500"	.038"	.005"	0000	12.70	100'	250'
SH105-1½"	1.500"	.750"	.043"	.005"	450MCM	19.05	—	50'
SH105-2"	2.000"	1.000"	.048"	.006"	750MCM	25.40	—	50'
SH105-3"	3.000"	1.500"	.068"	.007"	1750MCM	38.10	—	50'
SH105-4"	4.000"	2.000"	.073"	.008"	2750MCM	50.80	—	50'

* If full recovery allowed. ** O.D. of closest equivalent wire.

SHRINKABLE IRRADIATED POLYOLEFIN TUBING — ALL PURPOSE — MIL-I-23053/5



Flexible, yet greater electrical, chemical, and abrasion resistance, and greater mechanical strength than that of shrinkable PVC tubing. It not only insulates, it can also encapsulate, giving a watertight fit. Won't crack or peel. Its non-corrosive, has excellent resistance to soldering irons, oils, solvents, acids, alkalis, fuels, hydraulic fluids, fungus. Shrink Ratio-2:1 (50%). Shrinks when exposed to 250°F. Longitudinal shrinkage: 5%. Dielectric Strength: 1300V/MIL. Colored tubing is self-extinguishing; clear tubing is slow burning. Uses: Strain relief, jacketing material, component insulation. OPERATING TEMPERATURE: -55°C to +135°C. Meets MIL-I-23053/5, Class 1, 2. MIL-I-1744B, AMS 3636B, AMS 3637A, ASTM D876, ASTM D150, ASTM D257, ASTM D2671, ASTM D792.

Brimflex No.	Min. Exp. I.D.	Recovered Dimen.*		±Wall Toler.	AWG**	Rec. M.M.	Std. P-U	
		I.D. Max.	Wall					
SH135-¼"	.046"	.023"	.016"	.003"	24-22	0.59	100'	500'
SH135-⅜"	.063"	.031"	.016"	.003"	22-20	0.80	100'	500'
SH135-½"	.093"	.046"	.020"	.003"	18-16	1.19	100'	500'
SH135-⅝"	.125"	.063"	.020"	.003"	14	1.59	100'	500'
SH135-¾"	.187"	.093"	.020"	.003"	12-10	2.39	100'	500'
SH135-1"	.250"	.125"	.025"	.003"	8	3.18	100'	500'
SH135-1¼"	.312"	.156"	.025"	.003"	5	4.77	50'	100'
SH135-1½"	.375"	.187"	.025"	.003"	2	6.35	50'	100'
SH135-1¾"	.500"	.250"	.030"	.005"	00	9.52	25'	50'
SH135-2"	.750"	.375"	.035"	.006"	0000	12.70	25'	50'
SH135-1½"	1.500"	.750"	.040"	.006"	450MCM	19.05	25'	50'
SH135-2"	2.000"	1.000"	.045"	.007"	750MCM	25.40	25'	50'
SH135-3"	3.000"	1.500"	.050"	.008"	1750MCM	38.10	25'	50'
SH135-4"	4.000"	2.000"	.055"	.009"	2750MCM	50.80	25'	50'

STD. COLORS: Black, Clear, Red, White. Other colors are available to order.
 * If full recovery allowed. ** O.D. of closest equivalent wire.

BRIMFLEX™ SHRINKABLE HEAVY WALL PVC TUBING UL VW-1



Brimflex No.	Min. Exp. I.D.	Recovered Dimen.*		±Wall Toler.	AWG**	Rec. M.M.	Std. P-U
		I.D. Max.	Wall				
SH110-¼"	.125"	.063"	.032"	0.05"	14	1.59	1000'
SH110-⅜"	.187"	.093"	.032"	0.05"	12-10	2.39	1000'
SH110-½"	.250"	.125"	.032"	0.05"	8	3.18	1000'
SH110-⅝"	.312"	.156"	.032"	0.05"	6	3.97	500'
SH110-¾"	.375"	.187"	.032"	0.05"	4	4.77	500'
SH110-1"	.500"	.250"	.032"	0.05"	2	6.35	500'

* If full recovery allowed. ** O.D. of closest equivalent wire.

SEMI-RIGID POLYOLEFIN SHRINKABLE TUBING IS AVAILABLE TO ORDER.
 CUT AND PRINTED WIRE MARKERS ARE AVAILABLE TO ORDER.

SPIRAL WRAP TUBINGS FOR HARNESSING



Easily twists on and off. Can be repeatedly flexed without cracking or breaking. Expandable. Holds wire, and cable bundles securely, and allows leadoffs or additions at any point. Bends around sharp corners, and protection against sharp edges. Available in 4 types of insulations: Polyethylene, Rulan (a flame retardant type of polyethylene), Nylon, Teflon. All are resistant to organic solvents, alkalis, and acids (nylon satisfactory except for strong acids). OSHA and UL approved for harnessing cables.

Brimflex No.	Covers Max. Wire Group	Nom. O.D.	Nom. Wall
POLYETHYLENE (CLEAR)* -105°F to +215°F			
PSW-1/8"	1/16" to 1/2"	1/8"	.032"
PSW-1/4"	3/16" to 2"	1/4"	.045"
PSW-3/8"	5/16" to 3"	3/8"	.052"
PSW-1/2"	3/8" to 4"	1/2"	.062"
PSW-3/4"	3/4" to 5"	3/4"	.065"
PSW-1"	1" to 7"	1"	.080"

RULAN (WHITE)** -8°F to +200°F			
RSW-1/8"	1/16" to 1/2"	1/8"	.032"
RSW-1/4"	3/16" to 2"	1/4"	.045"
RSW-3/8"	5/16" to 3"	3/8"	.052"
RSW-1/2"	3/8" to 4"	1/2"	.062"
RSW-3/4"	5/8" to 5"	3/4"	.065"
RSW-1"	1" to 7"	1"	.080"

NYLON (NATURAL)*** -121°F to +300°F			
NSW-1/8"	1/16" to 1/2"	1/8"	.015"
NSW-1/4"	3/16" to 2"	1/4"	.025"
NSW-3/8"	3/16" to 3"	3/8"	.032"
NSW-1/2"	3/8" to 4"	1/2"	.032"
NSW-3/4"	1/2" to 5"	3/4"	.032"
NSW-1"	1" to 7"	1"	.032"

TEFLON (NATURAL)**** -275°F to +500°F			
TSW-1/8"	1/16" to 1/2"	1/8"	.030"
TSW-3/16"	1/8" to 1"	3/16"	.030"
TSW-1/4"	3/15" to 2"	1/4"	.030"
TSW-3/8"	5/16" to 2 1/2"	3/8"	.030"
TSW-1/2"	3/8" to 3"	1/2"	.030"
TSW-3/4"	5/8" to 4"	3/4"	.032"
TSW-1"	3/4" to 5"	1"	.040"

STD. P-U 1/8" to 1/4" — 100', 1000'; 3/8" to 1/2" — 100', 500'; 3/4" and 1" — 100'

* MIL-E-16400, MIL-P-3803, MIL-I-631D, MIL-E-5400F, Fed. Spec. L-P-390, ASTM D1248-65T.
 ** UL-70, ASTM D635, MIL-E-5400F.
 *** MIL-P-20693A, MIL-P-17091B, L-P-4100, MIL-T-47287
 **** MIL-I-22129C, AMS3653C, AMS3655, MIL-T-47287

BLACK NYLON AND POLYETHYLENE SPIRAL WRAP FOR ULTRAVIOLET RAY PROTECTION IS AVAILABLE TO ORDER.

LOW & HI TEMP. PVC TUBING PER MIL-I-7444 & MIL-I-631 STOCKED.

SHRINK RATIO: 2:1 (50%) — OPERATING TEMPERATURE: -20°C to +105°C

SH110 meets or exceeds the performance requirements of MIL-I-23053/2B, Class 2 but for its dimensions — its heavier wall. SH110 is a Heavy Wall Shrinkable PVC tubing, yet its flexible, and will shrink at temperatures below 200°F (within one minute). Provides outstanding dielectric and mechanical protection without damage to enclosed or adjacent components, even around sharp bends. Longitudinal shrinkage: approximately 20%. SH110 is self-extinguishing, resistant to fungus, moisture, sunlight, and most oils, and chemicals. Dielectric Strength: 600V/MIL min., ASTM-D922. Suitable as a heavy duty all-purpose shrinkable tubing that is less expensive, almost as flexible, and has a higher temperature ability than that of Shrinkable Neoprene tubing. Suggested Storage Temperature: Under 70°F for up to 10 months.



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 - Reduces the assembly labor cost.
 - Rework is easier and less time consuming.
 - Provides a superior strain relief.

Fits All Connector Sizes

Five Stock Sizes:

Connector Size	1	2	3	4	5
		8	10	14	18	22
	9	11	15	19	23
		12	16	20	24
		13	17	21	25
					28**

The connector size and MIL series determines the ring size; i.e., a size 18 connector BACC45 requires a size 4 ring.

Fits all connector sizes including:

Boeing # BACC 45, F, M, N, P, R, S, T & BACC 63X
 Douglas #DC-30 thru 37; DC-50 thru 57; DC-60 thru 63

I. To fit the following connectors, **increase the size by one size.**

MIL-C-26500 (MS24264 & MS24265),
 MIL-C-5015 (MS-3450) (DC-60/61)
 MIL-C-26482 Series I (MS3124) Series II (MS3472)
 MIL-C-83723 Series I (M83723/03&04)
 Series II (M83723/19&20/21&22)
 MIL-C-83723 Series III (M83723/66&67/68&69)
 MIL-C-38999 Series I (MS27466, 96, 68,
 MS27656,27505) Series III (D38999/20&24)

II. To fit the following connectors, **increase the size by two sizes.**

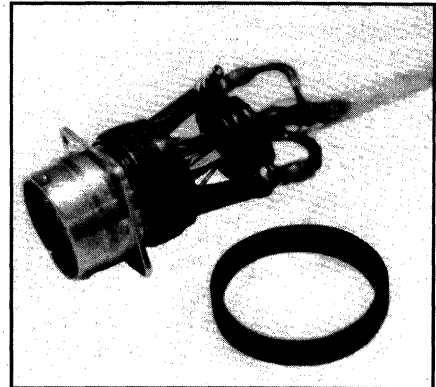
MIL-C-5015 (MS3454)
 MIL-C-38999 Series II (MS27474)***

III. For a MIL Connector to Ring Size Cross Reference Chart, contact BTC.

* Certain size 28 connectors may be too large for a size 5 - consult factory for larger sizes.

** For connector sizes larger than 28 consult BTC.

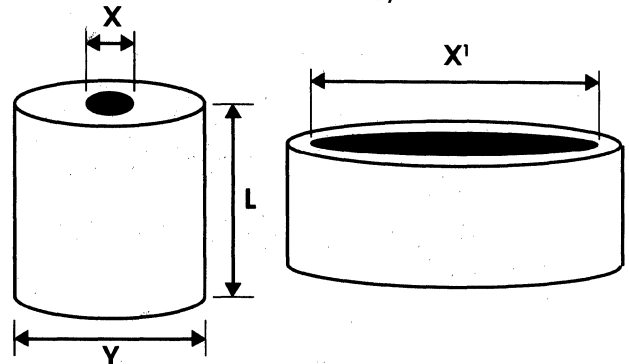
*** MIL-C-38999 Series I and II are connector sizes 9-25.



This heat shrinkable grommet can be placed over the cable assembly after the assembly is fabricated.

Dimensions (Inches)

Type I Semi Rigid Insulation MIL-I-81765/1



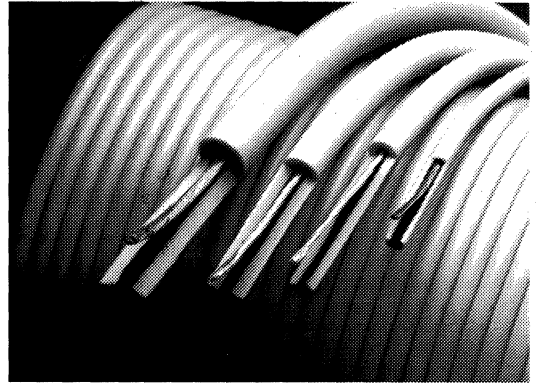
Size	I.D. Expanded X'	I.D. Recovered X	O.D. (Y)	Length (L)	Wt. grams
1	1.00	.045	.250	.500	.75
2	1.225	.062	.375	.500	1.0
3	1.437	.125	.500	.500	1.50
4	1.85	.125	.562	.750	3.50
5	2.00	.125	.812	.750	5.0

Notes:

- a) Recovered length will allow for 0.075" either side of the collar, minimum.
- b) Recovered I.D. will conform to all wire arrangements available in the connector size.
- c) For fire wall applications consult BTC.
- d) Rings can be made to fit any connector size - consult BTC.

DE Group Series Wire

The DE Group Series high voltage wire consists of the CC Series silicone rubber wire designed by Caton Connector Corporation and the BIW Series manufactured by Draka Intercable - BIW Cable Systems Division. Both offer the same high reliability found in a silicone dielectric wire. The wire is very flexible, has a wide operating temperature range and good resistance against corona. The electrical properties meet or exceed even the best organic insulation materials and offers maximum resistance against extreme temperature changes, radiation, moisture, deformation, weathering and chemicals.



General Design Specifications

1.0) ELECTRICAL

1.1) Operating Voltage: 10 thru 80 KVDC
 1.2) Current: 2.5 - 66 AMPS

3.0) MATERIALS

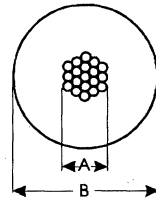
3.1) Dielectric: White Silicone
 4.2) Conductor: Silver Plated Copper

2.0) ENVIRONMENTAL

2.1) Operating Temperature Range: -55° C to +150° C

The CC Series — High Voltage Silicone Wire

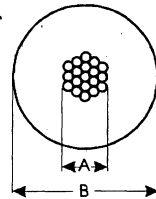
CONTINUOUS WORKING VOLTAGE KVDC	PART NUMBER	WIRE SIZE		DIMENSIONS IN INCHES/MM	
		AWG	STRANDING	A	B
15	CC20100-1	20	19/32	0.040 [1.02]	0.100 [2.54]
25	CC30140	18	19/30	0.051 [1.30]	0.140 [3.56]



BIW Series — Standard High Voltage Silicone Wire

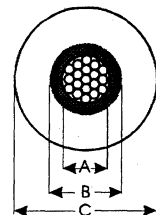
- Caton is an authorized stocking distributor for DRAKA INTERCABLE - BIW Cable Systems.
- All items are stocked in minimum quantity lengths, on spools for quick delivery.
- Bulk Lengths are available.

CONTINUOUS WORKING VOLTAGE		PART NUMBER	WIRE SIZE		DIMENSIONS IN INCHES/MM	
KVAC	KVDC		AWG	STRANDING	A	B
5	10	005636	20	19/32	0.040 [1.02]	0.100 [2.54]
10	30	005638	16	19/29	0.058 [1.47]	0.180 [4.57]



CONTINUOUS WORKING VOLTAGE		PART NUMBER	WIRE SIZE		DIMENSIONS IN INCHES/MM		
KVAC	KVDC		AWG	STRANDING	A	B	C
10	30	005639	22	19/34	0.032 [0.81]	0.067 [1.70]	0.180 [4.57]
15	40	0A2841	18	19/30	0.051 [1.30]	0.086 [2.18]	0.236 [5.99]
18	50	002841	14	19/27	0.071 [1.80]	0.100 [2.54]	0.300 [7.62]
20	60	005640	12	19/25	0.092 [2.34]	0.134 [3.40]	0.360 [9.14]
30	80	005641	8	133/29	0.150 [3.81]	0.240 [6.10]	0.650 [16.51]

Items have semiconducting silicone rubber bonded to insulation for increased CORONA-FREE operation.

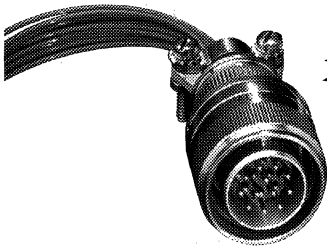


For More Information On Corona, Please Consult Factory. Call for our complete wire list.

CATON
 Caton Connector Corporation

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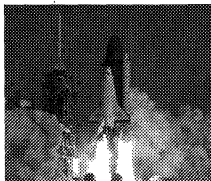
Medical



Aviation

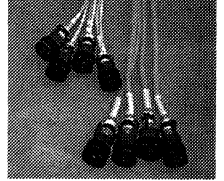


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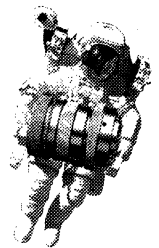
- Low Weight - Low Cost Harness Solutions
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- OR** Use of Existing Designs and Processes

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CTI is also a quality source for your connector needs

Cylindrical	Rectangular
<ul style="list-style-type: none"> • MIL-C-38999- Series I, II, III • MIL-C-26482- Series I & II Crimp and Solder • MIL-C-5015 G, Class K • MIL-C-83723, specifically engine types 	<ul style="list-style-type: none"> • M24308 • M55302 • ARINC 600

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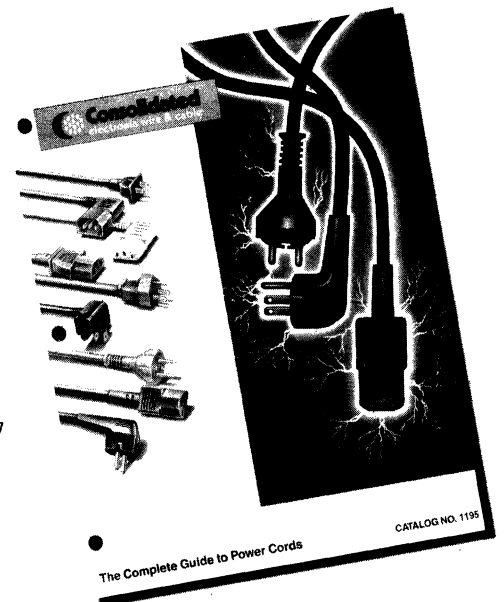
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(NEC) CM, CL2

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UL1283, UL1429, UL1430
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Material	Daburn Series	Expanded I.D. Range	Max. Op. Temp.	Shrink Temp.	Shrink Ratio	Min. Flex Temp.	Volts/MIL	Notes
PVC	SH265	3/64-4"	105°C	95°C	2:1	-10°C	700	Also heavy wall SH267 Series
Irradiated Polyolefin Shrink-Melt	SM270	1/8-1"	110°C	110°C	3:1	-55°C	500	Inner liner for encapsulation, large shrink ratio
Neoprene	SH162	1/8-4"	120°C	120°C	2:1	-70°C	300	Low-temp flexibility
Rubber Tape	NEW ST250†	—	130°C	—†	Stretches 2:1	-40°C	1060	No heat required Stretch-N-Seal™
Irradiated Polyolefin	SH275	3/64-4"	135°C	120°C	2:1	-55°C	500	Also semi-rigid SH290 Series
Irradiated Polyolefin 3:1	SH321	1/16-4"	135°C	90°C	3:1	-55°C	500	Shrinks 3 to 1
Irradiated Polyolefin 4:1	SH277	1"-4"	135°C	110°C	4:1	-55°C	500	Shrinks 4 to 1
Kynar	SH350	3/64-1"	175°C	175°C	2:1	-55°C	1000	Semi-rigid
FEP Teflon	SH400	0.31-1.3"	200°C	250°C	1.3:1	-67°C	2100	
TEF/FEP Teflon Shrink-Melt	SM450	1/32-1"	232°C	327°C	1.4:1	-67°C	500	Inner Wall Melts for encapsulation
TFE Teflon	SH621	.034-1.5"	288°C	327°C	1.5:1	-67°C	900	Also Ultra-TW SH620 Series
TFE-Teflon 4:1	SH421	5/64-1 1/4"	288°C	327°C	4:1	-67°C	500	Shrinks 4 to 1

† Stretch and it recovers without heat



NON-SHRINK SLEEVING

Material	DABURN Series	I.D. Range	Max. Op. Temp.	Min. Flex Temp.	Dry Volts MIL	Dielectric Constant	Standard Colors
PVC-Low Temp	D74	.022-2.5"	80°C	-55°C	500 Min.	4.5	Clear
PVC	D105	.022-2.5"	105°C	-10°C	1000 Avg.	6.0	#1 Thru 2 1/2" Clear Black #2 True #7 Clear, Black, White #8 True, #24 Clear, Black, White, Red
Vinyl Coated Fiberglass	D130	0.22-1"	130°C	-20°C	4000 Min.	7.0	Black, Yellow
Silicone Rubber Coated Fiberglass	D200	0.24-1"	200°C	-70°C	8000 Avg.	3.7	White
Teflon-Std. Wall	DTT550	0.22-1.5"	250°C	-90°C	1400 Min.	2.2	Natural
Teflon-Thin Wall	DTT500	0.12-1"	250°C	-90°C	1400 Min.	2.2	Natural plus all MIL colors
Teflonm-Ultra TW	DUT	.002-.325"	250°C	-90°C	1400 Min.	2.2	Natural
Fiberglass	D1200	.022-1"	648°C	N.M.	Space Variable	N.M.	Natural

* Other colors available to order

WIRE-UNINSULATED

Material	AWG	Solid STR.	DABURN Series	Type	Std. P-U†	Memo
Copper	30-4	Sol	2360	TC	231	Soft Drawn
Copper	16-8	Sol	2375	BC	231	Soft Drawn
Copper	19-12	Str	2366	BC	231	Soft Drawn
Copper	22-10	Sol	2362	TC	120	Hard Drawn-2Ft Lgths
Copper	40-10	Sol	DTC	TC	380	Soft Drawn
Copperweld	14-10	Sol	2382	BCW	311	Hard Drawn-40% Conductivity
Copperweld	14-6	Sol	2386	BCW	201	Hard Drawn-40% Conductivity
Bronze	14-4	Str	2364	BB	311	Hard Drawn

BRAIDED SHIELD



Wire Type	Style	DABURN Series	Nom. ID	Spec	Approx. Awg	P-U†	Memo
TC	Flat	2355	1/32-3"	Mil	24-0000	311	Use as grounding strap
TC	Tubular	2350	1/32"-2"	Mil	22-2	311	For Electrostatic shield
S. Steel	Tubular	2354	1/32"-1 1/2"	Comm.	19-3	100	Soft drawn alloy 304

Additional Constrictions, Including Nickel, Silver and Oval, Are Available To Order.

†P-U Codes: 311:100,500,100; 231: 100, 1000; 201: 100; 380: 1/4, 1/2, 1LB; 234: 500, 100; 375: 250, 500, 1000; 100:100

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WIRE-FILM INSULATED

Insulation	AWG	Solid Str.	DABURN Series	Style/Type	O.P. Temp	Nom. Wall In.	Std. P-U†	Memo
Formvar/P. Nylon	44-10	Sol	DHF	JW1177/4	105°C	.0002 to .0016	380	Double Build
Formvar/P. Nylon	14-10	Sol	2380	JW1177/4	105°C	.0002 to .0016	231	Double Build
PU/Nylon	44-14	Sol	DPE	JW1177/9	130°C	.0005 to .0008	380	Single Build

HOOK-UP & LEAD WIRE-NO SHIELD-NO JACKET

Insulation	AWG	Solid Str.	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	Nom. Wall In.	Stk.** Colors	Std. P-U†	Memo
PVC	30-20	Str	2585	M76/LW	300	80°C	0.010	1	201	
PVC	24-12	Str	2555	M76/MW	1000	80°C	0.016	1	311	
PVC	24-18	Sol	2560	M76/MW	1000	80°C	0.016	1	311	
PVC	22-6	Str	2580	M76/MW	2500	80°C	0.032	1	311	Additional col. to order
PVC	24-16	Str	2628	CSA TR64 UL 1007	300	80°C	0.016	1	231	
PVC	26-18	Str	1660	UL1061	300	80°C	0.009	1	234	Semi-rigid bus. machine
PVC	22-8	Str	2611	UL1011	600	80°C	0.033	1	231	
Rubber	20-18	Str	2715	Test Lead	3-10K	80°C	3/64-5/64	3	311	
PVC	22-16	Str	2722	Test Lead	5000	80°C	0.032	4	311	Gas, Oil & Abrasion Resistant
PVC	32	Str	2741	Phone Wire UL1429	300	80°C	0.010	3	234	Stereo
PVC	26-16	Sol/Str	2200	CSA REW XLPVC M16878/B	150 600	80° 105°C	0.010	1	231	Irradiated PVC
PVC	32-18	Str	2671	UL1568 1692 1007	150 30 300	80°C 105°C 105°C	.005 to .010	6	231	Ultra Flexible Subminiature
PE	20-16	Str	2641	Some to UL3239 1067, 1069	to 26000	90°C (UL 80°C)	.047 to .125	5	311	Hi-Volt Wire
PVC	22-10	Str	2630	CSA TR32 UL1015	600	90°C 105°C	0.032	1	311	AWM
PVC	22-18	Sol	2635	CSA TR32 UL1015	600	90°C 105°C	0.032	1	311	AWM
PVC	32-14	Str	2500	M16878/B/1	600	105°C	0.010	2	231	19Str-Series 2501
PVC	24-12	Str	2515	M16878/C/2	1000	105°C	0.016	1	231	Additional col. to order
PVC	24-2	Str	2525	M16878/D/3	3000	105°C	0.032	1	231	Additional col. to order
Teflon	32-20	Str	2410	UL1213	—	105°C	0.010	1	201	Also available-Nickel plated cond. to 250°C
PVC	32-24	Str	2670	M16878	600	105°C	0.010	1	234	Flexible
PVC	26-16	Str	2215	UL1430 CSA REW XLPVC M16878/C	300 1000	105°C 105°C	0.016	1	231	Irradiated PVC
Kynar	30-25	Sol	D1422	UL1422,3	300	125°C (105°C UL)	.0045-.005	1	201	Hi-Cut Thru Resist; OFHC CU
Glass Braid	22-16	Str	2498	Hi-Temp	—	1500°F	—	3	232	Inorganic Braid
Teflon	24-16	Str	2412	UL1164	300	150°C	0.016	1	231	Also available-Nickel plated cond. to 250°C
Tefzel	30-24	Sol	D1522	UL1516	300	150°C (105°C UL)	.0045-.005	1	231	Hi-Cut Thru Resist; OFHC CU
Teflon	26-10	Str	CRT	Hi-Volt	10KVDC 50KVDC	200°C	.010-.100	1	375	Corona Resistant
Teflon	32-10	Sol/Str	2401	M16878/E/4	600	200°C	0.010	2	311	Also available-Nickel plated cond. to 250°C
Teflon	24-8	Str	2428	M16878/EE/5	1000	200°C	0.016	1	311	Also available- -Nickel plated cond. to 250°C
Teflon	36-20	Str	2427	M16878/ET/6	250	200°C	0.006	1	311	Miniature
Teflon	24-16	Str	2411	UL1180	300	200°C	0.016	1	231	Also available-Nickel plated cond. to 250°C
Teflon	22-12	Str	2426	M7139, CL1	600	200°C	0.025	W/BU	234	
Kapton	30-16	Str	2490	M81281	600 1000	200°C	.0045-.006	7	201	Radiation Resist. Hi-Diel. Strength
Silicone Rubber	22-10'	Str	2636	UL3239	to 40KDC	200°C (UL150°C)	.045-.097	5	231	Hi-Volt Lead Wire
Teflon	22-13	Str	2425	M7139, CL2	600	260°C	0.025	W/OR	234	
Glass Braid	22-18	Str	2497	Hi-Temp	—	800°F	—	5	234	Inorganic braid

* TC unless noted

****COLOR CODES (Not Necessarily This Sequence.)**

1 - BK, BN, RD, OR, YE, GN, BU, VI, GY, WH 2 - Above +W/BK, W/RD, W/GN, W/YE, W/BU, W/BN, W/OR, W/GY, W/VI 3 - RD, BK 4 - BK, RD, YE, GN, BU, WH 5 - WH 6 - WH, RD, BK, GN 7 - Nataural/CL 8 - GY 9 - BN, TN, GY [Not All Colors Stocked in All Size]

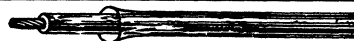
†P-U Codes: 311:100,500,100; 231: 100, 1000; 201: 100; 380: 1/4, 1/2, 1LB; 234: 500, 100; 375: 250, 500, 1000; 100:100

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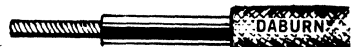
WIRE: JACKETED • SHIELDED CABLE: UNSHIELDED **DABURN**

HOOK-UP WIRE JACKETED-NO SHIELD



Insulation	Jacket	AWG	Solid Str.*	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	Nom. Wall In.	Stk.** Colors	Std. P-U†	Memo
PVC	Nylon	30-20	Str	2590	M76/LW/J	300	90°C	0.010	1	201	Abrasion Resist.
PVC	Nylon	24-12	Str	2565	M76/MW/J	1000	90°C	0.017	1	311	Abrasion Resist.
PVC	Glass Braid	22-12	Str	2570	M76/MW/B	1000	90°C	0.017	5	231	
PVC	Glass Braid	10-6	Str	2575	M76/HW/B	2500	90°C	0.045	5	231	
PVC	Nylon	28-14	Str	2510	M16878/ BN/17	600	105°C	0.010	2	231	19Str. 2511 Series
PVC	Nylon	22-12	Str	2601	M5086 TY1	600	105°C	.018-.028	5	231	PVC Aircraft
PVC	Nylon Braid	00-22	Str	2602	M5086 TY2	600	105°C	.023-.070	5	231	PVC Aircraft
PVC	Nylon	24-12	Str	2520	M16878/ CN/18	1000	105°C	0.016	1	231	
PVC	Nylon	24-6	Str	2525N	M16878/ DN/19	3000	105°C	0.032	1	231	Abrasion Resist.
Teflon	Glass Braid	26	Str	2464	M16878/ E/4	600	200°C	0.010	5	375	Teflon impregnated fiberglass braid overall
Silicone					UL3069		200°C				
Rubber	Glass Braid	22-8	Str	2625	UL3070	600	(UL150°C)	0.032	5	311	Fixture Wire

WIRE SHIELDED-WITH/WITHOUT JACKET



Insulation	AWG	Solid Str.*	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	Std. P-U†	Memo
PVC	24-22	Str	2737	Phone wire	300	60°C	234	Flexible, limp, braid TC shield overall
PVC	24-12	Str	2597	M76/MW-C-SJ	1000	80°C	311	Vinyl over braid TC
PVC	24-12	Str	2592	M76/MW-C-S	1000	80°C	311	Shield Overall
PVC	32	Str	2745	Flexible, limp	200	80°C	234	For low hum
PVC	24-12	Str	2595	M76/MW-C-SJ	1000	90°C	201	Nylon over braid TC
PE	20-14	Str	2652	Hi-Volt	16,000	90°C	311	Hi-Volt
PVC	22-12	Str	2605	M7078/1	600	105°C	231	PVC/Nylon Aircraft
PVC	24-12	Str	2530	M16878/C-S	1000	105°C	201	Shield overall
PVC	24-12	Str	2533	M16878/C-SJ	1000	105°C	201	Nylon over braid TC
PVC	24-12	Str	2535	M16878/C-SJ	1000	105°C	201	Vinyl over braid TC
PVC	30-24	Str	2682	Flexible	600	105°C	234	TC braid overall
TFE	26-16	Str	2444	M16878/E	600	200°C	375	Fiberglass braid over shield
TFE	26-16	Str	2454	M16878/E	600	200°C	375	TFE TAPE over shield
TFE	26-16	Str	2434	M16878/E	600	200°C	375	No JKT over shield
TFE	24-16	Str	2480	Type E	600	200°C	234	FEP/JKT Over shield
Glass Braid	22-18	Str	2499	Hi-Temp	—	2000°F	234	Radiation resist.

MULTICONDUCTOR CABLE-UNSHIELDED



Insulation	AWG	Solid Str.*	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	Nom. Wall In.	Stk.** Colors	Std. P-U†	Memo
PE	28	Str	28-04	w/Modular Plugs	60°C			BK, GY	10	7, 14, 25ft. Straight or cross wired
PVC	24-8	Str	2754	Zip	300	60°C	.016-.055	7,9,BK,WH	311	2 cond. speaker wire
Rubber, PVC	18-16	Str	1990	SP-1 SPT 1,2	300	60°C		BK, BN, 7	311	2 cond. lamp cord
Rubber	20	Str	2802	Rubber	300	60°C	0.022	BK	231	Control cable
Rubber	18-12	Str	3300	SO	600	60°C		BK	100	Control cable
PVC	28-27	Sol/Str	2750	Mini-zip	30	80°C	.011-.012	WH, TN	234	2 cond. earphone
PVC	22	Sol	3020/4SW	Telephone	100	80°C		BG	311	4 cond. station wire
PE	28	Str	2800/4	Modular Phone (UL30)	100	80°C		SS, BK	231	Available to order #26, tinsel shielded
PVC	22-14	Sol/Str	3020	UL2905 VW-1	300	80°C	.010-.016	8	311	2-60 Cond.
PVC	32	Str	2742	UL2576 Hi-Fi	200	80°C	0.010	6	234	1-4 cond. no JKT
PVC	22	Str	3054	UL1581 2905 CL2 (UL15V)	300	80°C	0.010	8	311	2-60 Cond.
PVC	22-12	Str	3004	UL1007/ UL1581	300	80°C	.016-.020	9	201	2 cond. no jacket
PVC	22-18	Sol/Str	3029C	—	600	80°C		GY	311	B.C. 2-20 cond.
Neoprene	18-12	Str	1995	HPN	300	90°C		BK	375	2 cond. heater cord
PVC	28	Str	1888	UL2651 VW-1	300	105°C	0.010	8	100	9-64 cond. ribbon, .050" on center

* TC unless noted

**COLOR CODES Not Necessarily This Sequence.

1 - BK, BN, RD, OR, YE, GN, BU, VI, GY, WH 2 - Above +W/BK, W/RD, W/GN, W/YE, W/BU, W/BN, W/OR, W/GY, W/VI 3 - RD, BK 4 - BK, RD, YE, GN, BU, WH 5 - WH 6 - WH, RD, BK, GN 7 - Natural/CL 8 - GY 9 - BN, TN, GY [Not All Colors Stocked in All Size]

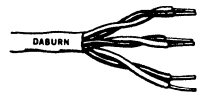
†P-U Codes: 311:100,500,1000; 231: 100, 1000; 201: 1000; 380: 1/4, 1/2, 1LB; 234: 500, 1000; 375: 250, 500, 1000; 100:100; 10:10

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DABURN**CABLE: UNSHIELDED (CON'T) • PAIRS • SHIELDED****MULTICONDUCTOR CABLE-UNSHIELDED-CONT'D**

Insulation	AWG	Solid Str.	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	Nom. Wall In.	Stk** Colors	Std. P-U†	Memo
PVC	30	Str	2672	M16878	600	105°C	0.010	6	234	2-4 cond. no JKT
PVC	28	Str	2674	M16878	600	105°C	0.010	6	234	2-4 cond. CL JKT
PVC	24	Str	1804	M16878/B VW-1	600	105°C	0.010	2	311	4-20 cond. ribbon-bonded ind. colors
PVC	30-22	Str	1805	M16878/B UL2476	600	105°C	0.010	1	1	10-30 cond. bonded ribbon-solid colors
PVC	22	Str	1822	M16878/B VW-1	1000	105°C	0.016	2	311	4-20 cond. ribbon bonded-ind. colors
PVC	22	Str	1823	M16878/B UL2444	1000	105°C	0.016	1	1	5-20 cond. bonded ribbon-solid colors
FEP	28	Str	2488	UL20424 VW-1	300	200°C	0.008	7	100	9-64 cond. ribbon, .050" on center
TFE	26-16	Str	2464	M16878/E VW-1	600	200°C	0.010	6	375	2-5 cond. TFE impreg. braid

**CABLE-UNSHIELDED PAIRS**

Insulation	AWG	Solid Str.	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	No. Prs	Std. P-U†	Memo
PVC	22	Str	3002	UL2576 VW-1 CL2	200 (UL150V)	80°C	1-52	311	Intercom
PVC	22	Sol	3000	UL2576 VW-1 CL2	200 (UL150V)	80°C	1-101	311	Intercom
PVC	18	Str	3003	UL2464 VW-1 CL2	300	80°C	3-15	234	Heavy duty Intercom

**SHIELDED CABLE-MULTI CONDUCTOR-NOT PAIRED**

Insulation	AWG	Solid Str.	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	Nom. Wall In.	Stk** Colors	Std. P-U†	Memo
PVC	30-10	Str	2902	Audio	200-600	60°C	.010-.025	3	311	braid shield, no JKT
PE	25-20	Str	2770	MIC	1000-5000	60°C		GY	311	1 cond spiral + braid shield
PE	26-22	Str	2690	Lo Cap MIC		60°C		GY	311	Foam PE, braid SH overall copper + copperweld, JKT
PVC	22	Str	2958	Studio	300	60°C	0.010	BK	234	2 cond. spiral shield + drain
PVC	32	Str	2746	Stereo	200	80°C	0.010	6	234	2-4 cond no JKT, #2751 ind. sh braid
PVC	32	Str	2752	UL2879	300	80°C	0.007	BK	201	5 cond spiral shield + BK, JKT, Hi Flex
PE	18	Str	2779	MIC.	1000	80°C	0.025	BK	234	BK JKT over braid shield
PE	24-20	Str	2782	MIC./Control	600	80°C	0.014	GY	311	2-20 cond braid shield
PVC	28	Str	2928	UL2464 VW-1	300	80°C	0.009	GY	234	2-50 cond JKT over braid + foil shield overall
PVC	24	Str	2980	UL2464 CL-2	300	80°C	0.009	GY	311	2-60 cond JKT over foil shield
PVC	24	Str	2982	UL2464 CL-2	300	80°C	0.009	GY	234	2-60 cond JKT over braid + foil shield overall
PE	22	Str	2936	Sound cable	300	80°C	0.009	GY	234	2 cond al foil shield +2 cond no sh JKT
PVC	22	Str	2935	UL2785 UL2094	350	80°C	0.016	GY	234	3-5 cond. shield + unshielded for balanced & unbal. Intercom cable
PE	22-14	Str	2960	MIC	400 (UL300)	80°C (UL60°C)	.016-.020	GY	234	2-4 cond al foil + shield + drain JKT.
PVC	22-12	Str	2970	UL2095	450 (UL300)	80°C	.017-.020	GY	234	1-3 cond braid shield JKT
PVC	22-12	Str	2950	UL1108, UL2095	450 (UL300)	80°C	.017-.020	GY	311	1-6 cond spiral shield JKT
PVC	26-16	Str	2540	M16878/BN	600	105°C	0.010	5	234	1-4 cond Nylon over PVC, braid shield, JKT
PVC	28	Str	2678	M16878	600	105°C	0.010	6	234	2-4 cond CI JKT over braid shield
PVC	28	Str	2550	M16878/B	600	105°C	0.010	MIL-C-915	234	2-20 cond braid shield + JKT
PVC	24	Str	2676	M16878	1000	105°C	0.015	6	234	2-4 cond braid shield no JKT
PVC	18	Str	2551	M16878/C	1000	105°C	0.016	MIL-C-915	234	5-30 cond, braid shield + JKT
FEP	24-18	Str	82980	Plenum	300	150°C		7	231	Al foil shield + drain JKT
TFE	24-16	Str	2434	M16878/E	600	200°C	0.010	6	375	1-5 cond Sil. pl braid shield, no jacket
TFE	24-16	Str	2444	M16878/E	600	200°C	0.010	6	375	1-5 cond TFE Impregnated braid over shield
TFE	24-16	Str	2454	M16878/E	600	200°C	0.010	6	375	1-5 cond TFE tape wrap over braid shield
FEP	24-16	Str	2480	M16878/E	600	200°C	0.010	6	234	1-5 cond Extruded FEP over braid shield

**COLOR CODES Not Necessarily This Sequence.

1 - BK, BN, RD, OR, YE, GN, BU, VI, GY, WH 2 - Above +W/BK, W/RD, W/GN, W/YE, W/BU, W/BN, W/OR, W/GY, W/VI 3 - RD, BK 4 - BK, RD, YE, GN, BU, WH 5 - WH 6 - WH, RD, BK, GN 7 - Natural/CL 8 - GY 9 - BN, TN, GY [Not All Colors Stocked in All Size]

†P-U Codes: 311:100,500,1000; 231: 100, 1000; 201: 1000; 380: 1/4, 1/2, 1LB; 234: 500, 1000; 375: 250, 500, 1000; 100:100

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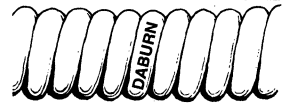
CABLE: SHIELDED PAIRS • RETRACTILE • POWER COMMUNICATION



CABLE-SHEILDED PAIRS

Insulation	AWG	Solid Str.	DABURN Series	Style/Type	O.P. Volt	O.P. Temp	No. Pairs	Stk** Colors	Std. P-U†	Memo
PE	22	Sol	3510	REA-PE-22			6-600	IPCEA	100	Aerial-Telephone
PE	19	Sol	3515	REA-PE-22			6-300	IPCEA	100	Aerial-Telephone
PE	22	Sol	3526	REA-PE-39			6-400	IPCEA	100	Burial-telephone
PE	19	Sol	3531	REA-PE-39			6-300	IPCEA	100	Burial-telephone
PVC	30-10	Str	2902		200-600	60°C	1		311	Braid shield, no JKT
PVC	28	Str	2920	UL2464 VW1	300	80°C	1-50	GY	234	Braid + foil shield JKT
PVC	24	Str	2937	UL2464 CL2-VW1	300	80°C	1-51	GY	311	Foil shield, JKT
PVC	24	Str	2938	UL2464 CL2-VW1	300	80°C	1-51	GY	234	Braid, foil shield JKT
PE	22	Str	2932	UL2493	300 (UL-None)	80°C	2-27	GY	234	Al foil + drain over ea. pr., JKT
PVC	22	Sol	2930	UL2464	300	80°C	3-27	GY	234	Al foil + drain over ea. pr., JKT
FEP	24-18	Str	82937	Plenum	300	150°C	1-27	7	231	AL foil sh+drain overall, JKT

RETRACTABLE CORDS UNSHIELDED-POWER CORDS UL & CSA TYPES



No. of Cond.	AWG	Voltage	UL/Types	Retracted Length	Extended Length	Amps	Notes
2-15	18	300-600	SVO, SJO, SO	1, 5ft	5-25ft	4.9-7	15 Cond. #18 20 & 25' ext. 7&15 cond. not UL
2-7	16	300-600	SJO, SO	1, 4ft	5-20ft	7-10	7 cond. not UL
2-4	14	600	SO	2, 4ft	10-20ft	12-15	
3-7	12	600	SO	2, 4ft	10,20ft	16-20	6 cond not UL
4	10	600	SO	4ft	20ft	20	
1	20	1000	Rubber test Lead, BK, RD	1, 2ft	5-10ft	4	TPE & PVC available to order

UNSHIELDED-POWER CORDS SETS-MOLDED MALE PLUG



No. of Cond.	AWG	DABURN Series	UL/Types	Voltage	Retracted Length	Amps	Extended Length	Notes
3	18	980/3	SVO	300	18in.	7	7 1/2ft	1 end: JKT removed & stripped
3	18	981/3	SJO	300	18in.	7	7 1/2ft	1 end: JKT removed & stripped
3	16	982/3	SJO	300	18in.	13	7 1/2 ft	1 end: JKT removed & stripped

UNSHIELDED COMMUNICATION CORDS

No. of Cond.	AWG	DABURN No.	Types	Voltage	Jacket Type	Amps	Retracted Length	Notes
2-15	23	975D	AWM	300	Plastic	1	2-4ft	10-20ft
2-8	28	975/28	Style 2723, AWM	300	Plastic	0.5	1-2ft	5-10ft
4-8	28	28-14-XX	With modular Plugs ea. end	—	Plastic		1-4 1/2ft	3-20ft
2-15	23	975	Some UL	300	TPE/Neoprene	1	4ft	20ft

SHIELDED COMMUNICATION CORDS

No. of Cond.	AWG	DABURN Series	UL/Types	Voltage	Jacket Type	Amps	Jacket Color	Extended Length
8	28	28-18-XS	With Modular Plugs		Plastic		BK, GY	5-15ft
2-8	28	975/28S	Miniature	300	Plastic	0.5	BK	5-10ft
1-6	23	995D	AWM	300 (120UL)	Plastic	1	BK	5-20ft
2-4	23	999D	Shield/Unshield	100	Plastic	1	BK	5-20ft
1-4	23	995	Shield/Unshield	75-300	Neoprene	1	BK	20ft

Additional Retractable Cord Constructions, with and without Plugs, and Jackets other than Black are Available to Order.

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1 - BK, BN, RD, OR, YE, GN, BU, VI, GY, WH 2 - Above +W/BK, W/RD, W/GN, W/YE, W/BU, W/BN, W/OR, W/GY, W/VI 3 - RD, BK 4 - BK, RD, YE, GN, BU, WH 5 - WH, RD, BK, GN 7 - Natural/CL 8 - GY 9 - BN, TN, GY [Not All Colors Stocked in All Size]

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DABURN CORDAGE • CORDS • CO-AX CABLE

PORTABLE CORDAGE



No. of Cond.	AWG	DABURN Series	UL/Types	Volts
2-4	18	2860, 2890, 2870	SV, SVO, SVTO	300
		2861, 2891, 2871	SJ, SJO, SJTO	300
		2863, 2893, 2873	S, SO, STO	600
2-4	16	2862, 2892, 2872	SJ, SJO, SJTO	300
		2864, 2894, 2874	S, SO, STO	600
2-4	14	2865, 2895, 2875	S, SO, STO	600
2-4	12	2866, 2896, 2876	S, SO, STO ff	600
2-4	10	2867, 2897, 2877	S, SO, STO	600
2-4	8	2868, 2898	S, SO	600
2-4	6	2869, 2899	S, SO	600

EXTENSION CORDS

No. of Cond.	AWG	DABURN Cat. No.	UL/Types	Length	Volts
2	18	9-201 ff	SV, SJ	6, 10, 25ft	300
2	16	9-206 ff	SJ	10, 25, 50ft	300
3	16	9-214	SJ	10, 25, 50ft	300
3	14	9-218	SJ	25, 50, 100ft	300
3	12	9-219	SJ	25, 50, 100ft	300

SERVICE/LINE CORDS

ff not U/L

No. of Cond.	AWG	DABURN Cat. No.	UL/Types	Length	Volts
2	18	1987	SPT-1	6, 7 1/2ft	300
2	18	1984	SV	9ft	125
3	18	1984/3	SV	9ft	125
3	18	1982/3	SJ	8ft	125
2	16	1980	SJ	8ft	125
3	16	1980/3	SJ	8ft	125

MIL SPEC AND COMMERCIAL CO-AXIAL CABLE



Rg/U Type	DABURN Cat. No.	Resist Ohms	Cap. ‡ Pf/Ft	Cond. Strand	Dielectric	Nom. Cable O.D. IN.	Jack Type	P-U	Shield
6/U	D6/U	75	17.3	18(1)B	FPE	.270	V	1,5	FB
8/U*	1925	52	29.5	7/21B	PE	.405	V	5	M
8/U	1925C	50	26.0	7/21B	FPE	.405	V	3	C
8/U	1925F	52	29.5	7/21B	FPE	.405	V	3	M
8/X	1925X	50	28.0	19/28B	FPE	.242	V	1,5	M
11/U*	1927	75	20.5	7/26T	PE	.405	V	5	M
58/U*	1929	53.5	28.5	20(1)B	PE	.195	V*	1	M
58A/U*	1928	50	29.0	19/33T	PE	.195	V	1	M
58/U	1929C	52	22.0	20(1)B	FPE	.195	V	1,5	C
58C/U*	1928C	50	29.5	19/22T	PE	.195	VN	1	M
59/U*	1930	73	21.0	22(1)CW	PE	.242	V	1	M
59/U	1930C	80	16.3	22(1)CW	FPE	.242	V	1,5	C
59/U	1930L	80	16.3	22(1)CW	FPE	.242	V	1,5	FB
59/U	1930F	80	16.3	22(1)CW	FPE	.242	V	1,5	M
59/U**	D59	75	19.6	22(1)CW	FC	.215	FC	1	M
59/U Dual	1923	75	20.5	22(1)CW	PE	.242x.505	V	1,5	M
62A/U*	1931A	93	13.5	22(1)CW	FPE	.242	V	1	M
62A/U**	D62A	93	12.9	22(1)CW	FC	.210	FC	1	M
142B/U*	D142B/U	50	30.0	18(1)SCW	T	.195	F	1,5	M
174/U*	D174/U	50	30.8	7/34CW	PE	.100	V	1,5	M
178B/U*	D178B/U	50	29.0	7/38SCW	T	.075	F	1,5	M
179B/U*	D179B/U	75	20.0	7/38SCW	T	.100	F	1,5	M
180B/U*	D180B/U	95	15.0	7/38SCW	T	.142	F	1,5	M
187A/U*	D187A/U	75	19.5	7/38SCW	T	.105	T	1,5	M
188A/U*	D188A/U	50	29.0	7/33SCW	T	.110	T	1,5	M
195A/U*	D195A/U	95	15.0	7/38SCW	T	.145	T	1,5	M
196A/U*	D196A/U	50	28.5	7/38SCW	T	.078	T	1,5	M
213/U*	D213/U	50	30.5	7/21B	PE	.405	VN	5	N
214/U*	D214/U	50	30.8	7/21S	PE	.425	VN	1,5	M
316/U*	D316/U	50	29.0	7/33SCW	T	.097	F	1,5	M

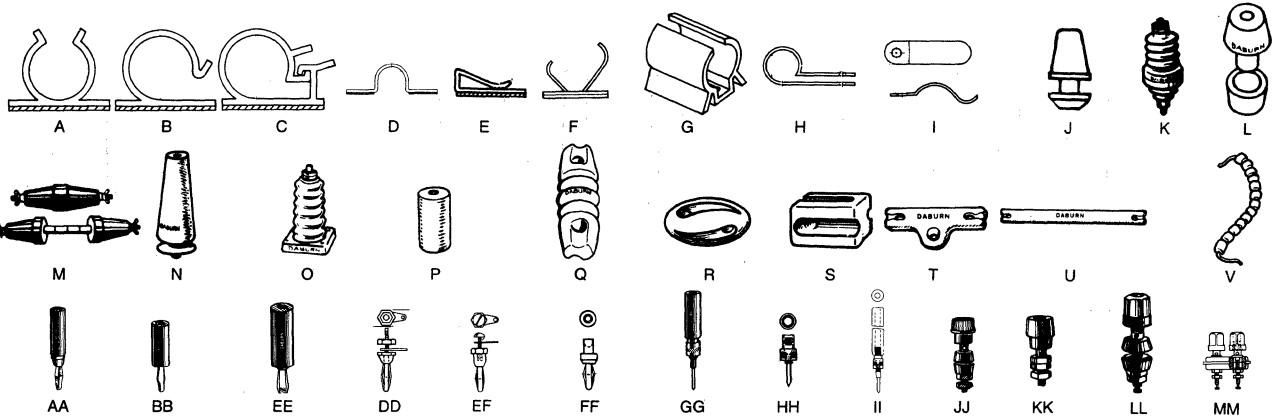
CODES:

‡ ±3 **Rg/U TYPE:** *MIL-C-17; ** Plenum style. (For non-conduit installation.) **COND. STRAND:** B-Bare copper; CW-Copperweld; S-Silver coated copper; SCW-Silverplated copperweld; T-Tinned. **DIELECTRIC:** F-FEP teflon; FC-Fluoropolymer resin; FPE-Foam polyethylene; PE-Polyethylene; T-TFE teflon. **JACKET TYPE:** F-FEP teflon; FC-Fluorocarbon; T-PTFE teflon tape; V-Vinyl; VN-Non-contaminating vinyl. **SHIELD:** C-Commercial copper braid (75-85%); FB-Aluminum polyester foilshield (100%) and aluminum braid (40%); M-Mil spec copper braid (95%). **STANDARD PUT-UP:** 1-1000 Ft., 3-100 Ft., 500 Ft., 1000 Ft., 5-500 Ft. Additional put-ups available.

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HARDWARE: • CLIPS • CLAMPS • PLUGS • BINDING POSTS
• PORCELAIN INSULATORS • LACING CORD & TAPE



STIK KLIPST™

DABURN Series	ILL.	Capacity Range	Std. Pkg.	Note
660	A	1/8"-3/4"	100, 1000	Top acceptance
670	B	1/8"-3/4"	100, 1000	Side acceptance
680	C	1/4"-3/4"	100, 1000	Locking
690	D	1/8"-1/2"	100, 1000	Over-the-top
675	E	1/2"-1"	100, 1000	Ribbon cable
666	F	5/32"-3/8"	100, 1000	Aluminum

CLIPS & CLAMPS

DABURN Series	ILL.	Capacity Range	Std. Pkg.	Note
600	G	1/4"-1 1/2"	100, 1000	Rigid, vinyl, BK
625	H	1/8"-1 1/2"	100, 1000	Nylon-natural
615	H	1/8"-1 1/2"	100, 1000	Propinate
651	H	1/8"-1 1/8"	100, 1000	Aluminum
641	I	3/8"	100, 1000	Nylon-natural

PLUGS & BINDING POSTS-

BANANA PLUGS

Solderless-Insulated

DABURN Cat. No.	ILL.	O.A. Length	Colors	Std. Pkg.	Note
19-63	AA	1 13/16"	RD, BK, YE, GN, BU	50	Wide thru side hole
19-46	BB	1 11/32"	RD, BK, YE, GN, BU	50	Side screw
19-04	AA	1 13/16"	RD, BK, YE, GN, BU	50	Top lock screw
19-65	EE	1 3/4"	RD, BK, YE, GN, BU	50	Top lock screw
19-55	EE	1 3/16"	RD, BK, BU	50	Midgit-solder

Solderless-Uninsulated

17-40	DD	1 5/16"	—	100	1/2" screw, lug, nut
17-40A	DD	1 5/16"	—	100	3/8" screw, lug, nut
17-40B	DD	1 5/16"	—	100	Beryllium Cu.
17-41	EE	1 7/32"	—	100	6-32x1/4 RMHS
17-26	FF	25/32"	—	100	Midgit-solder, rivit

PHONE TIP-SOLDERLESS

DABURN Cat. No.	ILL.	O.A. Length	Colors	Std. Pkg.	Note
19-09	GG	2 1/4"	RD, BK	50	Insulated
17-33	HH	1 3/16"	—	100	Uninsulated, Sr., swage-on
17-34	HH	1 15/32"	—	100	Uninsulated, Jr., swage-on
19-09T	HH	1 1/16"	—	100	Uninsulated, Sr., swage-on
19-10	II	5 1/4"	RD, BK	50	Test prod
19-43	II	6 1/4"	RD, BK	50	Test prod

BINDING POST

18-78	JJ	15 Amp	RD, BK	100	All insulated
18-79	KK	15 Amp	RD, BK	100	Ground type
18-72	LL	30 Amp	RD, BK	100	Multi purpose-fluted hd.
18-75	LL	30 Amp	RD, BK	100	Multi purpose-hex hd.
18-50	MM	15 Amp	RD, BK	100	Dual hex hd.
18-52	MM	15 Amp	RD, BK	100	Dual-fluted hd.

LACING TAPE

Flat Braided Tape-Teflon

Nom. Width	Mil. Spec.	Tensile Strength	DABURN Series	Std. P-U Yds.	Stock Colors
.100"	M43435-III-A	35 lbs.	2048	250	Natural
.075"	M43435-III-A	15 lbs.	2049	500	Natural

Flat Braided Tape-Teflon Coated Fiberglass

.170"	M43435-IV-D	150 lbs.	2045	250	Natural
.120"	M43435-IV-D	90 lbs.	2046	250	Natural
.080"	M43435-IV-D	70 lbs.	2047	500	Natural

LACING TAPE

Flat Braided Tape-Nylon

Nom. Width	Mil. Spec.	Tensile Strength	DABURN Series	Std. P-U Yds.	Stock Colors
.200"	M43435-I-B-1	150 lbs.	2035	250	WH, BK
.120"	M43435-I-B-2	80 lbs.	2036	250	WH, BK
.090"	M43435-I-B-3	50 lbs.	2037	500	WH, BK
.065"	M43435-I-B-4	30 lbs.	2038	500	WH, BK
.046"	M43435-I-B-5	15 lbs.	2039	500	WH, BK

Flat Braided Tape-Dacron

.120"	M43435-II-B-2	80 lbs.	2041	250	WH, BK
.090"	M43435-II-B-3	48 lbs.	2042	500	WH, BK
.060"	M43435-II-B-4	35 lbs.	2043	500	WH, BK
.046"	M43435-II-B-5	25 lbs.	2044	500	WH, BK

LACING CORD

Round Twisted Cord-Nylon

Nom. Width	Mil. Spec.	Tensile Strength	DABURN Series	Std. P-U Yds.	Stock Colors
.039"	M713-P-1	20 lbs.	2070	1 lb.	WH, BK
.029"	M713-P-2	48 lbs.	2071	1 lb.	WH, BK
.025"	M713-P-3	32 lbs.	2072	1 lb.	WH, BK
.020"	M713-P-4	20 lbs.	2072/1	1 lb.	WH, BK

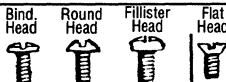
Round Twisted Cord-Linen

.036"	—	22 lbs.	2075	1 lb., 8 oz., 4 oz.	Natural
.044"	M713-3-N	33 lbs.	2078	1 lb., 8 oz., 4 oz.	Natural, BK
.051"	M713-2-N	50 lbs.	2084	1 lb., 8 oz., 4 oz.	Natural, BK
.054"	—	56 lbs.	2081	1 lb., 8 oz., 4 oz.	Natural, BK
.063"	M713-1-N	72 lbs.	2087	1 lb., 8 oz., 4 oz.	Natural, BK

NYLON FASTENINGS-MIL-P-20693A Screws

Daburn Series	Thread Size	Thread Length	Head Type	Standard Package
14-40	2-56	1/4, 3/8, 1/2	RD, FILL, BIND	100, 1000
14-43	4-40	1/4, 3/8, 1/2, 1"	RD, FILL, BIND, FLAT	100, 1000
14-46	6-32	1/4, 3/8, 1/2, 1"	RD, FILL, BIND, FLAT	100, 1000
14-51	8-32	1/4, 3/8, 1/2, 1"	RD, FILL, BIND, FLAT	100, 1000
14-57	10-32	1/4, 3/8, 1/2, 1", 2"	RD, FLAT	100, 1000
14-62	1/4-20	1", 2"	RD	100, 1000

Standard Color: Natural. Additional sizes to order.



PORCELAIN INSULATORS-

Feed-Thru

DABURN Series	ILL.	Nom. Height Max.	Std. Pkg.	Note
10-58	J	7/8"-3 3/4"	10-50	Smooth
10-79	K	2 1/16"-6"	5-25	Corrugated
10-205	L	7/8"-4 1/8"	5-20	Steatite, no hardware
10-237	M	7 3/4"-11 3/4"	10	Lead-in

Standoffs

10-30	N	5/8"-2 3/4"	25-100	Steatite
10-67	O	1/3/8"-4 1/2"	5-25	Corrugated, metal base
10-41	P	1/4"-4"	100	Steatite, no hardware

Antenna

DABURN Series	ILL.	Shape	Std. Pkg.	Note
10-06	Q	Corrugated	100	
10-73	R	Strain-egg	100	2", 1 1/2"
10-72	S	Strain-cube	25	2 1/4"
10-68	T	Strain	10, 25	4 1/4", 4 1/2"
10-70	U	Strain-cylinder	10	7", 12"
10-62	U	Feeder Spreader	25	2", 4", 6"

Fish Spine

10-215	V	Ball & Socket	100, 1000	Steatite, ID: .068"-.125"
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NYLON HEX NUTS

Daburn No.	Size
14-85	2-56
14-86	4-40
14-87	6-32
14-88	8-32
14-89	10-32
14-90	1/4-20

Standard Color: Natural.

NYLON FLAT WASHERS

Daburn No.	Size	I.D.	O.D.	Thickness	Standard Package
14-92	2	.094"	.250"	.016"	100, 1000
14-93	4	.125"	.250"	.016"	100, 1000
14-94	6	.156"	.312"	.031"	100, 1000
14-95	8	.170"	.375"	.031"	100, 1000
14-96	10	.195"	.375"	.031"	100, 1000
14-97	1/4	.281"	.625"	.063"	100, 1000

Standard Color: Natural.

SPIRAL HARNESS WRAP

Material	Covers	Series	DABURN Package	Note
Polyethylene	1/16" - 4"	605	100, 500, 1000'	to 200°F
Rulan	1/16" - 4"	606	100, 500, 1000'	to 200°F
Nylon	1/16" - 4"	607	100, 500, 1000'	to 300°F
Teflon	1/8" - 3"	608	100, 500'	to 500°F

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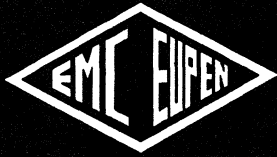
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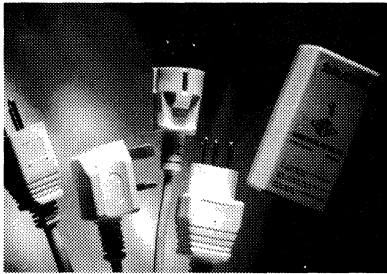
International Filtered Power Cord Sets



KABELWERK EUPEN AG

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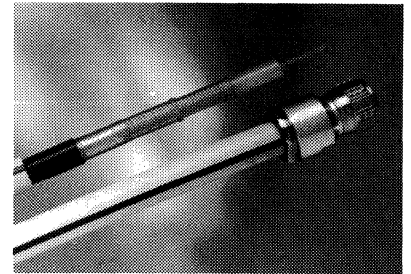
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 ■ **Industrial Controls** ■ **Test & Measurements** ■ **Secure Communications**



Int'l Filtered Cord Sets



Power, Data & Signal Cables



RF Cord Sets & Cables

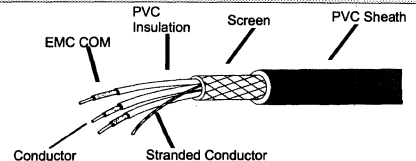
Your Cables Should Be The Solution To Your EMI Problems, Not The Cause

Kabelwerk Eupen manufactures a unique line of cables containing a ferroelastic compound which absorbs RF energy. This extrudable compound is referred to as EMC COM (electromagnetic compatibility compound). Unlike the traditional EMI suppression means which just re-direct the EMI energy, the EMC COM cables obliterate undesirable RF interference through absorption and transforming it to heat.

Low Pass Mains Cables - GNLM

These HF absorptive cables have individually ferrite (EMC COM) coated conductors and a screen made of aluminum foil. Earth conductors are normally not ferrite coated. These cables are very useful in applications where mains disturbances are a problem. They are especially effective for steep impulses, e.g. burst impulses. As the result of the ferrite coating on the conductor, the cable performs like a low pass (LP) filter, the longer the cable, the higher the attenuation. All GNLM-types have VDE, UL, and CSA approval.

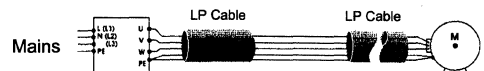
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Motor Connection Cables for Frequency Inverters LIMY(St)CY-JZ

Kabelwerk Eupen designed and manufactures an application specific, four conductor cable to be used as the interconnect cable between asynchronous motors and frequency converters. This is a well known source for conducted and radiated interferences. Because of its low pass (LP) design, there is a greatly reduced level of reflections also. The cable is fitted with double shielding: the metallic foil reduces the capacitive coupling of the cable, whilst the second shield is a high density braid of large cross-section which insures both high current carrying capacity and low transfer impedance. The LP cable is offered with conductors 1.5, 2.5, 4.0 and 6mm², which meet the current requirements for inverters up to 3 x 400 V/45 A (30 kW).

See our website: <http://www.emceupen.com> or call for catalog



Low Pass Instrumentation Cables - LIMYCY

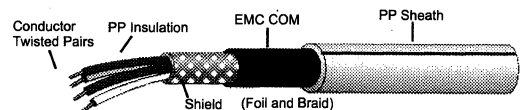
In many industrial environments, electromagnetic disturbances are a bitter reality. If you want to avoid these disturbances falsifying your measurements, low pass instrumentation cables from KABELWERK EUPEN are an effective solution. These screened, HF absorptive cables perform very well and give excellent protection against external disturbances in analogue signal circuits. Available in one, two, and four pairs, 0.25mm² or 0.50mm².

See our website: <http://www.emceupen.com> or call for catalog

Shielded Multicore Transmission Cables CMS LI9Y(St)CMY

For cables with high speed data and for computer applications, Kabelwerk Eupen has designed special polypropylene coated, 100 ohm impedance cables. These high speed, low distortion cables exhibit both low dielectric permittivity and low distortion factor. They are available with individually shielded pairs or overall foil and optimized braided shield. Both types are covered with an extruded layer of ferrite EMC COM. This combination of EMC COM and shields offers an interference free transmission.

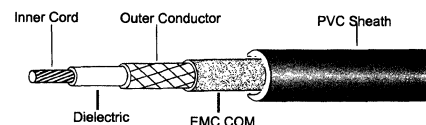
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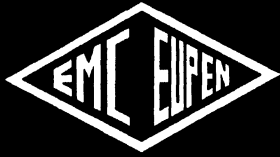
Coaxial CMS Cables - CMS/RG

Frequently referred to as 'Stealth' cables because the EMC COM ferrite coating is non-reflective, thus making them non-obtrusive to RF. Used in EMC labs and RF measurement chambers, these special coax cables are placed between the antenna and measurement equipment as well as from video cameras that are being subjected to electromagnetic radiation. Standard offering is CMS RG 58 and CMS RG 214, both 50 ohm, and CMS RG 59 and CMS RG 7064 video, both 75 ohm.

See our website: <http://www.emceupen.com> or call for catalog



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International Filtered Power Cord Sets



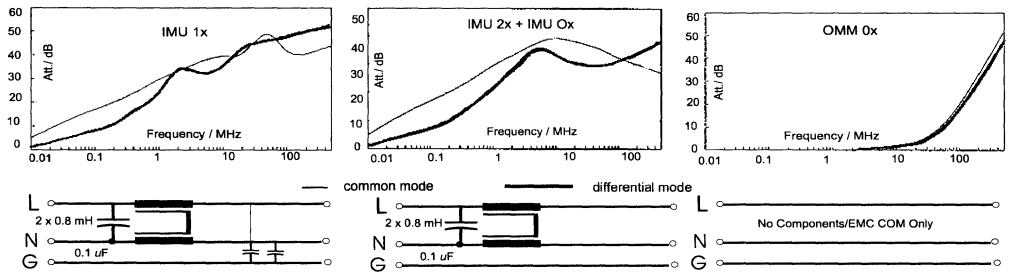
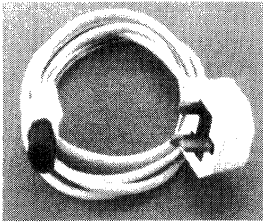
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PLUG CHOICE:

- *CEE7-VII (VDE/UTE)
(last digit in P/N ends in 3)
- *UL 498 (NEMA 5-15P)
(last digit in P/N ends in 4)
- *BSA 13634 & BS 1362
(last digit in P/N ends in 5)
- *SEV 1011 Type 12
(last digit in P/N ends in 6)

P/N	Cable	I	L	C _x uF	C _y nF	U _{test} P/N	U _{test} P-N / L	Max. Leak. I mA		Ready Made Ends	IEC 320-C 13 Connector
								250V-50Hz	125V-60Hz		
IMU 13/ 14/15/16	LP/GNLM 3G1/AWG18	10	0.8	0.1	2.2	2 kVac	2 kVac	0.490	0.295		
IMU 03/ 04/05/06	LP/GNLM 3G1/AWG18	10	0.8	0.1	-	2 kVac	2 kVac	0.130	0.78		
IMU 23/ 24/25/26	LP/GNLM 3G1/AWG18	10	0.8	0.1	-	2 kVac	2 kVac	0.130	0.78		
OMM 03/ 04/05/06	LP/GNLM 3G1/AWG18	10	-	-	-	2 kVac	2 kVac	0.130	0.78		

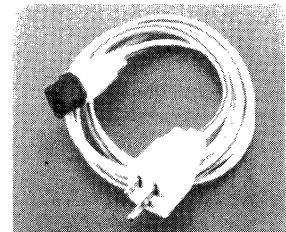
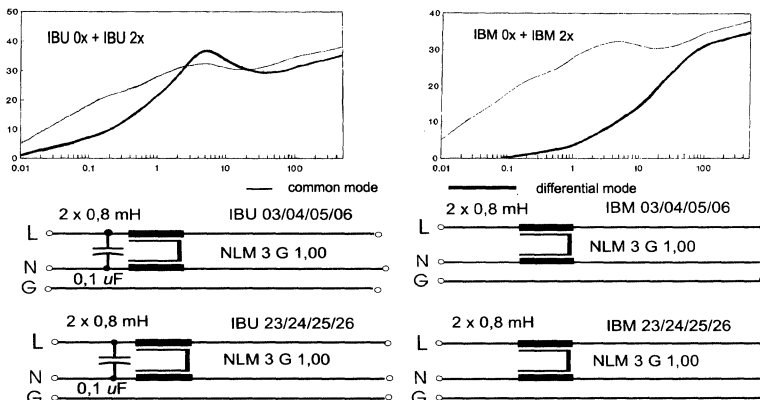
RFI/EMI Filter: The filter performance, which is effective over a wide frequency range for common and differential mode interferences, is due to the RF-absorptive EMC COM material, combined with an inductive/capacitive network within the plug.



P/N	Cable	I _n A	L mH	C _x uF	C _y nF	U _{test} P/N	U _{test} P-N / L	Max. Leak. I mA		Ready Made Ends	IEC 320-C 13 Connector
								250V-50Hz	125V-60Hz		
IBM 23/ 24/25/26	LP/NLM 3G1/AWG18	10	0.8	-	-	2 kVac	2 kVac	0.025	0.015		
IBM 03/ 04/05/06	LP/NLM 3G1/AWG18	10	0.8	-	-	2 kVac	2 kVac	0.025	0.015		
IBU 23/ 24/25/26	LP/NLM 3G1/AWG18	10	0.8	0.1	-	2 kVdc	2 kVac	0.025	0.015		
IBU 03/ 04/05/06	LP/NLM 3G1/AWG18	10	0.8	0.1	-	2 kVdc	2 kVac	0.025	0.015		

CABLE:

Type LP/NLM 3G1.00mm² (3AWG 18) with ferrite coated conductors and PVC insulated conductors with PVC outer jacket. Flame test according to VDE 0472, Part 804B and UL 1581-VW1.



Standard Cord Sets - In addition to the filtered power cords described above, EMC Eupen carries standard cord sets from CWA, one of Europe's largest and premier suppliers. These international cord sets are available either as Class I or Class II and comply with all relevant international standards.

Your Cables Should be the Solution To Your EMI Problems, Not the Cause



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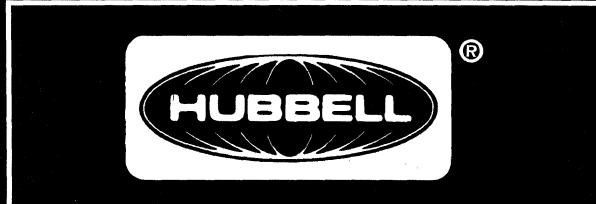
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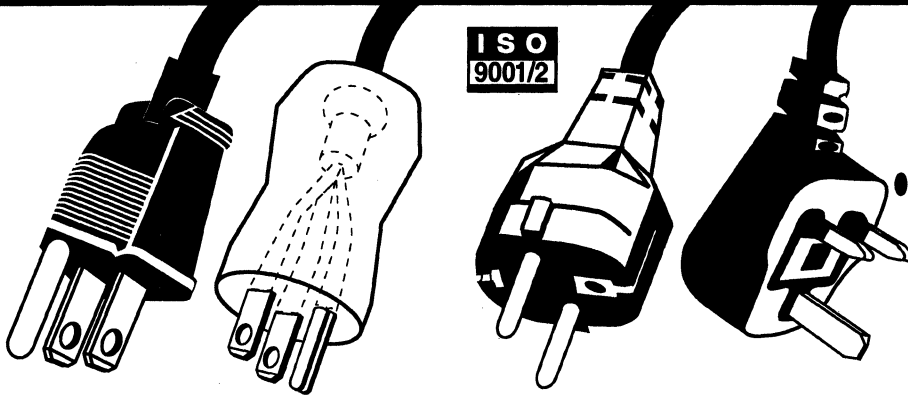
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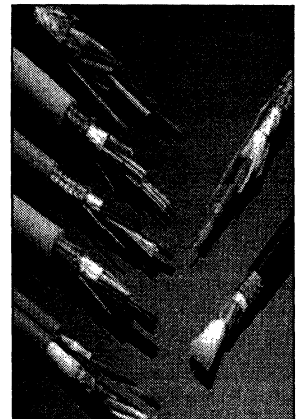


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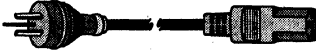



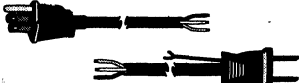









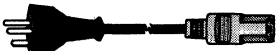

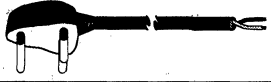
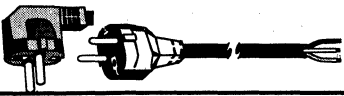
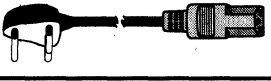
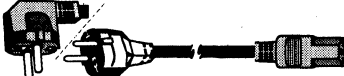















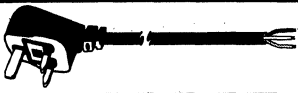
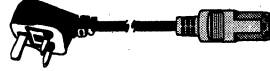

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	European Non-Detachable Euro Plug to ROJ/RIJ		Indian/S. African Non Detachable Indian/S. African Plug to ROJ/RIJ
	European Non-Detachable Euro Plug to ROJ/RIJ		Indian/S. African Detachable Indian/S. African Plug to IEC320/C13 Female
	European Detachable Euro Plug to IEC320/C13 Female	              	
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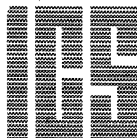


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DESIGN OPTIONS

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Conductor Type
Solid, Stranded,
& Gauge
Number of
Conductors
Paired or Unpaired

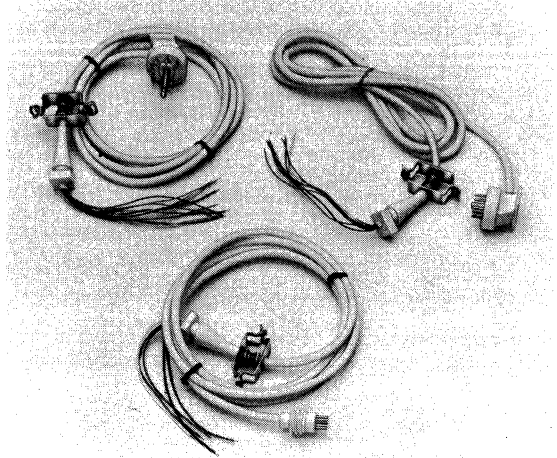
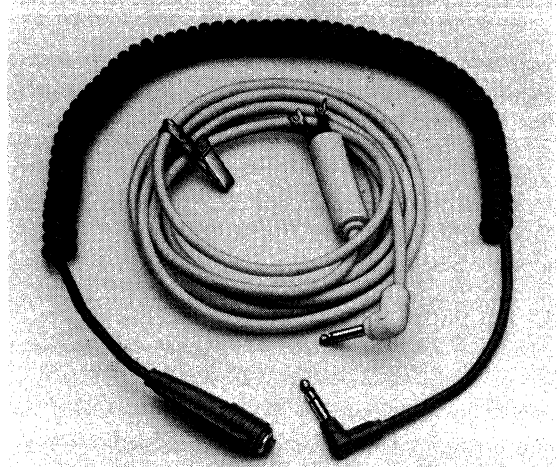
Dielectric Type

Types of Shields
Braided Copper
Foil/ Drain Wire
Foil/Braid
100% Shield

Insulation of
Conductors & Jacket
Other

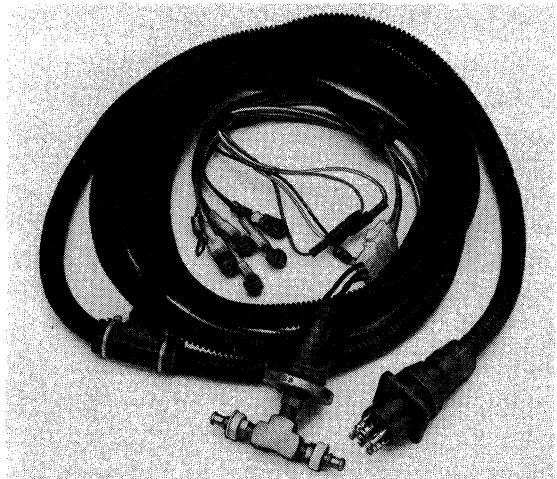
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Judd Wire is a high technology wire company, specializing in the use of electron beam cross-linked thermosets for wire insulation. By applying irradiation cross-linking technology to insulating materials, Judd Wire meets the needs of the wire and cable industry for economical, high-performance products.

Judd Wire manufactures electronic wire and cable in over

100 styles recognized by Underwriters Laboratory, Canadian Standards and/or Military Specifications.

These pages contain comprehensive listings of Judd Wire standard products, many of which are stocked in a variety of colors. For the stocking status of a specific product, please call Judd Wire.

PCA (80°C & 105°C XLPVC)

PCA is a diverse line of tri-rated electronic wire. Its polychloroalkene insulation is an exclusive irradiation cross-linked PVC with a unique combination of high-performance properties.

- **High heat and burn through resistance.** PCA insulation will not melt or flow at soldering iron temperatures up to 660°F. It eliminates the problem of rework due to soldering iron damage.
- **Wide operating temperature range.** PCA insulated wires are rated for continuous operation from -55°C to 105°C regardless of the temperature range established by UL, CSA and MIL Spec ratings.
- **Improved chemical resistance.** PCA insulation has chemical and solvent resistance that is superior to the best grade PVC insulations.
- **Superior processability.** End costs are reduced with PCA insulated wires, which conform easily to desired shapes for

chassis wiring and harness construction. PCA insulation can be cut and stripped cleanly by automatic processing equipment. The characteristic PVC creep due to insulation stretch is eliminated.

- **VW-1.** PCA insulated wire provides the same excellent flame-resistant properties as the best PVC insulations. It does not melt or shrink back at termination.
- **Ready availability.** PCA insulated wire is available in nine UL styles and over 100 types and configurations. They are UL and CSA rated, and MIL specified at your option.
- **Reduced material costs.** PCA tinned copper conductors do not require expensive silverplating as do many fluorocarbon constructions. PCA with tinned copper is comparable to fluorocarbon insulations with silver plating in every respect but one - price. There, PCA offers the significant advantage of lower cost with equivalent quality.

FLEXRAD HV™ (105°C XLPE)

FLEXRAD HV is specially designed as a high voltage lead wire for consumer electronics, appliances, test equipment and instrumentation. It has Judd Wire's superior cross-linked polyethylene insulation and is temperature rated for 105° continuous, with excellent overload capacity for short duration.

- **Application-matching variety.** FLEXRAD HV is available in seven voltage ratings. 5kV to 40kV, so it is easily matched to your applications without expensive "overkill." There is no need, for example, to substitute a 15kV wire in a 5kV application. Savings up to 20% in cost, space requirement and wire weight are possible by specifying the right FLEXRAD HV for each job.

• **Superior production properties.** The excellent flexibility of FLEXRAD HV makes it easy to use in tight places. Its tough irradiated polyethylene insulation resists shrink-back and melting, even when in direct contact with a soldering iron.

- **Excellent performance characteristics.** FLEXRAD HV has high resistance to abrasion, deformation, cut-through and chemical attack.
- **Flame retardant rating VW-1.**
- **Three conductor styles.** Solid tinned copper, stranded bare copper with tinned overcoat (TOP), or stranded tinned copper with tinned overcoat (TOC).

FLEXRAD 125™ (125°C XLPE)

FLEXRAD 125 is an irradiation cross-linked polyethylene insulated wire, tri-rated by UL, CSA and Military Specifications for a wide variety of uses. It is offered in three styles, each of which has these desirable characteristics:

- **High heat and abrasion resistance.** FLEXRAD 125 has excellent abrasion resistance (no cut-through) and exhibits no shrink-back even when in direct contact with a soldering iron.
- **Excellent chemical resistance.** FLEXRAD 125 insulation has unusually high resistance to chemicals and solvents, especially potting systems, which makes it ideal for transformer applications.
- **Wide operating temperature range.** FLEXRAD 125 insulated wires are rated for continuous operation from -55°C to 125°C,

as recognized by UL, CSA and Military Specifications.

- **Flame retardant rating VW-1.**
- **Superior processability and performance.** Highly flexible FLEXRAD 125 wires conform readily to desired shapes for lead wire and interconnection applications. They avoid the limitations of conventional 105° C PVC: limited temperature range, solder iron shrink-back, creeping insulation during automated cut and strip processing, and poor abrasion resistance. Similarly, FLEXRAD 125 avoids the production problems of fluorocarbons: cold flow, low adhesion, poor cut-through resistance, short lengths, limited flexibility and poor potting ability.
- **Reduced material costs.** Instead of the silver-plated conductors often required with fluorocarbon constructions, FLEXRAD 125 can use tinned copper at substantial savings

UL					CSA					Judd Wire Product Line
Style No.	Temp. Rating °C	Voltage Rating	AWG Sizes	Average Wall Thick.	Class	Temp Rating °C	Voltage Rating	AWG Sizes	Average Wall Thick.	
1472	80	125V	32-20	.007"	AWM	80	150V	32-12	.011"	PCA PCA
1429	80	150V	32-20	.0105"						
1534	80	NVS*	18-16	.011"	AWM	80	150V	32-12	.011"	PCA PCA
			32-16	.011"						
1536	80	NVS*	14	.012"	AWM	80	150V	32-12	.011"	PCA PCA
			32-16	.011"						
1787	80	300V	12-10	.013"	AWM	80	150V	32-12	.011"	PCA PCA
			36-20	.0105"						
1430	105	300V	18-16	.011"	REW	105	300V	26-10	.016"	PCA PCA
			30-16	.016"						
1557	105	NVS*	16	.016"	REW	105	300V	26-10	.016"	PCA PCA
			14-10	.016"						
3317	105	300V	14-10	.016"	REW	105	600V	24-10	.030"	PCA PCA
			30-10	.030"						
1431	105	600V	8	.050"	REW	105	600V	24-10	.030"	PCA PCA
			6-2	.060"						
3265	125	150V	30-16	.011"	AWM	125	150V	30-16	.011"	FLEXRAD 125 FLEXRAD 125
			26-10	.016"						
3266	125	300V	26-10	.016"	AWM or CL 1252 CL1251	125	300V	26-10	.016"	FLEXRAD 125 FLEXRAD 125
			26-10	.030"						
3271	125	600V	8	.045"	AWM or CL 1252 CL1251	125	600V	26-10	.030"	FLEXRAD 125 FLEXRAD 125
			6-1/0	.060"						
3239	105	5kV	24-12	.020"	TV-6	105	6kV	22-10	.020"	FLEXRAD HV FLEXRAD HV
			24-12	.030"						
3239	105	10kV	24-12	.030"	TV-10	105	10kV	22-10	.030"	FLEXRAD HV FLEXRAD HV
			24-12	.035"						
3239	105	15kV	24-12	.035"	TV-15	105	15kV	22-10	.035"	FLEXRAD HV FLEXRAD HV
			24-12	.050"						
3239	105	20kV	24-12	.050"	TV-20	105	20kV	22-10	.050"	FLEXRAD HV FLEXRAD HV
			24-12	.055"						
3239	105	25kV	24-12	.055"	TV-20	105	20kV	22-10	.055"	FLEXRAD HV FLEXRAD HV
			24-12	.060"						
3239	105	30kV	24-12	.060"	TV-30	105	30kV	22-10	.060"	FLEXRAD HV FLEXRAD HV
			24-12	.070"						
3239	105	40kV	24-12	.070"	TV-40	105	40kV	22-10	.070"	FLEXRAD HV FLEXRAD HV
			24-12	.070"						

* No voltage specified.


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Super Somicell™ High Speed Miniature Coaxial Cable

PRODUCT DATA

Super Somicell cables are high speed miniature coaxial cables insulated with a highly expanded polyolefin.

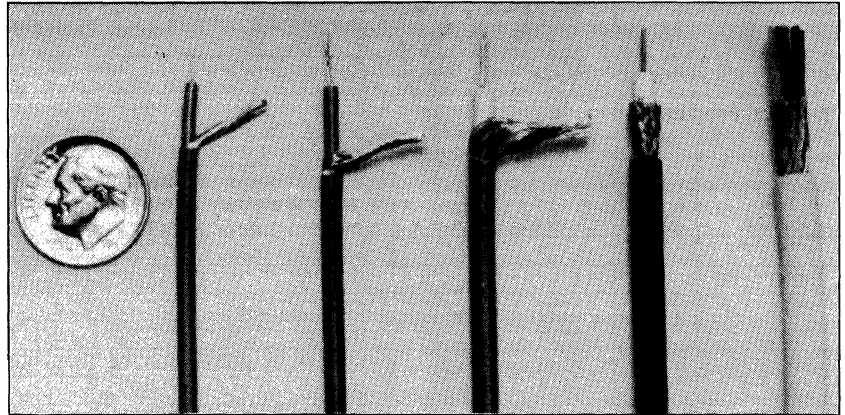
Super Somicell cables are designed for use as high speed transmission lines for high density wiring in computers, telecommunications equipment, medical electronics, instrumentation and similar equipment. The cables meet UL specifications for internal wiring of electronic equipment (class 2 circuits), Style 1874 (80°C 30 volts).

The standard discrete coaxial cable is supplied with a spiral shield and copper coated aluminized tape shield. Alternate constructions offered are:

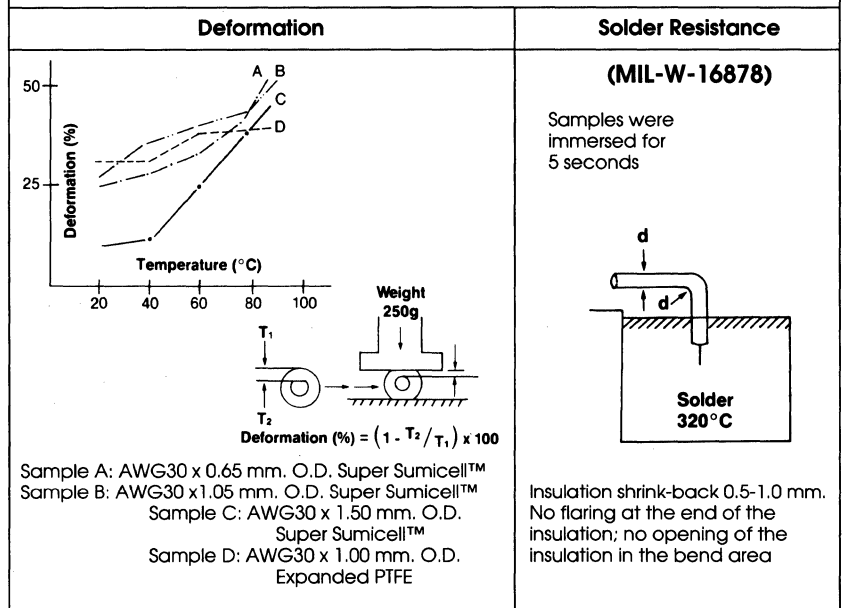
- Single copper coated aluminized tape shield and drain
- Braided shield with second tape shield
- Triaxial configurations
- Multi-conductor coaxial ribbon cables
- Round cable configurations

Advantages

- Highly expanded irradiated polyolefin with a tough skin
- Resistant to damage by solder (MIL-W-16878)
- Operating temperature -40°C to 80°C
- Excellent flexibility
- Low capacitance
- Long continuous lengths
- Small diameter
- Low attenuation
- Light weight
- High velocity of propagation



Super Somicell™ Typical Physical Properties



Property	Test Method	Typical Results
Heat Aging	7 days @ 98°C. After aging, 10 wraps around 11mm. diameter mandrel @ 20°C.	No cracking Dielectric strength 1000 V. rms-1 min.
Cold Bend	One hour @ -40°C. 3 wraps around 11mm. diameter mandrel @ -40°C.	No cracking Dielectric strength 1000 V. rms-1 min.
Insulation Shrinkage	10 Cycles, 6 Hours each 60°C. to -20°C. (50 cm. sample)	Shrinkage 0.35-0.45 mm. (measured from the end of the outer conductor)
Flammability	UL VW-1	Pass
Capacitance Stability	10 Cycles, 6 Hours each 60°C. to -20°C.	0.0 to 0.5% change



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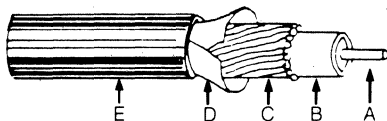
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Super Sumicell™



- A. Conductor
- B. SUPER SUMICELL™ Insulation
- C. First Shield: Spiral Served Tinned Annealed Copper
- D. Second Shield: Copper-Coated Aluminized Polyester Tape
- E. Jacket: Gray PVC

Physical Properties

Part Number	Conductor				Nom. Diameter of Insulation		Nom. Diameter of First Shield		Jacket				
	AWG	Stranding	Material	Nom. Diameter (Inches) (MM.)	(Inches) (MM.)	(Inches) (MM.)	(Inches) (MM.)	Nom. Thickness (Inches) (MM.)	Nom. Outside Diameter (Inches) (MM.)				
SS753201	32	solid	AgCA	0.0080	0.203	0.0295	0.75	0.0335	0.85	0.007	0.18	0.050	1.27
SS103201	32	solid	AgCA	0.0080	0.203	0.0480	1.22	0.0559	1.42	0.012	0.30	0.082	2.08
SS123201	32	solid	AgCA	0.0080	0.203	0.0787	2.00	0.0866	2.20	0.011	0.28	0.111	2.82
SS503001	30	solid	AgCA	0.0100	0.254	0.0268	0.68	0.0307	0.78	0.007	0.18	0.047	1.20
SS753001	30	solid	AgA	0.0100	0.254	0.0374	0.95	0.0437	1.11	0.008	0.21	0.064	1.63
SS903001	30	solid	AgA	0.0100	0.254	0.0500	1.27	0.0579	1.47	0.012	0.30	0.084	2.13
SS753002	30	7/38	TCA	0.0118	0.300	0.0429	1.09	0.0492	1.25	0.009	0.23	0.070	1.77
SS903002	30	7/38	TCA	0.0118	0.300	0.0571	1.45	0.0650	1.65	0.012	0.30	0.091	2.31
SS502801	28	7/36	TCA	0.0150	0.380	0.0374	0.95	0.0406	1.03	0.009	0.23	0.063	1.60
SS752801	28	7/36	TCA	0.0150	0.380	0.0551	1.40	0.0630	1.60	0.012	0.30	0.089	2.26
SS902801	28	7/36	TCA	0.0150	0.380	0.0728	1.85	0.0807	2.05	0.012	0.30	0.107	2.71
SS502601	26	7/34	TA	0.0189	0.480	0.0433	1.10	0.0512	1.30	0.011	0.28	0.076	1.92
SS502602	26	solid	AgA	0.0160	0.404	0.0390	1.00	0.0457	1.16	0.010	0.26	0.069	1.74
SS752601	26	7/34	TA	0.0189	0.480	0.0689	1.75	0.0768	1.95	0.012	0.30	0.103	2.61
SS502402	24	solid	AgA	0.0200	0.510	0.0500	1.26	0.0570	1.46	0.011	0.29	0.082	2.09
SS502401	24	7/32	TA	0.0240	0.610	0.0551	1.40	0.0630	1.60	0.012	0.30	0.089	2.26
SS752401	24	7/32	TA	0.0240	0.610	0.0980	2.50	0.1091	2.78	0.012	0.30	0.135	3.43
SS752202	22	7/30	TA	0.0300	0.760	0.1100	2.80	0.1214	3.08	0.012	0.30	0.155	3.93

Conductor Materials AgCA=Silver-Plated High-Strength Copper Alloy TCA=Tinned High-Strength Copper Alloy
 AgA=Silver-Plated Annealed Copper TA=Tinned Annealed Copper

Electrical Properties

Part Number	Nom. Conductor Resistance Ω/Km	Insulation Resistance MΩ/Km	Dielectric Strength Vrms/min.	Capacitance @ 1KHZ PF/m	Characteristic Impedance Ω	Propagation Delay Time nsec/m	Attenuation db/Km 100 MHZ & 400 MHZ	
SS753201	650	1000	500	55	75	3.8	424	886
SS103201	650	1000	500	40	100	3.7	300	596
SS123201	650	1000	500	32	125	3.7	226	420
SS503001	400	1000	500	78	50	3.95	520	1100
SS753001	350	1000	500	55	75	3.8	290	610
SS903001	350	1000	500	46	90	3.7	258	522
SS753002	350	1000	500	55	75	3.8	292	622
SS903002	350	1000	500	46	90	3.7	247	525
SS502801	250	1000	500	78	50	3.95	390	850
SS752801	250	1000	500	55	75	3.8	234	494
SS902801	250	1000	500	46	90	3.7	198	408
SS502601	130	1000	500	78	50	3.95	300	640
SS502602	140	1000	500	78	50	3.95	350	755
SS752601	130	1000	500	55	75	3.8	196	414
SS502402	75	1000	500	78	50	3.95	210	430
SS502401	80	1000	500	78	50	3.95	240	520
SS752401	80	1000	500	55	75	3.95	140	296
SS752202	50	1000	500	55	75	3.95	134	282

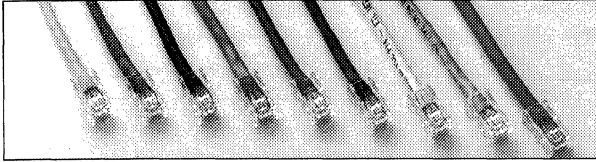
Notice: All statements, ratings, technical data, etc., contained herein are based on information we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. Before using, buyer shall determine the suitability of the product for its intended application, and assumes all risk and liability in connection therewith.

Category 5 Patch Cord Assemblies

Round UTP 24 AWG Cable, Stranded, PVC - UL, CSA, ETL, 568

Custom Lengths And Configurations Available Upon Request

COLORED CABLE WITHOUT BOOTS



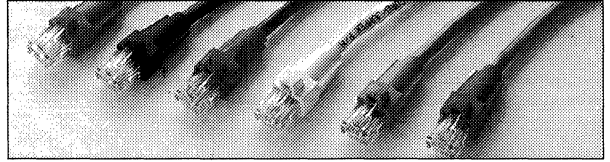
WIRING 568B

WIRING 568A

GRAY CABLE 5PC8UNB1B-3FT. 5PC8UNB1B-7FT. 5PC8UNB1B-10FT. 5PC8UNB1B-15FT. 5PC8UNB1B-25FT.	BLACK CABLE 5PC8UNB5B-3FT. 5PC8UNB5B-7FT. 5PC8UNB5B-10FT. 5PC8UNB5B-15FT. 5PC8UNB5B-25FT.	GRAY CABLE 5PC8UNB1A-3FT. 5PC8UNB1A-7FT. 5PC8UNB1A-10FT. 5PC8UNB1A-15FT. 5PC8UNB1A-25FT.	BLACK CABLE 5PC8UNB5A-3FT. 5PC8UNB5A-7FT. 5PC8UNB5A-10FT. 5PC8UNB5A-15FT. 5PC8UNB5A-25FT.
BLUE CABLE 5PC8UNB2B-3FT. 5PC8UNB2B-7FT. 5PC8UNB2B-10FT. 5PC8UNB2B-15FT. 5PC8UNB2B-25FT.	GREEN CABLE 5PC8UNB6B-3FT. 5PC8UNB6B-7FT. 5PC8UNB6B-10FT. 5PC8UNB6B-15FT. 5PC8UNB6B-25FT.	BLUE CABLE 5PC8UNB2A-3FT. 5PC8UNB2A-7FT. 5PC8UNB2A-10FT. 5PC8UNB2A-15FT. 5PC8UNB2A-25FT.	GREEN CABLE 5PC8UNB6A-3FT. 5PC8UNB6A-7FT. 5PC8UNB6A-10FT. 5PC8UNB6A-15FT. 5PC8UNB6A-25FT.
RED CABLE 5PC8UNB3B-3FT. 5PC8UNB3B-7FT. 5PC8UNB3B-10FT. 5PC8UNB3B-15FT. 5PC8UNB3B-25FT.	YELLOW CABLE 5PC8UNB7B-3FT. 5PC8UNB7B-7FT. 5PC8UNB7B-10FT. 5PC8UNB7B-15FT. 5PC8UNB7B-25FT.	RED CABLE 5PC8UNB3A-3FT. 5PC8UNB3A-7FT. 5PC8UNB3A-10FT. 5PC8UNB3A-15FT. 5PC8UNB3A-25FT.	YELLOW CABLE 5PC8UNB7A-3FT. 5PC8UNB7A-7FT. 5PC8UNB7A-10FT. 5PC8UNB7A-15FT. 5PC8UNB7A-25FT.
WHITE CABLE 5PC8UNB4B-3FT. 5PC8UNB4B-7FT. 5PC8UNB4B-10FT. 5PC8UNB4B-15FT. 5PC8UNB4B-25FT.	BEIGE CABLE 5PC8UNB8B-3FT. 5PC8UNB8B-7FT. 5PC8UNB8B-10FT. 5PC8UNB8B-15FT. 5PC8UNB8B-25FT.	WHITE CABLE 5PC8UNB4A-3FT. 5PC8UNB4A-7FT. 5PC8UNB4A-10FT. 5PC8UNB4A-15FT. 5PC8UNB4A-25FT.	BEIGE CABLE 5PC8UNB8A-3FT. 5PC8UNB8A-7FT. 5PC8UNB8A-10FT. 5PC8UNB8A-15FT. 5PC8UNB8A-25FT.

Other colors available upon request.

COLORED CABLE WITH MATCHING BOOTS



WIRING 568B

WIRING 568A

GRAY CABLE 5PC8UWB1B-3FT. 5PC8UWB1B-7FT. 5PC8UWB1B-10FT. 5PC8UWB1B-15FT. 5PC8UWB1B-25FT.	BLACK CABLE 5PC8UWB5B-3FT. 5PC8UWB5B-7FT. 5PC8UWB5B-10FT. 5PC8UWB5B-15FT. 5PC8UWB5B-25FT.	GRAY CABLE 5PC8UWB1A-3FT. 5PC8UWB1A-7FT. 5PC8UWB1A-10FT. 5PC8UWB1A-15FT. 5PC8UWB1A-25FT.	BLACK CABLE 5PC8UWB5A-3FT. 5PC8UWB5A-7FT. 5PC8UWB5A-10FT. 5PC8UWB5A-15FT. 5PC8UWB5A-25FT.
BLUE CABLE 5PC8UWB2B-3FT. 5PC8UWB2B-7FT. 5PC8UWB2B-10FT. 5PC8UWB2B-15FT. 5PC8UWB2B-25FT.	GREEN CABLE 5PC8UWB6B-3FT. 5PC8UWB6B-7FT. 5PC8UWB6B-10FT. 5PC8UWB6B-15FT. 5PC8UWB6B-25FT.	BLUE CABLE 5PC8UWB2A-3FT. 5PC8UWB2A-7FT. 5PC8UWB2A-10FT. 5PC8UWB2A-15FT. 5PC8UWB2A-25FT.	GREEN CABLE 5PC8UWB6A-3FT. 5PC8UWB6A-7FT. 5PC8UWB6A-10FT. 5PC8UWB6A-15FT. 5PC8UWB6A-25FT.
RED CABLE 5PC8UWB3B-3FT. 5PC8UWB3B-7FT. 5PC8UWB3B-10FT. 5PC8UWB3B-15FT. 5PC8UWB3B-25FT.	YELLOW CABLE 5PC8UWB7B-3FT. 5PC8UWB7B-7FT. 5PC8UWB7B-10FT. 5PC8UWB7B-15FT. 5PC8UWB7B-25FT.	RED CABLE 5PC8UWB3A-3FT. 5PC8UWB3A-7FT. 5PC8UWB3A-10FT. 5PC8UWB3A-15FT. 5PC8UWB3A-25FT.	YELLOW CABLE 5PC8UWB7A-3FT. 5PC8UWB7A-7FT. 5PC8UWB7A-10FT. 5PC8UWB7A-15FT. 5PC8UWB7A-25FT.
WHITE CABLE 5PC8UWB4B-3FT. 5PC8UWB4B-7FT. 5PC8UWB4B-10FT. 5PC8UWB4B-15FT. 5PC8UWB4B-25FT.	BEIGE CABLE 5PC8UWB8B-3FT. 5PC8UWB8B-7FT. 5PC8UWB8B-10FT. 5PC8UWB8B-15FT. 5PC8UWB8B-25FT.	WHITE CABLE 5PC8UWB4A-3FT. 5PC8UWB4A-7FT. 5PC8UWB4A-10FT. 5PC8UWB4A-15FT. 5PC8UWB4A-25FT.	BEIGE CABLE 5PC8UWB8A-3FT. 5PC8UWB8A-7FT. 5PC8UWB8A-10FT. 5PC8UWB8A-15FT. 5PC8UWB8A-25FT.

Other colors available upon request.

CATEGORY 5 SHIELDED CABLE ASSEMBLIES

Overall Foil Shield, 24 AWG, Solid and/or 26 AWG Stranded RJ45 Shielded Plugs, UL, CSA, EIA/TIA568A, PVC, Gray Cable with Matching Colored Boots Unless Otherwise Requested



WITHOUT BOOTS 5PC8SNB1XX-Y - Stranded Wire 5SLD8SNB1XX-Y - Solid Wire	WITH BOOTS 5PC8SWB1XX-Y - Stranded Wire 5SLD8SWB1XX-Y - Solid Wire
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XX=Length Y= B=568(B) or Y=A=568(A)

CATEGORY 5 BASE BOARD CABLE ASSEMBLIES

PVC, 4PR, 24 AWG, RJ45 Plugs, Solid Wire, UL, CSA, EIA/TIA568A

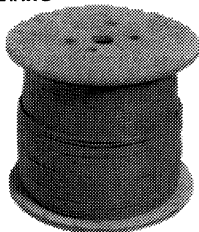
Gray Cable 5SLD8U1XX-Y	Blue Cable 5SLD8U2XX-Y
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- Other colors and lengths available.
- Also available in plenum and shielded versions.
- Strain relief boots available upon request.

XX=Length Y= B=568(B) or Y=A=568(A)

CATEGORY 5 BULK CABLE

UL, CSA, ETL, EIA/TIA568A, 24AWG
1000 Ft. Reels



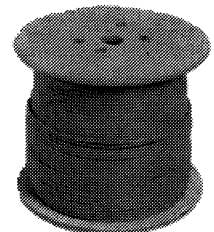
PLENUM	
Part No. R5PLN8U1K-XX	Description Plenum, 4 Pair, 24 WAG, Solid, Unshielded, 1000 Ft. Reels
XX=Color: GR= Gray WH= White	
UNSHIELDED TWISTED PAIR (UTP) PVC	
Part No. R5PC8U1K-XX	Description PVC, 4 Pair, 24 AWG, Unshielded, Stranded, 100 Ft. Reels
XX=Color: GR= Gray, BG= Beige, RD=Red, BL=Blue, GR=Green, YL=Yellow, BK=Black, WH=White, OR=Orange	
SHIELDED TWISTED PAIR (STP)	
Part No. R5PC8S1K-GY	Description PVC, 4 Pair, 24 AWG, Unshielded, Stranded, 100 Ft. Reels Color: Gray only
Part No. R5PC8S1K-GY	Description PVC, 4 Pair, 24 AWG, Shielded, Solid, 100 Ft. Reels Color: Gray only

LEVEL 3 CABLE, UTP, 24 AWG, UL, CSA, STRANDED AND SOLID

Available in 1000 Ft. Reels and Boxes Gray Only

STRANDED	
Part No. R3PC4U1K R3PC8U1K	Description Stranded 2 Pair Stranded 4 Pair

SOLID	
Part No. R3SLD4U1K R3SLD8U1K	Description Solid 2 Pair Solid 4 Pair



THIN NET COAXIAL CABLE
1000 Ft. Reels, Gray Only, 802.3, 50 Ohm, 20 AWG, Stranded

Part No. RG581K	Description 20 AWG, Stranded, Coaxial, PVC
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Other types of bulk cable available upon request. Call and tell us your specific requirements.

High Speed Communications Cables

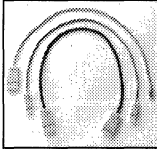
Category 5 Cable Assemblies

CATEGORY 5 TO 110 CONNECTOR ASSEMBLIES

PVC, 24 AWG, UL, 50µG, UNSHIELDED
Available in 1, 2, 3, or 4 Pair Category 5 Cable Assemblies in Various Colors and Lengths

RJ45 Plug To 110 Connector Assemblies

Part No.	Description
C5ATT2U45/1102-XX-YY	1 PR
C5ATT4U45/1104-XX-YY	2 PR
C5ATT6U45/1106-XX-YY	3 PR
C5ATT8U45/1108-XX-YY	4 PR



110 To 110 Connector Assemblies

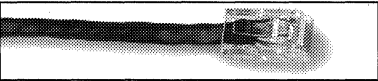
Part No.	Description
C5ATT2U1102-XX-YY	1 PR
C5ATT4U1104-XX-YY	2 PR
C5ATT6U1106-XX-YY	3 PR
C5ATT8U1108-XX-YY	4 PR

XX=Length in ft.

YY=Color: BK=Black, BL=Blue, GY=Gray, RD=Red, GN=Green, YL=Yellow, WH=White, BG=Beige

CATEGORY 5 ENHANCED PERFORMANCE CABLES

UL, CSA, 568A, PVC, UNSHIELDED



- Solid wire rated up to 350 MHz, PVC, UL, RJ45 50µG plugs.
- Stranded wire cables rated up to 155 MHz, RJ45 50µG plugs.
- Various colors and lengths available.
- Boots available upon request.

Part No.	Description
CEPPC8UNB-XX-YY-Z	Stranded wire
CEPSLD8UNB-XX-YY-Z	Solid wire

XX=Length in ft.

YY=Color: BK=Black, BL=Blue, GY=Gray, RD=Red, GN=Green, YL=Yellow, WH=White, BG=Beige
Z=Wiring, A=568A Wiring B=568B Wiring

CUSTOM CATEGORY 5 CABLE ASSEMBLIES WITH 1, 2, AND 3 PAIR TERMINATIONS

PVC, Unshielded Cable, UL/CSA - Plugs 50µ Gold plated

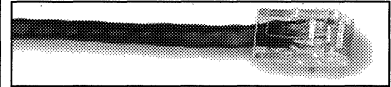
UNSHIELDED

Part No.	Description
5PC2UBK-XX	4P4C, 1 PR, RJ11, BK
5PC4UBK-XX	6P4C, 2PR, RJ11, BK
5PC4UBG-XX	6P4C, 2PR, RJ11, BG
5PC6UBK-XX	6P6C, 3PR, RJ12, BK

XX=Length in ft. Shielded versions available upon request.

Ethernet Cable Assemblies

LEVEL 3 AND 4 CABLE ASSEMBLIES



10 BASE T (up to 16 MBPS) UTP, UL, CSA, Gray 24 AWG, PVC, Round Cable, Unshielded

Part No.	Description
3SLD4U1-XX	6P4C, 2PR, Level 3, Solid, Gray
3SLD8U1-XX	8P8C, 4PR, Level 3, Solid, Gray
3PC4U1-XX	6P4C, 2PR, Level 3, Stranded, Gray
3PC8U1-XX	8P8C, 4PR, Level 3, Stranded, Gray

XX=Length in ft.

10 BASE-2 COAXIAL ASSEMBLIES

IEEE 802.3, PVC, RG58 Thin Net, Gray Only

Part No.	Description
10B2-3	3 ft., RG58, BNC/BNC
10B2-7	7 ft., RG58, BNC/BNC
10B2-10	10 ft., RG58, BNC/BNC
10B2-25	25 ft., RG58, BNC/BNC

Custom and plenum assemblies available upon request.

TOKEN RING CABLES

MODIFIED TYPE 6 TOKEN RING CABLE ASSEMBLY

2 Pair, Shielded, PVC

Part No.	Description
CT6MTRS45/UDC-XX	RJ45 to IBM - UDC Connector

XX=Length in ft.

TYPE 6 TOKEN RING CABLE ASSEMBLY (ENHANCED TYPE 6 AND 6A ALSO AVAILABLE)

2 Pair, Shielded, PVC

Part No.	Description
CT6TRSUDC/UDC-XX	IBM-UDC to IBM-UDC
CT6TRSUDC/DB9-XX	IBM-UDC to DB9

XX=Length in ft.

Broadband Cables

T1 CABLE ASSEMBLIES

2 Individually shielded pairs for LAN to LAN or LAN to WAN, 22 AWG, PVC, Stranded



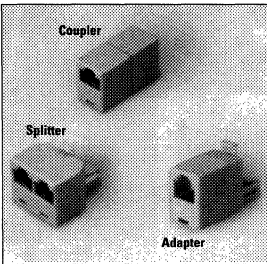
Part No.	Description
C5T14S45/45-XX	RJ45 to RJ45 Shielded Version
C5T14S45/DB15-XX	RJ45 to DB15 Shielded Version

XX=Length in ft.

Call for other T1 Cable Assembly Requirements.

Premise Wiring Accessories

E. Telco Splitters and Couplers



In-Line Couplers, ivory color only.

Part No.	Description
TA10344	4 cond., 4P4C, female/female
TA10366	6 cond., 6P6C, female/female
TA10388	8 cond., 8P8C, female/female

Telco Splitters, ivory color only.

Part No.	Description
TA10244	4 cond.male to two-6P4C female jacks

TA10266	6 cond.male to two-6P6C female jacks
TA10288	8 cond. male to two-8P8C female jacks

Telco Adapters-Reverse Wiring Pin 2 to 3 and 4 to 5

Part No.	Description
TA1026P4CR	6P4C, male/female
TA1026P6CR	6P6C, male/female
TA1028P8CR	8P8C, male/female

Fiber Optics

FIBER OPTIC CABLE ASSEMBLIES AND RELATED ACCESSORIES

Fiber Optic Patch Cords - All Assemblies Are Multi-Mode Type, 62.5/125, UM Fiber With Riser Rating

Ceramic Type Connectors

DUPLEX ST TO ST CONNECTOR (CERAMIC)

Part No.	Description
STD-1M	ST to ST, Duplex 1 meter long (3.3')
STD-2M	ST to ST, Duplex 2 meter long (6.6')
STD-3M	ST to ST, Duplex 3 meter long (10')



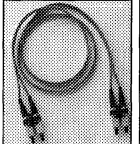
SIMPLEX ST TO ST CONNECTOR (CERAMIC)

Stainless steel connectors available.

Part No.	Description
STS-1M	ST to ST, Simplex 1 meter long (3.3')
STS-2M	ST to ST, Simplex 2 meter long (6.6')
STS-3M	ST to ST, Simplex 3 meter long (10')

DUPLEX SC TO SC CONNECTOR (CERAMIC)

Part No.	Description
SCD-1M	SC to SC, Duplex 1 meter long (3.3')
SCD-2M	SC to SC, Duplex 2 meter long (6.6')
SCD-3M	SC to SC, Duplex 3 meter long (10')



SIMPLEX SC TO SC CONNECTOR (CERAMIC)

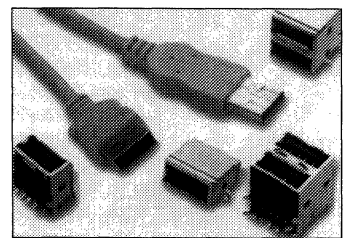
Part No.	Description
SCS-1M	SC to SC Simplex 1 meter long (3.3')
SCS-2M	SC to SC Simplex 2 meter long (6.6')
SCS-3M	SC to SC Simplex 3 meter long (10')

COUPLERS

Part No.	Description
STSTCP	ST to ST
SCSCCP-S	SC to SC - Simplex
SCSCCP-D	SC to SC - Duplex

USB CABLE ASSEMBLIES AND MATING PCB CONNECTORS

Gold Contact, Shielded, 4 Conductors Plug and Play Type, UL, CSA



CABLES (MOLDED) SHIELDED, BEIGE

Part No.	Description
USB2-5	USB to USB Cable, 5ft.
USB1-1	USB to Pigtail Cable, 5 ft.

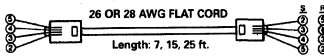
Custom Lengths and Color Upon Request

PCB CONNECTORS-SHIELDED, R/A

Part No.	Description
USBP2	Dual Deck Type R/A
USBP1	Single Deck Type R/A

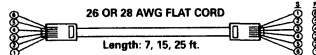
Modular Telephone Cords

FLAT CORD ASSEMBLIES-SILVER SATIN OR BLACK T4-4 Conductor Series: Plug To Plug (RJ11) 6P4C PLUG



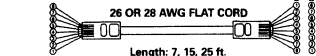
Part No.	Description
T407S/R*-XX-Y	4 Cond. 7ft. Ext. Cord
T415S/R*-XX-Y	4 Cond. 15ft. Ext. Cord
T425S/R*-XX-Y	4 Cond. 25ft. Ext. Cord

T6-6 Conductor Series: Plug To Plug (RJ12) 6P6C PLUG



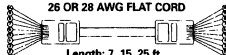
Part No.	Description
T607S/R*-XX-Y	6 Cond. 7ft. Ext. Cord
T615S/R*-XX-Y	6 Cond. 15ft. Ext. Cord
T625S/R*-XX-Y	6 Cond. 25ft. Ext. Cord

T8-8 Conductor Series: Plug To Plug (RJ45) 8P8C PLUG



Part No.	Description
T807S/R*-XX-Y	8 Cond. 7ft. Ext. Cord
T815S/R*-XX-Y	8 Cond. 15ft. Ext. Cord
T825S/R*-XX-Y	8 Cond. 25ft. Ext. Cord

T10-10 Conductor Series: (silver Satin and 26 AWG Only) 10P10C PLUG



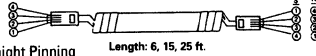
Part No.	Description
T1007S/R*-GY26	10 Cond. 7ft. Ext. Cord
T1007S/R*-GY26	10 Cond. 15ft. Ext. Cord
T1007S/R*-GY26	10 Cond. 25ft. Ext. Cord

Key:
 * S = Straight Through Wiring Straight Through Means: Pin 1 to Pin 1, Etc.
 * R = Reversed Sequence Wiring Reverse Sequence Means: Pin 1 to Pin 6, Pin 2 to Pin 5, Etc. (For a 6 Conductor Cable Assembly).
 XX=Color GY=Silver Satin BK=Black Y=AWG.
 Specify 6=26AWG, 8=28AWG

Custom lengths available upon request

COILED CORDS

C-4 4 MODULAR COILED CORDS 4P4C PLUG

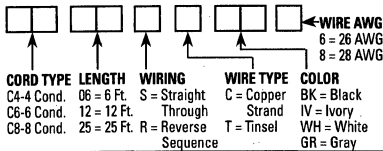


• S = Straight Pinning
 • R = Reverse Pinning

XX=Color:
 BK=Black
 IV=Ivory
 WH=White

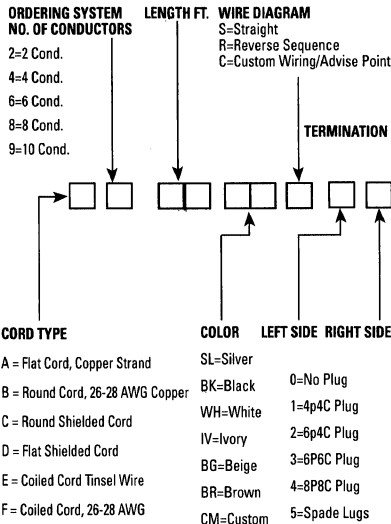
Part No.	Description
C406S/R*	4 Cond. Telephone Headset Cord 6ft.
C412S/R*	4 Cond. Telephone Headset Cord 12ft.
C425S/R*	4 Cond. Telephone Headset Cord 25ft.

6 and 8 Conductor Coil Cords Refer: Ordering Method Below



CUSTOM MADE MODULAR CORD ASSEMBLY FORM

Minimums May Apply



BRITISH STYLE CONNECTORS

TBT4 = 4 CONDUCTOR BRITISH STYLE SERIES: PLUG TO PLUG BRITISH STYLE (PTC) 4 WAY RIGHT HAND LINE CORD ASSEMBLIES

PLUG TO PLUG

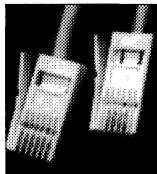
Part No.	Description
TBT407S/R*-XX-Y	4 Cond. 7ft. Ext. Cord
TBT415S/R*-XX-Y	4 Cond. 15ft. Ext. Cord
TBT425S/R*-XX-Y	4 Cond. 25ft. Ext. Cord

TBT6 = 6 CONDUCTOR BRITISH STYLE SERIES: PLUG TO PLUG BRITISH STYLE (PTC) 6 WAY RIGHT HAND LINE CORD ASSEMBLIES

PLUG TO PLUG

Part No.	Description
TBT607S/R*-XX-Y	6 Cond. 7ft. Ext. Cord
TBT615S/R*-XX-Y	6 Cond. 15ft. Ext. Cord
TBT625S/R*-XX-Y	6 Cond. 25ft. Ext. Cord

XX=Color: BK = Black, GY=Silver Satin,
 Y=AWG Specify 6=26AWG 8=28 AWG
 * S=Straight Pinning
 * R=Reverse Pinning

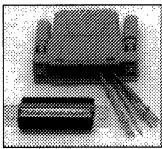


MODULAR ADAPTORS

LZR's Modular Adaptors have a One Piece Hood With Metal Type Long thumbscrews

Modular Adaptors, Gray

Part No.	Description
MAD25M-6X	DB25 male to RJ12, 6C
MAD25M-8X	DB25 male to RJ45, 8C
MAD25F-6X	DB25 female to RJ12, 6C
MAD25F-8X	DB25 female to RJ45, 8C
MAD9M-6X	DB9 male to RJ12, 6C
MAD9M-8X	DB9 male to RJ45, 8C
MAD9F-6X	DB9 female to RJ12, 6C
MAD9F-8X	DB9 female to RJ45, 8C



X = Add "S" For shielded Metalized Version

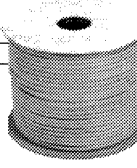
BULK TELEPHONE CABLE

UL, CSA, Stranded Bare Copper
 4, 6, 8, & 10 Conductors

UNSHIELDED FLAT CORD

Part No.	Description
TC5004C-XX-Y	500 Ft. Reel, Flat Cord, 4C
TC1K4C-XX-Y	1000 Ft. Reel, Flat Cord, 4C
TC3.5K4C-XX-Y	3500 Ft. Reel, Flat Cord, 4C
TC5006C-XX-Y	500 Ft. Reel, Flat Cord, 6C
TC1K6C-XX-Y	1000 Ft. Reel, Flat Cord, 6C
TC2.5C-XX-Y	2500 Ft. Reel, Flat Cord, 6C
TC5008C-XX-Y	500 Ft. Reel, Flat Cord, 8C
TC1K8C-XX-Y	1000 Ft. Reel, Flat Cord, 8C
TC2.5C-XX-Y	2500 Ft. Reel, Flat Cord, 8C
TC1K10C-GY6	1000 Ft., Flat Cord, 10C, Silver Satin only- 26AWG only

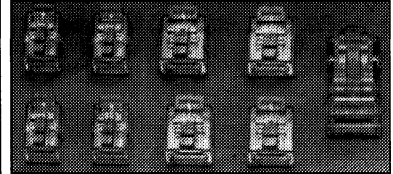
XX=Color: G=Silver Satin, BK=Black
 Y=AWG Specify 6=26AWG, 8=28AWG



Modular Plugs

MODULAR TELEPHONE PLUGS

Flat Cable Entry Plugs, Polycarbonate, UL, CSA
 (100 Pieces Per Bag)



Part No.	Description
111E-B	4P4C, 50µG, Stranded, Flat
105E-A	6P2C, 50µG, Stranded, Flat
107E-K	6P4C, 50µG, Stranded, Flat
106C-CE	6P4C, 15µG, Stranded, Flat
109C-D	6P6C, 15µG, Stranded, Flat
109-3E-L	6P6C, 50µG, Stranded, Flat
104E-N	8P8C, 50µG, Stranded, Flat
104C-F	8P8C, 15µG, Stranded, Flat
112E-R	10P10C, 50µG, Stranded, Flat

DATA AND DIGITAL APPLICATIONS

Plugs With Round Cable Entry,
 Polycarbonate, UL, 50µG.
 (100 Pieces Per Bag)

Part No.	Description
105E-A	6P2C, 50µG, Stranded, Round
106E-K	6P4C, 50µG, Stranded, Round
106-3E-T	6P4C, 50µG, Solid, Round
108E-L	6P6C, 50µG, Stranded, Round
109-3E-I	6P6C, 50µG, Solid, Round
104E-N	8P8C, 50µG, Stranded, Round
104-3E-G	8P8C, 50µG, Solid, Round
112-3E-Q	10P10C, 50µG, Solid, Round

CATEGORY 5 PLUGS FOR HIGH SPEED DIGITAL AND DATA TRANSMISSIONS

Plugs With Round Cable Entry,
 Polycarbonate, UL, CSA, 50µG.
 (100 Pieces Per Bag)

UNSHIELDED

Part No.	Description
104-3E-G	8P8C, 50µG, Solid, Round
104E-N	8P8C, 50µG, Stranded, Round
104C5-2E-P	Enhanced Category 5 Plugs
104C5-E-J	9P8C, 50µG, Solid, Round
	8P8C, 50µG, Stranded, Round

SHIELDED PLUGS -50µG, UL, CSA

Part No.	Description
0811T8TR-3E-W	8P8C, 50µG, Solid, Shielded, Round
0800T8TRE-Y	8P8C, 50µG, Stranded, Shielded, Round


AC POWER CORDS

NORTH AMERICA, JAPAN


STANDARD LENGTH: 6 FT




Approval	Model No.	Rating	Size of Conductor		Cord	Nominal O.D. (mm)	Temperature Rating
			AWG	Composition			

 **Hospital Grade Cord**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP	ZHG1	125V 10A	18 43/34	SVT	6.3	60°C, 75°C or 105°C
	ZHG2	125V 10A	18 43/34	SJT	7.8	
	ZHG3	125V 13A	16 68/34	SJT	8.5	
	ZHG4	125V 15A	14 41/30	SJT	9.3	

 **United Kingdom Cord Set, With 13A Fuse**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP	ZV03	125V 10A	18 41/0.16	SVT	6.4	60°C, 75°C or 105°C
	ZJ03	125V 10A	18 41/0.16	SJT	8.3	60°C, 75°C or 105°C

 **Australia Plug, Optional 2 Prong**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP	ZV05	125V 10A	18 41/0.16	SVT	6.4	60°C, 75°C or 105°C
	ZJ05	125V 10A	18 41/0.16	SJT	8.3	60°C, 75°C or 105°C

 **Continental Europe**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP T	ZV01	125V 10A	18 41/0.16	SVT	6.4	60°C, 75°C or 105°C
	ZJ01	125V 10A	18 41/0.16	SJT	8.3	60°C, 75°C or 105°C
	ZP01	125V 10A	1.25mm ² 50/0.18	VCTE	8.7	60°C, 75°C

 **Continental Europe**

Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP	ZV02	125V 10A	18 41/0.16	SVT	6.4	60°C, 75°C or 105°C
	ZJ02	125V 10A	18 41/0.16	SJT	8.3	60°C, 75°C or 105°C

 **Continental Europe**

Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP	ZV07	125V 10A	18 41/0.16	SVT	6.4	60°C, 75°C or 105°C
	ZJ07	125V 10A	18 41/0.16	SJT	8.3	60°C, 75°C or 105°C

 **For Polarized plug add -P after model no.**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
UL SP	Z1	125V 10A	18 41/0.16	SPT-2, (HPN)	3.5x6.9	SPT-2-60°C, 105°C
	Z2	125V 13A	16 66/0.16	SPT-2, (HPN)	3.7x7.4	(HPN-90°C, 105°C)
T	ZP1	125V 12A	1.25mm ² 50/0.18	HVFF	3.1x6.2	HVFF 75°C

INTERNATIONAL




STANDARD LENGTH: 2 METERS (6.7 FT)


Approval	Model No.	Rating	Size of Conductor		Cord	Nominal O.D. (mm)	Temperature Rating
			AWG	Composition			

 **Continental Europe Cord Set**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
CEE 7/7	Z510	250V 10A	(1.0mm ²) 32/0.2	H05VV-F	7.5 mm	60°C, 75°C

 **United Kingdom Cord Set, With 13A Fuse**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
BS 1363	Z610	250V 10A	(1.0mm ²) 32/0.2	H05VV-F	7.5 mm	60°C, 75°C

 **Australia Plug, Optional 2 Prong**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
ISTA 5/96	Z410	250V 10A	(1.0mm ²) 32/0.2	GFC-3R	7.5 mm	75°C

 **Continental Europe**


Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
IEC 320	Z505	250V 6A	(0.75mm ²) 42/0.15	H05VV-F	7.5 mm	60°C
	Z506	250V 10A	(1.0mm ²) 32/0.2	H05VV-F	7.5 mm	60°C

 **Continental Europe**

Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
CEE 7/7	Z508	250V 6A	(0.75mm ²) 42/0.15	H05VV-F	7.5 mm	60°C
	Z509	250V 10A	(1.0mm ²) 32/0.2	H05VV-F	7.5 mm	60°C

 **Continental Europe**

Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
IEC 320	Z502	250V 6A	(0.75mm ²) 42/0.15	H05VV-F	7.5 mm	60°C
	Z503	250V 10A	(1.0mm ²) 32/0.2	H05VV-F	7.5 mm	60°C

 **Continental Europe**

Approval	Model No.	Rating	Size of Conductor	Cord	Nominal O.D. (mm)	Temperature Rating
CEE 7/16	Z3	250V 2.5A	(0.75mm ²) 42/0.15	H03VVH2-F H05VVH2-F	3.7x5.8	60°C

Notes:

- The mark S next to the cord assembly denotes that shielded cord is available when requested.
- Shielded power supply cords are 100% aluminum-mylar tape shielded.
- All cords except Z1, Z2, ZP1 are available in 14 or 16 AWG wire for higher power ratings.

SPECIAL LENGTHS, CUSTOM MADE CORDS, STRAIN RELIEF, ETC. ARE AVAILABLE PER CUSTOMER SPECIFICATIONS.

LZRelectronics, inc.

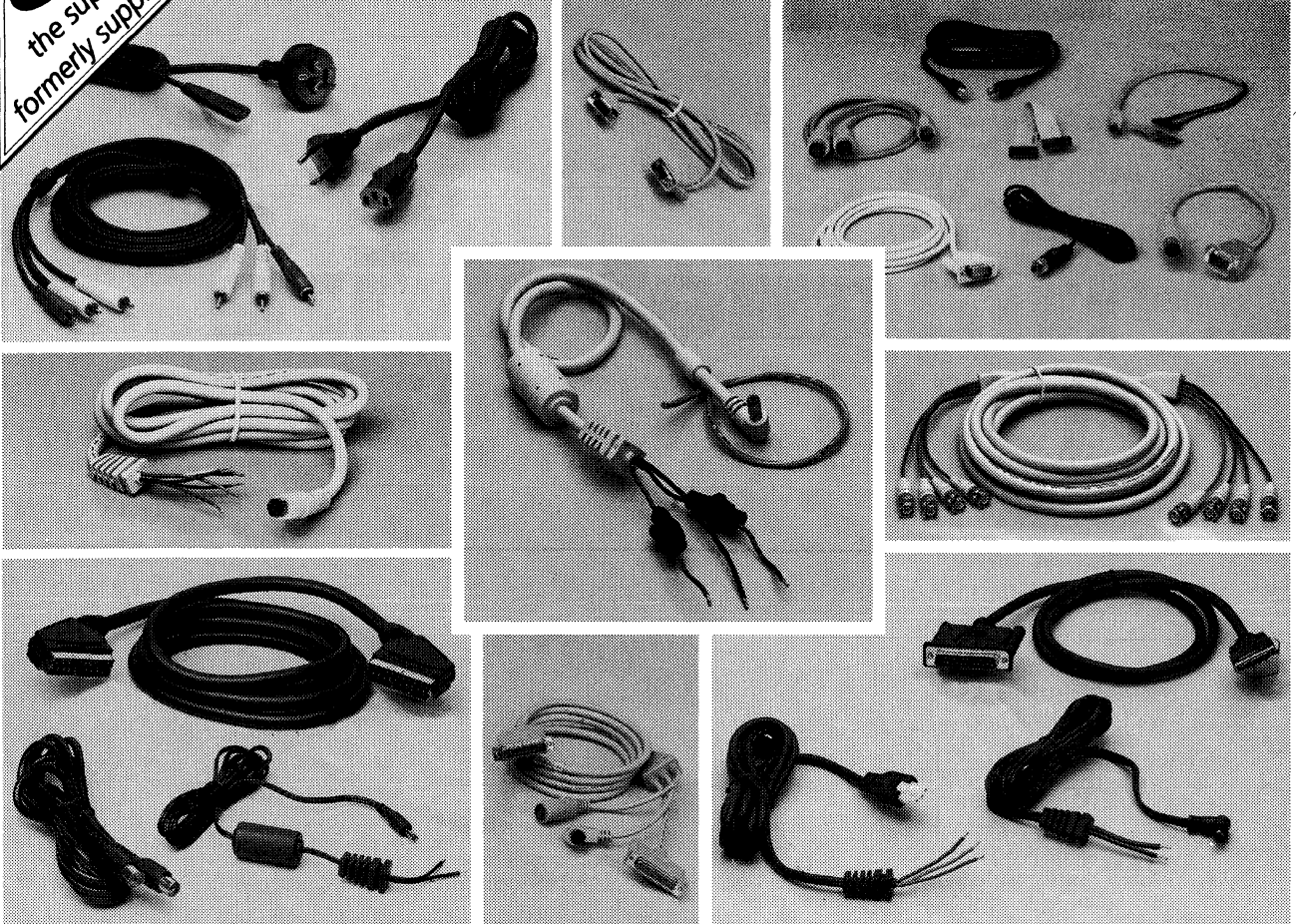
8051 Cessna Ave., Gaithersburg, MD 20879
Telephone (301) 921-4600 Fax (301) 670-0436

LZR

C Molded Cable Assemblies

LZR **RD** is now a variety of custom molded cable assemblies for a wide variety of applications. Our molding capabilities enable us to meet your custom specifications. Our molding capabilities enable us to provide the highest quality cable assemblies at prices that are within your budget.

RD is now the supplier of these components, formerly supplied by **LZR electronics, inc.**



Applications

Audio and Video
 Computer, Printer, Modem
 Instrumentation
 Medical and Health Care
 Fiber Optic
 Communications
 Telecommunications

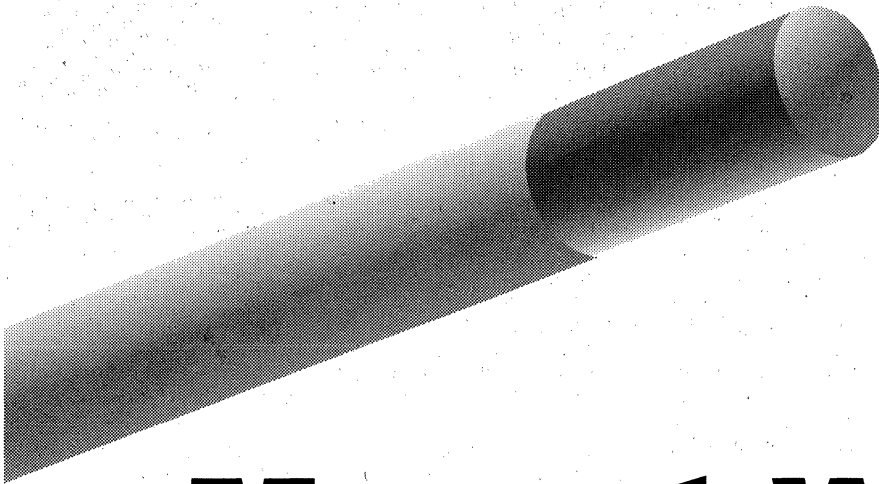
Terminations Available

Audio/Video Connectors
 Coaxial
 D-Sub
 DIN, MiniDIN
 Power, AC & DC
 Fiber Optic
 RCA
 SCSI II, III PCMCIA
 Modular Telephone Plugs

LZRelectronics

please contact RDI, Inc. • 400 Columbus Avenue • Valhalla, NY 10595
 phone 914.773.1000 • fax 914.773.1111 • www.rdi-electronics.com

RD



Magnet Wire

(516) 667-9315

Magnet Wire

Gauges: 4 - 60

Insulation types:

- Bondable
- Enamel
- Formvar
- Glass Fibers
- Polyester
- Polyester-amide-imide
- Polyester-imide
- Polyester-imide-nylon
- Solderable Polyester
- Solderable Polyester-nylon
- Polyimide (ML)*
- Polytetrafluoroethylene (Teflon*)
- Polyurethane
- Polyurethane H.T.
- Polyurethane-nylon

Shapes

- Round
- Square
- Rectangular

Bifilar

Twisted

Colors:

- Natural
- Red
- Green
- Blue

Temperature: 105°C - 220°C

Buss Wire

- Tinned: Soft or Hard Drawn
- Bare
- Silver Plated

Litz Wire

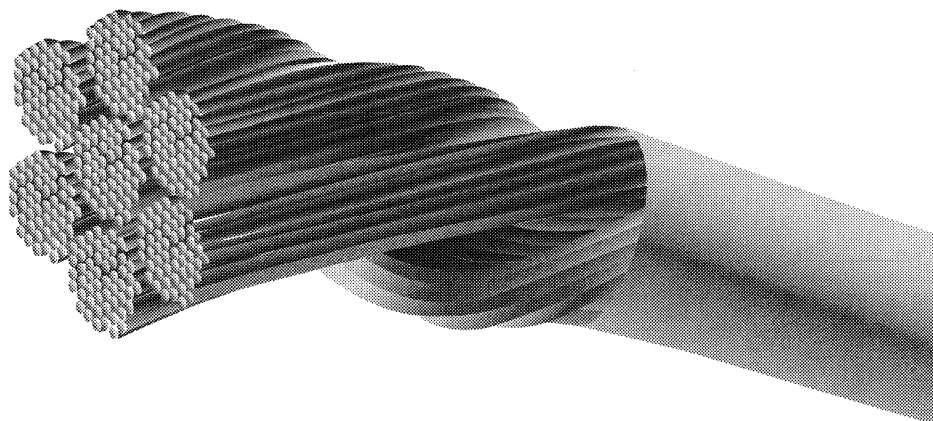
Resistance Alloys

- Nichrome**
- Cupron
- Tungsten

*Reg. TM of Du Pont Corp.

**Reg. TM of Driver-Harris Co.

Magnet Wire Inc. 161 Rodeo Drive • Edgewood, NY 11717 • (516) 667-9315 • Fax: (516) 254-2099



Litz Wire

(516) 667-9315

Concerned about High Frequency losses in your coils and transformer?

The Litz Wire Division of Magnet Wire Inc. has been supplying Litz wire since 1947 in gauges 28-48 for operation at 60hz -2.8mhz. All litz wire is available with an outer insulation of textile yarn, tape or extruded compounds.

•

Small Quantities Available

•

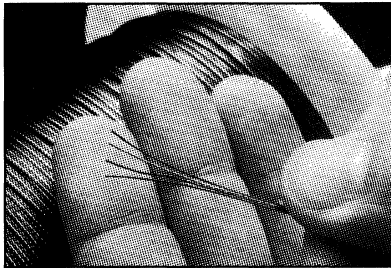
Prompt Delivery

Magnet Wire Inc. 161 Rodeo Drive • Edgewood, NY 11717 • (516) 667-9315 • Fax: (516) 254-2099

MULTIFILAR®

Parallel Bonded Multiconductor

Magnet Wire



Whenever two or more magnet wires travel together, MULTIFILAR magnet wire is the perfect alternative. This parallel-bonded, color-coded magnet wire offers many benefits for both small and large users.

Engineers should specify MULTIFILAR when concerned with space, weight and reliability. Where consistent capacitance and impedance characteristics are required, MULTIFILAR magnet wire outperforms windings using two separate magnet wires.

Production users benefit from increased layer winding speeds, tighter windings that deliver more power in less space, reduced labor and handling. Color coding assists in conductor identification and reduces termination errors.

Multifilar magnet wire is custom produced by MWS to guarantee flat, parallel construction in an array of sizes 16 AWG and finer, with up to 20 conductors in some sizes.

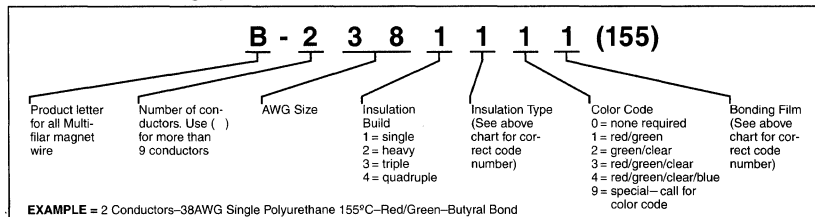
Available constructions include round, flat and square. Color-coded conductors are available in most insulations (including NEMA MW 1000, JW 1177/B, 105-220°C; single through quadruple film builds) with up to 10 different colors in some sizes. Conductor separation is also guaranteed with certain bonding films. Production minimums are as low as 500 feet.

General Product Information

CODE NO.	INSULATIONS	THERMAL RATING	DIELECTRIC CONSTANT	NEMA MW 1000	JW 1177 CLASS/TYPE
1	Polyurethane*	155°C	6.20	MW79C	JW 1177/37B CL-130 SP thru SP-4
2	Poly-Nylon*	155°C	6.20	MW80C	JW 1177/9B CL-130, SUN thru SUN-4
4	Modified Polyester	180°C	3.34	MW30C	JW 1177/12B CL-180, H thru H-4
5	Armored Polyester	200°C	4.55	MW35C	JW 1177/14B CL-200, K thru K-4
6	Solderable Polyester*	180°C	3.95	MW77C	JW 1177/39B CL-180, SPEI thru SPEI-4
7	Formvar	105°C	3.71	MW15C	JW 1177/4B CL-105, T thru T-4
8	Polyimide (ML)	220°C	3.90	MW16C	JW 1177/15B CL-220, M thru M-4

*Solderable insulations

Part Number Ordering System. Make your own 8 digit part number by following the guidelines outlined below.



CALL TOLL FREE **1 888 MWS-WIRE**
6 9 7 - 9 4 7 3

(818) 991-8553 Fax (818) 706-0911
31200 Cedar Valley Dr., Westlake Village, CA 91362 www.mwswire.com

Multifilar® is a registered trademark of MWS Wire Industries.

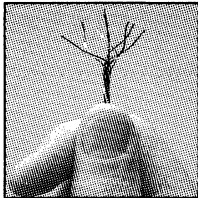
MWS®
Wire Industries

An ISO-9002 Certified Company

TWISTITE™

Precision Twisted

Magnet Wire



For superior performance and tighter control over twisted wire construction.

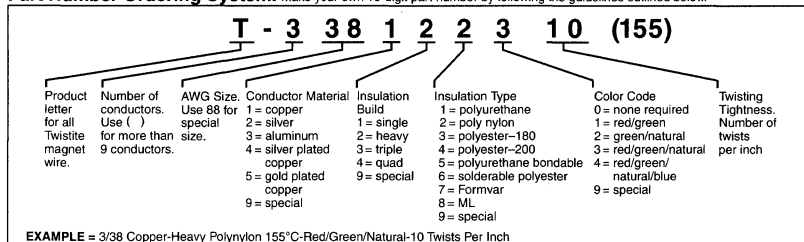
For those who use twisted magnet wire in the production of custom toroid, ferrite and recording head coils, specialty audio and R.F. transformers, Twistite magnet wire offers several advantages over other twisted magnet wire constructions.

Because Twistite is custom produced by MWS, a wider range of twisting constructions is possible. Manufacturing capabilities include:

- up to 33 twists per inch on fine wire
- twisting tolerance as tight as ±1%
- tightly controlled capacitance, inductance and impedance characteristics
- up to 10 colors in some sizes for conductor identification
- huge selection of insulations including NEMA MW 1000, JW 1177/B, 105-220°C (single through quadruple film builds)
- wide range of sizes: 16 through 52 AWG
- wide variety of conductor materials: copper; silver plated conductors; and specialty alloys.

NUMBER OF STRANDS	SIZE (AWG)	CIRCULAR MILLS NOMINAL	NEAREST AWG EQUIV. (CIR. MILS)	RESISTANCE (OHMS PER 1000 FT AT 20°C)	SINGLE BUILD			HEAVY BUILD		
					MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.
					NOMINAL			NOMINAL		
2	30	200.00	27	51.85	.022	1604	.623	.023	1568	.638
3	30	300.00	25½	34.57	.022	1068	.936	.023	1048	.954
6	30	600.00	22½	17.29	.031	534	1.87	.033	524	1.91
2	32	128.00	29	81.05	.0176	2498	.400	.019	2436	.410
3	32	192.00	27	54.00	.018	1695	.590	.019	1651	.606
6	32	384.00	24	27.00	.025	848	1.18	.027	826	1.21
2	34	79.00	31	130.65	.014	4027	.248	.015	3918	.255
3	34	119.00	29½	87.10	.014	2680	.373	.015	2627	.381
6	34	238.00	26½	43.55	.020	1340	.746	.021	1313	.762
2	36	50.00	33	207.40	.0112	6400	.156	.012	6190	.162
3	36	75.00	31	138.27	.011	4230	.236	.012	4151	.241
6	36	150.00	28½	69.13	.016	2115	.473	.017	2076	.482
2	38	32.00	35	324.10	.009	10010	.100	.009	9680	.103
3	38	48.00	33	216.07	.009	6748	.148	.010	6549	.135
6	38	96.00	30	108.03	.013	3374	.296	.014	3274	.305
2	40	19.22	37	539.50	.007	16665	.060	.007	15970	.063
3	40	28.83	35½	359.73	.007	10650	.0939	.008	10443	.0957
6	40	57.66	32½	179.87	.010	5325	.188	.011	5225	.191
2	42	12.50	39	829.50	.0056	25470	.039	.006	24800	.040
3	42	18.75	37½	553.00	.006	17129	.0584	.006	16750	.0597
6	42	37.50	34½	276.50	.008	8564	.117	.009	8375	.119
2	44	8.00	41	1286.00	.0044	40030	.025	.005	38080	.026
3	44	12.00	39	864.33	.004	27034	.0370	.005	26247	.0381
6	44	24.00	36	432.17	.006	13517	.0740	.007	13123	.0762
2	46	4.94	43	2103.00	.0035	65000	.015	.003	61900	.016
3	46	7.41	41	1402.23	.0035	43367	.0231	.004	41267	.0242
6	46	14.82	38½	701.16	.0050	21683	.0461	.005	20633	.0485
2	48	3.06	45	3372.00	.0028	102450	.0098	.003	98450	.0101
3	48	4.62	43	2248.33	.0030	68333	.0146	.003	65567	.0153
6	48	9.24	40	1124.16	.0040	34167	.0293	.004	32783	.0305

Part Number Ordering System. Make your own 10-digit part number by following the guidelines outlined below.



CALL TOLL FREE **1 888 MWS-WIRE**
6 9 7 - 9 4 7 3

(818) 991-8553 Fax (818) 706-0911
31200 Cedar Valley Dr., Westlake Village, CA 91362 www.mwswire.com
Twistite™ is a trademark of MWS Wire Industries.

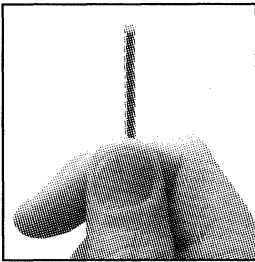
MWS
Wire Industries

An ISO-9002 Certified Company

MICROSQUARE™

Miniature Square and Rectangular

Magnet Wire



For specialty coil and motor windings.

When product miniaturization calls for tighter dimensional specifications, MWS Microsquare film-coated magnet wire allows design engineers to create compact coils and small motors that deliver more power in less space.

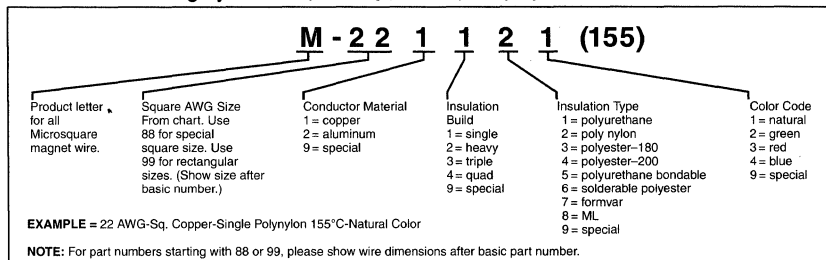
Microsquare means miniature square and rectangular, copper and aluminum magnet wire. Custom-produced by MWS in sizes smaller than 14 AWG or 3500 sq.mil. cross-sectional area, Microsquare is available in a wide range of solderable and high-temperature insulations and a variety of colors, with or without bondable overcoats.

Microsquare magnet wire was developed to provide improved winding uniformity and maximum use of space.

SIZE (AWG)	BARE DIMENSION (INCHES) NOMINAL	BARE WIRE TOLERANCE*	RESISTANCE (OHMS PER 1000 FEET AE 20°C)						CORNER RADIUS	SQ. MIL AREA	SIZE (AWG)
			MIN		NOM		MAX				
			CU	AL	CU	AL	CU	AL			
15	.0571	±.0005"	2.801	4.134	2.761	4.262	2.801	4.393	.010"	3175	15
16	.0508	±.0005"	3.281	5.210	3.483	5.372	3.534	5.535	.010"	2495	16
17	.0453	±.0005"	4.135	6.566	4.390	6.722	4.453	6.977	.009"	1983	17
18	.0403	±.0005"	5.225	8.294	5.546	8.554	5.627	8.813	.008"	1569	18
19	.0359	±.0005"	6.570	10.43	6.975	10.76	7.078	11.06	.008"	1234	19
20	.0320	±.0004"	8.302	13.18	8.685	13.60	8.845	14.01	.007"	982	20
21	.0285	±.0004"	10.46	16.94	10.94	17.16	11.15	17.66	.006"	781	21
22	.0253	±.0004"	13.17	20.86	13.78	21.52	14.03	22.17	.005"	619	22
23	.0226	±.0004"	16.60	25.37	17.37	27.19	17.69	28.02	.005"	499	23
24	.0201	±.0003"	21.06	33.41	22.03	34.45	22.44	35.60	.005"	393	24
25	.0179	±.0003"	26.00	41.98	26.81	43.30	27.32	44.61	.004"	307	25
26	.0159	±.0003"	32.86	52.99	33.88	54.65	34.91	56.30	.003"	245	26
27	.0142	±.0003"	41.43	66.82	42.73	68.90	44.02	70.99	.003"	194	27
28	.0126	±.0003"	52.51	84.74	54.15	87.38	55.79	90.03	.0025"	153	28
29	.0113	±.0003"	65.83	106.2	67.89	109.6	69.94	112.9	.002"	124	29
30	.0100	±.0003"	83.62	134.8	86.24	139.0	88.85	143.2	.002"	97	30

*Conformance to dimensional tolerance is based on the average of at least three measurements per axis using a minimum 12" sample length.

Part Number Ordering System. Make your own 7-digit part number by following the guidelines outlined below.



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All sizes to 56 AWG,
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2 - 20 conductors, 16 to
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PLATINUM to 99.999% Pure

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16 AWG and Finer

Up to 33 TPI ±1%

Up to 10 colors in some sizes

FACILITIES/SERVICES

CUSTOM ENAMELING

In our custom enameling facilities we enamel most metals from .072" to .0004" round or square and rectangular sizes smaller than 14 AWG or 3500 sq. mil. cross-sectional area including high ratio of thickness-to-width constructions. Insulations are available in special colors, builds and bondable, overcoats. All insulations meet NEMA MW 1000, 105-220°C, single thru quadruple film builds. Up to 10 insulation colors are available to aid in conductor identification.

WIRE SHAPING

MWS produces a complete line of miniature square and rectangular wires in a variety of metals. Sizes smaller than 14 AWG sq. and rectangular shapes smaller than 3500 sq. mils. are produced bare as well as film insulated.

RIBBON ROLLING

MWS operates facilities for production of flat ribbon wire in a wide variety of metals. Thicknesses range from .0005" with widths up to .125". Ribbon wires are available bare, film insulated and plated.

DRAWING AND ANNEALING

Our drawing and annealing capabilities round out our custom manufacturing facilities. These capabilities allow us to fabricate most metals from .064" through .0004" diameter in the temper and quantity you require.

TESTING LABORATORY

Expanded test facility provides complete chemical, physical and electrical test data for applicable military, federal, commercial and customer standards. Metallurgical and I/R spectro analysis are also available. We can provide you with fast and accurate answers to your technical questions.

CUSTOM PACKAGING

MWS provides custom molded, individual foam or 100% recycled paper shipping containers. These containers eliminate damage in shipping, and later prevent breakage in storage and production line handling.

WIRE TWISTING

MWS operates facilities for twisting 2 or more conductors 18 AWG and finer. Twisting tightness up to 33 twists per inch and to tolerances of ±1%. Conductor materials include copper, silver, plated conductors and specialty alloys, in bare and insulated constructions.

WIRE SPOOLING

Spooling facilities handle every size wire from heavy square and rectangular to ultra-fine. This enables you to buy the quantity of wire you need on the spool size you want.

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(818) 991-8553 Fax (818) 706-0911

Our goal is to have the wire you need, when you need it. That's why MWS stocks the largest inventory of specialty wires in the country. Over 25,000 types and sizes. If we don't have the wire you need in stock, we'll custom manufacture it. Our short run capabilities provide an alternative to large factory minimums and long deliveries.

31200 Cedar Valley Dr., Westlake Village, CA 91362

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As a manufacturer of wire and cable products National Wire & Cable is ready to fill your immediate needs. Choose from our standard lines of wire or cable . . . OR let us design and custom manufacture exactly what you require for your application.

Our wire inventory is now over 160 million feet, and our 1500 different standard multiconductor cables total in excess of 1.5 million feet!

When you call National Wire, you'll find we are especially well equipped to handle your large as well as minimal requirements. If our "standard" items won't meet your application, we have the wire inventory, the machinery, the expertise to produce exactly what you need. 105,000 square feet of manufacturing area and our expert engineering staff are at your disposal!!!! All cable components are produced within our own facility in order to assure complete quality control.

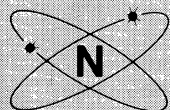
Review the following catalog pages. If you need some assistance with your specific requirement, call our factory direct, or call our representative nearest you.

CORPORATE OFFICE

Factory and Warehouse Facilities

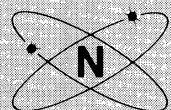
136 San Fernando Road, P.O. Box 31307, Los Angeles, Calif. 90031

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U/L RECOGNIZED WIRE**CSA CERTIFIED WIRE****U/L STYLE 1061**

Appliance wiring material available as FR-1 rated 80-degree C Service. .009" semi-rigid vinyl insulation U/L rated: 300-volt service. Meets Mil-W-16878D Type B, and CSA S-R PVC. Also available with solid conductors.

U/L STYLE 1007

Appliance wiring available as FR-1 rated 80-degree C Service. 1/64" vinyl insulation U/L rated: 300 volt appliance, use 600 volt electronic use. Meets Mil-W-16878D Type C. Also approved by CSA as Type TR-64 radio wiring for 90-degree C Service. Colors: 10 standard colors plus tracers on solid colors. Also available with solid conductors.

U/L STYLE 1015

Appliance wiring material available as FR-1 rated 105-degree C Service 1/32" vinyl insulation U/L rated: 2500 volts electronic use, 600 volt appliance use. Meets Mil-W-16878D Type D. Colors: 10 standard colors plus tracers on solid colors.

CSA/TYPE TR-32 RADIO WIRE

Rated: 90-degree C 600 volt, 1/32" vinyl insulation. Also listed as CSA Appliance Wiring Material 90-degree 600 V. Meets U/L Style 1015 & Mil-W-16878D Type D.

CSA CERTIFIED TYPE TR-64 RADIO WIRE

Rated: 90-degree C 300 volt, 1/64" vinyl insulation. Meets U/L Style 1007 & Mil-W-16878D Type C.

- Wires recognized by the Underwriter's Laboratories, Inc. for operation in an air or an oil environment. U.L. file #E35793.
- Wires certified by the Canadian Standards Association for radio or electronic uses. CSA File #LR-20482 & LR-32511.

U/L STYLE 1061

*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
28	N304-736U	7	36	.015	.034	69.0	1.0
26	N304-1938U	19*	38	.019	.038	42.9	1.5
24	N304-1936U	19*	36	.024	.043	26.8	2.0
22	N304-1934U	19*	34	.030	.050	16.7	3.0
20	N304-1932U	19*	32	.038	.057	10.5	4.75
18	N304-1930U	19	30	.048	.068	6.57	6.5
16	N304-1929U	19	29	.057	.077	4.85	9.0

U/L STYLE 1007

*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
24	N303-732U	7	32	.024	.058	26.8	2.75
22	N303-1934U	19*	34	.030	.063	16.7	3.75
20	N303-1932U	19*	32	.038	.072	10.5	5.50
18	N303-1930U	19	30	.048	.082	6.57	8.0
16	N303-1929U	19	29	.057	.090	4.85	10.0

U/L STYLE 1015

*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
24	N600-732U	7	32	.024	.082	26.8	4.0
22	N600-730U	7	30	.030	.090	16.7	5.2
20	N600-728U	7	28	.038	.098	10.5	7.3
18	N600-1930U	19	30	.048	.108	6.57	10.0
16	N600-1929U	19	29	.057	.117	4.85	12.0
14	N600-1927U	19	27	.071	.130	3.05	17.1
12	N600-1925U	19	25	.090	.162	1.92	27.4
10	N600-4927U	49	27	.111	.181	1.24	38.6

CSA/Type TR-32 Radio Wire

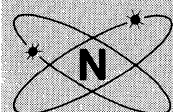
*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
24	N307-732U	7	32	.024	.082	26.8	4.0
22	N307-730U	7	30	.030	.090	16.7	5.2
20	N307-728U	7	28	.038	.098	10.5	7.3
18	N307-1930U	19	30	.048	.108	6.57	10.0
16	N307-1929U	19	29	.057	.117	4.85	12.0
14	N307-1927U	19	27	.071	.130	3.05	17.1
12	N307-1925U	19	25	.090	.162	1.92	27.4
10	N307-4927U	49	27	.111	.181	1.24	38.6

CSA/Type TR-64

*Also available with Nylon Jacket

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
24	N308-732U	7	32	.024	.058	28.4	2.75
22	N308-1934U	19*	34	.030	.063	19.0	3.50
20	N308-1932U	19*	32	.038	.072	13.12	5.25
18	N308-1930U	19	30	.048	.082	7.89	6.75
16	N308-1929U	19	29	.057	.090	4.97	10.0



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MILITARY ELECTRONIC HOOKUP WIRE

MIL-W-16878/1 Type BU

For internal wiring of electronic equipment. .010" wall vinyl primary insulation. No outer covering.
 -54-degree C to +105-degree C, 600 V, R.M.S. (working).
 Also available as NABOND.
 Meets U/L Style 1061, and CSA S-R PVC.

MIL-W-16878/1 TYPE BU

*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
32	NB740U	7	40	.009	.028	179.0	0.70
30	NB738U	7	38	.012	.031	111.0	0.75
28	NB736U	7	36	.015	.034	69.0	1.0
26	NB1938U	19*	38	.019	.038	42.9	1.5
24	NB1936U	19*	36	.024	.043	26.8	2.0
22	NB1934U	19*	34	.030	.050	16.7	3.0
20	NB1932U	19*	32	.038	.057	10.5	4.5
18	NB1930U	19	30	.048	.068	6.57	6.5
16	NB1929U	19	29	.057	.077	4.85	9.0
14	NB1927U	19	27	.071	.091	3.05	14.0

MIL-W-16878/17 Type BN

For internal wiring of electronic equipment. Vinyl primary insulation with Nylon jacket overall.
 -54-degree C to +105-degree C, 600 V, R.M.S. (working).
 Meets U/L Style 1006.

MIL-W-16878/17 TYPE BN

*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
32	NB740N	7	40	.009	.032	179.0	0.75
30	NB738N	7	38	.012	.036	111.0	1.0
28	NB736N	19	40	.015	.039	69.0	1.25
26	NB1938N	19*	38	.019	.044	42.9	1.75
24	NB1936N	19*	36	.024	.049	26.8	2.25
22	NB1934N	19*	34	.030	.056	16.7	3.25
20	NB1932N	19*	32	.038	.063	10.5	4.75
18	NB1930N	19	30	.048	.074	6.57	7.0
16	NB1929N	19	29	.057	.083	4.85	9.0
14	NB1927N	19	27	.071	.098	3.05	14.7

MIL-W-16878/2 Type CU

For internal wiring of meters, panels & electronic equipment, .015" Wall Vinyl primary insulation (no outer covering).
 -54° C to +105° C, 1000 Volts, R.M.S. (working).
 Also available as NABOND.
 Meets U/L Style 1007, and CSA TR-64.

MIL-W-16878/2 TYPE CU

*Also available in 7 strands

Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
26	NC734U	7	34	.024	.053	42.9	2.1
24	NC732U	7	32	.024	.058	26.8	2.75
22	NC1934U	19*	34	.030	.063	16.7	3.75
20	NC1932U	19*	32	.038	.072	10.5	5.50
18	NC1930U	19	30	.048	.082	6.57	8.0
16	NC1929U	19	29	.057	.090	4.85	10.0
14	NC1927U	19	27	.071	.104	3.05	15.0
12	NC1925U	19	25	.090	.124	1.92	24.0

MIL-W-16878/3 Type DU

Resists the effect of salt water, aviation fuel, motor oil, ethylene glycol and alcohols (methyl or ethyl).
 .031" wall vinyl primary insulation. No outer covering.
 -54-degree C to +105-degree C, 3000 V, R.M.S. (working).
 Meets U/L Style 1015 and CSA TR-32.

MIL-W-16878/3 TYPE DU

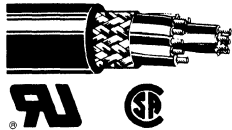
Gauge (AWG)	National Catalog Number	No. of Strands	Ga. of Strands (AWG)	Nom. Diam. of Stranded Conductor (Inches)	Nom. Fin. Wire Diam. (Inches)	Max. Resistance (dc) at 25°C Ohms/1000 ft.	Nom. Wt. per 1000 ft. (lbs.)
24	ND732U	7	32	.024	.082	26.8	4.0
22	ND730U	7	30	.030	.090	16.7	5.2
20	ND728U	7	28	.038	.098	10.5	7.3
18	ND1930U	19	30	.048	.108	6.57	10.0
16	ND1929U	19	29	.057	.117	4.85	12.0
14	ND1927U	19	27	.071	.130	3.05	17.1
12	ND1925U	19	25	.090	.162	1.92	27.4
10	ND4927U	49	27	.111	.181	1.24	38.6
8	ND13329U	133	29	.167	.246	0.726	70.5
6	ND13327U	133	27	.210	.290	0.444	104.0

NOTE: The above wires come in 10 standard colors plus tracers on solid colors.



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(NX-1922 SJ shown)

IN STOCK

**COMPUTER GRADE
SINGLE CONDUCTORS
(NX SERIES)**

**MIL SPEC. & U.L. RECOGNIZED
STYLE 2343 & CSA CERTIFIED**

MINIATURE SIGNAL & CONTROL CABLES

National Wire & Cable Corp. manufactures a complete line of MINIATURE low voltage signal and control cable. Available as cabled pairs or cabled singles, with optional overall shield: Conductors are stranded tinned copper with .010" wall of vinyl primary insulation for use up to 105°C. per MIL-W-16878/1.

Insulated for 600 volts working voltage. (Also meets U.L. AWM Type 1061; 300 volt, 80°C.) All are coded using 10 standard colors plus stripes on white per MIL-STD-681. (See table Page 12, Section 8.)

All conductors are planetary cabled and contra-helically laid for optimum flexibility, with a Mylar tape barrier undershields. Shielded cables have a tinned copper braid overall, of 85-90% coverage per MIL-C-7078; and braid angles below 40° for easy pushback.

The outer jacket is black abrasion-resistant 105°C. vinyl meeting MIL-I-631 Type F. All materials are self-extinguishing and fungus resistant. All items are U.L. STYLE 2343 COMPUTER CABLE; rated 80°C. (Higher temp. ratings apply for any non-U.L. service.) Meets E.I.A. Standard RS-232 for 18-24 gauges.

U.L. and/or CSA certification furnished only when requested.

Standard Putups: 500 and 1000 ft. No-deposit reels.

TECHNICAL DATA (all cables)

- Insulation break-down voltage:** Greater than 5000 volts AC RMS, 60cps.
- Capacitance:** Nominal capacitance from a wire to all else in a cable ranges from 45 to 70 pf/ft at 1 kc, depending on gauge and position.
- Insulation Leakage:** 200 megohms/1000 feet minimum @ 500 VDC from any conductor to all else in cable.
- Sheath Leakage:** 10 megohms/1000 feet minimum @ 500 VDC from shield or conductor group through sheath to ground.
- Temperature Range:** Suitable for continuous use from -40°C. to +105°C. (U.L. Service limited to +80°C.)
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 6 cable diameters from +105°C to -20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at -40°C. For continuous flexing applications consult the factory.

MULTICONDUCTOR STOCK CABLED SINGLES

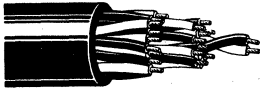
Conductor sizes 24, 22 are 7 strand; 20 AWG is 19 strand

UNSHIELDED										OVERALL SHIELDED											
National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight		National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight	
			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM				Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM
NX-524J	5	24	.044	1.1	.062	1.6	.247	6.3	31	47	NX-524SJ	5	24	.044	1.1	.062	1.6	.267	6.8	42	63
NX-724J	7	24	.044	1.1	.062	1.6	.260	6.6	37	55	NX-724SJ	7	24	.044	1.1	.062	1.6	.280	7.1	49	72
NX-1224J	12	24	.044	1.1	.062	1.6	.311	7.9	53	79	NX-1224SJ	12	24	.044	1.1	.062	1.6	.331	8.4	63	101
NX-1524J	15	24	.044	1.1	.062	1.6	.335	8.5	62	92	NX-1524SJ	15	24	.044	1.1	.062	1.6	.355	9.0	79	117
NX-1924J	19	24	.044	1.1	.062	1.6	.348	8.8	72	106	NX-1924SJ	19	24	.044	1.1	.062	1.6	.368	9.3	89	133
NX-2724J	27	24	.044	1.1	.062	1.6	.399	10.1	94	139	NX-2724SJ	27	24	.044	1.1	.062	1.6	.419	10.6	115	171
NX-3724J	37	24	.044	1.1	.062	1.6	.436	11.1	118	176	NX-3724SJ	37	24	.044	1.1	.062	1.6	.461	11.7	151	224
NX-4824J	48	24	.044	1.1	.062	1.6	.484	12.3	146	217	NX-4824SJ	48	24	.044	1.1	.062	1.6	.510	12.9	183	273
NX-6024J	60	24	.044	1.1	.062	1.6	.524	13.3	175	261	NX-6024SJ	60	24	.044	1.1	.062	1.6	.549	13.9	216	321
NX-522J	5	22	.050	1.3	.062	1.6	.263	6.7	38	56	NX-522SJ	5	22	.050	1.3	.062	1.6	.283	7.2	50	74
NX-722J	7	22	.050	1.3	.062	1.6	.278	7.1	45	67	NX-722SJ	7	22	.050	1.3	.062	1.6	.298	7.6	58	87
NX-1222J	12	22	.050	1.3	.062	1.6	.336	8.5	67	99	NX-1222SJ	12	22	.050	1.3	.062	1.6	.356	9.0	83	124
NX-1522J	15	22	.050	1.3	.062	1.6	.363	9.2	79	117	NX-1522SJ	15	22	.050	1.3	.062	1.6	.383	9.7	97	145
NX-1922J	19	22	.050	1.3	.062	1.6	.378	9.6	92	137	NX-1922SJ	19	22	.050	1.3	.062	1.6	.398	10.1	112	166
NX-2722J	27	22	.050	1.3	.062	1.6	.436	11.1	122	182	NX-2722SJ	27	22	.050	1.3	.062	1.6	.461	11.7	155	230
NX-3722J	37	22	.050	1.3	.062	1.6	.478	12.1	156	233	NX-3722SJ	37	22	.050	1.3	.062	1.6	.503	12.8	193	287
NX-4822J	48	22	.050	1.3	.062	1.6	.533	13.5	195	290	NX-4822SJ	48	22	.050	1.3	.062	1.6	.558	14.2	237	352
NX-6022J	60	22	.050	1.3	.062	1.6	.578	14.7	235	350	NX-6022SJ	60	22	.050	1.3	.062	1.6	.603	15.3	281	419
NX-520J	5	20	.058	1.5	.062	1.6	.285	7.2	49	73	NX-520SJ	5	20	.058	1.5	.062	1.6	.305	7.7	62	93
NX-720J	7	20	.058	1.5	.062	1.6	.302	7.7	61	90	NX-720SJ	7	20	.058	1.5	.062	1.6	.322	8.2	75	112
NX-1220J	12	20	.058	1.5	.062	1.6	.369	9.4	92	137	NX-1220SJ	12	20	.058	1.5	.062	1.6	.389	9.9	111	165
NX-1520J	15	20	.058	1.5	.062	1.6	.401	10.2	110	163	NX-1520SJ	15	20	.058	1.5	.062	1.6	.421	10.7	131	195
NX-1920J	19	20	.058	1.5	.062	1.6	.418	10.6	131	194	NX-1920SJ	19	20	.058	1.5	.062	1.6	.438	11.1	153	228
NX-2720J	27	20	.058	1.5	.062	1.6	.485	12.3	176	262	NX-2720SJ	27	20	.058	1.5	.062	1.6	.510	13.0	213	317
NX-3720J	37	20	.058	1.5	.062	1.6	.534	13.6	229	341	NX-3720SJ	37	20	.058	1.5	.062	1.6	.559	14.2	271	403
NX-4820J	48	20	.058	1.5	.062	1.6	.598	15.2	288	429	NX-4820SJ	48	20	.058	1.5	.062	1.6	.623	15.8	336	500
NX-6020J	60	20	.058	1.5	.062	1.6	.650	16.5	351	522	NX-6020SJ	60	20	.058	1.5	.062	1.6	.675	17.2	404	601



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 CAGE CODE 04569





(NXP-1924J shown)

IN STOCK

COMPUTER GRADE

TWISTED PAIRS
(NXP SERIES)

MIL SPEC. & U.L. RECOGNIZED
STYLE 2343 & 2344 & CSA CERTIFIED

MINIATURE SIGNAL & CONTROL CABLES

TECHNICAL DATA (all cables)

National Wire & Cable Corp. manufactures a complete line of MINIATURE low voltage signal and control cable. Available as cabled pairs or cabled singles, with optional overall shield. Conductors are stranded tinned copper with .010" wall of vinyl primary insulation for use up to 105°C. per MIL-W-16878/1.

Insulated for 600 volts working voltage. (Also meets U.L. AWM Type 1061; 300 volt, 80°C.) All are coded using 10 standard colors plus stripes on white per table below.

All conductors are planetary cabled and contra-helicallly laid for optimum flexibility, with a Mylar tape barrier undershields. Shielded cables have a tinned copper braid overall, of 85-90% coverage per MIL-C-7078; and braid angles below 40° for easy pushback.

The outer jacket is black abrasion-resistant 105°C. vinyl meeting MIL-I-631 Type F. All materials are self-extinguishing and fungus resistant. All items are U.L. STYLE 2343 or 2344 COMPUTER CABLE; rated 80°C. (Higher temp. ratings apply for any non-U.L. service.) Meets RS-423 for 20-24 gauge.

U.L. and/or CSA certification furnished only when requested. Standard Putups: 500 and 1000 ft. No-deposit reels.

- Insulation break-down voltage:** Greater than 5000 volts AC RMS, 60cps.
- Capacitance:** Nominal capacitance from a wire to all else in a cable ranges from 45 to 70 pf/ft at 1 kc, depending on gauge and position.
- Insulation Leakage:** 200 megohms/1000 feet minimum @ 500 VDC from conductor to all else in cable.
- Sheath Leakage:** 10 megohms/1000 feet minimum @ 500 VDC from shield or conductor group through sheath to ground.
- Temperature Range:** Suitable for continuous use from -40°C. to +105°C. (U.L. Service limited to +80°C.)
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 6 cable diameters from +105°C to -20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at -40°C. For continuous flexing applications consult the factory.
- Impedance:** Balanced: 87 ohms ±5%
Unbalanced: 52 ohms ±5%

MULTI-CONDUCTOR STOCK CABLED PAIRS

Conductor sizes: 24, 22 are 7 strand; 20 AWG is 19 strand

UNSHIELDED								OVERALL SHIELDED													
National Catalog Number	No. Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Lbs. per 1000 ft.	KG/KM	National Catalog Number	No. Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Lbs. per 1000 ft.	KG/KM		
			Inches	MM	Inches	MM	Inches			MM				Inches	MM	Inches	MM			Inches	MM
NXP-524J	5	24	.044	1.1	.062	1.6	.339	8.6	55	82	NXP-524SJ	5	24	.044	1.1	.062	1.6	.359	9.1	74	110
NXP-724J	7	24	.044	1.1	.062	1.6	.352	9.0	66	99	NXP-724SJ	7	24	.044	1.1	.062	1.6	.372	9.5	87	129
NXP-1224J	12	24	.044	1.1	.062	1.6	.439	11.2	98	146	NXP-1224SJ	12	24	.044	1.1	.062	1.6	.464	11.8	137	203
NXP-1524J	15	24	.044	1.1	.062	1.6	.489	12.4	116	173	NXP-1524SJ	15	24	.044	1.1	.062	1.6	.514	13.1	159	236
NXP-1924J	19	24	.044	1.1	.062	1.6	.502	12.8	135	201	NXP-1924SJ	19	24	.044	1.1	.062	1.6	.527	13.4	181	269
NXP-2724J	27	24	.044	1.1	.062	1.6	.589	15.0	180	267	NXP-2724SJ	27	24	.044	1.1	.062	1.6	.614	15.6	234	349
NXP-3724J	37	24	.044	1.1	.062	1.6	.652	16.6	229	340	NXP-3724SJ	37	24	.044	1.1	.062	1.6	.677	17.2	291	432
NXP-4824J	48	24	.044	1.1	.062	1.6	.734	18.6	285	424	NXP-4824SJ	48	24	.044	1.1	.062	1.6	.759	19.3	356	529
NXP-6024J	60	24	.044	1.1	.062	1.6	.801	20.4	343	510	NXP-6024SJ*	60	24	.044	1.1	.062	1.6	.862	21.9	453	674
NXP-522J	5	22	.050	1.3	.062	1.6	.368	9.3	68	101	NXP-522SJ	5	22	.050	1.3	.062	1.6	.388	9.9	89	132
NXP-722J	7	22	.050	1.3	.062	1.6	.383	9.7	83	124	NXP-722SJ	7	22	.050	1.3	.062	1.6	.403	10.2	106	158
NXP-1222J	12	22	.050	1.3	.062	1.6	.482	12.2	126	187	NXP-1222SJ	12	22	.050	1.3	.062	1.6	.507	12.9	169	251
NXP-1522J	15	22	.050	1.3	.062	1.6	.538	13.7	150	223	NXP-1522SJ	15	22	.050	1.3	.062	1.6	.563	14.3	198	294
NXP-1922J	19	22	.050	1.3	.062	1.6	.553	14.0	177	263	NXP-1922SJ	19	22	.050	1.3	.062	1.6	.578	14.7	227	338
NXP-2722J	27	22	.050	1.3	.062	1.6	.652	16.6	237	352	NXP-2722SJ	27	22	.050	1.3	.062	1.6	.677	17.2	299	444
NXP-3722J	37	22	.050	1.3	.062	1.6	.723	18.4	305	454	NXP-3722SJ	37	22	.050	1.3	.062	1.6	.748	19.0	375	558
NXP-4822J*	48	22	.050	1.3	.062	1.6	.817	20.7	382	569	NXP-4822SJ*	48	22	.050	1.3	.080	2.0	.878	22.3	495	737
NXP-6022J*	60	22	.050	1.3	.080	2.0	.929	23.6	498	741	NXP-6022SJ	60	22	.050	1.3	.080	2.0	.954	24.2	588	874
NXP-520J	5	20	.058	1.5	.062	1.6	.406	10.3	91	135	NXP-520SJ	5	20	.058	1.5	.062	1.6	.426	10.8	115	171
NXP-720J	7	20	.058	1.5	.062	1.6	.424	10.8	114	169	NXP-720SJ	7	20	.058	1.5	.062	1.6	.444	11.3	140	208
NXP-1220J	12	20	.058	1.5	.062	1.6	.538	13.7	176	262	NXP-1220SJ	12	20	.058	1.5	.062	1.6	.563	14.3	226	336
NXP-1520J	15	20	.058	1.5	.062	1.6	.604	15.3	212	315	NXP-1520SJ	15	20	.058	1.5	.062	1.6	.629	16.0	267	397
NXP-1920J	19	20	.058	1.5	.062	1.6	.621	15.8	254	378	NXP-1920SJ	19	20	.058	1.5	.062	1.6	.646	16.4	312	464
NXP-2720J	27	20	.058	1.5	.062	1.6	.735	18.7	345	513	NXP-2720SJ	27	20	.058	1.5	.062	1.6	.761	19.3	416	619
NXP-3720J	37	20	.058	1.5	.062	1.6	.818	20.8	451	670	NXP-3720SJ*	37	20	.058	1.5	.080	2.0	.879	22.3	564	839
NXP-4820J*	48	20	.058	1.5	.062	2.0	.963	24.5	605	901	NXP-4820SJ*	48	20	.058	1.5	.080	2.0	.988	25.1	699	1039
NXP-6020J*	60	20	.058	1.5	.062	2.0	1.051	26.7	734	1092	NXP-6020SJ*	60	20	.058	1.5	.080	2.0	1.077	27.3	838	1246

*Denotes U.L. Style 2344.

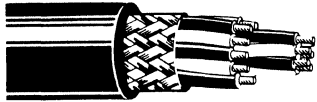
COLOR CODING USED IN TWISTED PAIRS

PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS
1	White with Black	11	Black with Red	21	Brown with Green	31	Orange with Yellow	41	Green with Violet	51	Wh/Blk with Green
2	White with Brown	12	Black with Orange	22	Brown with Blue	32	Orange with Green	42	Green with Gray	52	Wh/Blk with Blue
3	White with Red	13	Black with Yellow	23	Brown with Violet	33	Orange with Blue	43	Blue with Violet	53	Wh/Blk with Violet
4	White with Orange	14	Black with Green	24	Brown with Gray	34	Orange with Violet	44	Blue with Gray	54	Wh/Blk with Gray
5	White with Yellow	15	Black with Blue	25	Red with Orange	35	Orange with Gray	45	Violet with Gray	55	Wh/Brn with Black
6	White with Green	16	Black with Violet	26	Red with Yellow	36	Yellow with Green	46	Wh/Blk with Black	56	Wh/Brn with Brown
7	White with Blue	17	Black with Gray	27	Red with Green	37	Yellow with Blue	47	Wh/Blk with Brown	57	Wh/Brn with Red
8	White with Violet	18	Brown with Red	28	Red with Blue	38	Yellow with Violet	48	Wh/Blk with Red	58	Wh/Brn with Orange
9	White with Gray	19	Brown with Orange	29	Red with Violet	39	Yellow with Gray	49	Wh/Blk with Orange	59	Wh/Brn with Yellow
10	Black with Brown	20	Brown with Yellow	30	Red with Gray	40	Green with Blue	50	Wh/Blk with Yellow	60	Wh/Brn with Green



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CAGE CODE 04569





(NW-1918SJ shown)

MULTIPLE CONDUCTOR CONTROL CABLES

National Wire & Cable Corp. manufactures a complete line of multiple conductor control cable. All conductors are stranded tinned copper with 1/64" wall of vinyl primary insulation for use up to 105°C per MIL-W-16878/2.* Insulated for 1000 volts working voltage. Color coded using 10 standard colors plus stripes on white per MIL-STD- 681 (see Page 12, Section 8).

All conductors are planetary cabled and contra-helically laid for optimum flexibility, with a Mylar tape serve over cable bundle. Shielded cables have a tinned copper braid overall, of 85-90% coverage per MIL-C-7078, and braid angles below 40° for easy pushback.

The outer jacket is black abrasion-resistant 105°C vinyl meeting MIL-I-631 Type F. All materials are self-extinguishing and fungus resistant. May be Neoprene to MIL-R-6855 Class 2 Grade 60 specification. (Neoprene at added cost and only available for non-U.L. applications.) Cables are U.L. STYLE 2343 or 2344, rated 80°C, and CSA CERTIFIED for 105°C as described below. U.L. and/or CSA certification furnished only when requested.

*Insulated wires also meet U.L. style 1007 or 1569 as appropriate for gauge.
 ** Not recognized under UL styles 2343 or 2344 or CSA in these gauges. — See NWH Series.

IN STOCK

HEAVY DUTY

SINGLE CONDUCTORS (NW SERIES)

MIL SPEC. & U.L. RECOGNIZED
 STYLE 2343 OR 2344 & CSA CERTIFIED

TECHNICAL DATA (all cables)

- Insulation Break-down Voltage:** Greater than 8000 volts AC RMS, 60 cps.
- U.L. Voltage Rating:** 300 volts RMS AC (appliance use), 600 volts RMS AC (electronic use).
- CSA Voltage Rating:** 300 volts RMS AC (appliance use).
- Military Voltage Rating:** 1000 volts RMS.
- Capacitance:** Nominal capacitance from a wire to all else in the cable ranges from 40 to 65 pf per ft., @ 1000 cps, dependent on gauge and position.
- Insulation Leakage Res.:** 200 megohms/1000 ft. min. at 500 VDC from any conductor to all else in cable.
- Sheath Leakage Res.:** 10 megohms/1000 ft. min. at 500 VDC from overall shield through sheath to outside world.
- Usable Temp. Range:** Suitable for continuous use from +105°C to -55°C.
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 6 cable diameters from +105°C to -20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at -40°C. For continuous flexing applications consult the factory.

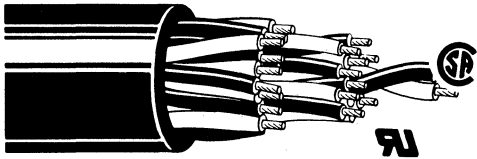
MULTI-CONDUCTOR STOCK CABLES

Conductor sizes: 22, 20, 18, 16, 14 & 12 gauge. 22 AWG is 7 strand. All others 19 strand.

UNSHIELDED								OVERALL SHIELDED													
National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter Inches	Jacket Wall Inches	Nominal Diameter Inches	Weight Lbs. per 1000 ft.		National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter Inches	Jacket Wall Inches	Nominal Diameter Inches	Weight Lbs. per 1000 ft.							
NW-722J	7	22	.064	1.6	.062	1.6	320	8.1	55	82	NW-722SJ	7	22	.064	1.6	.062	1.6	340	8.6	71	106
NW-1222J	12	22	.064	1.6	.062	1.6	.394	10.1	82	123	NW-1222SJ	12	22	.064	1.6	.062	1.6	.414	10.5	103	153
NW-1922J	19	22	.064	1.6	.062	1.6	.448	11.4	114	170	NW-1922SJ	19	22	.064	1.6	.062	1.6	.473	12.0	148	220
NW-2722J	27	22	.064	1.6	.062	1.6	.522	13.3	152	227	NW-2722SJ	27	22	.064	1.6	.062	1.6	.547	13.9	193	287
NW-3722J	37	22	.064	1.6	.062	1.6	.576	14.6	195	291	NW-3722SJ	37	22	.064	1.6	.062	1.6	.601	15.3	241	359
NW-4822J	48	22	.064	1.6	.062	1.6	.646	16.4	244	363	NW-4822SJ	48	22	.064	1.6	.062	1.6	.672	17.1	296	441
NW-6022J	60	22	.064	1.6	.062	1.6	.704	17.9	295	438	NW-6022SJ	60	22	.064	1.6	.062	1.6	.729	18.5	353	525
NW-7222J	72	22	.064	1.6	.062	1.6	.768	19.5	346	515	NW-7222SJ	72	22	.064	1.6	.062	1.6	.793	20.1	410	610
NW-8822J	88	22	.064	1.6	.080	2.0	.868	22.0	441	656	NW-8822SJ	88	22	.064	1.6	.080	2.0	.893	22.7	512	761
NW-10222J	102	22	.064	1.6	.080	2.0	.932	23.7	502	747	NW-10222SJ	102	22	.064	1.6	.080	2.0	.957	24.3	579	861
NW-720J	7	20	.072	1.8	.062	1.6	.344	8.7	71	106	NW-720SJ	7	20	.072	1.8	.062	1.6	.364	9.2	89	132
NW-1220J	12	20	.072	1.8	.062	1.6	.428	10.9	109	162	NW-1220SJ	12	20	.072	1.8	.062	1.6	.448	11.4	132	196
NW-1920J	19	20	.072	1.8	.062	1.6	.488	12.4	155	230	NW-1920SJ	19	20	.072	1.8	.062	1.6	.513	13.0	192	286
NW-2720J	27	20	.072	1.8	.062	1.6	.572	14.5	209	311	NW-2720SJ	27	20	.072	1.8	.062	1.6	.597	15.2	255	379
NW-3720J	37	20	.072	1.8	.062	1.6	.632	16.1	272	405	NW-3720SJ	37	20	.072	1.8	.062	1.6	.657	16.7	323	481
NW-4820J	48	20	.072	1.8	.062	1.6	.711	18.1	342	509	NW-4820SJ	48	20	.072	1.8	.062	1.6	.736	18.7	401	597
NW-6020J	60	20	.072	1.8	.062	1.6	.776	19.7	417	620	NW-6020SJ	60	20	.072	1.8	.062	1.6	.801	20.4	482	716
NW-7220J	72	20	.072	1.8	.080	2.0	.884	22.5	521	775	NW-7220SJ	72	20	.072	1.8	.080	2.0	.909	23.1	593	883
NW-8820J	88	20	.072	1.8	.080	2.0	.956	24.3	621	924	NW-8820SJ	88	20	.072	1.8	.080	2.0	.981	24.9	700	1042
NW-10220J	102	20	.072	1.8	.080	2.0	1.028	26.1	710	1056	NW-10220SJ	102	20	.072	1.8	.080	2.0	1.053	26.8	796	1184
NW-718J	7	18	.082	2.1	.062	1.6	.374	9.5	91	136	NW-718SJ	7	18	.082	2.1	.062	1.6	.394	10.0	111	165
NW-1218J	12	18	.082	2.1	.062	1.6	.469	11.9	142	211	NW-1218SJ	12	18	.082	2.1	.062	1.6	.494	12.6	178	265
NW-1918J	19	18	.082	2.1	.062	1.6	.538	13.7	206	306	NW-1918SJ	19	18	.082	2.1	.062	1.6	.563	14.3	248	369
NW-2718J	27	18	.082	2.1	.062	1.6	.633	16.1	280	417	NW-2718SJ	27	18	.082	2.1	.062	1.6	.658	16.7	332	493
NW-3718J	37	18	.082	2.1	.062	1.6	.702	17.8	368	547	NW-3718SJ	37	18	.082	2.1	.062	1.6	.727	18.5	425	633
NW-4818J	48	18	.082	2.1	.062	1.6	.792	20.1	465	692	NW-4818SJ	48	18	.082	2.1	.062	1.6	.817	20.8	532	791
NW-6018J	60	18	.082	2.1	.080	2.0	.902	22.9	599	891	NW-6018SJ	60	18	.082	2.1	.080	2.0	.927	23.6	673	1001
NW-7218J	72	18	.082	2.1	.080	2.0	.984	25.0	706	1051	NW-7218SJ	72	18	.082	2.1	.080	2.0	1.009	25.6	788	1173
NW-716J	7	16	.091	2.3	.062	1.6	.401	10.2	108	161	NW-716SJ	7	16	.091	2.3	.062	1.6	.421	10.7	129	192
NW-1216J	12	16	.091	2.3	.062	1.6	.507	12.9	170	253	NW-1216SJ	12	16	.091	2.3	.062	1.6	.532	13.5	209	311
NW-1916J	19	16	.091	2.3	.062	1.6	.583	14.8	248	369	NW-1916SJ	19	16	.091	2.3	.062	1.6	.608	15.4	294	437
NW-2716J	27	16	.091	2.3	.062	1.6	.689	17.5	339	504	NW-2716SJ	27	16	.091	2.3	.062	1.6	.714	18.1	395	588
NW-3716J	37	16	.091	2.3	.062	1.6	.765	19.4	446	664	NW-3716SJ	37	16	.091	2.3	.062	1.6	.790	20.0	510	759
NW-4816J	48	16	.091	2.3	.080	2.0	.901	22.9	576	857	NW-4816SJ	48	16	.091	2.3	.080	2.0	.926	23.5	670	997
NW-6016J	60	16	.091	2.3	.080	2.0	.983	25.0	706	1071	NW-6016SJ	60	16	.091	2.3	.080	2.0	1.008	25.6	808	1202
NW-714J**	7	14	.105	2.7	.062	1.6	.443	11.2	146	217	NW-714SJ	7	14	.105	2.7	.062	1.6	.468	11.9	175	260
NW-1214J**	12	14	.105	2.7	.062	1.6	.565	14.3	233	347	NW-1214SJ	12	14	.105	2.7	.062	1.6	.590	15.0	270	402
NW-1914J**	19	14	.105	2.7	.062	1.6	.653	16.6	345	513	NW-1914SJ	19	14	.105	2.7	.062	1.6	.678	17.2	399	594
NW-2714J**	27	14	.105	2.7	.062	1.6	.775	19.7	476	708	NW-2714SJ	27	14	.105	2.7	.062	1.6	.805	20.4	530	789
NW-512J**	5	12	.124	3.1	.062	1.6	.463	11.7	157	234	NW-512SJ	5	12	.124	3.1	.062	1.6	.488	12.4	192	286
NW-712J**	7	12	.124	3.1	.062	1.6	.500	12.7	205	305	NW-712SJ	7	12	.124	3.1	.062	1.6	.525	13.3	244	363
NW-1212J**	12	12	.124	3.1	.062	1.6	.644	16.4	332	494	NW-1212SJ	12	12	.124	3.1	.062	1.6	.669	17.0	385	573
NW-1912J**	19	12	.124	3.1	.062	1.6	.748	18.0	499	743	NW-1912SJ	19	12	.124	3.1	.062	1.6	.773	19.6	562	836

** Not listed under UL styles 2343 or 2344 in these gauges. — See NWH Series.

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(NWP1918J shown)

IN STOCK

HEAVY DUTY

**TWISTED PAIR
(NWP SERIES)**

**MIL SPEC. & U.L. RECOGNIZED
STYLE 2343 OR 2344 & CSA CERTIFIED**

TECHNICAL DATA (all cables)

MULTIPLE CONDUCTOR CONTROL CABLES

Identical to National's NW-Series Cables except offered as twisted pairs.

National Wire & Cable Corporation manufactures a complete line of multiple pair control cables. Conductors are of tinned copper strand with 1/64" vinyl primary insulation for use up to 105°C per MIL-W-16878/2.* Insulated for 1000 volts working voltage. Conductors are color coded using 10 standard basic colors, plus spiral tracers on white per table below.

All pairs are planetary cabled and contra-helically laid with a Mylar tape serve over the cable bundle. Shielded cables have a tinned copper braid overall, of 85-90% coverage per MIL-C-7078, and braid angles below 40° for easy pushback.

The outer jacket is black, abrasion-resistant 105°C vinyl meeting MIL-I-631 Type F. This material is self-extinguishing and fungus resistant. Neoprene to MIL-R-6855 Class 2 Grade 60 specification is also available on special request for non-U.L. applications.

Cables are U.L. STYLE 2343 or 2344, rated 80°C, and CSA CERTIFIED for 105°C as described below. U.L. and/or CSA certification furnished only when requested.

*Insulated wires also meet U.L. Style 1007 or 1569 as appropriate for gauge.

Insulation Break-down Voltage:	Greater than 8000 volts AC RMS, 60 cps.
U.L. Voltage Rating:	300 volts RMS AC (appliance use). 600 volts RMS AC (electronic use).
CSA Voltage Rating:	300 volts RMS AC (appliance use).
Military Voltage Rating:	1000 volts RMS.
Capacitance:	Nominal capacitance wire to wire for a pair ranges from 27 to 40 pF/ft. Capacitance from both wires tied together measured to all else in common ranges from 35 to 60 mmfd/ft. dependent on gauge and position. Overall shield has negligible effect on W-W capacitance.
Insulation Leakage Res.:	200 megohms/1000 ft. min. at 500 VDC from any conductor to all else in cable.
Sheath Leakage Res.:	10 megohms/1000 ft. min. at 500 VDC from overall shield through sheath to outside world.
Usable Temp. Range:	Suitable for continuous use from +105°C to -55°C.
Cold Bending Capability:	All cables are suitable for flexing to a circle diameter of approximately 6 cable diameters from +105°C to -20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at -40°C. For continuous flexing applications consult the factory.

MULTI-CONDUCTOR STOCK CABLED PAIRS														Conductor sizes: 22 AWG is 7 strand. All others 19 strand.													
UNSHIELDED														OVERALL SHIELDED													
National Catalog Number	No. Pairs	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight		National Catalog Number	No. Pairs	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight							
			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM				Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM						
NWP-722J	7	22	.064	1.6	.062	1.6	.454	11.5	103	154	NWP-722SJ	7	22	.064	1.6	.062	1.6	.480	12.2	143	213						
NWP-1222J	12	22	.064	1.6	.062	1.6	.581	14.7	157	234	NWP-1222SJ	12	22	.064	1.6	.062	1.6	.606	15.4	211	314						
NWP-1922J	19	22	.064	1.6	.062	1.6	.672	17.1	221	329	NWP-1922SJ	19	22	.064	1.6	.062	1.6	.697	17.7	285	424						
NWP-2722J	27	22	.064	1.6	.062	1.6	.798	20.3	297	442	NWP-2722SJ	27	22	.064	1.6	.062	1.6	.823	20.9	375	558						
NWP-3722J	37	22	.064	1.6	.080	2.0	.926	23.5	418	621	NWP-3722SJ	37	22	.064	1.6	.080	2.0	.951	24.2	507	754						
NWP-4822J	48	22	.064	1.6	.080	2.0	1.045	26.6	520	773	NWP-4822SJ	48	22	.064	1.6	.080	2.0	1.070	27.2	622	926						
NWP-6022J	60	22	.064	1.6	.080	2.0	1.143	29.0	625	930	NWP-6022SJ	60	22	.064	1.6	.080	2.0	1.168	29.7	739	1099						
NWP-720J	7	20	.072	1.8	.062	1.6	.495	12.6	135	201	NWP-720SJ	7	20	.072	1.8	.062	1.6	.520	13.2	180	267						
NWP-1220J	12	20	.072	1.8	.062	1.6	.637	16.2	210	313	NWP-1220SJ	12	20	.072	1.8	.062	1.6	.662	16.8	270	402						
NWP-1920J	19	20	.072	1.8	.062	1.6	.740	18.8	302	450	NWP-1920SJ	19	20	.072	1.8	.062	1.6	.765	19.4	374	556						
NWP-2720J	27	20	.072	1.8	.080	2.0	.918	23.3	445	662	NWP-2720SJ	27	20	.072	1.8	.080	2.0	.943	24.0	534	794						
NWP-3720J	37	20	.072	1.8	.080	2.0	1.021	25.9	575	855	NWP-3720SJ	37	20	.072	1.8	.080	2.0	1.046	26.6	675	1004						
NWP-4820J	48	20	.072	1.8	.080	2.0	1.155	29.3	721	1073	NWP-4820SJ	48	20	.072	1.8	.080	2.0	1.181	30.0	836	1243						
NWP-6020J	60	20	.072	1.8	.080	2.0	1.266	32.1	874	1300	NWP-6020SJ	60	20	.072	1.8	.080	2.0	1.291	32.8	1001	1490						
NWP-718J	7	18	.082	2.1	.062	1.6	.546	13.9	175	261	NWP-718SJ	7	18	.082	2.1	.062	1.6	.571	14.5	225	335						
NWP-1218J	12	18	.082	2.1	.062	1.6	.708	18.0	277	412	NWP-1218SJ	12	18	.082	2.1	.062	1.6	.733	18.6	345	513						
NWP-1918J	19	18	.082	2.1	.080	2.0	.861	21.9	436	649	NWP-1918SJ	19	18	.082	2.1	.080	2.0	.886	22.5	518	771						
NWP-2718J	27	18	.082	2.1	.080	2.0	1.023	26.0	591	880	NWP-2718SJ	27	18	.082	2.1	.080	2.0	1.048	26.6	692	1029						
NWP-3718J	37	18	.082	2.1	.080	2.0	1.140	29.0	771	1147	NWP-3718SJ	37	18	.082	2.1	.080	2.0	1.165	29.6	884	1315						
NWP-4818J	48	18	.082	2.1	.080	2.0	1.293	32.8	973	1447	NWP-4818SJ	48	18	.082	2.1	.080	2.0	1.318	33.5	1103	1641						
NWP-716J*	7	16	.091	2.3	.062	1.6	.592	15.0	209	310	NWP-716SJ	7	16	.091	2.3	.062	1.6	.617	15.7	264	392						
NWP-1216J*	12	16	.091	2.3	.062	1.6	.772	19.6	332	493	NWP-1216SJ	12	16	.091	2.3	.062	1.6	.797	20.2	407	605						
NWP-1916J*	19	16	.091	2.3	.080	2.0	.938	23.8	523	777	NWP-1916SJ	19	16	.091	2.3	.080	2.0	.963	24.5	613	912						
NWP-2716J*	27	16	.091	2.3	.080	2.0	1.117	28.4	712	1059	NWP-2716SJ	27	16	.091	2.3	.080	2.0	1.142	29.0	823	1224						
NWP-3716J*	37	16	.091	2.3	.080	2.0	1.247	31.7	932	1387	NWP-3716SJ	37	16	.091	2.3	.080	2.0	1.272	32.3	1057	1573						

NWP Cables in 16 Gauge are not U.L. or CSA recognized

COLOR CODING USED ON TWISTED PAIRS

PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS
1	White with Black	11	Black with Red	21	Brown with Green	31	Orange with Yellow	41	Green with Violet	51	Wht/Blk with Green
2	White with Brown	12	Black with Orange	22	Brown with Blue	32	Orange with Green	42	Green with Gray	52	Wht/Blk with Blue
3	White with Red	13	Black with Yellow	23	Brown with Violet	33	Orange with Blue	43	Blue with Violet	53	Wht/Blk with Violet
4	White with Orange	14	Black with Green	24	Brown with Gray	34	Orange with Violet	44	Blue with Gray	54	Wht/Blk with Gray
5	White with Yellow	15	Black with Blue	25	Red with Orange	35	Orange with Gray	45	Violet with Gray	55	Wht/Brn with Black
6	White with Green	16	Black with Violet	26	Red with Yellow	36	Yellow with Green	46	Wht/Blk with Black	56	Wht/Brn with Brown
7	White with Blue	17	Black with Gray	27	Red with Green	37	Yellow with Blue	47	Wht/Blk with Brown	57	Wht/Brn with Red
8	White with Violet	18	Brown with Red	28	Red with Blue	38	Yellow with Violet	48	Wht/Blk with Red	58	Wht/Brn with Orange
9	White with Gray	19	Brown with Orange	29	Red with Violet	39	Yellow with Gray	49	Wht/Blk with Orange	59	Wht/Brn with Yellow
10	Black with Brown	20	Brown with Yellow	30	Red with Gray	40	Green with Blue	50	Wht/Blk with Yellow	60	Wht/Brn with Green

continued on following page

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(NQ1928J shown)

MINIATURE SIGNAL & CONTROL CABLES

GRAY PVC JACKET

National Wire & Cable Corporation manufactures a complete line of highly flexible micro-miniature low-voltage instrument control cable. These are available as cabled pairs or singles, with optional overall shield of either foil with drain or a braided shield.

Conductors are stranded tinned copper with .010" wall of tough extruded polyvinyl chloride primary insulation, rated for 300 volt use at +80°C under U.L. style 1061.* All are color coded using ten standard colors plus white with stripes per MIL-STD-681. (See Table Page 12, Section 8.)

Conductors are planetary cabled and helically laid for optimum flexibility, with a barrier under braids. Shielded cables have a tinned copper braid of 90% coverage per MIL-C-7078, with braid angles below 40° for easy pushback; or have a 100% coverage foil shield in intimate contact with a drain wire for easy termination. See Section 4 of our catalog for relative shield effectiveness.

Outer jacket is highly flexible abrasion-resistant gray polyvinyl chloride thermoplastic, meeting the requirements of U.L. style 2464.** U.L. & CSA certification furnished.

Military certification furnished only when requested.

All materials are flame retardant and fungus resistant.

Standard Putups: 500 and 1000 ft. No-deposit reels. For short-er quantities or specific lengths, consult factory.

*Wire also meets MIL-W-16878/1, rated 600 volts, +105°C.
**Jacket material is military rated for +105°C; meets MIL-I-631, Type F. Meets E.I.A. Standards RS-232 for 18-24 gauges.

IN STOCK

**EXTRA FLEXIBLE
GRAY PVC JACKETS**

**SINGLE CONDUCTORS
(NQ SERIES)**

**MIL SPEC. & U.L. RECOGNIZED
STYLE 2464 & CSA CERTIFIED**

TECHNICAL DATA (all cables)

- Insulation break-down voltage:** Greater than 3000 volts AC RMS, 60cps.
- Capacitance:** Nominal capacitance from a wire to all else in a cable ranges from 25 to 45 pF/ft at 1kc, depending on gauge and position.
- Insulation Leakage:** 200 megohms/1000 feet minimum @ 500VDC from conductor to all else in cable.
- Sheath Leakage:** 10 megohms/1000 feet minimum @ 500VDC from shield or conductor group through sheath to ground.
- Temperature Range:** U.L. rating: +80°C per U.L. style 2464. Military: Continuous use from -40°C to +105°C.
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 6 cable diameters from +105°C to -20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at -40°C. For continuous flexing applications consult the factory.
- Foil Shielded Cables:** The nominal over-all diameter of foil shielded cables will be .006" greater than the non-shielded cables of the same conductor count and wire size.
- Characteristic Impedance (NQP Paired Cables):** Ranges from 150 ohms to 45 ohms, dependent on wire size (AWG), geometry and drive method. Consult our technical staff for data on specific cable types.

MULTI-CONDUCTOR STOCK CABLED SINGLES Conductor sizes 28, 26, 24, 22 are 7 strand. All others 19 strand.

UNSHIELDED								OVERALL BRAIDED SHIELD													
National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight	National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight				
			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.			
NQ-228J	2	28	.035	.9	.032	.8	.138	3.5	8	12	NQ-228SJ	2	28	.035	.9	.032	.8	.158	4.0	15	22
NQ-328J	3	28	.035	.9	.032	.8	.144	3.6	10	14	NQ-328SJ	3	28	.035	.9	.032	.8	.164	4.2	16	24
NQ-428J	4	28	.035	.9	.032	.8	.152	3.9	11	17	NQ-428SJ	4	28	.035	.9	.032	.8	.172	4.4	18	27
NQ-528J	5	28	.035	.9	.032	.8	.163	4.1	13	19	NQ-528SJ	5	28	.035	.9	.032	.8	.183	4.6	21	31
NQ-628J	6	28	.035	.9	.032	.8	.173	4.4	14	21	NQ-628SJ	6	28	.035	.9	.032	.8	.193	4.9	23	34
NQ-728J	7	28	.035	.9	.032	.8	.173	4.4	15	23	NQ-728SJ	7	28	.035	.9	.032	.8	.193	4.9	24	36
NQ-828J	8	28	.035	.9	.032	.8	.196	5.0	18	27	NQ-828SJ	8	28	.035	.9	.032	.8	.218	5.5	28	42
NQ-928J	9	28	.035	.9	.032	.8	.208	5.3	20	29	NQ-928SJ	9	28	.035	.9	.032	.8	.228	5.8	31	45
NQ-1028J	10	28	.035	.9	.032	.8	.208	5.3	21	31	NQ-1028SJ	10	28	.035	.9	.032	.8	.228	5.8	32	47
NQ-1228J	12	28	.035	.9	.032	.8	.214	5.4	23	34	NQ-1228SJ	12	28	.035	.9	.032	.8	.234	5.9	34	51
NQ-1528J	15	28	.035	.9	.032	.8	.233	5.9	27	40	NQ-1528SJ	15	28	.035	.9	.032	.8	.253	6.4	40	59
NQ-1928J	19	28	.035	.9	.032	.8	.243	6.2	32	47	NQ-1928SJ	19	28	.035	.9	.032	.8	.263	6.7	45	67
NQ-2728J	27	28	.035	.9	.032	.8	.284	7.2	42	63	NQ-2728SJ	27	28	.035	.9	.032	.8	.304	7.7	50	87
NQ-3728J	37	28	.035	.9	.032	.8	.313	8.0	54	83	NQ-3728SJ	37	28	.035	.9	.032	.8	.333	8.5	72	108
NQ-226J	2	26	.039	1.0	.032	.8	.146	3.7	10	14	NQ-226SJ	2	26	.039	1.0	.032	.8	.166	4.2	16	24
NQ-326J	3	26	.039	1.0	.032	.8	.152	3.9	11	17	NQ-326SJ	3	26	.039	1.0	.032	.8	.172	4.4	19	28
NQ-426J	4	26	.039	1.0	.032	.8	.162	4.1	13	20	NQ-426SJ	4	26	.039	1.0	.032	.8	.182	4.6	21	32
NQ-526J	5	26	.039	1.0	.032	.8	.173	4.4	15	23	NQ-526SJ	5	26	.039	1.0	.032	.8	.193	4.9	24	36
NQ-626J	6	26	.039	1.0	.032	.8	.185	4.7	18	26	NQ-626SJ	6	26	.039	1.0	.032	.8	.205	5.2	27	40
NQ-726J	7	26	.039	1.0	.032	.8	.185	4.7	19	28	NQ-726SJ	7	26	.039	1.0	.032	.8	.205	5.2	28	42
NQ-826J	8	26	.039	1.0	.032	.8	.212	5.4	22	33	NQ-826SJ	8	26	.039	1.0	.032	.8	.232	5.9	33	50
NQ-926J	9	26	.039	1.0	.032	.8	.224	5.7	24	36	NQ-926SJ	9	26	.039	1.0	.032	.8	.244	6.2	36	54
NQ-1026J	10	26	.039	1.0	.032	.8	.224	5.7	25	38	NQ-1026SJ	10	26	.039	1.0	.032	.8	.244	6.2	38	56
NQ-1226J	12	26	.039	1.0	.032	.8	.230	5.8	29	43	NQ-1226SJ	12	26	.039	1.0	.032	.8	.250	6.4	41	61
NQ-1526J	15	26	.039	1.0	.032	.8	.251	6.4	34	51	NQ-1526SJ	15	26	.039	1.0	.032	.8	.271	6.9	48	72
NQ-1926J	19	26	.039	1.0	.032	.8	.263	6.7	40	60	NQ-1926SJ	19	26	.039	1.0	.032	.8	.283	7.2	55	82
NQ-2726J	27	26	.039	1.0	.032	.8	.308	7.8	54	81	NQ-2726SJ	27	26	.039	1.0	.032	.8	.320	8.3	72	108
NQ-3726J	37	26	.039	1.0	.032	.8	.341	8.7	71	105	NQ-3726SJ	37	26	.039	1.0	.032	.8	.361	9.2	91	135
NQ-4826J	48	26	.039	1.0	.032	.8	.384	9.8	89	132	NQ-4826SJ	48	26	.039	1.0	.032	.8	.409	10.4	120	179

(CONTINUED ON THE FOLLOWING PAGE)



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(NQ-1928J shown)

IN STOCK
EXTRA FLEXIBLE
GRAY PVC JACKETS
SINGLE CONDUCTORS
(NQ SERIES)

U.L. and CSA certification furnished.

MINIATURE SIGNAL & CONTROL CABLES

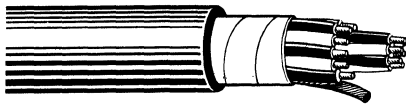
MULTI-CONDUCTOR STOCK CABLED SINGLES continued from previous page.

UNSHIELDED											OVERALL BRAIDED SHIELD										
National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight		National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight	
			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM				Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM
NQ-224J	2	24	.044	1.1	.032	.8	.156	4.0	11	17	NQ-224SJ	2	24	.044	1.1	.032	.8	.176	4.5	19	28
NQ-324J	3	24	.044	1.1	.032	.8	.163	4.1	14	21	NQ-324SJ	3	24	.044	1.1	.032	.8	.183	4.6	22	32
NQ-424J	4	24	.044	1.1	.032	.8	.174	4.4	17	25	NQ-424SJ	4	24	.044	1.1	.032	.8	.194	4.9	25	37
NQ-524J	5	24	.044	1.1	.032	.8	.187	4.7	19	29	NQ-524SJ	5	24	.044	1.1	.032	.8	.207	5.3	29	43
NQ-624J	6	24	.044	1.1	.032	.8	.200	5.1	22	33	NQ-624SJ	6	24	.044	1.1	.032	.8	.220	5.6	33	49
NQ-724J	7	24	.044	1.1	.032	.8	.200	5.1	24	36	NQ-724SJ	7	24	.044	1.1	.032	.8	.220	5.6	35	52
NQ-824J	8	24	.044	1.1	.032	.8	.231	5.9	28	42	NQ-824SJ	8	24	.044	1.1	.032	.8	.251	6.4	41	60
NQ-924J	9	24	.044	1.1	.032	.8	.244	6.2	31	46	NQ-924SJ	9	24	.044	1.1	.032	.8	.264	6.7	44	66
NQ-1024J	10	24	.044	1.1	.032	.8	.244	6.2	33	49	NQ-1024SJ	10	24	.044	1.1	.032	.8	.264	6.7	46	69
NQ-1224J	12	24	.044	1.1	.032	.8	.251	6.4	37	56	NQ-1224SJ	12	24	.044	1.1	.032	.8	.271	6.9	51	76
NQ-1524J	15	24	.044	1.1	.032	.8	.275	7.0	45	67	NQ-1524SJ	15	24	.044	1.1	.032	.8	.295	7.5	61	90
NQ-1924J	19	24	.044	1.1	.032	.8	.288	7.3	54	80	NQ-1924SJ	19	24	.044	1.1	.032	.8	.308	7.8	70	105
NQ-2724J	27	24	.044	1.1	.032	.8	.339	8.6	73	109	NQ-2724SJ	27	24	.044	1.1	.032	.8	.359	9.1	93	139
NQ-3724J	37	24	.044	1.1	.032	.8	.376	9.6	96	142	NQ-3724SJ	37	24	.044	1.1	.032	.8	.401	10.2	127	189
NQ-4824J	48	24	.044	1.1	.032	.8	.424	10.8	121	180	NQ-4824SJ	48	24	.044	1.1	.032	.8	.450	11.4	157	233
NQ-6024J	60	24	.044	1.1	.032	.8	.464	11.8	148	220	NQ-6024SJ	60	24	.044	1.1	.032	.8	.489	12.4	187	278
NQ-222J	2	22	.050	1.3	.032	.8	.168	4.3	14	21	NQ-222SJ	2	22	.050	1.3	.032	.8	.188	4.8	22	33
NQ-322J	3	22	.050	1.3	.032	.8	.176	4.5	17	26	NQ-322SJ	3	22	.050	1.3	.032	.8	.196	5.0	26	39
NQ-422J	4	22	.050	1.3	.032	.8	.188	4.8	21	31	NQ-422SJ	4	22	.050	1.3	.032	.8	.208	5.3	31	46
NQ-522J	5	22	.050	1.3	.032	.8	.203	5.2	25	37	NQ-522SJ	5	22	.050	1.3	.032	.8	.223	5.7	35	53
NQ-622J	6	22	.050	1.3	.032	.8	.218	5.5	29	43	NQ-622SJ	6	22	.050	1.3	.032	.8	.238	6.0	40	60
NQ-722J	7	22	.050	1.3	.032	.8	.218	5.5	32	47	NQ-722SJ	7	22	.050	1.3	.032	.8	.238	6.0	43	64
NQ-822J	8	22	.050	1.3	.032	.8	.253	6.4	37	54	NQ-822SJ	8	22	.050	1.3	.032	.8	.273	6.9	51	75
NQ-922J	9	22	.050	1.3	.032	.8	.268	6.8	40	60	NQ-922SJ	9	22	.050	1.3	.032	.8	.288	7.3	56	83
NQ-1022J	10	22	.050	1.3	.032	.8	.268	6.8	43	64	NQ-1022SJ	10	22	.050	1.3	.032	.8	.288	7.3	58	87
NQ-1222J	12	22	.050	1.3	.032	.8	.276	7.0	50	74	NQ-1222SJ	12	22	.050	1.3	.032	.8	.296	7.5	65	97
NQ-1522J	15	22	.050	1.3	.032	.8	.303	7.7	60	89	NQ-1522SJ	15	22	.050	1.3	.032	.8	.323	8.2	78	115
NQ-1922J	19	22	.050	1.3	.032	.8	.318	8.1	73	108	NQ-1922SJ	19	22	.050	1.3	.032	.8	.338	8.6	91	136
NQ-2722J	27	22	.050	1.3	.032	.8	.376	9.6	100	148	NQ-2722SJ	27	22	.050	1.3	.032	.8	.401	10.2	131	194
NQ-3722J	37	22	.050	1.3	.032	.8	.418	10.6	131	196	NQ-3722SJ	37	22	.050	1.3	.032	.8	.443	11.3	167	248
NQ-4822J	48	22	.050	1.3	.032	.8	.473	12.0	167	248	NQ-4822SJ	48	22	.050	1.3	.032	.8	.498	12.7	207	308
NQ-6022J	60	22	.050	1.3	.032	.8	.518	13.2	205	305	NQ-6022SJ	60	22	.050	1.3	.032	.8	.543	13.8	249	371
NQ-220J	2	20	.058	1.5	.032	.8	.184	4.7	18	27	NQ-220SJ	2	20	.058	1.5	.032	.8	.204	5.2	28	41
NQ-320J	3	20	.058	1.5	.032	.8	.193	4.9	24	35	NQ-320SJ	3	20	.058	1.5	.032	.8	.213	5.4	34	50
NQ-420J	4	20	.058	1.5	.032	.8	.207	5.3	29	44	NQ-420SJ	4	20	.058	1.5	.032	.8	.227	5.8	40	60
NQ-520J	5	20	.058	1.5	.032	.8	.225	5.7	35	52	NQ-520SJ	5	20	.058	1.5	.032	.8	.245	6.2	47	70
NQ-620J	6	20	.058	1.5	.032	.8	.242	6.1	41	61	NQ-620SJ	6	20	.058	1.5	.032	.8	.262	6.7	54	81
NQ-720J	7	20	.058	1.5	.032	.8	.242	6.1	46	68	NQ-720SJ	7	20	.058	1.5	.032	.8	.262	6.7	59	88
NQ-820J	8	20	.058	1.5	.032	.8	.283	7.2	53	78	NQ-820SJ	8	20	.058	1.5	.032	.8	.303	7.7	69	102
NQ-920J	9	20	.058	1.5	.032	.8	.300	7.6	58	87	NQ-920SJ	9	20	.058	1.5	.032	.8	.320	8.1	76	113
NQ-1020J	10	20	.058	1.5	.032	.8	.300	7.6	63	94	NQ-1020SJ	10	20	.058	1.5	.032	.8	.320	8.1	80	120
NQ-1220J	12	20	.058	1.5	.032	.8	.309	7.9	73	109	NQ-1220SJ	12	20	.058	1.5	.032	.8	.329	8.4	91	136
NQ-1520J	15	20	.058	1.5	.032	.8	.341	8.7	89	133	NQ-1520SJ	15	20	.058	1.5	.032	.8	.361	9.2	109	163
NQ-1920J	19	20	.058	1.5	.032	.8	.358	9.1	109	162	NQ-1920SJ	19	20	.058	1.5	.032	.8	.378	9.6	130	194
NQ-2720J	27	20	.058	1.5	.032	.8	.425	10.8	151	225	NQ-2720SJ	27	20	.058	1.5	.032	.8	.450	11.4	187	278
NQ-3720J	37	20	.058	1.5	.032	.8	.474	12.0	201	299	NQ-3720SJ	37	20	.058	1.5	.032	.8	.499	12.7	242	359
NQ-218J	2	18	.068	1.7	.032	.8	.204	5.2	24	36	NQ-218SJ	2	18	.068	1.7	.032	.8	.224	5.7	35	52
NQ-318J	3	18	.068	1.7	.032	.8	.215	5.5	32	47	NQ-318SJ	3	18	.068	1.7	.032	.8	.235	6.0	43	64
NQ-418J	4	18	.068	1.7	.032	.8	.231	5.9	40	59	NQ-418SJ	4	18	.068	1.7	.032	.8	.251	6.4	52	78
NQ-518J	5	18	.068	1.7	.032	.8	.252	6.4	48	71	NQ-518SJ	5	18	.068	1.7	.032	.8	.272	6.9	62	92
NQ-618J	6	18	.068	1.7	.032	.8	.272	6.9	56	83	NQ-618SJ	6	18	.068	1.7	.032	.8	.292	7.4	71	106
NQ-718J	7	18	.068	1.7	.032	.8	.272	6.9	63	94	NQ-718SJ	7	18	.068	1.7	.032	.8	.292	7.4	78	117
NQ-818J	8	18	.068	1.7	.032	.8	.320	8.1	73	108	NQ-818SJ	8	18	.068	1.7	.032	.8	.340	8.6	91	136
NQ-918J	9	18	.068	1.7	.032	.8	.340	8.6	81	120	NQ-918SJ	9	18	.068	1.7	.032	.8	.360	9.1	101	150
NQ-1018J	10	18	.068	1.7	.032	.8	.340	8.6	88	131	NQ-1018SJ	10	18	.068	1.7	.032	.8	.360	9.1	100	161
NQ-1218J	12	18	.068	1.7	.032	.8	.351	8.9	102	152	NQ-1218SJ	12	18	.068	1.7	.032	.8	.371	9.4	123	183
NQ-1518J	15	18	.068	1.7	.032	.8	.388	9.8	126	187	NQ-1518SJ	15	18	.068	1.7	.032	.8	.413	10.5	158	235
NQ-1918J	19	18	.068	1.7	.032	.8	.408	10.4	155	230	NQ-1918SJ	19	18	.068	1.7	.032	.8	.433	11.0	189	281
NQ-2718J	27	18	.068	1.7	.032	.8	.487	12.4	215	320	NQ-2718SJ	27	18	.068	1.7	.032	.8	.512	13.0	257	382



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(NQ-1926FSJ shown)

IN STOCK

**EXTRA FLEXIBLE
GRAY PVC JACKETS**

**SINGLE CONDUCTORS
(NQ SERIES)**

U.L. and CSA certification furnished.



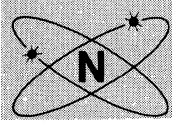
MINIATURE SIGNAL & CONTROL CABLES

MULTI-CONDUCTOR STOCK CABLED SINGLES Same as previous pages except Foil Shield with Drain Wire.

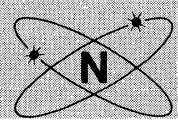
OVERALL FOIL SHIELD WITH DRAIN

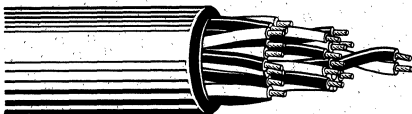
National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight		National Catalog Number	No. Cond.	Cond. AWG	Cond. Diameter		Jacket Wall		Nominal Diameter		Weight	
			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM				Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM
NQ-228FSJ	2	28	.035	.9	.032	.8	.140	3.6	9	13	NQ-222FSJ	2	22	.050	1.3	.032	.8	.170	4.3	16	24
NQ-328FSJ	3	28	.035	.9	.032	.8	.146	3.7	10	15	NQ-322FSJ	3	22	.050	1.3	.032	.8	.178	4.5	20	29
NQ-428FSJ	4	28	.035	.9	.032	.8	.154	3.9	12	18	NQ-422FSJ	4	22	.050	1.3	.032	.8	.190	4.8	23	35
NQ-528FSJ	5	28	.035	.9	.032	.8	.165	4.2	13	20	NQ-522FSJ	5	22	.050	1.3	.032	.8	.205	5.2	27	40
NQ-628FSJ	6	28	.035	.9	.032	.8	.175	4.4	15	22	NQ-622FSJ	6	22	.050	1.3	.032	.8	.220	5.6	31	46
NQ-728FSJ	7	28	.035	.9	.032	.8	.175	4.4	16	24	NQ-722FSJ	7	22	.050	1.3	.032	.8	.220	5.6	34	50
NQ-828FSJ	8	28	.035	.9	.032	.8	.200	5.1	19	28	NQ-822FSJ	8	22	.050	1.3	.032	.8	.255	6.5	39	58
NQ-928FSJ	9	28	.035	.9	.032	.8	.210	5.3	20	30	NQ-922FSJ	9	22	.050	1.3	.032	.8	.270	6.9	43	63
NQ-1028FSJ	10	28	.035	.9	.032	.8	.210	5.3	21	32	NQ-1022FSJ	10	22	.050	1.3	.032	.8	.270	6.9	46	68
NQ-1228FSJ	12	28	.035	.9	.032	.8	.216	5.5	24	35	NQ-1222FSJ	12	22	.050	1.3	.032	.8	.278	7.1	52	77
NQ-1528FSJ	15	28	.035	.9	.032	.8	.235	6.0	28	41	NQ-1522FSJ	15	22	.050	1.3	.032	.8	.305	7.7	62	93
NQ-1928FSJ	19	28	.035	.9	.032	.8	.245	6.2	32	48	NQ-1922FSJ	19	22	.050	1.3	.032	.8	.320	8.1	75	111
NQ-2728FSJ	27	28	.035	.9	.032	.8	.286	7.3	43	64	NQ-2722FSJ	27	22	.050	1.3	.032	.8	.378	9.6	102	152
NQ-3728FSJ	37	28	.035	.9	.032	.8	.315	8.0	55	82	NQ-3722FSJ	37	22	.050	1.3	.032	.8	.420	10.7	134	199
NQ-226FSJ	2	26	.039	1.0	.032	.8	.148	3.8	11	16	NQ-4822FSJ	48	22	.050	1.3	.032	.8	.475	12.1	169	252
NQ-326FSJ	3	26	.039	1.0	.032	.8	.154	3.9	12	18	NQ-6022FSJ	60	22	.050	1.3	.032	.8	.520	13.2	207	308
NQ-426FSJ	4	26	.039	1.0	.032	.8	.164	4.2	14	21	NQ-220FSJ	2	20	.058	1.5	.032	.8	.186	4.7	22	33
NQ-526FSJ	5	26	.039	1.0	.032	.8	.175	4.5	16	24	NQ-320FSJ	3	20	.058	1.5	.032	.8	.195	5.0	28	41
NQ-626FSJ	6	26	.039	1.0	.032	.8	.187	4.7	18	28	NQ-420FSJ	4	20	.058	1.5	.032	.8	.209	5.3	33	49
NQ-726FSJ	7	26	.039	1.0	.032	.8	.187	4.7	20	30	NQ-520FSJ	5	20	.058	1.5	.032	.8	.227	5.8	39	58
NQ-826FSJ	8	26	.039	1.0	.032	.8	.214	5.4	23	34	NQ-620FSJ	6	20	.058	1.5	.032	.8	.244	6.2	45	66
NQ-926FSJ	9	26	.039	1.0	.032	.8	.226	5.7	25	37	NQ-720FSJ	7	20	.058	1.5	.032	.8	.244	6.2	49	73
NQ-1026FSJ	10	26	.039	1.0	.032	.8	.226	5.7	26	39	NQ-820FSJ	8	20	.058	1.5	.032	.8	.285	7.2	56	84
NQ-1226FSJ	12	26	.039	1.0	.032	.8	.232	5.9	30	44	NQ-920FSJ	9	20	.058	1.5	.032	.8	.302	7.7	62	93
NQ-1526FSJ	15	26	.039	1.0	.032	.8	.253	6.4	35	52	NQ-1020FSJ	10	20	.058	1.5	.032	.8	.302	7.7	67	100
NQ-1926FSJ	19	26	.039	1.0	.032	.8	.265	6.7	41	62	NQ-1220FSJ	12	20	.058	1.5	.032	.8	.311	7.9	77	114
NQ-2726FSJ	27	26	.039	1.0	.032	.8	.310	7.9	55	82	NQ-1520FSJ	15	20	.058	1.5	.032	.8	.343	8.7	93	138
NQ-3726FSJ	37	26	.039	1.0	.032	.8	.343	8.7	71	106	NQ-1920FSJ	19	20	.058	1.5	.032	.8	.360	9.1	113	168
NQ-4826FSJ	48	26	.039	1.0	.032	.8	.386	9.8	90	133	NQ-2720FSJ	27	20	.058	1.5	.032	.8	.427	10.9	155	230
NQ-224FSJ	2	24	.044	1.1	.032	.8	.158	4.0	13	19	NQ-3720FSJ	37	20	.058	1.5	.032	.8	.476	12.0	205	305
NQ-324FSJ	3	24	.044	1.1	.032	.8	.165	4.2	15	23	NQ-218FSJ	2	18	.068	1.7	.032	.8	.206	5.2	30	45
NQ-424FSJ	4	24	.044	1.1	.032	.8	.176	4.5	18	27	NQ-318FSJ	3	18	.068	1.7	.032	.8	.217	5.5	38	56
NQ-524FSJ	5	24	.044	1.1	.032	.8	.189	4.8	21	31	NQ-418FSJ	4	18	.068	1.7	.032	.8	.233	5.9	46	68
NQ-624FSJ	6	24	.044	1.1	.032	.8	.202	5.1	24	35	NQ-518FSJ	5	18	.068	1.7	.032	.8	.254	6.4	54	80
NQ-724FSJ	7	24	.044	1.1	.032	.8	.202	5.1	26	38	NQ-618FSJ	6	18	.068	1.7	.032	.8	.274	7.0	62	92
NQ-824FSJ	8	24	.044	1.1	.032	.8	.233	5.9	30	44	NQ-718FSJ	7	18	.068	1.7	.032	.8	.274	7.0	69	102
NQ-924FSJ	9	24	.044	1.1	.032	.8	.246	6.2	32	48	NQ-818FSJ	8	18	.068	1.7	.032	.8	.322	8.2	79	117
NQ-1024FSJ	10	24	.044	1.1	.032	.8	.246	6.2	34	51	NQ-918FSJ	9	18	.068	1.7	.032	.8	.342	8.7	87	129
NQ-1224FSJ	12	24	.044	1.1	.032	.8	.253	6.4	39	58	NQ-1018FSJ	10	18	.068	1.7	.032	.8	.342	8.7	94	139
NQ-1524FSJ	15	24	.044	1.1	.032	.8	.277	7.0	46	69	NQ-1218FSJ	12	18	.068	1.7	.032	.8	.353	9.0	100	161
NQ-1924FSJ	19	24	.044	1.1	.032	.8	.290	7.4	55	82	NQ-1518FSJ	15	18	.068	1.7	.032	.8	.390	9.9	131	196
NQ-2724FSJ	27	24	.044	1.1	.032	.8	.341	8.7	75	111	NQ-1918FSJ	19	18	.068	1.7	.032	.8	.410	10.4	150	239
NQ-3724FSJ	37	24	.044	1.1	.032	.8	.378	9.6	97	145	NQ-2718FSJ	27	18	.068	1.7	.032	.8	.489	12.4	221	329
NQ-4824FSJ	48	24	.044	1.1	.032	.8	.426	10.8	122	182											
NQ-6024FSJ	60	24	.044	1.1	.032	.8	.466	11.8	149	222											

NOTE: Drain wires are the same gage as individual conductors in any one group.



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(NQP-1928J shown)



MINIATURE SIGNAL & CONTROL CABLES

GRAY PVC JACKET

National Wire & Cable Corporation manufactures a complete line of highly flexible micro-miniature low-voltage instrument control cable. These are available as cabled pairs or singles, with optional overall shield of either foil with drain or a braided shield.

Conductors are stranded tinned copper with .010" wall of tough extruded polyvinyl chloride primary insulation, rated for 300 volt use at +80°C under U.L. style 1061.* All are color coded using ten standard colors plus white with stripes per MIL-STD-681. (See table following page.)

Conductors are planetary cabled and helically laid for optimum flexibility, with a barrier under braids. Shielded cables have a tinned copper braid of 90% coverage per MIL-C-7078, with braid angles below 40° for easy pushback; or have a 100% coverage foil shield in intimate contact with a drain wire for easy termination. See Section 3 of our mater catalog for relative shield effectiveness.

Outer jacket is highly flexible abrasion-resistant gray polyvinyl chloride thermoplastic, meeting the requirements of U.L. style 2464.**

Military certification furnished only when requested.

All materials are flame retardant and fungus resistant.

Standard Putups: 500 and 1000 ft. No-deposit reels. For shorter quantities or specific lengths, consult factory.

*Wire also meets MIL-W-16878/1, rated 600 volts, +105°C.

**Jacket material is military rated for +105°C; meets MIL-I-631, Type F.

Meets E.I.A. Standards RS-232 for 18-24 gauges.

IN STOCK

**EXTRA FLEXIBLE
GRAY PVC JACKETS**

**TWISTED PAIRS
(NQP SERIES)**

**MIL SPEC., U.L. RECOGNIZED
STYLE 2464 & CSA CERTIFIED**

TECHNICAL DATA (all cables)

- Insulation break-down voltage:** Greater than 3000 volts AC RMS, 60cps.
- Capacitance:** Nominal capacitance from a wire to all else in a cable ranges from 25 to 45 pf/ft at 1kc, depending on gauge and position.
- Insulation Leakage:** 200 megohms/1000 feet minimum @ 500VDC from conductor to all else in cable.
- Sheath Leakage:** 10 megohms/1000 feet minimum @ 500VDC from shield or conductor group through sheath to ground.
- Temperature Range:** U.L. rating: +80°C per U.L. style 2464. Military: Continuous use from -40°C to +105°C.
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 6 cable diameters from +105°C to -20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at -40°C. For continuous flexing applications consult the factory.
- Foil Shielded Cables:** The nominal overall diameter of foil shielded cables will be .006" greater than the non-shielded cables of the same conductor count and wire size.
- Characteristic Impedance (NQP Paired Cables):** Ranges from 150 ohms to 45 ohms, dependent on wire size (AWG), geometry and drive method. Consult our technical staff for data on specific cable types.

MULTI-CONDUCTOR STOCK CABLED PAIRS

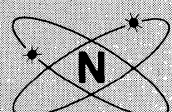
Conductor sizes 28, 26, 24, 22 are 7 strand. All others 19 strand.

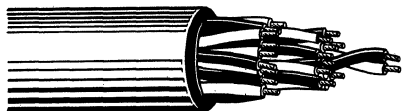
UNSHIELDED										OVERALL BRAIDED SHIELD											
National Catalog Number	No. of Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight		National Catalog Number	No. of Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight			
			Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM				Inches	MM	Inches	MM	Inches	MM	Lbs. per 1000 ft.	KG/KM
NQP-228J	2	28	.035	.9	.032	.8	.187	4.7	14	22	NQP-228SJ	2	28	.035	.9	.032	.8	.207	5.3	26	38
NQP-328J	3	28	.035	.9	.032	.8	.197	5.0	17	26	NQP-328SJ	3	28	.035	.9	.032	.8	.217	5.5	29	43
NQP-428J	4	28	.035	.9	.032	.8	.215	5.5	20	30	NQP-428SJ	4	28	.035	.9	.032	.8	.235	6.0	33	49
NQP-528J	5	28	.035	.9	.032	.8	.236	6.0	23	35	NQP-528SJ	5	28	.035	.9	.032	.8	.256	6.5	38	56
NQP-628J	6	28	.035	.9	.032	.8	.257	6.5	27	40	NQP-628SJ	6	28	.035	.9	.032	.8	.277	7.0	43	63
NQP-728J	7	28	.035	.9	.032	.8	.247	6.3	29	43	NQP-728SJ	7	28	.035	.9	.032	.8	.267	6.8	45	66
NQP-828J	8	28	.035	.9	.032	.8	.306	7.8	34	50	NQP-828SJ	8	28	.035	.9	.032	.8	.326	8.3	53	79
NQP-928J	9	28	.035	.9	.032	.8	.292	7.4	37	55	NQP-928SJ	9	28	.035	.9	.032	.8	.312	7.9	58	86
NQP-1028J	10	28	.035	.9	.032	.8	.306	7.8	39	58	NQP-1028SJ	10	28	.035	.9	.032	.8	.326	8.3	60	89
NQP-1228J	12	28	.035	.9	.032	.8	.316	8.0	44	65	NQP-1228SJ	12	28	.035	.9	.032	.8	.336	8.5	65	97
NQP-1528J	15	28	.035	.9	.032	.8	.355	9.0	52	77	NQP-1528SJ	15	28	.035	.9	.032	.8	.375	9.5	76	113
NQP-1928J	19	28	.035	.9	.032	.8	.366	9.3	61	91	NQP-1928SJ	19	28	.035	.9	.032	.8	.386	9.8	87	129
NQP-2728J	27	28	.035	.9	.032	.8	.435	11.1	82	122	NQP-2728SJ	27	28	.035	.9	.032	.8	.460	11.7	125	189
NQP-3728J	37	28	.035	.9	.032	.8	.485	12.2	106	158	NQP-3728SJ	37	28	.035	.9	.032	.8	.510	12.9	155	231
NQP-226J	2	26	.039	1.0	.032	.8	.201	5.1	17	25	NQP-226SJ	2	26	.039	1.0	.032	.8	.221	5.6	29	43
NQP-326J	3	26	.039	1.0	.032	.8	.211	5.4	21	31	NQP-326SJ	3	26	.039	1.0	.032	.8	.231	5.9	34	50
NQP-426J	4	26	.039	1.0	.032	.8	.232	5.9	25	36	NQP-426SJ	4	26	.039	1.0	.032	.8	.252	6.4	39	58
NQP-526J	5	26	.039	1.0	.032	.8	.255	6.5	29	43	NQP-526SJ	5	26	.039	1.0	.032	.8	.275	7.0	45	66
NQP-626J	6	26	.039	1.0	.032	.8	.279	7.1	33	49	NQP-626SJ	6	26	.039	1.0	.032	.8	.299	7.6	50	75
NQP-726J	7	26	.039	1.0	.032	.8	.267	6.8	36	53	NQP-726SJ	7	26	.039	1.0	.032	.8	.287	7.3	53	79
NQP-826J	8	26	.039	1.0	.032	.8	.333	8.5	42	62	NQP-826SJ	8	26	.039	1.0	.032	.8	.353	9.0	63	94
NQP-926J	9	26	.039	1.0	.032	.8	.318	8.1	46	68	NQP-926SJ	9	26	.039	1.0	.032	.8	.338	8.6	69	102
NQP-1026J	10	26	.039	1.0	.032	.8	.333	8.5	49	73	NQP-1026SJ	10	26	.039	1.0	.032	.8	.353	9.0	72	107
NQP-1226J	12	26	.039	1.0	.032	.8	.344	8.7	55	82	NQP-1226SJ	12	26	.039	1.0	.032	.8	.364	9.2	79	117
NQP-1526J	15	26	.039	1.0	.032	.8	.388	9.9	66	98	NQP-1526SJ	15	26	.039	1.0	.032	.8	.413	10.5	103	153
NQP-1926J	19	26	.039	1.0	.032	.8	.400	10.1	79	117	NQP-1926SJ	19	26	.039	1.0	.032	.8	.425	10.8	118	175
NQP-2726J	27	26	.039	1.0	.032	.8	.476	12.1	107	159	NQP-2726SJ	27	26	.039	1.0	.032	.8	.502	12.7	154	230
NQP-3726J	37	26	.039	1.0	.032	.8	.532	13.5	139	207	NQP-3726SJ	37	26	.039	1.0	.032	.8	.557	14.2	193	288

(CONTINUED ON THE FOLLOWING PAGE)



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 136 SAN FERNANDO ROAD, LOS ANGELES, CALIFORNIA 90031-0307
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 CAGE CODE 04569





(NQP-1928J shown)



IN STOCK

**EXTRA FLEXIBLE
GRAY PVC JACKETS**

**TWISTED PAIRS
(NQP SERIES)**

U.L. and CSA certification furnished.

MINIATURE SIGNAL & CONTROL CABLES

MULTI CONDUCTOR STOCK CABLED PAIRS continued from previous page.

UNSHIELDED										OVERALL BRAIDED SHIELD											
National Catalog Number	No. of Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight		National Catalog Number	No. of Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight			
			Inches	MM		Inches	MM	Lbs. per 1000 ft.	KG/KM				Inches	MM		Inches	MM	Lbs. per 1000 ft.	KG/KM		
NQP-224J	2	24	.044	1.1	.032	.8	.218	5.5	21	31	NQP-224SJ	2	24	.044	1.1	.032	.8	.238	6.0	34	51
NQP-324J	3	24	.044	1.1	.032	.8	.230	5.8	26	38	NQP-324SJ	3	24	.044	1.1	.032	.8	.250	6.3	40	60
NQP-424J	4	24	.044	1.1	.032	.8	.253	6.4	31	46	NQP-424SJ	4	24	.044	1.1	.032	.8	.273	6.9	47	70
NQP-524J	5	24	.044	1.1	.032	.8	.279	7.1	37	54	NQP-524SJ	5	24	.044	1.1	.032	.8	.299	7.6	54	81
NQP-624J	6	24	.044	1.1	.032	.8	.306	7.8	42	63	NQP-624SJ	6	24	.044	1.1	.032	.8	.326	8.3	62	92
NQP-724J	7	24	.044	1.1	.032	.8	.292	7.4	46	69	NQP-724SJ	7	24	.044	1.1	.032	.8	.312	7.9	66	98
NQP-824J	8	24	.044	1.1	.032	.8	.367	9.3	54	80	NQP-824SJ	8	24	.044	1.1	.032	.8	.387	9.8	78	116
NQP-924J	9	24	.044	1.1	.032	.8	.350	8.9	60	89	NQP-924SJ	9	24	.044	1.1	.032	.8	.370	9.4	85	127
NQP-1024J	10	24	.044	1.1	.032	.8	.367	9.3	64	95	NQP-1024SJ	10	24	.044	1.1	.032	.8	.387	9.8	89	133
NQP-1224J	12	24	.044	1.1	.032	.8	.379	9.6	73	108	NQP-1224SJ	12	24	.044	1.1	.032	.8	.404	10.3	109	163
NQP-1524J	15	24	.044	1.1	.032	.8	.429	10.9	88	130	NQP-1524SJ	15	24	.044	1.1	.032	.8	.454	11.5	129	192
NQP-1924J	19	24	.044	1.1	.032	.8	.442	11.2	106	157	NQP-1924SJ	19	24	.044	1.1	.032	.8	.467	11.9	149	222
NQP-2724J	27	24	.044	1.1	.032	.8	.529	13.4	144	214	NQP-2724SJ	27	24	.044	1.1	.032	.8	.554	14.1	198	294
NQP-222J	2	22	.050	1.3	.032	.8	.238	6.0	26	38	NQP-222SJ	2	22	.050	1.3	.032	.8	.258	6.6	41	61
NQP-322J	3	22	.050	1.3	.032	.8	.252	6.4	33	48	NQP-322SJ	3	22	.050	1.3	.032	.8	.272	6.9	49	73
NQP-422J	4	22	.050	1.3	.032	.8	.278	7.1	40	59	NQP-422SJ	4	22	.050	1.3	.032	.8	.298	7.6	58	86
NQP-522J	5	22	.050	1.3	.032	.8	.308	7.8	47	71	NQP-522SJ	5	22	.050	1.3	.032	.8	.328	8.3	67	100
NQP-622J	6	22	.050	1.3	.032	.8	.338	8.6	55	82	NQP-622SJ	6	22	.050	1.3	.032	.8	.350	9.1	77	115
NQP-722J	7	22	.050	1.3	.032	.8	.323	8.2	61	91	NQP-722SJ	7	22	.050	1.3	.032	.8	.343	8.7	83	123
NQP-822J	8	22	.050	1.3	.032	.8	.408	10.4	71	106	NQP-822SJ	8	22	.050	1.3	.032	.8	.433	11.0	108	161
NQP-922J	9	22	.050	1.3	.032	.8	.388	9.9	79	117	NQP-922SJ	9	22	.050	1.3	.032	.8	.413	10.5	119	176
NQP-1022J	10	22	.050	1.3	.032	.8	.408	10.4	85	126	NQP-1022SJ	10	22	.050	1.3	.032	.8	.433	11.0	124	185
NQP-1222J	12	22	.050	1.3	.032	.8	.422	10.7	97	145	NQP-1222SJ	12	22	.050	1.3	.032	.8	.447	11.3	139	206
NQP-1522J	15	22	.050	1.3	.032	.8	.478	12.1	118	176	NQP-1522SJ	15	22	.050	1.3	.032	.8	.503	12.8	165	245
NQP-1922J	19	22	.050	1.3	.032	.8	.493	12.5	143	213	NQP-1922SJ	19	22	.050	1.3	.032	.8	.518	13.2	193	287
NQP-2722J	27	22	.050	1.3	.050	1.3	.628	15.9	221	328	NQP-2722SJ	27	22	.050	1.3	.050	.8	.653	16.6	282	419
NQP-220J	2	20	.058	1.5	.032	.8	.265	6.7	35	52	NQP-220SJ	2	20	.058	1.5	.032	.8	.285	7.2	52	78
NQP-320J	3	20	.058	1.5	.032	.8	.281	7.1	45	67	NQP-320SJ	3	20	.058	1.5	.032	.8	.301	7.6	64	95
NQP-420J	4	20	.058	1.5	.032	.8	.312	7.9	56	84	NQP-420SJ	4	20	.058	1.5	.032	.8	.332	8.4	77	114
NQP-520J	5	20	.058	1.5	.032	.8	.346	8.8	68	101	NQP-520SJ	5	20	.058	1.5	.032	.8	.366	9.3	91	135
NQP-620J	6	20	.058	1.5	.032	.8	.381	9.7	79	118	NQP-620SJ	6	20	.058	1.5	.032	.8	.401	10.2	105	156
NQP-720J	7	20	.058	1.5	.032	.8	.364	9.2	89	132	NQP-720SJ	7	20	.058	1.5	.032	.8	.384	9.7	114	170
NQP-820J	8	20	.058	1.5	.032	.8	.462	11.7	103	154	NQP-820SJ	8	20	.058	1.5	.032	.8	.488	12.4	146	217
NQP-920J	9	20	.058	1.5	.032	.8	.439	11.2	115	171	NQP-920SJ	9	20	.058	1.5	.032	.8	.464	11.8	161	239
NQP-1020J	10	20	.058	1.5	.032	.8	.462	11.7	124	185	NQP-1020SJ	10	20	.058	1.5	.032	.8	.488	12.4	170	253
NQP-1220J	12	20	.058	1.5	.032	.8	.478	12.1	144	214	NQP-1220SJ	12	20	.058	1.5	.032	.8	.503	12.8	192	285
NQP-1520J	15	20	.058	1.5	.032	.8	.544	13.8	176	262	NQP-1520SJ	15	20	.058	1.5	.050	1.3	.605	15.4	252	375
NQP-1920J	19	20	.058	1.5	.032	.8	.561	14.2	216	321	NQP-1920SJ	19	20	.058	1.5	.050	1.3	.622	15.8	296	441
NQP-2720J	27	20	.058	1.5	.050	.8	.711	18.1	326	486	NQP-2720SJ	27	20	.058	1.5	.050	1.3	.737	18.7	397	591
NQP-218J	2	18	.068	1.7	.032	.8	.299	7.6	46	69	NQP-218SJ	2	18	.068	1.7	.032	.8	.319	8.1	66	98
NQP-318J	3	18	.068	1.7	.032	.8	.318	8.1	61	91	NQP-318SJ	3	18	.068	1.7	.032	.8	.338	8.6	83	123
NQP-418J	4	18	.068	1.7	.032	.8	.354	9.0	77	115	NQP-418SJ	4	18	.068	1.7	.032	.8	.374	9.5	101	150
NQP-518J	5	18	.068	1.7	.032	.8	.394	10.0	94	139	NQP-518SJ	5	18	.068	1.7	.032	.8	.420	10.7	130	194
NQP-618J	6	18	.068	1.7	.032	.8	.435	11.1	110	163	NQP-618SJ	6	18	.068	1.7	.032	.8	.460	11.7	151	224
NQP-718J	7	18	.068	1.7	.032	.8	.415	10.5	124	184	NQP-718SJ	7	18	.068	1.7	.032	.8	.440	11.2	164	245
NQP-1218J	12	18	.068	1.7	.032	.8	.549	13.9	203	302	NQP-1218SJ	12	18	.068	1.7	.050	.8	.610	15.5	281	418

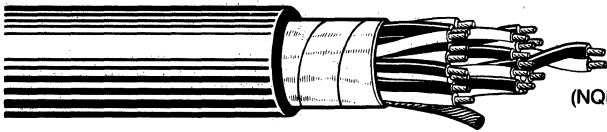
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(NQP-1924FSJ shown)

IN STOCK
EXTRA FLEXIBLE
GRAY PVC JACKETS

TWISTED PAIRS
(NQP SERIES)

U.L. and CSA certification furnished.



MINIATURE SIGNAL & CONTROL CABLES

MULTI CONDUCTOR STOCK CABLED PAIRS Same as previous pages except Foil Shield with Drain Wire.

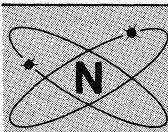
OVERALL FOIL SHIELD WITH DRAIN

National Catalog Number	No. of Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight Lbs. per 1000 ft. KG/KM	National Catalog Number	No. of Pairs	Cond. AWG	Cond. Diameter		Jacket Wall	Nominal Diameter		Weight Lbs. per 1000 ft. KG/KM	
			Inches	MM		Inches	MM					Inches	MM		Inches	MM		
NQP-228FSJ	2	28	.035	.9	.032	.8	.189	4.8	15	23	.050	1.3	.032	.8	.240	6.1	28	42
NQP-328FSJ	3	28	.035	.9	.032	.8	.199	5.0	18	27	.050	1.3	.032	.8	.254	6.4	35	52
NQP-428FSJ	4	28	.035	.9	.032	.8	.217	5.5	21	31	.050	1.3	.032	.8	.280	7.1	42	63
NQP-528FSJ	5	28	.035	.9	.032	.8	.238	6.0	24	36	.050	1.3	.032	.8	.310	7.9	50	74
NQP-628FSJ	6	28	.035	.9	.032	.8	.259	6.6	27	41	.050	1.3	.032	.8	.340	8.6	57	85
NQP-728FSJ	7	28	.035	.9	.032	.8	.249	6.3	29	44	.050	1.3	.032	.8	.325	8.3	63	94
NQP-828FSJ	8	28	.035	.9	.032	.8	.308	7.8	34	51	.050	1.3	.032	.8	.410	10.4	73	109
NQP-928FSJ	9	28	.035	.9	.032	.8	.294	7.5	38	56	.050	1.3	.032	.8	.390	9.9	81	120
NQP-1028FSJ	10	28	.035	.9	.032	.8	.308	7.8	40	59	.050	1.3	.032	.8	.410	10.4	87	129
NQP-1228FSJ	12	28	.035	.9	.032	.8	.318	8.1	44	66	.050	1.3	.032	.8	.424	10.8	99	148
NQP-1528FSJ	15	28	.035	.9	.032	.8	.357	9.1	53	78	.050	1.3	.032	.8	.480	12.2	120	179
NQP-1928FSJ	19	28	.035	.9	.032	.8	.368	9.3	62	92	.050	1.3	.032	.8	.495	12.6	146	216
NQP-2728FSJ	27	28	.035	.9	.032	.8	.437	11.1	83	124	.050	1.3	.050	1.3	.630	16.0	223	331
NQP-3728FSJ	37	28	.035	.9	.032	.8	.487	12.3	107	159								
NQP-226FSJ	2	26	.039	1.0	.032	.8	.203	5.1	18	27	.058	1.5	.032	.8	.283	7.2	49	73
NQP-326FSJ	3	26	.039	1.0	.032	.8	.213	5.4	22	32	.058	1.5	.032	.8	.314	8.0	60	90
NQP-426FSJ	4	26	.039	1.0	.032	.8	.234	5.9	25	38	.058	1.5	.032	.8	.348	8.8	72	107
NQP-526FSJ	5	26	.039	1.0	.032	.8	.257	6.5	30	44	.058	1.5	.032	.8	.383	9.7	83	124
NQP-626FSJ	6	26	.039	1.0	.032	.8	.281	7.1	34	50	.058	1.5	.032	.8	.366	9.3	93	138
NQP-726FSJ	7	26	.039	1.0	.032	.8	.269	6.8	37	55	.058	1.5	.032	.8	.464	11.8	107	159
NQP-826FSJ	8	26	.039	1.0	.032	.8	.335	8.5	43	64	.058	1.5	.032	.8	.441	11.2	119	176
NQP-926FSJ	9	26	.039	1.0	.032	.8	.320	8.1	47	70	.058	1.5	.032	.8	.464	11.8	128	190
NQP-1026FSJ	10	26	.039	1.0	.032	.8	.335	8.5	50	74	.058	1.5	.032	.8	.480	12.2	148	220
NQP-1226FSJ	12	26	.039	1.0	.032	.8	.346	8.8	56	84	.058	1.5	.032	.8	.546	13.9	180	268
NQP-1526FSJ	15	26	.039	1.0	.032	.8	.390	9.9	67	100	.058	1.5	.032	.8	.563	14.3	220	327
NQP-1926FSJ	19	26	.039	1.0	.032	.8	.402	10.2	80	119	.058	1.5	.032	.8	.713	18.1	330	492
NQP-2726FSJ	27	26	.039	1.0	.032	.8	.478	12.2	108	160								
NQP-3726FSJ	37	26	.039	1.0	.032	.8	.534	13.5	140	209								
NQP-224FSJ	2	24	.044	1.1	.032	.8	.220	5.6	22	33	.068	1.7	.032	.8	.301	7.7	52	77
NQP-324FSJ	3	24	.044	1.1	.032	.8	.232	5.9	27	40	.068	1.7	.032	.8	.356	9.0	63	124
NQP-424FSJ	4	24	.044	1.1	.032	.8	.255	6.5	32	48	.068	1.7	.032	.8	.396	10.1	99	148
NQP-524FSJ	5	24	.044	1.1	.032	.8	.281	7.1	38	57	.068	1.7	.032	.8	.437	11.1	116	172
NQP-624FSJ	6	24	.044	1.1	.032	.8	.308	7.8	44	65	.068	1.7	.032	.8	.417	10.6	130	193
NQP-724FSJ	7	24	.044	1.1	.032	.8	.294	7.5	48	71	.068	1.7	.032	.8	.551	14.0	209	310
NQP-824FSJ	8	24	.044	1.1	.032	.8	.369	9.4	55	83								
NQP-924FSJ	9	24	.044	1.1	.032	.8	.352	8.9	61	91								
NQP-1024FSJ	10	24	.044	1.1	.032	.8	.369	9.4	65	97								
NQP-1224FSJ	12	24	.044	1.1	.032	.8	.381	9.7	74	110								
NQP-1524FSJ	15	24	.044	1.1	.032	.8	.431	10.9	89	133								
NQP-1924FSJ	19	24	.044	1.1	.032	.8	.444	11.3	107	159								
NQP-2724FSJ	27	24	.044	1.1	.032	.8	.531	13.5	146	217								

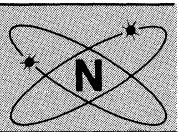
NOTE : Drain wires are same gage as individual conductors in any one group.

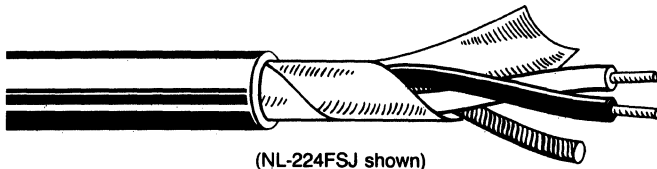
COLOR CODING USED IN TWISTED PAIRS

PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS	PR #	PAIR COLORS
1	White with Black	11	Black with Red	21	Brown with Green	31	Orange with Yellow	41	Green with Violet	51	Whi/Blk with Green
2	White with Brown	12	Black with Orange	22	Brown with Blue	32	Orange with Green	42	Green with Gray	52	Whi/Blk with Blue
3	White with Red	13	Black with Yellow	23	Brown with Violet	33	Orange with Blue	43	Blue with Violet	53	Whi/Blk with Violet
4	White with Orange	14	Black with Green	24	Brown with Gray	34	Orange with Gray	44	Blue with Gray	54	Whi/Blk with Gray
5	White with Yellow	15	Black with Blue	25	Red with Orange	35	Orange with Gray	45	Violet with Gray	55	Whi/Brn with Black
6	White with Green	16	Black with Violet	26	Red with Yellow	36	Yellow with Green	46	Whi/Blk with Black	56	Whi/Brn with Brown
7	White with Blue	17	Black with Gray	27	Red with Green	37	Yellow with Blue	47	Whi/Blk with Brown	57	Whi/Brn with Red
8	White with Violet	18	Brown with Red	28	Red with Blue	38	Yellow with Violet	48	Whi/Blk with Red	58	Whi/Brn with Orange
9	White with Gray	19	Brown with Orange	29	Red with Violet	39	Yellow with Gray	49	Whi/Blk with Orange	59	Whi/Brn with Yellow
10	Black with Brown	20	Brown with Yellow	30	Red with Gray	40	Green with Blue	50	Whi/Blk with Yellow	60	Whi/Brn with Green



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(NL-224FSJ shown)

SIGNAL & CONTROL TRAY CABLES

National Wire & Cable Corporation manufactures a complete line of DUAL-RATED multiconductor NEC TRAY CABLE Type CL2, for signal, instrumentation and control uses. Also UL rated for use as 300 Volt Appliance Wiring Material (AWM). These are available as cabled singles or pairs, with optional overall shield of aluminum-Mylar foil with drain wire.

Cabled conductors use stranded tinned copper wire with 0.010" wall of tough extruded poly-vinyl-chloride (PVC) insulation, rated for 300. Volt use under U.L. Style 2464.

All wires are color coded using 10 standard solid colors plus white with stripes. Cabled singles are color coded the same as our NQ and NX cable families per MIL-STD-681. (See table in Tech section.) Cabled pairs are color coded the same as our NQP and NXP cable families.

Conductors are helically cabled and laid for optimum flexibility, with a Mylar tape barrier wrap (or Mylar + Foil) applied between cabled wire bundle and outer jacket.

Shielded cables have an overall Aluminum-Mylar foil shielding tape helically wrapped over cable and a tinned uninsulated drain wire for shield connection. (Use FSJ part number suffix.) For optional composite tinned copper RFI braid(s) + foil shielding, consult factory.

Outer jacket is a special highly flexible abrasion-resistant gray poly-vinyl-chloride (PVC) thermoplastic. DUAL-RATED jacket compound meets the requirements of both U.L. Style 2464 AWM and U.L. 13 Type CL2 TRAY CABLE. Jacket is surface printed with both UL 2464 AWM and U.L. 13 Type CL2 TRAY CABLE identifiers. Jacket wall thickness is .032" nom.

Finished cables comply with applicable U.L. tests for N.E.C. Type CL2 TRAY CABLE Vertical Tray Flame Spread. All materials are flame-spread retardant and fungus resistant. The products are DUAL-RATED for AWM use as U.L. Style 2464 300 Volt, 80°C, OR for U.L. 13 Type CL2 TRAY CABLE 105°C use.

Standard putups: 500 ft. and 1000 ft. No-deposit reels. For shorter quantities or specific lengths consult factory.

TRAY CABLES NEC 725

CABLED SINGLES (NL SERIES)



TECHNICAL DATA (all cables)

- Rated Working Voltage:** 300 VOLTS for AWM uses.
- Rated Temperature:** DUAL-RATED: + 105°C or + 80°C dependent on AGENCY intended use. See below.
- Insulation Breakdown Voltage:** Greater than 1000 Volts AC RMS at 60 Hz.
- Capacitance:** Nominal capacitance from a wire to all else in a cable ranges from 25 to 45 PF/FT at 1 Khz, depending on AWG and position.
- Insulation Leakage:** 100 Megohms/1000 feet minimum @ 500 VDC; from a conductor to all else in a cable, at 25°C.
- U.L. Agency Voltage & Temperature Ratings:** UL rated: + 80°C AWM, 300 VOLT per UL Style 2464. UL rated + 105°C CL2 TRAY CABLE per UL 13, NEC Type CL2.
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 8 cable diameters from + 105°C to - 10°C. The flex diameter should be greater than 20 cable diameters for flexing at - 20°C.
- Characteristic Impedance:** RF Impedance of twisted pairs or adjacent singles is: 87 ohms in AWG 24; 80 ohms in AWG 22. Suitable for digital signals.

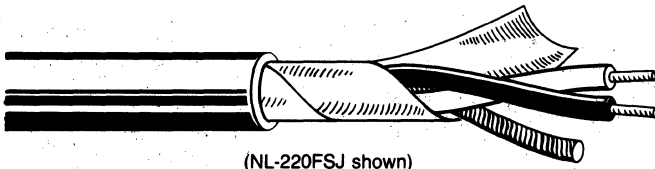
MULTI-CONDUCTOR STOCK CABLED SINGLES Conductor sizes 24, 22 are 7 strand. All others 19 strand.

UNSHIELDED					OVERALL FOIL SHIELDED (w/drain)					OVERALL BRAIDED SHIELD				
Part No.	No. of Cond.	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Cond.	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Cond.	Cond. AWG	Nom. O.D.	Weight LB/K ft.
NL-224J	2	24	.156	11	NL-224FSJ	2	24	.158	13	NL-224SJ	2	24	.176	19
NL-324J	3	24	.163	14	NL-324FSJ	3	24	.165	15	NL-324SJ	3	24	.183	22
NL-424J	4	24	.174	17	NL-424FSJ	4	24	.176	18	NL-424SJ	4	24	.194	25
NL-524J	5	24	.187	19	NL-524FSJ	5	24	.189	21	NL-524SJ	5	24	.207	29
NL-624J	6	24	.200	22	NL-624FSJ	6	24	.202	24	NL-624SJ	6	24	.220	33
NL-724J	7	24	.200	24	NL-724FSJ	7	24	.202	26	NL-724SJ	7	24	.220	35
NL-824J	8	24	.231	28	NL-824FSJ	8	24	.233	30	NL-824SJ	8	24	.251	41
NL-924J	9	24	.244	31	NL-924FSJ	9	24	.246	32	NL-924SJ	9	24	.264	44
NL-1024J	10	24	.244	33	NL-1024FSJ	10	24	.246	34	NL-1024SJ	10	24	.264	46
NL-1224J	12	24	.251	37	NL-1224FSJ	12	24	.253	39	NL-1224SJ	12	24	.271	51
NL-1524J	15	24	.275	45	NL-1524FSJ	15	24	.277	46	NL-1524SJ	15	24	.295	61
NL-1924J	19	24	.288	54	NL-1924FSJ	19	24	.290	55	NL-1924SJ	19	24	.308	70
NL-2724J	27	24	.339	73	NL-2724FSJ	27	24	.341	75	NL-2724SJ	27	24	.359	93
NL-3724J	37	24	.376	96	NL-3724FSJ	37	24	.378	97	NL-3724SJ	37	24	.401	127
NL-4824J	48	24	.424	121	NL-4824FSJ	48	24	.427	122	NL-4824SJ	48	24	.450	157
NL-6024J	60	24	.464	148	NL-6024FSJ	60	24	.466	149	NL-6024SJ	60	24	.489	187
NL-222J	2	22	.168	14	NL-222FSJ	2	22	.170	16	NL-222SJ	2	22	.188	22
NL-322J	3	22	.176	17	NL-322FSJ	3	22	.178	20	NL-322SJ	3	22	.196	26
NL-422J	4	22	.188	21	NL-422FSJ	4	22	.190	23	NL-422SJ	4	22	.208	31
NL-522J	5	22	.203	25	NL-522FSJ	5	22	.205	27	NL-522SJ	5	22	.223	35
NL-622J	6	22	.218	29	NL-622FSJ	6	22	.220	31	NL-622SJ	6	22	.238	40
NL-722J	7	22	.218	32	NL-722FSJ	7	22	.220	34	NL-722SJ	7	22	.238	43
NL-822J	8	22	.253	37	NL-822FSJ	8	22	.255	39	NL-822SJ	8	22	.273	51
NL-922J	9	22	.268	40	NL-922FSJ	9	22	.270	43	NL-922SJ	9	22	.288	56
NL-1022J	10	22	.268	43	NL-1022FSJ	10	22	.270	46	NL-1022SJ	10	22	.288	58
NL-1222J	12	22	.276	50	NL-1222FSJ	12	22	.278	52	NL-1222SJ	12	22	.296	65
NL-1522J	15	22	.303	60	NL-1522FSJ	15	22	.305	62	NL-1522SJ	15	22	.323	78
NL-1922J	19	22	.318	73	NL-1922FSJ	19	22	.320	75	NL-1922SJ	19	22	.338	91
NL-2722J	27	22	.376	100	NL-2722FSJ	27	22	.378	102	NL-2722SJ	27	22	.401	131
NL-3722J	37	22	.418	131	NL-3722FSJ	37	22	.420	134	NL-3722SJ	37	22	.443	167
NL-4822J	48	22	.473	167	NL-4822FSJ	48	22	.475	169	NL-4822SJ	48	22	.498	207
NL-6022J	60	22	.518	205	NL-6022FSJ	60	22	.520	207	NL-6022SJ	60	22	.543	249



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(NL-220FSJ shown)

**TRAY CABLES
NEC 725**

**CABLED SINGLES
(NL SERIES)**



SIGNAL & CONTROL TRAY CABLES

MULTI-CONDUCTOR STOCK CABLED SINGLES continued from previous page.

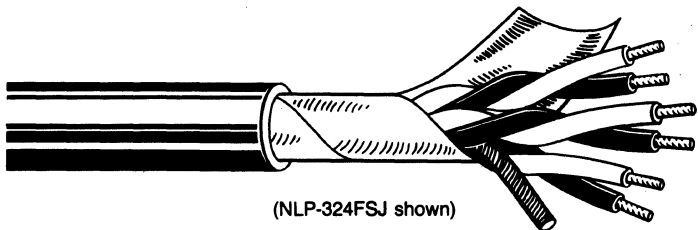
UNSHIELDED					OVERALL FOIL SHIELDED (w/drain)					OVERALL BRAIDED SHIELD				
Part No.	No. of Cond.	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Cond.	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Cond.	Cond. AWG	Nom. O.D.	Weight LB/K ft.
NL-220J	2	20	.184	18	NL-220FSJ	2	20	.186	22	NL-220SJ	2	20	.204	28
NL-320J	3	20	.193	24	NL-320FSJ	3	20	.195	28	NL-320SJ	3	20	.213	34
NL-420J	4	20	.207	29	NL-420FSJ	4	20	.209	33	NL-420SJ	4	20	.227	40
NL-520J	5	20	.225	35	NL-520FSJ	5	20	.227	39	NL-520SJ	5	20	.245	47
NL-620J	6	20	.242	41	NL-620FSJ	6	20	.244	45	NL-620SJ	6	20	.262	54
NL-720J	7	20	.242	46	NL-720FSJ	7	20	.244	49	NL-720SJ	7	20	.262	59
NL-820J	8	20	.283	53	NL-820FSJ	8	20	.285	56	NL-820SJ	8	20	.303	69
NL-920J	9	20	.300	58	NL-920FSJ	9	20	.302	62	NL-920SJ	9	20	.320	76
NL-1020J	10	20	.300	63	NL-1020FSJ	10	20	.302	67	NL-1020SJ	10	20	.320	80
NL-1220J	12	20	.309	73	NL-1220FSJ	12	20	.311	77	NL-1220SJ	12	20	.329	91
NL-1520J	15	20	.341	89	NL-1520FSJ	15	20	.343	90	NL-1520SJ	15	20	.361	109
NL-1920J	19	20	.358	109	NL-1920FSJ	19	20	.360	113	NL-1920SJ	19	20	.378	130
NL-2720J	27	20	.425	151	NL-2720FSJ	27	20	.427	155	NL-2720SJ	27	20	.450	187
NL-3720J	37	20	.474	201	NL-3720FSJ	37	20	.476	205	NL-3720SJ	37	20	.499	242
NL-218J	2	18	.204	24	NL-218FSJ	2	18	.206	20	NL-218SJ	2	18	.224	35
NL-318J	3	18	.215	32	NL-318FSJ	3	18	.217	38	NL-318SJ	3	18	.235	43
NL-418J	4	18	.231	40	NL-418FSJ	4	18	.233	46	NL-418SJ	4	18	.251	52
NL-518J	5	18	.252	48	NL-518FSJ	5	18	.254	54	NL-518SJ	5	18	.272	62
NL-618J	6	18	.272	56	NL-618FSJ	6	18	.274	62	NL-618SJ	6	18	.292	71
NL-718J	7	18	.272	63	NL-718FSJ	7	18	.274	69	NL-718SJ	7	18	.293	78
NL-818J	8	18	.320	73	NL-818FSJ	8	18	.322	79	NL-818SJ	8	18	.340	91
NL-918J	9	18	.340	81	NL-918FSJ	9	18	.342	87	NL-918SJ	9	18	.360	101
NL-1018J	10	18	.340	88	NL-1018FSJ	10	18	.342	94	NL-1018SJ	10	18	.360	108
NL-1218J	12	18	.351	102	NL-1218FSJ	12	18	.353	108	NL-1218SJ	12	18	.371	123
NL-1518J	15	18	.388	126	NL-1518FSJ	15	18	.390	131	NL-1518SJ	15	18	.413	158
NL-1918J	19	18	.408	155	NL-1918FSJ	19	18	.410	180	NL-1918SJ	19	18	.433	189
NL-2718J	27	18	.487	215	NL-2718FSJ	27	18	.489	221	NL-2718SJ	27	18	.512	257

- NOTES: 1. Available in other conductor sizes.
2. Available in other jacket colors.



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**TRAY CABLES
NEC 725**

**TWISTED PAIRS
(NLP SERIES)**



SIGNAL & CONTROL TRAY CABLES

National Wire & Cable Corporation manufactures a complete line of DUAL-RATED multiconductor NEC TRAY CABLE Type CL2, for signal, instrumentation and control uses. Also UL rated for use as 300 Volt Appliance Wiring Material (AWM). These are available as cabled singles or pairs, with optional overall shield of aluminum-Mylar foil with drain wire.

Cabled conductors use stranded tinned copper wire with 0.010" wall of tough extruded poly-vinyl-chloride (PVC) insulation, rated for 300. Volt use under U.L. Style 2464.

All wires are color coded using 10 standard solid colors plus white with stripes. Cabled singles are color coded the same as our NQ and NX cable families per MIL-STD-681. (See table in Tech section.) Cabled pairs are color coded the same as our NQP and NXP cable families.

Conductors are helically cabled and laid for optimum flexibility, with a Mylar tape barrier wrap (or Mylar + Foil) applied between cabled wire bundle and outer jacket.

Shielded cables have an overall Aluminum-Mylar foil shielding tape helically wrapped over cable and a tinned uninsulated drain wire for shield connection. (Use FSJ part number suffix.) For optional composite tinned copper RFI braid(s) + foil shielding, consult factory.

Outer jacket is a special highly flexible, abrasion-resistant gray poly-vinyl-chloride (PVC) thermoplastic. DUAL-RATED jacket compound meets the requirements of both U.L. Style 2464 AWM and U.L. Type CL2 TRAY CABLE. Jacket is surface printed with both U.L. 2464 AWM and U.L. 13 Type CL2 TRAY CABLE identifiers. Jacket wall thickness is .032" nom.

Finished cables comply with applicable U.L. tests for N.E.C. Type CL2 TRAY CABLE Vertical Tray Flame Spread. All materials are flame-spread retardant and fungus resistant. The products are DUAL-RATED for AWM use as U.L. Style 2464 300 Volt, 80°C, OR for U.L. 13 Type CL2 TRAY CABLE 105°C use.

Standard putups: 500 ft. and 1000 ft. No-deposit reels. For shorter quantities or specific lengths consult factory.

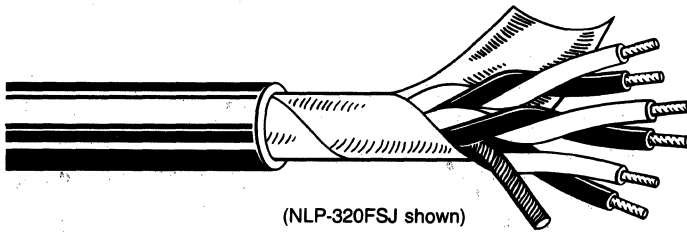
TECHNICAL DATA (all cables)

- Rated Working Voltage:** 300 VOLTS for AWM uses.
- Rated Temperature:** DUAL-RATED: + 105°C or + 80°C dependent on AGENCY intended use. See below.
- Insulation Breakdown Voltage:** Greater than 1000 Volts AC RMS at 60 Hz.
- Capacitance:** Nominal capacitance from a wire to all else in a cable ranges from 25 to 45 PF/FT at 1 KHz, depending on AWG and position.
- Insulation Leakage:** 100 Megohms/1000 feet minimum @ 500 VDC; from a conductor to all else in a cable, at 25°C.
- U.L. Agency Voltage & Temperature Ratings:** UL rated: + 80°C AWM, 300 VOLT per UL Style 2464. UL rated + 105°C CL2 TRAY CABLE per UL 13, NEC Type CL2.
- Bending Characteristics:** All cables are suitable for flexing to a circle diameter of 8 cable diameters from +105°C to -10°C. The flex diameter should be greater than 20 cable diameters for flexing at -20°C.
- Characteristic Impedance:** RF Impedance of twisted pairs or adjacent singles is: 87 ohms in AWG 24; 80 ohms in AWG 22. Suitable for digital signals.

MULTI-CONDUCTOR STOCK CABLED PAIRS Conductor sizes 24, 22 are 7 strand. All others 19 strand.

UNSHIELDED					OVERALL FOIL SHIELDED (w/drain)					OVERALL BRAIDED SHIELD				
Part No.	No. of Pairs	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Pairs	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Pairs	Cond. AWG	Nom. O.D.	Weight LB/K ft.
NLP-224J	2	24	.218	21	NLP-224FSJ	2	24	.220	22	NLP-224SJ	2	24	.238	34
NLP-324J	3	24	.230	26	NLP-324FSJ	3	24	.232	27	NLP-324SJ	3	24	.250	40
NLP-424J	4	24	.253	31	NLP-424FSJ	4	24	.255	32	NLP-424SJ	4	24	.273	47
NLP-524J	5	24	.279	37	NLP-524FSJ	5	24	.281	38	NLP-524SJ	5	24	.299	54
NLP-624J	6	24	.306	42	NLP-624FSJ	6	24	.308	44	NLP-624SJ	6	24	.326	62
NLP-724J	7	24	.292	46	NLP-724FSJ	7	24	.294	48	NLP-724SJ	7	24	.312	66
NLP-824J	8	24	.367	54	NLP-824FSJ	8	24	.369	55	NLP-824SJ	8	24	.387	78
NLP-924J	9	24	.350	60	NLP-924FSJ	9	24	.352	61	NLP-924SJ	9	24	.370	85
NLP-1024J	10	24	.367	64	NLP-1024FSJ	10	24	.369	65	NLP-1024SJ	10	24	.387	89
NLP-1224J	12	24	.379	73	NLP-1224FSJ	12	24	.381	74	NLP-1224SJ	12	24	.404	109
NLP-1524J	15	24	.429	88	NLP-1524FSJ	15	24	.431	89	NLP-1524SJ	15	24	.454	129
NLP-1924J	19	24	.442	106	NLP-1924FSJ	19	24	.444	107	NLP-1924SJ	19	24	.467	149
NLP-2724J	27	24	.529	144	NLP-2724FSJ	27	24	.531	146	NLP-2724SJ	27	24	.554	198
NLP-222J	2	22	.238	26	NLP-222FSJ	2	22	.240	28	NLP-222SJ	2	22	.258	41
NLP-322J	3	22	.252	33	NLP-322FSJ	3	22	.254	35	NLP-322SJ	3	22	.272	49
NLP-422J	4	22	.278	40	NLP-422FSJ	4	22	.280	42	NLP-422SJ	4	22	.298	58
NLP-522J	5	22	.308	47	NLP-522FSJ	5	22	.310	50	NLP-522SJ	5	22	.328	67
NLP-622J	6	22	.338	55	NLP-622FSJ	6	22	.340	57	NLP-622SJ	6	22	.358	77
NLP-722J	7	22	.323	61	NLP-722FSJ	7	22	.325	63	NLP-722SJ	7	22	.343	83
NLP-822J	8	22	.408	71	NLP-822FSJ	8	22	.410	73	NLP-822SJ	8	22	.433	108
NLP-922J	9	22	.388	79	NLP-922FSJ	9	22	.390	81	NLP-922SJ	9	22	.413	119
NLP-1022J	10	22	.408	85	NLP-1022FSJ	10	22	.410	87	NLP-1022SJ	10	22	.433	124
NLP-1222J	12	22	.422	97	NLP-1222FSJ	12	22	.424	99	NLP-1222SJ	12	22	.447	139
NLP-1522J	15	22	.478	118	NLP-1522FSJ	15	22	.480	120	NLP-1522SJ	15	22	.503	165
NLP-1922J	19	22	.493	143	NLP-1922FSJ	19	22	.495	146	NLP-1922SJ	19	22	.518	193
NLP-2722J	27	22	.592	197	NLP-2722FSJ	27	22	.594	199	NLP-2722SJ	27	22	.617	257

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(NLP-320FSJ shown)

TRAY CABLES NEC 725

TWISTED PAIRS (NLP SERIES)



SIGNAL & CONTROL TRAY CABLES

MULTI-CONDUCTOR STOCK CABLED PAIRS continued from previous page.

UNSHIELDED					OVERALL FOIL SHIELDED (w/drain)					OVERALL BRAIDED SHIELD				
Part No.	No. of Pairs	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Pairs	Cond. AWG	Nom. O.D.	Weight LB/K ft.	Part No.	No. of Pairs	Cond. AWG	Nom. O.D.	Weight LB/K ft.
NLP-220J	2	20	.265	35	NLP-220FSJ	2	20	.267	39	NLP-220SJ	2	20	.285	52
NLP-320J	3	20	.281	45	NLP-320FSJ	3	20	.283	49	NLP-320SJ	3	20	.301	64
NLP-420J	4	20	.312	56	NLP-420FSJ	4	20	.314	60	NLP-420SJ	4	20	.332	77
NLP-520J	5	20	.346	68	NLP-520FSJ	5	20	.348	72	NLP-520SJ	5	20	.366	91
NLP-620J	6	20	.381	79	NLP-620FSJ	6	20	.383	83	NLP-620SJ	6	20	.401	105
NLP-720J	7	20	.364	89	NLP-720FSJ	7	20	.366	93	NLP-720SJ	7	20	.384	114
NLP-820J	8	20	.462	103	NLP-820FSJ	8	20	.464	107	NLP-820SJ	8	20	.488	146
NLP-920J	9	20	.439	115	NLP-920FSJ	9	20	.441	119	NLP-920SJ	9	20	.464	161
NLP-1020J	10	20	.462	124	NLP-1020FSJ	10	20	.464	128	NLP-1020SJ	10	20	.488	170
NLP-1220J	12	20	.478	144	NLP-1220FSJ	12	20	.480	148	NLP-1220SJ	12	20	.503	192
NLP-1520J	15	20	.544	176	NLP-1520FSJ	15	20	.546	180	NLP-1520SJ	15	20	.569	230
NLP-1920J	19	20	.561	216	NLP-1920FSJ	19	20	.563	220	NLP-1920SJ	19	20	.586	273
NLP-2720J	27	20	.675	300	NLP-2720FSJ	27	20	.677	304	NLP-2720SJ	27	20	.701	369
NLP-218J	2	18	.299	46	NLP-218FSJ	2	18	.301	52	NLP-218SJ	2	18	.319	66
NLP-318J	3	18	.318	61	NLP-318FSJ	3	18	.320	67	NLP-318SJ	3	18	.338	83
NLP-418J	4	18	.354	77	NLP-418FSJ	4	18	.356	83	NLP-418SJ	4	18	.374	101
NLP-518J	5	18	.394	94	NLP-518FSJ	5	18	.396	99	NLP-518SJ	5	18	.420	130
NLP-618J	6	18	.435	110	NLP-618FSJ	6	18	.437	116	NLP-618SJ	6	18	.460	151
NLP-718J	7	18	.415	124	NLP-718FSJ	7	18	.417	130	NLP-718SJ	7	18	.440	164
NLP-1218J	12	18	.549	203	NLP-1218FSJ	12	18	.551	209	NLP-1218SJ	12	18	.574	258

- NOTES: 1. Available in other conductor sizes.
2. Available in other jacket colors.

OTHER SPECIAL PURPOSE CABLES

ANTENNA ROTOR CABLE

Part No.	No. Cond.	AWG/Str.	Ins. OD	Jkt Wall	Nom. OD	Weight Lb/M'
NQ 818J	8	18/19	.068 pvc	.032	.320	73

*See Page 2, Section 5 for specifications

LOW CAPACITANCE MICROPHONE CABLE (ULTRA-LIMP, ULTRA-QUIET)

Part No.	No. Cond.	AWG/Str.	Ins. OD	Jkt Wall	Nom. OD	Weight Lb/M'
S10-8819	2	24/105 BC	0.060" pe	.040"	.220"	24.
S10-9109	4	24/41 BC	0.054" pe	.045"	.245"	29.

TRANSDUCER CABLE, SHIELDED (For Low Level Uses)

Part No.	No. Cond.	AWG/Str.	Ins. OD	Jkt Wall	Nom. OD	Weight Lb/M'
S10-6023	4	22/19	0.054 pvc	.030"	.210"	31.

SEISMIC GEOPHONE CABLE (Digital Signals)

Part No.	No. Cond.	AWG/Str.	Ins. OD	Jkt Wall	Nom. OD	Weight Lb/M'
D-2362	2	20/19	130 Ohm	.045	.370	54.



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SIGNAL & CONTROL TRAY CABLES**NEC 725 TRAY CABLES "PLTC"****STANDARD PLTC CABLES**

UL RATED: 300 VOLTS, 105°C.

**PAIRS:**

PLTC UNSHIELDED PAIR CABLE				PLTC FOIL-SHIELDED PAIR CABLE			
PART NO.	COND.	AWG	DIAM. INCHES	PART NO.	COND.	AWG	DIAM. INCHES
NG222J	2	22	.170	NG222FSJ	2	22	.176
NG220J	2	20	.190	NG220FSJ	2	20	.196
NG218J	2	18	.206	NG218FSJ	2	18	.212
NG216J	2	16	.220	NG216FSJ	2	16	.226

TRIOS:

PLTC UNSHIELDED TRIO CABLE				PLTC FOIL-SHIELDED TRIO CABLE			
PART NO.	COND.	AWG	DIAM. INCHES	PART NO.	COND.	AWG	DIAM. INCHES
NG322J	3	22	.179	NG322FSJ	3	22	.185
NG320J	3	20	.200	NG320FSJ	3	20	.206
NG318J	3	18	.218	NG318FSJ	3	18	.224
NG316J	3	16	.233	NG316FSJ	3	16	.239

PLTC CABLE CONSTRUCTION:

ALL PLTC CABLES USE 0.012" (min.) WALL OF 105°C PVC WIRE INSULATION, PLUS AN OVERALL 0.032" WALL OF SPECIAL FLAME-SPREAD-RESISTANT BLACK PVC JACKET.

U.L. LISTED AS SUNLIGHT-RESISTANT "PLTC" TRAY CABLE.

(PLTC is abbreviation of NEC "POWER-LIMITED TRAY CABLE")

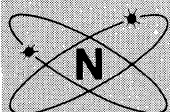
ALSO AVAILABLE AS CL3 (NOT SUNLIGHT RESISTANT)

RELATIVE PERFORMANCE:

THE NATIONAL PLTC CABLES ARE **VERY** SIMILAR IN PERFORMANCE TO THE NATIONAL "NQ" FAMILY OF FLEXIBLE CABLES.

STANDARD PUTUP: 500 FT. REELS (NON RETURNABLE REELS)

STANDARD COLORS: PAIRS; BLACK & RED. TRIOS; BLACK, RED, WHITE. MANY OTHER PLTC CONSTRUCTIONS CAN BE MADE TO ORDER. CONSULT FACTORY FOR OTHER LARGER "PLTC" CABLES.

**NATIONAL WIRE & CABLE CORPORATION**

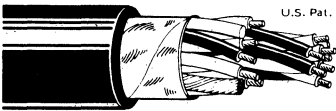
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DIGITAL DATA TRANSMISSION CABLES



U.S. Pat. No. 3489844



(D-200 SERIES)

UL AWM STYLE 2835

Meets E.I.A. Standards RS-422,
RS-423, RS-485

LOW VOLTAGE COMPUTER CABLE

THE D-200 SERIES CABLES ARE MULTIPLE-PAIR FLEXIBLE CABLES DESIGNED FOR TRANSMISSION OF DIGITAL PULSE SIGNALS BETWEEN A COMPUTER AND ITS PERIPHERAL EQUIPMENT.

DESIGN FEATURES OF THE D-200 SERIES DIGITAL DATA CABLE

Unlike conventional flexible cable construction the primary features offered by the D-200 series data cable are the high and accurately controlled characteristic impedance of every pair, regardless of its position in the cable and special geometry chosen to reduce crosstalk.

ADVANTAGES

1. Less crosstalk and noise from mismatched loads, due to proper matching.
2. Uniform light loading on drivers allows direct I.C. drive, accurate prediction of current demands from power supply, and driver power dissipation.
3. Proper load match reduces re-reflection and inversion noise where driver end is not matched to line. (Typical of TTL.)
4. Special geometry and pair construction provides exceptionally close capacitance balance between pair wires, reducing differential crosstalk.

USAGE

We recommend use of balanced drive and differential-input line receivers for lowest crosstalk and best pulse reproduction, utilizing the 110 ohm balanced impedance of the pairs. With such a system, TTL speeds have been used in D-200 cable at 1 mc data rates over 1000 ft.

Where the system is single-ended drive and receive, all pairs exhibit the 78 ohm impedance. Since these line receivers cannot discriminate between noise and the desired signal, crosstalk limits the cable distance over which transmission is reliable. Typical runs for DTL having 50 ns risetimes are 200 ft. Where risetimes can be slowed to longer than 100 ns, run lengths are practical to 500 ft. Without differential line reception, runs over 500 ft. are not recommended for D-200 cable due to external noise aspects.

The D-210 series cables are recommended for high noise or long-run application. (Utilizing individual shields.)

Although use of balanced drive and differential line reception will avoid most noise problems, there are some installations where the expected external noise is unknown but assumed to be very great. Here, the use of data cables having individually-shielded pairs may be considered as conservative engineering practice. The assurance of a lower received noise may justify the increased size cost and risetime.

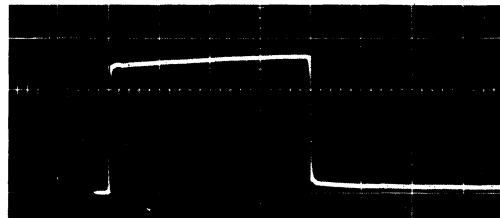
For these high noise-long run applications, Dynatronic Cable Engineering Corp. has developed the D-210 series data cables. Electrical performance is essentially the same as the D-200 series cables, which use only an overall shield. ^ΔAn overall tinned-copper shield braid may be specified on either series by the suffix -RF on the part number. Standard D-200 shield is aluminum-mylar foil. **THE D220 AND D222 SERIES CABLES ARE RECOMMENDED FOR LONG RUNS WHERE EXTRA-FAST OUTPUT PULSE TIMES ARE REQUIRED.**

For runs of 1000-5000 ft. or where extra-fast output pulse risetimes are required, we offer the D220 and D222 series cables: larger versions of the D200 series having improved transmission properties with sufficient mechanical strength for long pulls in conduit.

PULSE TRANSMISSION LOSS in D-series data cables causes a moderate amplitude loss, with definite rounding of the leading and trailing edges from 50% to 90% amplitude. The photos below (for a 1.25 megabit clock rate) show typical waveforms. The D-220 and D-222 series cables offer even lower losses than the D-200 or D-210 cables for long-run or fast-clocked applications.

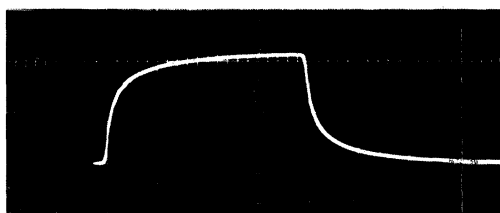
Contact our factory engineering staff for detailed pulse-shape versus distance information, or for special applications.

INPUT PULSE



Horizontal: 200. ns/cm
Vertical : 2. volts/cm

OUTPUT PULSE at 500 FT.



Horizontal: 200. ns/cm
Vertical : 2. volts/cm

We invite your telephone inquiries for technical information on data cables.
Contact our Engineering Dept.

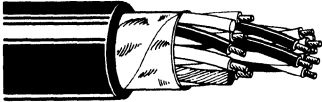


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DIGITAL DATA TRANSMISSION CABLES IN STOCK



U.S. Pat. No. 3489844



Black Vinyl Jackets.

D-200 XX (XX designates number of pairs)

D-200 XXRF (RF designates braided shield over aluminum mylar foil shield) Δ **(D-200 SERIES)****UL AWM STYLE 2835**

LOW VOLTAGE COMPUTER CABLE

MEETS E.I.A. STANDARDS

RS-422, RS-423, RS-485

STANDARD DATA CABLE CONSTRUCTIONS – D-200 SERIES

Nat'l Catalog No.		No. of Pairs	Cond. AWG.	Delay NS/FT	Cable Diam.		Weight	
Black Jacket	Grey Jacket				(Inches)	(MM)	Lbs. per 1000 Ft.	Kg/Km
D-200-4	D-200-4G	4	24	1.61*	.315"	8.00	41.	61.0
D-200-7	D-200-7G	7	24	1.61*	.410"	10.41	73.	109.0
D-200-12	D-200-12G	12	24	1.61*	.455"	11.56	96.	143.0
D-200-15	D-200-15G	15	24	1.61*	.510"	12.95	120.	179.0
D-200-20	D-200-20G	20	24	1.61*	.635"	16.13	160.	238.0
D-200-24	D-200-24G	24	24	1.61*	.660"	16.76	180.	268.0
D-200-27	D-200-27G	27	24	1.61*	.690"	17.53	210.	312.0
D-200-30	D-200-30G	30	24	1.61*	.710"	18.03	230.	342.0
D-200-33	D-200-33G	33	24	1.61*	.750"	19.05	250.	372.0
D-200-42	D-200-42G	42	24	1.61*	.840"	21.34	280.	417.0
D-200-50	D-200-50G	50	24	1.61*	.910"	23.1	320.	476.0

(*5.28 NS/MTR)

TECHNICAL DATA

Characteristic	Balanced**	Single-ended Δ
Characteristic Impedance	110. ohms \pm 5%	78. ohms \pm 4%
Capacitance	14. pF/ft (46. PF/MTR)	21. pF/ft (68.9 PF/MTR)
Signal Delay	1.61 ns/ft (5.28 NS/MTR)	1.61 ns/ft (5.28 NS/MTR)
DC Resistance/100 ft.	5.6 ohms loop	2.8 ohms
Insulation Breakdown	6. KV min. DC	6. KV min. DC
Insulation Resistance	> 1000. megohms/M'	> 1000. megohms/M'
Temperature Range	-20. C up to +80. C (60. C for U.L.)	
Min. Bend Radius	6 x cable diameter	

STANDARD DATA CABLE CONSTRUCTIONS – D-210 SERIES INDIVIDUALLY SHIELDED DATA PAIRS

Nat'l Catalog No.	No. of Pairs	Z ₀	Delay NS/FT	Cond. AWG	(In.) Cable Diam. (MM)	Sheath	
D-210-1	1	110.	1.61*	24	.220	5.59	PVC
D-210-12	12	110.	1.61*	24	.980	24.9	PVC
D-210-15	15	110.	1.61*	24	1.06	26.9	PVC
D-210-20	20	110.	1.61*	24	1.20	30.5	PVC
D-210-30	30	110.	1.61*	24	1.42	36.1	PVC
D-210-40	40	110.	1.61*	24	1.69	42.9	PVC
D-210-48	48	110.	1.61*	24	1.76	44.7	PVC

(*5.289 NS/MTR)

All items available in 50 ft. multiples.

TECHNICAL DATA

Characteristic	Balanced**	Single-ended Δ
Characteristic Impedance	110. ohms \pm 5%	63. ohms \pm 4%
Capacitance	14. pF/ft (46. PF/MTR)	23. pF/ft (77.0 PF/MTR)
Signal Delay	1.61 ns/ft (5.28 NS/MTR)	1.61 ns/ft.
DC Resistance/100 ft.	5.6 ohms loop	2.8 ohms
Insulation Breakdown	6. KV min. DC	6. KV min. DC
Insulation Resistance	> 1000. megohms/M'	> 1000. megohms/M'
Temperature Range	-20. C up to +80. C (60. C for U.L.)	
Min. Bend Radius	9 x cable diameter	

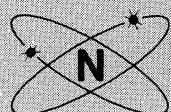
** Both driven, one inverted.

 Δ One conductor of each pair tied to common.

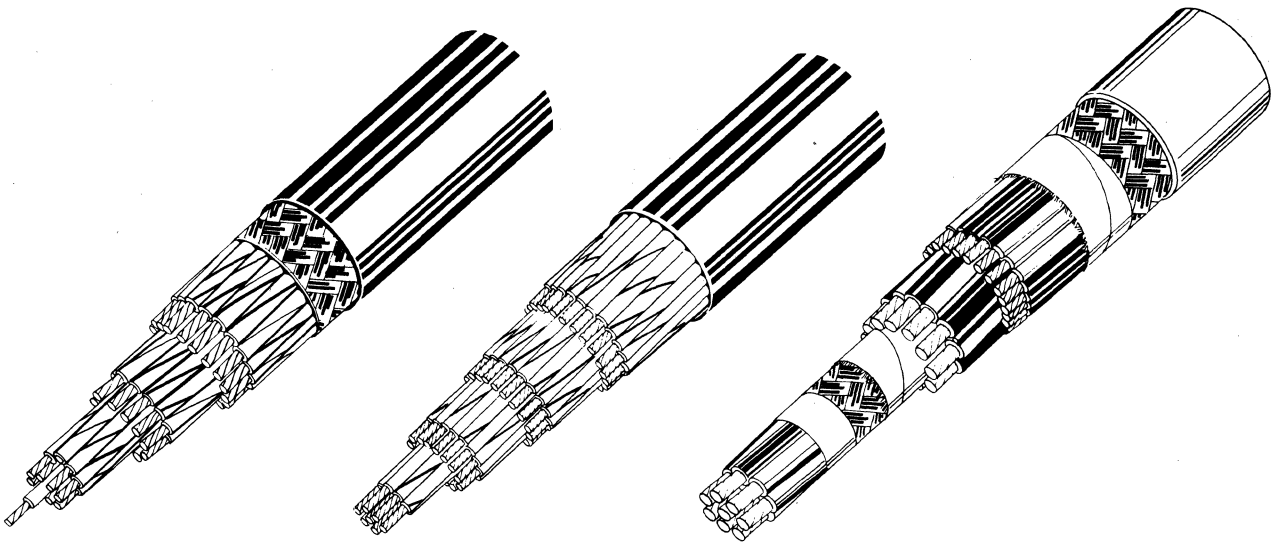
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CUSTOM-MADE CABLE TO YOUR OWN SPECIFICATIONS...



COMPLETE WIRE AND CABLE FACILITIES TO MEET YOUR NEEDS

If the standard cables shown on the preceding pages do not meet your application requirements, Custom-Made cables to your own specifications are available promptly — and at lower cost than you may suppose...

We invite your inquiries on fiber optic cables. National Wire & Cable can manufacture multi-conductor fiber optic cables as well as hybrid cables consisting of fiber and copper conductors.

BECAUSE NATIONAL HAS:

1. The organization & experience to handle short-runs or rush schedules with consistent quality.
2. All types of mill machinery for fabricating cable and all intermediate operations.
3. An enormous wire inventory to draw from for material for your cable. Over 160 million feet in stock.
4. Technical consultants to aid you in properly specifying your cable needs.

DESIGNERS: May we suggest:

- A. See Section 8 for technical details regarding custom cables.
- B. Call our engineering department (323-225-5611) and discuss your needs with our technical consultants. They speak your language and may have just the answers you need.
- C. Our consultants will assist you in design, obtain cost and delivery information, provide formal quotations and drawings, and assist with sales & procurement liaison.
- D. On most custom cables, we can print your company name and part number at regular intervals on the outside jacket at no extra cost. This will make your packaging truly "Custom".



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NATIONAL WIRE AND CABLE CORPORATION

CUSTOM COILED CABLE INQUIRY SHEET

CUSTOMER _____ DATE _____

CONTACT _____ PHONE NO. _____

POSITION _____ DRAWING _____

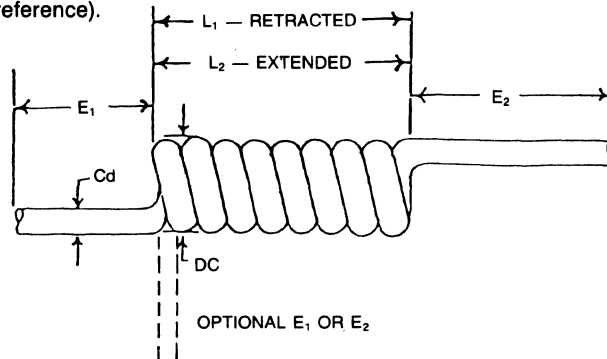
Let us review your requirements by mailing or faxing us this completed inquiry sheet.

CABLE DESCRIPTION

- 1. Number of Conductors (2 thru 60). _____
- 2. Gauge Size and Stranding of Conductors (30 thru 18). _____
- 3. Conductor Insulation Type (if preference). _____
- 4. Shielding, normally Nafoil or Spiral Tinned Copper (if required). _____
- 5. Jacketing Compound Polyurethane or Hytrel by Dupont. Compound PU, color black. Color matching is available. _____
- 6. Finished cable diameter requirements (if preference). . cd = _____
- 7. Voltage range and temperature range of application. _____ v. _____ °c _____
- 8. Any special requirements, UL 20197 is available for computer use on request. _____

COILED CABLE DESCRIPTION

- 1. Retracted Length L1 = _____
- 2. Extended length (normally 4-5 times recovered length). L2 = _____
- 3. Length of ends to be straight or right angle. E1 = $\frac{\text{Length}}{\text{Angle}}$ _____
E2 = $\frac{\text{Length}}{\text{Angle}}$ _____
- 4. Outside diameter of coil (if preference).



FOR INFORMATION PHOTO COPY THIS PAGE, FILL OUT AND RETURN.



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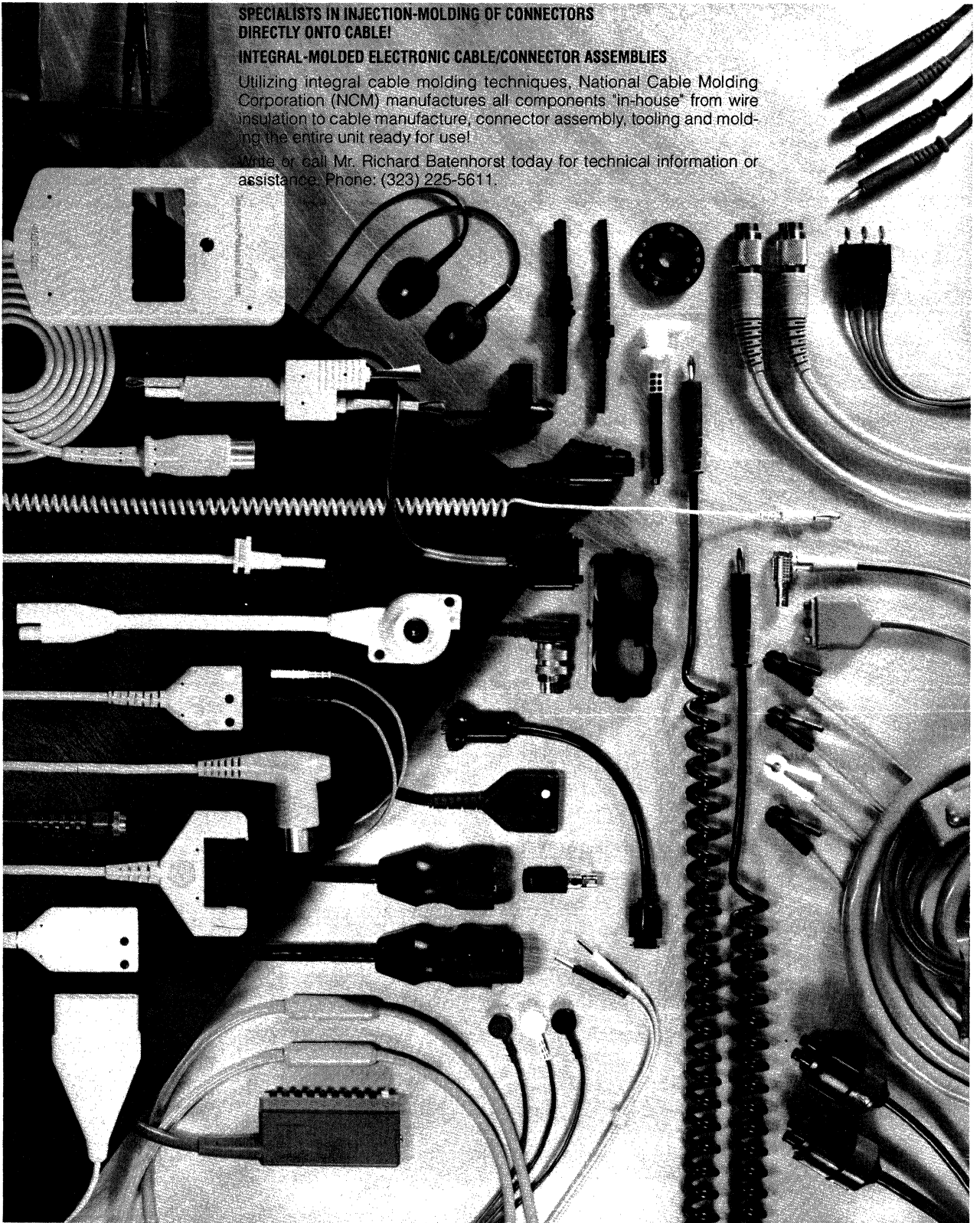


**SPECIALISTS IN INJECTION-MOLDING OF CONNECTORS
DIRECTLY ONTO CABLE!**

INTEGRAL-MOLDED ELECTRONIC CABLE/CONNECTOR ASSEMBLIES

Utilizing integral cable molding techniques, National Cable Molding Corporation (NCM) manufactures all components "in-house" from wire insulation to cable manufacture, connector assembly, tooling and molding the entire unit ready for use!

Write or call Mr. Richard Batenhorst today for technical information or assistance. Phone: (323) 225-5611.



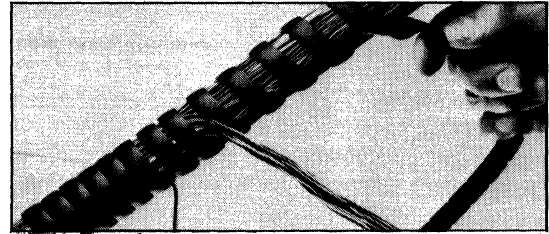
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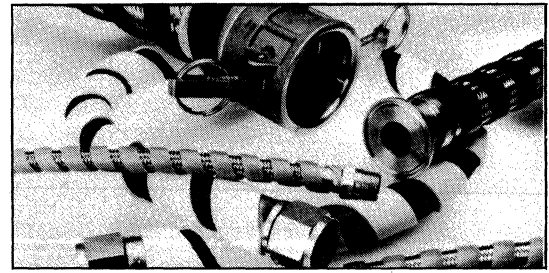
Heli-Tube® Cable Harness Abrasion Protector

Standard Materials	Max. Oper. Temp.	Min. Oper. Temp.	MIL Spec. & Approvals
Clear Polyethylene Ideal for general applications, this low-cost material is highly abrasion resistant and is not affected by most solvents.	215°F 101°C	-105°F -76°C	Fed. Spec. LP390 MIL-I-631D MIL-P-21922A
Ultraviolet-Resistant Black Polyethylene Has the same properties as clear polyethylene but features an ultraviolet absorber which allows it to be used outdoors in direct sunlight for long periods of time.	215°F 101°C	-105°F -76°C	Fed. Spec. LP390 MIL-I-631D MIL-P-21922A
Fire-Resistant Polyethylene This material is self-extinguishing and costs less than Nylon or Teflon; available in White or Black.	200°F 93°C	-1°F -19°C	
Nylon Natural Nylon is self-extinguishing and does not produce any toxic or irritating byproducts, even when exposed to an open flame or temperatures beyond its operating range. Recommended for use in enclosed environments where the possibility of fire exists, Nylon is also lightweight, highly abrasion resistant, and operates over a wide temperature range.	200°F 93°C	-121°F -85°C	MIL-M-20693B Type I MIL-M-22096A LP 410A MIL-M-19098
Black Nylon Features the same properties as Natural Nylon with the added benefit of an ultraviolet absorber so that it can be used in direct sunlight for long periods of time.	200°F 93°C	-121°F -85°C	MIL-M-20693A Type II MIL-M-22096 LP 410A MIL-I-47287A Type II
Teflon (TFE) Natural (TFE) features the widest operating temperature range of any material and can be used from -450° to +500°F. It is chemically inert, non-flammable, and can be supplied in a variety of colors.	500°F 260°C	-450°F -85°C	AMS 3651C AMS 3653C AMS 3654 AMS 3655 ASTM D3295 MIL I-22129C P-22296B MIL-T-47287A Type I

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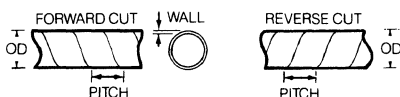


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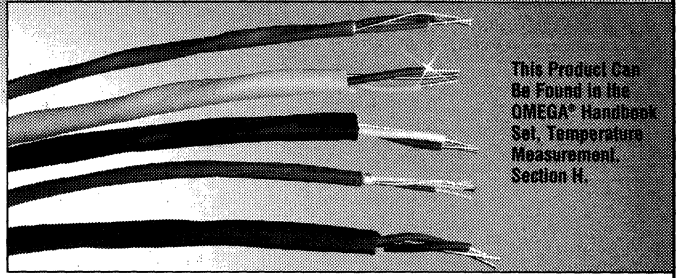
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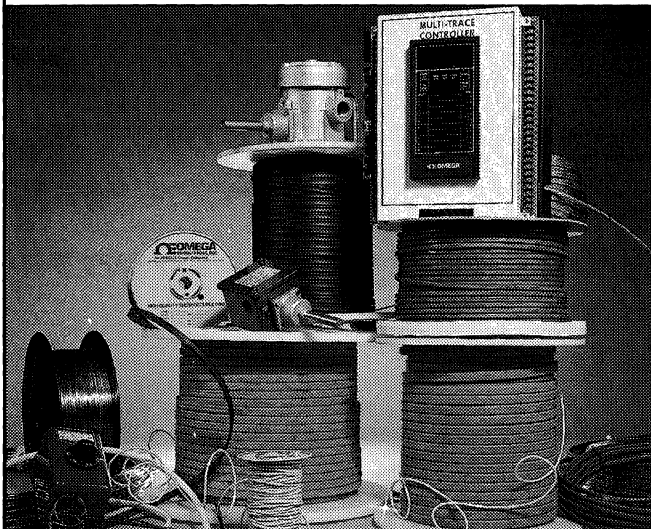


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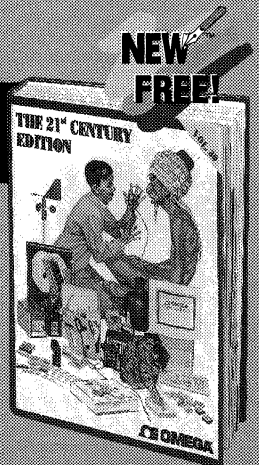
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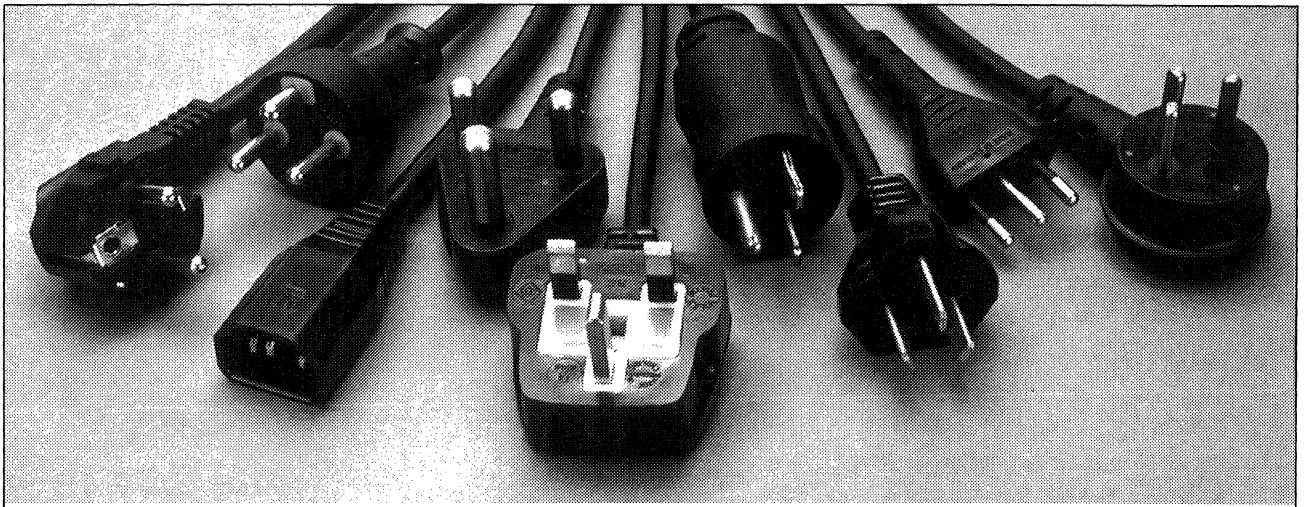
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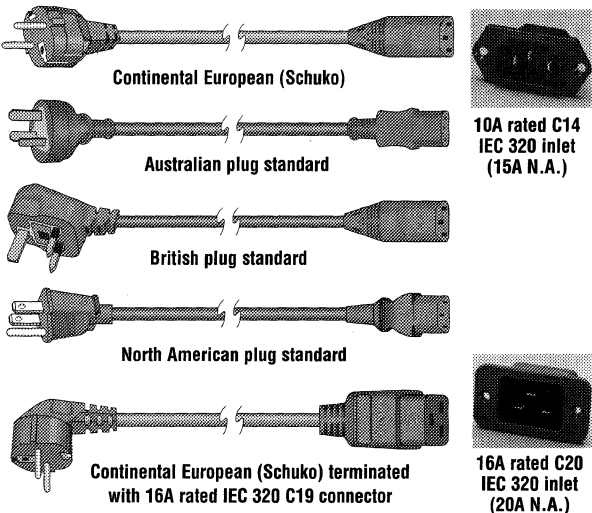
International Cords, Cordsets, and Cordage

Specifying International Power Connections

There are several important technical hurdles facing the designer of equipment that will be exported, some of which are:

- The product must be easily connected to foreign mains power outlets or wall sockets which vary from country to country.
- The product must work at foreign mains voltages and frequencies which range from 100-250VAC at 50 or 60Hz. European voltages are typically 230VAC at 50 Hz. (See our power inlet modules with integral voltage selectors in Section 2100.)
- The product must conform to foreign product safety standards as enforced by appropriate national standards and test agencies.

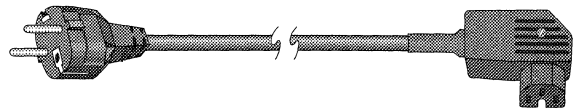
1. **Detachable connections based on IEC 320:** Benefit: Flexibility. The IEC 320 power inlet (installed on product) and connector (on cordset) allow the manufacturer to attach a cordset with the correct international or North American wall plug just before shipment. The IEC 320 standard covers several connector outlines, the most important of which are shown below:



2. **Power Supply Cords:** Usually specified when equipment requires more than 10A. For applications rated at 10-16 amps, 1.5mm² (equivalent to 14AWG) conductors are specified. For ratings above 16A, specify IEC 309 connectors and assemblies.



3. **Made-to-Order Cord & Cordset Assemblies:** We offer in-house, made-to-order assembly services when a standard model is not available or when special end preparations are required. **NOTE:** Panel Components only offers UL and CSA approvals for these assemblies



4. **Cordage:** When neither a molded power supply cord nor a cordset is suitable, international or North American cordage with appropriately sized conductors may be the best alternative.



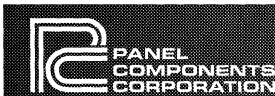
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able from stock. If you don't see what you need, call our Customer Service Department for assistance with custom lengths or colors.

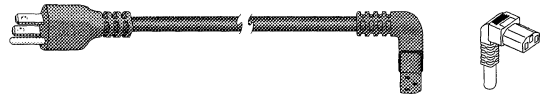
Note: SJT ("junior grade") cordage has a PVC jacket with greater wall thickness than SVT cordage.

Cordsets with T02 style** IEC 320 connector



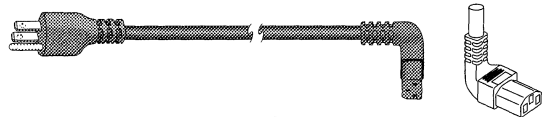
PART NUMBER	CORD RATINGS AND DESCRIPTION				CORDAGE SPECIFICATIONS				
	Current/Voltage Rating	Max. Temp.	Color	Length in feet	Conduct. Size (AWG)	Descript.	Wiring	Typical Stranding	Nominal O.D. (mm)
70405020234 2.34m (7.67')	10A/125VAC	60°C	BLACK	7.67	3x18AWG	SVT	N.A.*	41/34	6.22
70401020091 0.91m (3')	10A/125VAC	60°C	BLACK	3	3x18AWG	SJT	N.A.*	16/30	7.82
70401020183 1.83m (6')	10A/125VAC	60°C	BLACK	6	3x18AWG	SJT	N.A.*	16/30	7.82
70401020244 2.44m (8')	10A/125VAC	60°C	BLACK	8	3x18AWG	SJT	N.A.*	16/30	7.82
70401020274 2.74m (9')	10A/125VAC	60°C	BLACK	9	3x18AWG	SJT	N.A.*	16/30	7.82
70401020305 3.05m (10')	10A/125VAC	60°C	BLACK	10	3x18AWG	SJT	N.A.*	16/30	7.82
70403020031 0.31m (1')	13A/125VAC	60°C	BLACK	1	3x16AWG	SJT	N.A.*	26/30	8.51
70403020061 0.61m (2')	13A/125VAC	60°C	BLACK	2	3x16AWG	SJT	N.A.*	26/30	8.51
70403020092 0.92m (3')	13A/125VAC	60°C	BLACK	3	3x16AWG	SJT	N.A.*	26/30	8.51
70403020122 1.22m (4')	13A/125VAC	60°C	BLACK	4	3x16AWG	SJT	N.A.*	26/30	8.51
70403020153 1.53m (5')	13A/125VAC	60°C	BLACK	5	3x16AWG	SJT	N.A.*	26/30	8.51
70403020183 1.83m (6')	13A/125VAC	60°C	BLACK	6	3x16AWG	SJT	N.A.*	26/30	8.51
70403020214 2.14m (7')	13A/125VAC	60°C	BLACK	7	3x16AWG	SJT	N.A.*	26/30	8.51
70403020244 2.44m (8')	13A/125VAC	60°C	BLACK	8	3x16AWG	SJT	N.A.*	26/30	8.51
70403020305 3.05m (10')	13A/125VAC	60°C	BLACK	10	3x16AWG	SJT	N.A.*	26/30	8.51

Cordsets with T07 style** IEC 320 connector



PART NUMBER	CORD RATINGS AND DESCRIPTION				CORDAGE SPECIFICATIONS				
	Current/Voltage Rating	Max. Temp.	Color	Length in feet	Conduct. Size (AWG)	Descript.	Wiring	Typical Stranding	Nominal O.D. (mm)
70405070234 2.34m (7.67')	10A/125VAC	60°C	BLACK	7.67	3x18AWG	SVT	N.A.*	41/34	6.22
70403070183 1.83m (6')	13A/125VAC	60°C	BLACK	6	3x16AWG	SJT	N.A.*	26/30	8.51
70403070244 2.44m (8')	13A/125VAC	60°C	BLACK	8	3x16AWG	SJT	N.A.*	26/30	8.51
70403070305 3.05m (10')	13A/125VAC	60°C	BLACK	10	3x16AWG	SJT	N.A.*	26/30	8.51

Cordsets with T05 style** IEC 320 connector



PART NUMBER	CORD RATINGS AND DESCRIPTION				CORDAGE SPECIFICATIONS				
	Current/Voltage Rating	Max. Temp.	Color	Length in feet	Conduct. Size (AWG)	Descript.	Wiring	Typical Stranding	Nominal O.D. (mm)
70405050234 2.34m (7.67')	10A/125VAC	60°C	BLACK	7.67	3x18AWG	SVT	N.A.*	41/34	6.22
70403050183 1.83m (6')	13A/125VAC	60°C	BLACK	6	3x16AWG	SJT	N.A.*	26/30	8.51
70403050244 2.44m (8')	13A/125VAC	60°C	BLACK	8	3x16AWG	SJT	N.A.*	26/30	8.51
70403050305 3.05m (10')	13A/125VAC	60°C	BLACK	10	3x16AWG	SJT	N.A.*	26/30	8.51

*Conductor Wiring Color Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground). N.A.—North American: black (line), white (neutral), green (ground).

Note: cordage with international color coding also available.

** The T0... style numbers are not part of the IEC standard for connectors. These numbers were developed by Panel Components Corporation, for reference and clarification.

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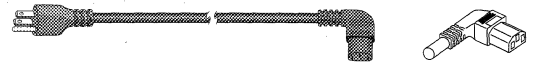


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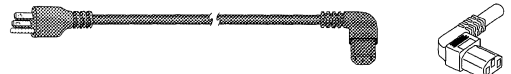
North American Cords, continued

Cordsets with T03 style IEC 320 connector**



PART NUMBER	CORD RATINGS AND DESCRIPTION				CORDAGE SPECIFICATIONS					
	Current/Voltage Rating	Max. Temp.	Color	Length in feet	Conduct. Size (AWG)	Descript.	Wiring	Typical Stranding	Nominal O.D. (mm)	
North American NEMA 5-15P plug with IEC 320 standard sheet C13 connector										
70405030234	2.34m (7.67')	10A/125V~	60°C	BLACK	7.67	3x18AWG	SVT	N.A.*	41/34	6.22
70403030031	0.31m (1')	13A/125V~	60°C	BLACK	1	3x16AWG	SJT	N.A.*	26/30	8.51
70403030061	0.61m (2')	13A/125V~	60°C	BLACK	2	3x16AWG	SJT	N.A.*	26/30	8.51
70403030092	0.92 (3')	13A/125V~	60°C	BLACK	3	3x16AWG	SJT	N.A.*	26/30	8.51
70403030122	1.22m (4')	13A/125V~	60°C	BLACK	4	3x16AWG	SJT	N.A.*	26/30	8.51
70403030153	1.53m (5')	13A/125V~	60°C	BLACK	5	3x16AWG	SJT	N.A.*	26/30	8.51
70403030183	1.83m (6')	13A/125V~	60°C	BLACK	6	3x16AWG	SJT	N.A.*	26/30	8.51
70403030214	2.14m (7')	13A/125V~	60°C	BLACK	7	3x16AWG	SJT	N.A.*	26/30	8.51
70403030244	2.44m (8')	13A/125V~	60°C	BLACK	8	3x16AWG	SJT	N.A.*	26/30	8.51
70403030305	3.05m (10')	13A/125V~	60°C	BLACK	10	3x16AWG	SJT	N.A.*	26/30	8.51

Cordsets with T06 style IEC 320 connector**



PART NUMBER	CORD RATINGS AND DESCRIPTION				CORDAGE SPECIFICATIONS					
	Current/Voltage Rating	Max. Temp.	Color	Length in feet	Conduct. Size (AWG)	Descript.	Wiring	Typical Stranding	Nominal O.D. (mm)	
North American NEMA 5-15P plug with IEC 320 standard sheet C13 connector										
70405060234	2.34m (7.67')	10A/125V~	60°C	BLACK	7.67	3x18AWG	SVT	N.A.*	41/34	6.22
70403060183	1.83m (6')	13A/125V~	60°C	BLACK	6	3x16AWG	SJT	N.A.*	26/30	8.51
70403060244	2.44m (8')	13A/125V~	60°C	BLACK	8	3x16AWG	SJT	N.A.*	26/30	8.51
70403060305	3.05m (10')	13A/125V~	60°C	BLACK	10	3x16AWG	SJT	N.A.*	26/30	8.51

Power Cords with 50/10mm jacket strip



Note: cordage with international color coding also available for molded power cords below.

PART NUMBER	CORD RATINGS AND DESCRIPTION				CORDAGE SPECIFICATIONS					
	Current/Voltage Rating	Max. Temp.	Color	Length in feet	Conduct. Size (AWG)	Descript.	Wiring	Typical Stranding	Nominal O.D. (mm)	
North American NEMA 5-15P plug; opposite end is stripped 50mm jacket/10mm conductor.										
70405000183	1.83m (6')	10A/125VAC	60°C	BLACK	6	3x18AWG	SVT	N.A.*	41/34	6.22
70405000244	2.44m (8')	10A/125VAC	60°C	BLACK	8	3x18AWG	SVT	N.A.*	41/34	6.22
70405000305	3.05m (10')	10A/125VAC	60°C	BLACK	10	3x18AWG	SVT	N.A.*	41/34	6.22
70401000183	1.83m (6')	10A/125VAC	60°C	BLACK	6	3x18AWG	SJT	N.A.*	16/30	7.82
70401000244	2.44m (8')	10A/125VAC	60°C	BLACK	8	3x18AWG	SJT	N.A.*	16/30	7.62
70401000305	3.05m (10')	10A/125VAC	60°C	BLACK	10	3x18AWG	SJT	N.A.*	16/30	7.82
70403000183	1.83m (6')	13A/125VAC	60°C	BLACK	6	3x16AWG	SJT	N.A.*	26/30	8.51
70403000244	2.44m (8')	13A/125VAC	60°C	BLACK	8	3x16AWG	SJT	N.A.*	26/30	8.51
70403000305	3.05m (10')	13A/125VAC	60°C	BLACK	10	3x16AWG	SJT	N.A.*	26/30	8.51
70404000183	1.83m (6')	18A/125VAC	60°C	BLACK	6	3x14AWG	SJT	N.A.*	41/30	9.40
70404000244	2.44m (8')	18A/125VAC	60°C	BLACK	8	3x14AWG	SJT	N.A.*	41/30	9.40
70404000305	3.05m (10')	18A/125VAC	60°C	BLACK	10	3x14AWG	SJT	N.A.*	41/30	9.40

*Conductor Wiring Color Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground). N.A.—North American: black (line), white (neutral), green (ground).

Note: cordage with international color coding also available.

** The T0... style numbers are not part of the IEC standard for connectors. These numbers were developed by Panel Components Corporation, for reference and clarification.

Note: Some 3 x 14 AWG cordsets also available from stock.

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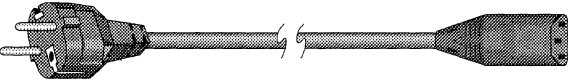

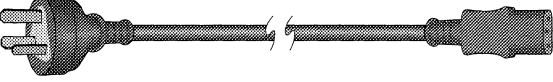


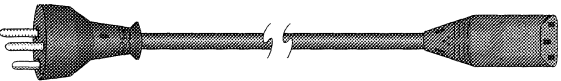


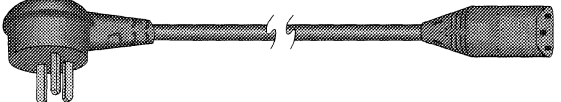

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Low Power Cordsets




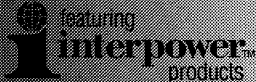
15A/120VAC North American
10A/230-250VAC International

Cordsets below are terminated with a detachable IEC 320 connector; connector locks—which secure cordset to IEC 320 inlet—are available for most models. See section 2100 for international sockets and rewirable plugs. In-house, made-to-order assembly services available.

CORDSETS							Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length ±0.1m (±.9")	Recommended connector lock	IEC 320 Inlet (10A INT'L/ 15A N.A.)
#86511052: CONTINENTAL EUROPE (German "Schuko") 								10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./OD 8301213: 6.3mm sold./OD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVFG1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#86516050: AUSTRALIA/NEW ZEALAND 							SECV	10A	250 VAC	75°C	BLK	2.5m (8.2')	—	#8301211: solder tabs 8301212: 4.8mm sold./OD 8301213: 6.3mm sold./OD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVFG1.0	INT'L*	32/0.2mm	V76419	7.0mm								
#86552007: UNITED KINGDOM/IRELAND  Plug contains BS 1362 13-amp fuse								10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./OD 8301213: 6.3mm sold./OD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVFG1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#86536041: DENMARK 								10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./OD 8301213: 6.3mm sold./OD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVFG1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#86559011: INDIA/SOUTH AFRICA 							None required	10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./OD 8301213: 6.3mm sold./OD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVFG1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#86558011: ISRAEL 								10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./OD 8301213: 6.3mm sold./OD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVFG1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								

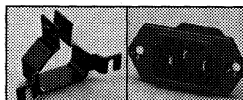
* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground); N.A.—black (line), white (neutral), green (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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Low Power Cordsets, continued

All items normally available from stock. No minimum order requirements.



CORDSETS							Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length ±0.1m (3.9')	Connector lock	IEC 320 Inlet (10A Int'l./15A N.A.)
#86531031: ITALY 								10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVf3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#86589010: JAPAN 								15A	125 VAC	60°C	BLK	2.4m (8')	—	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Desc.	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x2.00mm ²	FT-VCTF	N.A.*	37/0.26mm	12-1367 Yokita 300V	8.5mm								
#70401020244: NORTH AMERICA Utilizes SJT cordage								10A	125 VAC	60°C	BLK	2.4m (8')	85910060	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	O.D.								
	3x18AWG	SJT	N.A.*	16/30AWG	—	308"								
#86610301: NORTH AMERICA HOSPITAL GRADE Note: Plug is clear								10A	125 VAC	60°C	Gray	3m (10')	—	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x18AWG	SJT	INT'L*	16/30AWG	—	0.330"								
#86515050: SWITZERLAND 								10A	250 VAC	70°C	BLK	2.5m (8.2')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVf3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#86525051: IEC 320 CORD—INT'L CORDAGE Ready for installation of international plug—see Section 2100 for plugs								10A	250 VAC	70°C	BLK	3.0m (10')	#85910010	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVf3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm								
#70010020305: IEC 320 CORD—N.A. CORDAGE Ready for installation of North American plug—see Section 2100 for plug								10A	250 VAC	60°C	BLK	3m (10')	#85910060	#8301211: solder tabs 8301212: 4.8mm sold./QD 8301213: 6.3mm sold./QD
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	O.D.								
	3x18AWG	SJT	INT'L*	16/30AWG	—	7.8mm								

* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground); N.A.—black (line), white (neutral), green (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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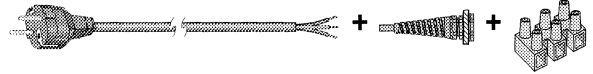


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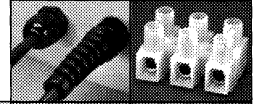
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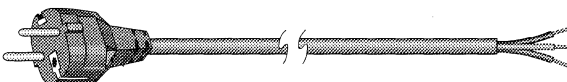
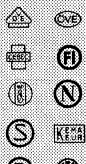
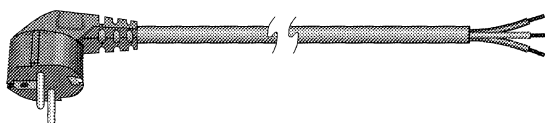

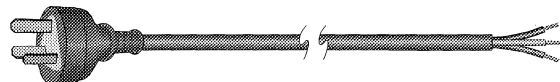

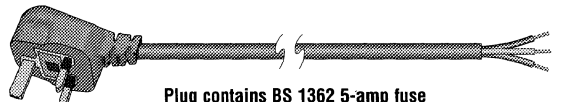

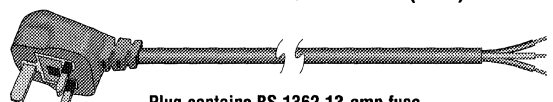

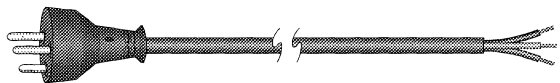

Low Power Cords

15A/120VAC North American 10A/230-250VAC International



Standard international power cords. Cable strain reliefs and terminal blocks are available. See section 2100 for international sockets and rewirable plugs. In-house, made-to-order assembly services available.



CORDS								Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length ±0.1m (3.3')	Recommended strain relief	Recommended terminal block
#86517030: CONTINENTAL EUROPE (GERMAN "SCHUKO") 									10A	250 VAC	70°C	BLK	2.5m (8.2')	#85820520 w/o bend rel. #85820020 or 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.									
	3x1.00mm ²	H05VVF3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm									
#86519030: CONTINENTAL EUROPE—ANGLED 									10A	250 VAC	70°C	BLK	2.5m (8.2')	#85820520 w/o bend rel. #85820020 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.									
	3x1.00mm ²	H05VVF3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm									
#86522050: AUSTRALIA/NEW ZEALAND 									10A	250 VAC	75°C	BLK	2.5m (8.2')	#85820520 w/o bend rel. #85820020 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.									
	3x1.00mm ²	H05VVF3G1.0	INT'L*	32/0.2mm	V76419	7.0mm									
#86590012: UNITED KINGDOM/IRELAND (5A)  <p>Plug contains BS 1362 5-amp fuse</p>									5A	250 VAC	70°C	BLK	3.0m (10')	#85820520 w/o bend rel. #85820020 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.									
	3x0.75mm ²	H05VVF3G0.75	INT'L*	24/0.2mm	<HAR>	6.8mm									
#86554004: UNITED KINGDOM/IRELAND (10A)  <p>Plug contains BS 1362 13-amp fuse</p>									10A	250 VAC	70°C	BLK	2.5m (8.2')	#85820520 w/o bend rel. #85820020 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.									
	3x1.00mm ²	H05VVF3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm									
#86539030: DENMARK 									10A	250 VAC	70°C	BLK	2.5m (8.2')	#85820520 w/o bend rel. #85820020 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ. Stranding	Marking	Nom. O.D.									
	3x1.00mm ²	H05VVF3G1.0	INT'L*	32/0.2mm	<HAR>	7.0mm									

* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground); N.A.—black (line), white (neutral), green (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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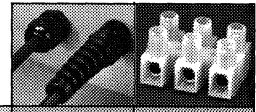


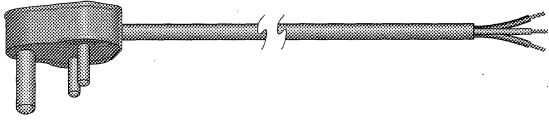
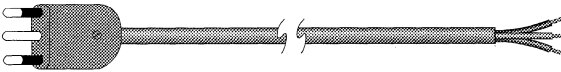





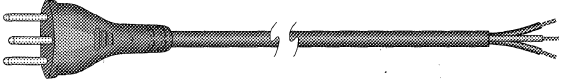
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Low Power Cords, continued



No minimum order requirements.



CORDS								Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length ±0.1m (±0.9')	Strain relief	Terminal block
#98010763.20030.1: INDIA (made-to-order assembly) 								(None required)	10A	250 VAC	70°C	BLK	Call	#85820520 w/o bend rel. #85820020 or 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVf3G1.0	INT'L*	—	—	<HAR>	—								
#98010771.20030.1: ITALY (made-to-order assembly) 								Plug, IMQ (Harmonized cordage)	10A	250 VAC	70°C	BLK	Call	#85820520 w/o bend rel. #85820020 or 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVf3G1.0	INT'L*	—	—	<HAR>	—								
#70410000305: NORTH AMERICA (10A)  <p>Utilizes SJT cordage</p>								UL, SF	10A	125 VAC	60°C	BLK	10' (3m)	#85820530 w/o bend rel. #85020130, #85820240 or #85820340 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	O.D.								
	3x18AWG	SJT	INT'L*	—	16/30AWG	—	308*								
#86610400: NORTH AMERICA—HOSPITAL GRADE   <p>Note: Plug is clear</p>								UL, SF	10A	125 VAC	60°C	Gray	10' (3m)	Call for gray	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x18AWG	SJT	INT'L*	—	16/30AWG	—	0.330*								
#70403000305: NORTH AMERICA (13A) 								UL, SF	13A	125 VAC	60°C	BLK	10' (3m)	#85820530 w/o bend rel. #85020130, #85820240 or #85820340 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x18AWG	SJT	N.A.*	—	26/30AWG	—	0.370*								
#86610200: NORTH AMERICA, for use in 250V circuits 								UL, SF	10A	250 VAC	60°C	BLK	10' (3m)	#85820530 w/o bend rel. #85020130, #85820240 or #85820340 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x18AWG	SJT	N.A.*	—	16/30AWG	—	0.335*								
#86521040: SWITZERLAND 								S	10A	250 VAC	70°C	BLK	2.5m (8.2')	#85820520 w/o bend rel. #85820020 or 85820120 w/ bend rel.	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.00mm ²	H05VVf3G1.0	INT'L*	—	32/0.2mm	<HAR>	7.0mm								

* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground); N.A.—black (line), white (neutral), green (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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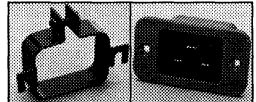
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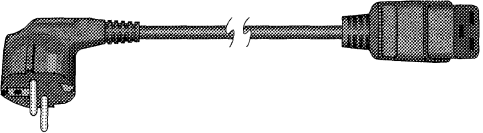

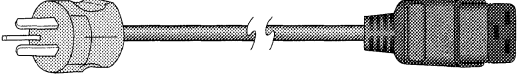
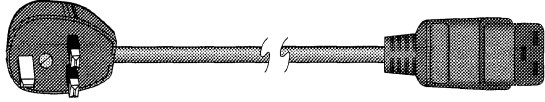
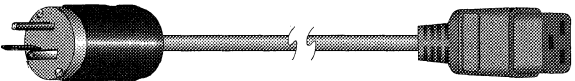

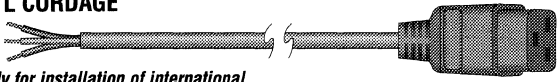

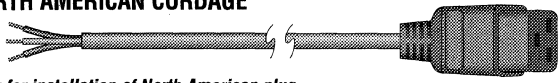

Medium Power International Cordsets

15-20A/120-230VAC North America
10-16A/230-250VAC International



The cords below feature a molded on IEC 320 C19 connector rated at 16A for international models (20A North America.) The plug on cordset model #86595000 is molded on, but plugs on the other cordsets are assembled on to IEC 320 cords #86591000 or #86591010.



CORDSETS		Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length Std. 7m (23.0')	Recommended connector lock	IEC 320 inlet (16A int'l./ 20A N.A.)
#86595000: CONTINENTAL EUROPE (GERMAN "SCHUKO") 			16A	250 VAC	70°C	BLK	2.5m (8')	#85910051	#83011340
#98010450.91000.2: AUSTRALIA/N.Z. (made-to-order assembly) 		EANSW (plug & connector only)	15A	250 VAC	60°C	BLK	8' Max.	#85910051	#83011340
#98040010.91000.2: U.K./IRELAND (made-to-order assembly) 		Plug, ASTA (Harmonized cordage)	13A	250 VAC	60°C	BLK	8' Max.	#85910051	#83011340
#98030120.91010.2: NORTH AMERICA (made-to-order assembly) 			20A	125 VAC 250 VAC	60°C	BLK	8' Max.	#85910051	#83011340
#86591000: IEC 320 CONNECTOR POWER CORD—INT'L CORDAGE  Ready for installation of international plug—see Section 2100 for plugs			16A	250 VAC	60°C	BLK	2.5m (8')	#85910051	#83011340
#86591010: IEC 320 CONNECTOR POWER CORD—NORTH AMERICAN CORDAGE  Ready for installation of North American plug—see Section 2100 for plug			20A	250 VAC	60°C	BLK	2.5m (8')	#85910051	#83011340

* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground); N.A.—black (line), white (neutral), green (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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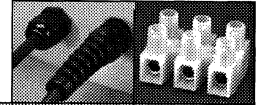
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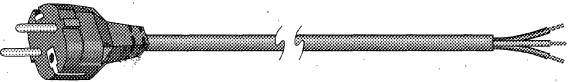

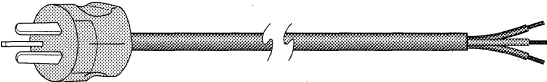
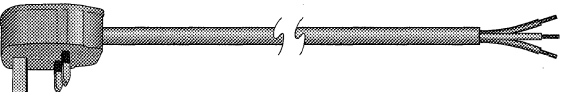
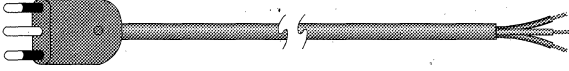

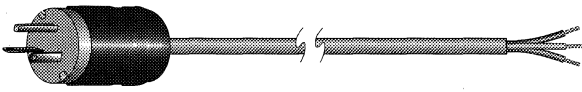


Medium Power International Cords

15-20A/120-230VAC N.A.
10-16A/230-250VAC International





Standard international power cords and made-to-order assemblies. Cable strain reliefs and terminal blocks are available. See section 2100 for international sockets. In-house, made-to-order assembly services available for most international or North American plug configurations.



CORDS								Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length ±0.1m (3.9")	Recommended strain relief	Recommended terminal block
#86518030: CONTINENTAL EUROPE (GERMAN "SCHUKO") 									16A	250 VAC	70°C	BLK	2.5m (8')	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.50mm ²	H05VVF3G1.5	INT'L*	—	29/0.25mm	<HAR>	7.4-9.4mm								
#98010713.20040.1: AUSTRALIA/NEW ZEALAND (assembly) 								Plug, EANSW (Harmonized cordage)	15A	250 VAC	70°C	White with Black Cordage	Call	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.50mm ²	H05VVF3G1.5	INT'L*	—	—	<HAR>	7.4-9.4mm								
#98040011.20040.1: U.K./IRELAND (assembly)  <p>Plug contains BS 1362 13-amp fuse</p>								Plug, ASTA (Harmonized cordage)	13A	250 VAC	70°C	Black or White Plug	Call	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.50mm ²	H05VVF3G1.5	INT'L*	—	—	<HAR>	7.4-9.4mm								
#98010771.20040.1: ITALY (assembly) 								 Plug, IMQ (Harmonized cordage)	10A	250 VAC	70°C	BLK	Call	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.50mm ²	H05VVF3G1.5	INT'L*	—	—	<HAR>	7.4-9.4mm								
#98030120.10610.1: NORTH AMERICA (20A/125V) 									20A	125 VAC	60°C	BLK	Call	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x12AWG	SOW	N.A.*	—	—	SOW-SO	15.5mm								
#87510020: IEC 309 POWER CORD WITH INT'L CORDAGE  <p>UL & CSA assemblies are also available!</p>								Plug, VDE (Harmonized cordage)	16A	230 VAC	—	Blue with Black Cordage	2.5m (8')	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.50mm ²	H05VVF3G1.5	INT'L	—	—	<HAR>	7.4-9.4mm								

* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground); N.A.—black (line), white (neutral), green (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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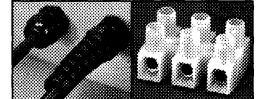
High Power Cords





16-32A/230-250VAC/Single Phase
32A-125A/380-415VAC/Three Phase



IEC 309 connection system is recommended for North American and international high power connections above 16A. The connectors below carry UL, CSA, and VDE approvals, but differing North American and international cordage standards require AWG cordage for assemblies used in North America and Harmonized cordage for assemblies being shipped overseas (see first page of this section for more information on differences in the cordage types).



The cordsets below are configured with Harmonized cordage; we also offer assemblies with AWG cordage.



CORDS								Approvals	Current Rating	Voltage Rating	Max. Temp.	Color	Length 40.1m (13.1')	Recommended strain relief	Recommended terminal block
#87510020: IEC 309 cord—16A, single phase  PVC jacketed cordage								Plug, VDE (Harmonized cordage)	16A single phase	230 VAC	—	Blue with Black Cordage	2.5m (8')	Call	#82010010
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x1.50mm ²	H05VVf3G1.5	INT'L*	—	—	<HAR>	7.4-9.4mm								
#87520050: IEC 309 cord—32A, single phase  rubber jacketed cordage								Plug, VDE (Harmonized cordage)	32A single phase	230 VAC	—	Blue, Black cordage	2.5m (8')	Call	—
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	3x4.00mm ²	H07RNF3G4.00	INT'L*	—	—	<HAR>	12.7-16.2mm								
#87530020: IEC 309 cord—32A, three phase  rubber jacketed cordage								Plug, VDE (Harmonized cordage)	32A three phase	400 VAC	—	Red, Black cordage	2.5m (8')	Call	#82010071
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	5x6.00mm ²	H07RNF5G6.00	INT'L	—	—	<HAR>	18.0-24.5mm								
#87540020: IEC 309 cord—63A, three phase  rubber jacketed cordage								Plug, VDE (Harmonized cordage)	63A three phase	400 VAC	—	Red, Black cordage	2.5m (8')	Call	#82010100
CORDAGE SPECIFICATIONS*	Conductor Size	Description	Wiring	Typ.	Stranding	Marking	Nom. O.D.								
	5x10.00mm ²	H07RNF5G10.0	INT'L	—	—	<HAR>	24.0-30.5mm								

* Conductor Wiring Code: INT'L—International: brown (line), blue (neutral), green/yellow (ground)
 Marking: International Harmonized cordage may be marked on outer or inner conductor, or an identifying tracer thread can be incorporated with conductors.

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International & North American Cordage

Products being shipped to Europe—and almost everywhere outside of North America—must utilize Harmonized cordage manufactured to CENELEC standard HD-21 (for PVC jacketed cordage) or HD-22 (rubber jacketed). Harmonized cordage differs from North American AWG cordage in several ways, the most important of which are:

Conductor color coding:

Conductor	Harmonized	North Amer. AWG
Line	Brown	Black
Neutral	Blue	White
Ground	Green-Yellow	Green

Metric and AWG: Harmonized wire sizes are expressed in metric units; North American wire sizes are expressed in AWG). Here is how they compare:



AWG	Max. Current	Closest Metric Equiv.	Max. Current
18 AWG	10A	0.75mm ²	6A
16 AWG	13A	1.00mm ²	10A
14 AWG	18A	1.50mm ²	16A

Constructional differences: Tensile strength of UL 62 cordage is typically greater than similar sizes of Harmonized cordage. Harmonized cordage may have textile threads in the construction which are used to indicate the manufacturer of the cordage.

All items normally available from stock. No minimum order requirements.



International Harmonized Cordage



Approved by VDE to HD-21 (PVC jacketed cordage) or HD-22 (rubber jacketed cordage). Most cordage is also sold by the reel: contact us for more information.	Part No.	Conductor Size	Jacket Material	Cur. Rat.	Volt. Rating	Temperature Rating	O.D. (mm)	Color	HD-21 or HD-22 Code*
3 Conductors  International color coding: Brown (line), Blue (neutral), Green/Yellow (Ground)	86020020	3x0.75mm ²	PVC	6A	300/500V	-40°C to +70°C	6.0-7.6	BLK	H05VVF3G0.75
	86020030	3x1.00mm ²	PVC	10A	300/500V	-40°C to +70°C	6.3-8.0	BLK	H05VVF3G1.00
	86020040	3x1.50mm ²	PVC	16A	300/500V	-40°C to +70°C	7.4-9.4	BLK	H05VVF3G1.50
	86020050	3x2.50mm ²	PVC	25A	300/500V	-40°C to +70°C	9.2-11.4	BLK	H05VVF3G2.50
	86020300	3x1.50mm ²	Rubber	16A	450/750V	-30°C to +60°C	9.2-11.9	BLK	H07RNF3G1.50
	86020310	3x2.50mm ²	Rubber	25A	450/750V	-30°C to +60°C	10.9-14.0	BLK	H07RNF3G2.50
NEW! Shielded Cable** Color coding: Brown (line), Blue (neutral), Green/Yellow (Ground)	86021030	3x1.00mm ²	PVC	10A	300/500V	-40°C to +70°C	6.3-8.0	BLK	A05VVF3G1.0
	5 Conductors (3 phase applications)  International color coding: Brown (line), Blue (neutral), Green/Yellow (Ground), plus two black conductors	86020210	5x2.50mm ²	PVC	20A	300/500V	-40°C to +70°C	11.2-13.9	BLK	H05VVF5G2.50
86020410		5x2.50mm ²	Rubber	26A	450/750V	-30°C to +60°C	13.3-17.0	BLK	H07RNF5G2.50
86020420		5x4.00mm ²	Rubber	34A	450/750V	-30°C to +60°C	16.0-19.5	BLK	H07RNF5G4.00
86020430		5x6.00mm ²	Rubber	44A	450/750V	-30°C to +60°C	18.0-24.5	BLK	H07RNF5G6.00
86020440		5x10.0mm ²	Rubber	61A	450/750V	-30°C to +60°C	24.0-30.5	BLK	H07RNF5G10.0
86010490		5x16.0mm ²	Rubber	82A	450/750V	-30°C to +60°C	26.4-33.3	BLK	H07RNF5G16.0
86020500	5x35.0mm ²	Rubber	135A	450/750V	-30°C to +60°C	36.8-45.8	BLK	H07RNF5G35.0	



*According to HD-21 and HD-22, HAR or standards agency marks must be displayed on outer jacket or conductor jacket. Due to customer requests, Panel Component's cordage, whenever possible, will have <HAR> marks on the outer jacket.

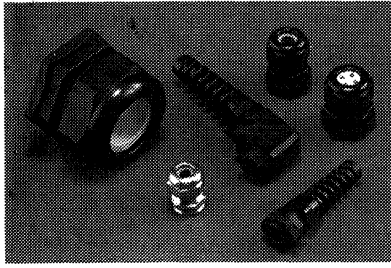
North American AWG Cordage

Note: This cordage is UL listed and CSA certified	Part No.	Conductor Size	Jacket Material	Cur. Rat.	Volt. Rating	Temperature Rating	O.D. (inches)	Color	Cordage Type
3 Conductors  Color coding: Black (line), White (neutral), Green (Ground)	86010450	3x18AWG	PVC	10A	300V	60°C	.325" nom.	BLK	SJT
	86010681	3x18AWG	PVC	10A	300V	60°C	.260" nom.	BLK	SVT
	86010460	3x16AWG	PVC	13A	300V	60°C	.345" nom.	BLK	SJT
	86010470	3x14AWG	PVC	18A	300V	60°C	.378" nom.	BLK	SJT
	86010480	3x12AWG	PVC	25A	300V	60°C	.445" nom.	BLK	SJT
	86010600	3x14AWG	Rubber	18A	600V	-35°C/+90°C	.540" nom.	BLK	SOW-SO
	86010610	3x12AWG	Rubber	25A	600V	-35°C/+90°C	.610" nom.	BLK	SOW-SO
	86010620	3x10AWG	Rubber	30A	600V	-35°C/+90°C	.670" nom.	BLK	SOW-SO
Shielded Cable** Color coding: Brown (line), Blue (neutral), Green/Yellow (Ground)	86024000	3x18 AWG	PVC	10A	300V	60°C	.345" nom.	BLK	SJT
	86024010	3x16 AWG	PVC	13A	300V	60°C	.345" nom.	BLK	SJT
5 Conductors (3 phase applications)  Color coding: Black (line), White (neutral), Green (Ground), 4th conductor = red, 5th conductor = orange	86010661	5x10AWG	Rubber	20A	600V	-35°C/90°C	.790" nom.	BLK	SO/SOW
	86010670	5x8AWG	Rubber	28A	600V	-40°C/90°C	1.05" nom.	BLK	SO/SOW
	86010690	5x4AWG	Rubber	48A	600V	-35°C/90°C	1.43" nom.	BLK	SEO
	86010700	5x2AWG	Rubber	64A	600V	-35°C/90°C	1.42" nom.	BLK	SOW-SO

**Note: The wiring of the North American and International shielded cordage utilizes international color coding, however, the cordage is not harmonized. North American shielded cordage requires approvals from UL and CSA.

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Interpower™ Strain Reliefs

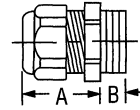
North American and international strain reliefs from Panel Components provide a liquid-tight seal on the power cord entry and, at the same time, provide extra protection to your power cords. Strain reliefs extend cord life and reinforce the cord connection to your equipment. Panel Components' family of strain reliefs includes a variety of styles

(dome, flex, & angles); materials (PVC and brass); and accommodates cable diameters ranging from .08 – 1.73". PG to NPT adapters also available. The products on the following pages represent only a sample of the strain reliefs available from stock. Call our Customer Service Department at **800-409-0081** for more information.



Liquid Strain Relief Fittings with Dome

Material: Polyamide self-extinguishing; Protection: IP 68;



Part Number	Cordage Diameter	Thread Type	Clearance Hole	Body (A) Length	Thread (B) Length	Wrenching Flats	Torque Settings
85820510	.11 — .26"	PG 7	0.49	0.79	0.31	0.59	11 inch lbs.
85820610	.08 — .20"	PG 7	0.49	0.79	0.31	0.59	11 inch lbs.
85820520	.16 — .31"	PG 9	0.60	0.87	0.31	0.75	12 inch lbs.
85820620	.08 — .24"	PG 9	0.60	0.87	0.31	0.75	12 inch lbs.
85820420	.16 — .31"	3/8" NPT	0.68	0.87	0.59	0.87/0.75	12 inch lbs.
85820720	.08 — .24"	3/8" NPT	0.68	0.87	0.59	0.87/0.75	12 inch lbs.
85820530	.20 — .39"	PG 11	0.73	0.94	0.31	0.87	15 inch lbs.
85820630	.11 — .28"	PG 11	0.73	0.94	0.31	0.87	15 inch lbs.
85820540	.24 — .47"	PG 13	0.80	1.06	0.35	0.94	19 inch lbs.
85820640	.20 — .35"	PG 13	0.80	1.06	0.35	0.94	19 inch lbs.
85820440	.24 — .47"	1/2" NPT	0.83	1.06	0.51	0.94	19 inch lbs.
85820740	.20 — .35"	1/2" NPT	0.83	1.06	0.51	0.94	19 inch lbs.
85820450	.39 — .56"	1/2" NPT	0.83	1.10	0.51	1.06	19 inch lbs.
85820750	.28 — .47"	1/2" NPT	0.83	1.10	0.51	1.06	19 inch lbs.
85820550	.39 — .56"	PG 16	0.88	1.10	0.39	1.06	31 inch lbs.
85820650	.28 — .47"	PG 16	0.88	1.10	0.39	1.06	31 inch lbs.
85820560	.51 — .71"	PG 21	1.12	1.18	0.43	1.30	39 inch lbs.
85820660	.35 — .63"	PG 21	1.12	1.18	0.43	1.30	39 inch lbs.
85820460	.51 — .71"	3/4" NPT	1.05	1.18	0.51	1.30	39 inch lbs.
85820760	.35 — .63"	3/4" NPT	1.05	1.18	0.51	1.30	39 inch lbs.
85820570	.71 — .98"	PG 29	1.47	1.50	0.43	1.65	54 inch lbs.
85820670	.51 — .79"	PG 29	1.47	1.50	0.43	1.65	54 inch lbs.
85820470	.71 — .98"	1" NPT	1.35	1.50	0.75	1.65	54 inch lbs.
85820770	.51 — .79"	1" NPT	1.35	1.50	0.75	1.65	54 inch lbs.
85820870	.71 — .98"	1 1/4" NPT	1.65	1.50	0.63	1.81/1.65	65 inch lbs.
85820970	.51 — .97"	1 1/4" NPT	1.65	1.50	0.63	1.81/1.65	65 inch lbs.
85820580	.86 — 1.26"	PG 36	1.85	1.77	0.51	2.09	65 inch lbs.
85820680	.79 — 1.02"	PG 36	1.85	1.77	0.51	2.09	65 inch lbs.
85820480	.86 — 1.26"	1 1/2" NPT	1.92	1.77	0.79	2.09	65 inch lbs.
85820780	.79 — 1.02"	1 1/2" NPT	1.92	1.77	0.79	2.09	65 inch lbs.
85820590	1.26 — 1.50"	PG 42	2.13	1.85	0.51	2.36	95 inch lbs.
85820690	.98 — 1.22"	PG 42	2.13	1.85	0.51	2.36	95 inch lbs.
85820600	1.45 — 1.73"	PG 48	2.34	1.85	0.55	2.56	107 inch lbs.
85820700	1.14 — 1.38"	PG 48	2.34	1.85	0.55	2.56	107 inch lbs.

Dimensions are in inches

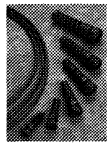
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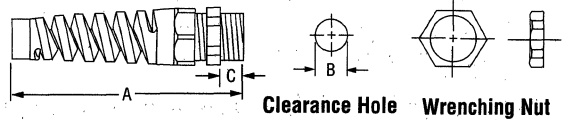
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Interpower™ Strain Reliefs, continued

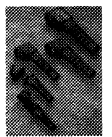


Liquid Tight Strain Relief Fittings, Flex Style

Material: Polyamide self-extinguishing
Protection: IP 68

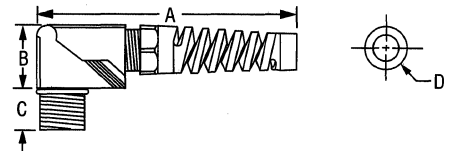


Part Number	Cordage Diameter	Thread Size	Clearance Hole (B)	Body Length (A)	Thread Length (C)	Wrenching Flats	Torque Settings
85820020	.16 — .31"	3/8" NPT	0.68	2.32	0.59	0.87/0.75	12 inch lbs.
85820040	.24 — .47"	1/2" NPT	0.83	3.19	0.51	0.94	19 inch lbs.
85820050	.39 — .56"	1/2" NPT	0.83	3.66	0.51	1.06	19 inch lbs.
85820060	.51 — .71"	3/4" NPT	1.05	4.37	0.51	1.30	39 inch lbs.
85820110	.11 — .26"	PG7	0.49	1.93	0.31	0.59	11 inch lbs.
85820120	.16 — .31"	PG9	0.60	2.32	0.31	0.75	12 inch lbs.
85820130	.20 — .39"	PG11	0.73	2.80	0.31	0.87	15 inch lbs.
85820140	.24 — .47"	PG13	0.80	3.19	0.35	0.94	19 inch lbs.
85820150	.39 — .56"	PG16	0.88	3.66	0.39	1.06	31 inch lbs.
85820160	.51 — .71"	PG21	1.12	4.37	0.43	1.30	39 inch lbs.
85820210	.08 — .20"	PG7	0.49	1.93	0.31	0.59	11 inch lbs.
85820220	.08 — .24"	PG9	0.60	2.32	0.31	0.75	12 inch lbs.
85820230	.11 — .28"	PG11	0.73	2.80	0.31	0.87	15 inch lbs.
85820240	.20 — .35"	PG13	0.80	3.19	0.35	0.94	19 inch lbs.
85820250	.28 — .47"	PG16	0.88	3.66	0.39	1.06	31 inch lbs.
85820260	.35 — .63"	PG21	1.12	4.37	0.43	1.30	39 inch lbs.
85820320	.08 — .24"	3/8" NPT	0.68	2.32	0.59	0.87/0.75	12 inch lbs.
85820340	.20 — .35"	1/2" NPT	0.83	3.19	0.51	0.94	19 inch lbs.
85820350	.28 — .47"	1/2" NPT	0.83	3.66	0.51	1.06	19 inch lbs.
85820360	.35 — .63"	3/4" NPT	1.05	4.37	0.51	1.30	39 inch lbs.



90° Liquid Tight Strain Relief Snap Elbow with Flex Nut

Material: Polyamide self-extinguishing
Protection: IP 68



Part Number	Cordage Diameter	Thread Type	Clearance Hole (D)	Body Length (A)	Height (B)	Thread Length (C)	Wrenching Flats
85822020	.16 — .31"	3/8" NPT	0.68	3.35	0.91	0.59	0.75
85822040	.24 — .47"	1/2" NPT	0.83	4.41	1.20	0.51	0.94
85822060	.35 — .63"	3/4" NPT	1.05	6.10	1.57	0.51	1.30
85822120	.16 — .31"	PG9	0.60	3.35	0.91	0.31	0.75
85822130	.20 — .39"	PG11	0.73	3.86	1.06	0.31	0.87
85822140	.24 — .47"	PG13	0.80	4.41	1.20	0.35	0.94
85822150	.39 — .56"	PG16	0.88	4.92	1.28	0.39	1.06
85822160	.51 — .71"	PG21	1.12	6.10	1.57	0.43	1.30
85822220	.08 — .24"	PG9	0.60	3.35	0.91	0.31	0.75
85822230	.11 — .28"	PG11	0.73	3.86	1.06	0.31	0.87
85822240	.20 — .35"	PG13	0.80	4.41	1.20	0.35	0.94
85822250	.28 — .47"	PG16	0.88	4.92	1.28	0.39	1.06
85822260	.35 — .63"	PG21	1.12	6.10	1.57	0.43	1.30
85822320	.08 — .24"	3/8" NPT	0.68	3.35	0.91	0.59	0.75
85822340	.20 — .35"	1/2" NPT	0.83	4.41	1.20	0.51	0.94
85822350	.28 — .47"	1/2" NPT	0.83	5.13	1.28	0.51	1.06
85822360	.35 — .63"	3/4" NPT	1.05	6.10	1.57	0.51	1.30

Dimensions are in inches

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The Wire of the Future Here Today!

MHW MICROMINIATURE HOOK-UP WIRE

Using the best insulation known to man and capitalizing on experience in the insulating of Teflon[®], dating back to 1951, Phoenix Wire has developed a Multi-layer thin wall wire to aid in miniaturization.

• 300 Volt Service • Operating temperature - 90° to + 260°C • Silver Plated Conductor • Multi-layer TFE-Teflon[®] insulation insures uniformity, quality, and concentricity • Extreme Flexibility; long lengths • No danger from Soldering Irons • Chemically Inert — Weather resistant, non-flammable; zero moisture absorption; natural lubricity • Available in 10 Bright colors • Space & Weight savings invaluable in miniaturization programs • Parallel flat, triangular, and twisted multi-conductor cables available.

Catalog Number	AWG Size	Bare Conductor Diameter	Stranding	Insulation Wall Thickness		Insulated Wire Diameter		
				Minimum	Maximum	Minimum	Nominal	Maximum
30738MHW	30	.0120	7/38	.0029	.0039	.0178	.0188	.0198
301040MHW	30	.0114	10/40	.0029	.0039	.0172	.0182	.0192
301942MHW	30	.0125	19/42	.0029	.0039	.0183	.0193	.0203
302544MHW	30	.0115	25/44	.0029	.0039	.0173	.0183	.0193
304046MHW	30	.0117	40/46	.0029	.0039	.0175	.0185	.0195
32740MHW	32	.0093	7/40	.0025	.0035	.0143	.0153	.0163
321944MHW	32	.0100	19/44	.0022	.0036	.0154	.0163	.0172
322546MHW	32	.0093	25/46	.0025	.0035	.0143	.0153	.0163
326450MHW	32	.0093	64/50*	.0025	.0035	.0143	.0153	.0163
34540MHW	34	.0078	5/40	.0025	.0032	.0128	.0135	.0142
34742MHW	34	.0075	7/42	.0024	.0030	.0123	.0129	.0135
341044MHW	34	.0073	10/44	.0022	.0028	.0121	.0127	.0133
341646MHW	34	.0074	16/46	.0023	.0029	.0122	.0128	.0134
341946MHW	34	.0080	19/46	.0024	.0032	.0129	.0137	.0145
344050MHW	34	.0073	40/50*	.0022	.0028	.0121	.0127	.0133
36340MHW	36	.0061	3/40	.0015	.0025	.0093	.0102	.0111
36744MHW	36	.0060	7/44	.0015	.0025	.0092	.0101	.0110
361046MHW	36	.0059	10/46	.0015	.0025	.0091	.0100	.0109
362550MHW	36	.0058	25/50*	.0015	.0025	.0090	.0099	.0109
38444MHW	38	.0046	4/44	.0017	.0021	.0080	.0084	.0088
38746MHW	38	.0048	7/46	.0017	.0021	.0082	.0086	.0090
381650MHW	38	.0046	16/50*	.0017	.0021	.0080	.0084	.0088
401050MHW	40	.0037	10/50*	.0015	.0017	.0067	.0069	.0071
42650MHW	42	.0031	6/50*	.0013	.0015	.0057	.0059	.0061

*Bare Copper Conductor

TDQ SUBMINIATURE LEAD WIRE

For greater economy, but still retaining all the features of our MHW (with the exception of less flexibility) try our TDQ Wire. Bare Copper or Silver Plated Copper Conductor standard. Conductor of your choice may also be used.

Catalog Number	AWG Size	Bare Conductor Diameter	Insulation Wall Thickness		Insulated Wire Diameter		
			Minimum	Maximum	Minimum	Nominal	Maximum
24TDQ	24	.0201	.0035	.0049	.0269	.0285	.0301
26TDQ	26	.0159	.0032	.0045	.0222	.0236	.0251
28TDQ	28	.0126	.0029	.0039	.0183	.0194	.0206
30TDQ	30	.0100	.0027	.0036	.0153	.0163	.0173
32TDQ	32	.0080	.0025	.0032	.0129	.0137	.0145
34TDQ	34	.0063	.0021	.0027	.0104	.0111	.0118
36TDQ	36	.0050	.0019	.0023	.0087	.0092	.0097
38TDQ	38	.0040	.0016	.0019	.0071	.0075	.0079
40TDQ	40	.0031	.0013	.0015	.0056	.0059	.0062
42TDQ	42	.0025	.0010	.0012	.0044	.0047	.0050
44TDQ	44	.0020	.0009	.0011	.0037	.0040	.0043

MFC MULTICONDUCTOR MICROMINIATURE AND SUBMINIATURE FLAT CABLES GAUGES: 24—44

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Specializing in the application of less than .00025" to over .006" of Teflon[®] (TFE and FEP) to wires of any composition in AWG. Gauges: 14 to 60.

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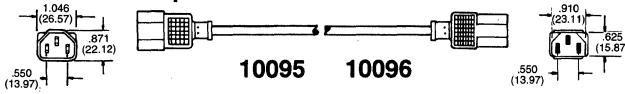
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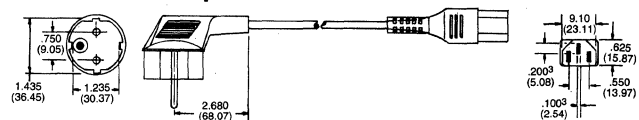
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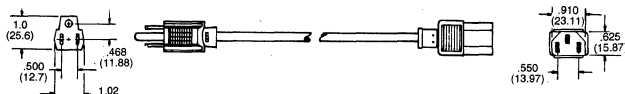
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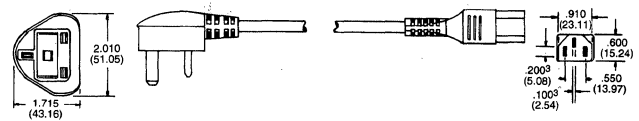
Continental European Cord Set 12013



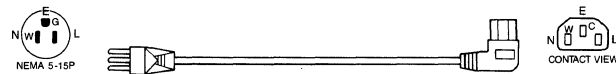
American Cord Set 10087 10088



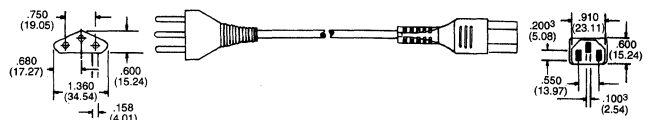
British Fused Cord Set 14012



10086 10085



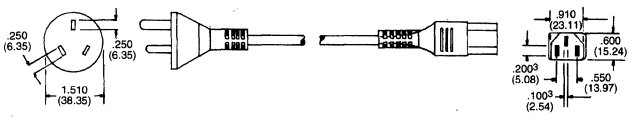
Swiss Cord Set 13012



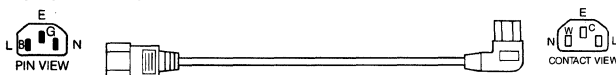
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Australian/New Zealand Cord Set 15012



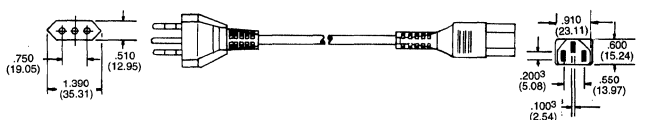
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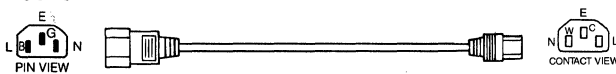
10080 10079



Italian Cord Set 14512



10078



Selection of the proper Cord Set allows your international customer the convenience of a finished product ready for use immediately upon unpacking. The proper selection of a Cord Set also makes the product easier to use by overseas customers and enhances its overseas marketing value. Power Dynamics offers basic Cord Sets to meet most international requirements. Each Cord Set is molded to indicate the appropriate National Safety Agency approvals.

Part Number	Description	Approval	Rating	Size of Conductor AWG	Conductor Composition	Cord Length	Temp. Rating*	Nominal O.D.	Color
10095	SVT	UL, CSA	10A 250V	18	41/0.16	3'3" (1.0M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10096	SVT	UL, CSA	10A 250V	18	41/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10088	SVT	UL, CSA	10A 125V	18	41/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10087	SJT	UL, CSA	10A 125V	16	66/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.34 (8.6)	Black
10086	SVT	UL, CSA	1250W 10A 125V	18	41/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10084	SVT	UL, CSA	1250W 10A 125V	18	41/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10082	SVT	UL, CSA	1250W 10A 250V	18	41/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10080	SVT	UL, CSA	1250W 10A 250V	18	41/0.16	7'6" (2.3M)	60°C, 75°C, 105°C	.255 (6.5)	Black
10078	3 x 1.0mm ² H05VV-F	VDE	10A 250V			7'6" (2.3M)	70°C	.283 (7.2)	Black
1162H	SJT	UL, CSA	10A 125V	18	41/0.16	8'2" (2.5M)	60°C, 75°C, 105°C	.307 (7.8)	Gray
12013	3 x 1.0mm ² H05VV-F	VDE, IMQ, NEMKO, CEPEC, SEMKO OVE, KEMA, SETI	10A 250V			8'2" (2.5M)	70°C	.283 (7.2)	Black
14012**	3 x 1.0mm ² H05VV-F	BSI	10A 250V			8'2" (2.5M)	70°C	.283 (7.2)	Black
13012	3 x 1.0mm ² H05VV-F	SEV	10A 250V			8'2" (2.5M)	70°C	.283 (7.2)	Black
15012	3 x 1.0mm ² H05VV-F	SECV	10A 250V			8'2" (2.5M)	70°C	.283 (7.2)	Black
14512	3 x 1.0mm ² H05VV-F	IMQ	10A 250V			8'2" (2.5M)	70°C	.283 (7.2)	Black
10060	SJT	UL, CSA	15A 125V	16	66/0.16	8'2" (2.5M)	65°C	.378 (9.6)	Black
12060	3 x 1.0mm ² H05VVF3GI-5	VDE, SEMKO, OVE, NEMKO, IMR, SETI, CEPEC	13A 250V			8'2" (2.5M)	65°C	.33 (8.5)	Black

Specifications subject to change without notice. Metric dimensions are shown in parentheses. *If not specified 60°C will be supplied.

**Supplied with 13 Amp fuse. Also available with 3 and 5 Amp fuses.

Note: To specify shielded cord, add suffix: A. Copper braid shielded B. 100% Aluminum-mylar tape shielded. C. Both of A. & B.

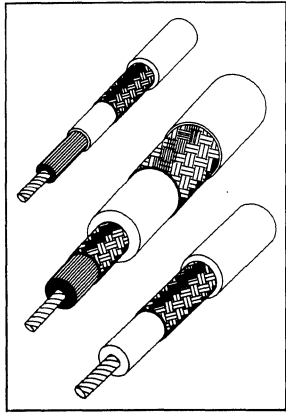
For engineering specifications, access our Website: www.powerdynamics.com

For mating IEC connectors, see EEM pages C•1328-C•1330.

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Rowe High Temperature, High Voltage, Cable and Wire

High Voltage Cable



Rowe Industries has provided industry and the military with high reliability, corona-free, high voltage cable designed for use in varied and exacting applications such as accelerators, radar, X-ray, and ECM equipment.

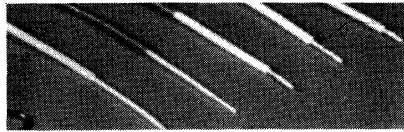
The semi-conducting corona-suppressing layers with thermosetting materials provide noise free, corona-free cable and wire. Various high pulse coax and triax types are listed in the chart.

Primary insulation is extruded silicone and outer jacket is silicone, neoprene or PVC. Consult factory for exact cable construction.

Cable jacket color is black. Additional colors are available for some cables. Consult factory.

Rowe Cable No.	Center Conductor AWG Size & Plating	Final O.D. (Inches)	Capitance Rating PF/FT	Voltage Rating KVDC
Coax				
R5234-1	#20 (14/32) SPC	.215	43	30
R5743-1	#20 (19/32) SPC	.260	30	15
R1020-2	#20 (19/33) TPC	.280	36	15
2R1032-4	#16 (19/29) TPC	.340	48	30
R3146-2	#22 (19/34) SPC	.285	50	25
2R1020-3	#20 (7/26) SPC	.375	46	30
R1037-1	#16 (19/29) SPC	.495	50MM	15
R1035-1	#16 (19/29) SPC	.565	50	25
R7000-1	#16 (19/29) SPC	.615	56	40
R1006-1	#12 (19/25) SPC	.625	50	50
R1081-2	#12 (19/25) SPC	.670	55	30
2R1080-1	#10 (37/26) TPC or SPC	1.100	55	90
R1046-1	#10 (19/23) SPC	.830	49	75
Triax				
R1296-1	#12 (19/25) SPC	.540	66	30
R7010-1	#6 (133/27) SPC	.825	100	40
R7020-1	#12 (19/25) SPC	.880	56	55
2R1068-1	#8 (133/29) SPC	1.200	51	80
R1068-1	#10 (19/23) TPC or SPC	1.000	40	100

High Voltage Silicone Coated Teflon Insulated Wire



Rowe's high voltage silicone coated teflon wire is designed for use in radar systems, ECM's, CRT displays, laser systems, and airborne system applications where maximum operating capability with minimal size is a must.

Silicone coated teflon wire offers excellent dielectric strength while maintaining the small diameter so often required in a systems' package design. The wire can be easily bonded to with most silicone based RTV's, eliminating the need for chemical etching of teflon wires.

All operating voltages listed are continuous DC ratings from +55°C to +150°C, and sea level to 70,000 ft.

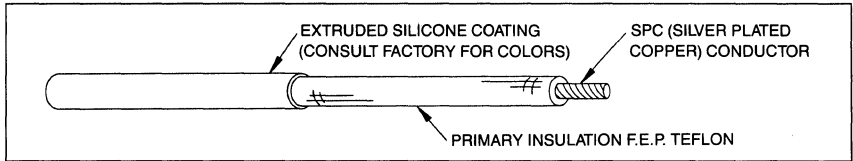
* Nomex is a trademark for DuPont Aramid (Polyamide) Fibers "Teflon" is a trademark of DuPont

Features:

- Voltage ratings thru 60 kvdc • 26 AWG thru 20 AWG conductor • -55°C to +150°C operating temperature range • High flexible • Easy bonding to extruded silicone outer jacket • Small diameter
- Available with or without silicone outer jacket
- Available with or without Nomex* braid

Ordering Information: When ordering wire specify part number followed by applicable dash number for color.

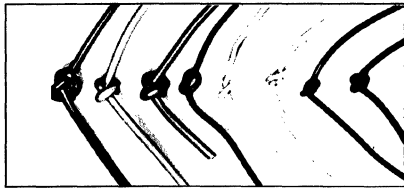
EXAMPLE: **RCB10081-24-6**
BASE PART NO. _____ COLOR _____



Base Part No.	Conductor	Physical Characteristics Primary O.D.	Final O.D.	Electrical Characteristics Operating Voltage	Test Voltage
RCB10081-24	24 (19/36) AWG	.050 NOM.	.070 NOM.	18 KVDC	36 KVDC
RCB10081-22	22 (19/34) AWG	.060 NOM.	.080 NOM.	20 KVDC	40 KVDC
RCB10081-20	20 (19/32) AWG	.080 NOM.	.100 NOM.	22 KVDC	45 KVDC
RCB10081-19	20 (19/32) AWG	.100 NOM.	.120 NOM.	25 KVDC	50 KVDC

Follows standard IEEE color code.

"Super Tough" and "UL 3239" High Voltage Silicone Lead Wire



"Super Tough" High Voltage Silicone Lead Wire was developed for high abrasion resistance requirements and exhibits excellent dielectric capability in extreme environments. "UL 3239" High Voltage Silicone Lead Wire exhibits excellent dielectric capability in extreme environment areas where high abrasion resistance, high voltage, flame resistance, and flexibility are major requirements.

Specifications*
Conductor — Silver or tin plated copper stranding** (SPC indicates silver plating)
Temperature Rating:
"Super Tough" —
SPC -65° to +200°C (250°C Intermittent)
TPC -40°C to +150°C
"UL 3239" — 150°C (250°C Intermittent)
Voltage Ratings — Maximum DC voltage rating in air
Wire Marking — Per UL 3239 requirements

"Super Tough" High Voltage Silicone Lead Wire

Rowe Catalog No.	AWG Size	Strand	O.D. Nom.	Maximum Operating Volt. Rating DC
R790-0222	22	19/34	.054	2KV
R790-0522	22	7/30	.070	5KV
R790-1022	22	19/34	.090	10KV
R790-1522	22	19/34	.110	15KV
R790-2022	22	7/30	.130	20KV
R790-2522	22	19/34	.160	25KV
R790-6022	22	19/34	.380	60KV
R790-1520	20	19/32	.120	15KV
R790-2020	20	19/32	.150	20KV
R790-2520	20	19/32	.166	25KV
R790-3020	20	19/32	.190	30KV
R790-2518	18	19/30	.160	25KV
R790-4518	18	19/30	.295	45KV
R790-2016	16	41/32	.161	20KV
R790-3516	16	41/32	.265	35KV
R790-4516	16	19/29	.300	45KV
R790-6016	16	26/30	.380	60KV
R790-3014	14	19/27	.256	30KV
R790-6014	14	19/27	.385	60KV
R790-2012	12	19/25	.205	20KV
R790-3012	12	19/25	.275	30KV
R790-4012	12	19/25	.335	40KV
R790-5012	12	19/25	.414	50KV
R790-6012	12	19/25	.445	60KV

"UL 3239" High Voltage Silicone Lead Wire

Rowe Catalog No.	AWG Size	Strand	Nom. Wall Thickness (Inches)	Nom. O.D.	Voltage Rating
R800-2022	22	7/30	.050	.130	20KV
R800-2522	22	7/30	.065	.160	25KV
R800-3022	22	7/30	.090	.210	30KV
R800-2020	20	10/30	.050	.135	20KV
R800-2520	20	10/30	.065	.165	25KV
R800-3020	20	10/30	.090	.215	30KV
R800-2018	18	16/30	.050	.150	20KV
R800-2518	18	16/30	.065	.180	25KV
R800-3018	18	16/30	.090	.230	30KV
R800-2016	16	26/30	.050	.160	20KV
R800-3016	16	26/30	.090	.240	30KV
R800-4016	16	26/30	.120	.300	40KV
R800-3014	14	41/30	.090	.255	30KV
R800-4014	14	41/30	.120	.315	40KV
R800-4012	12	65/30	.120	.335	40KV
R800-5012	12	65/30	.160	.415	50KV
R800-4010	10	105/30	.120	.360	40KV
*R800-5010	10	105/30	.160	.440	50KV

*Per UL3239 requirements.

*Consult factory for variation available for conductor stranding, plating, AWG, size and voltage rating. Standard insulation is white. Other colors and special configurations available.

**When ordering tin plated stranding, add "/TPC" to P/N (i.e. R790-2002/TPC)

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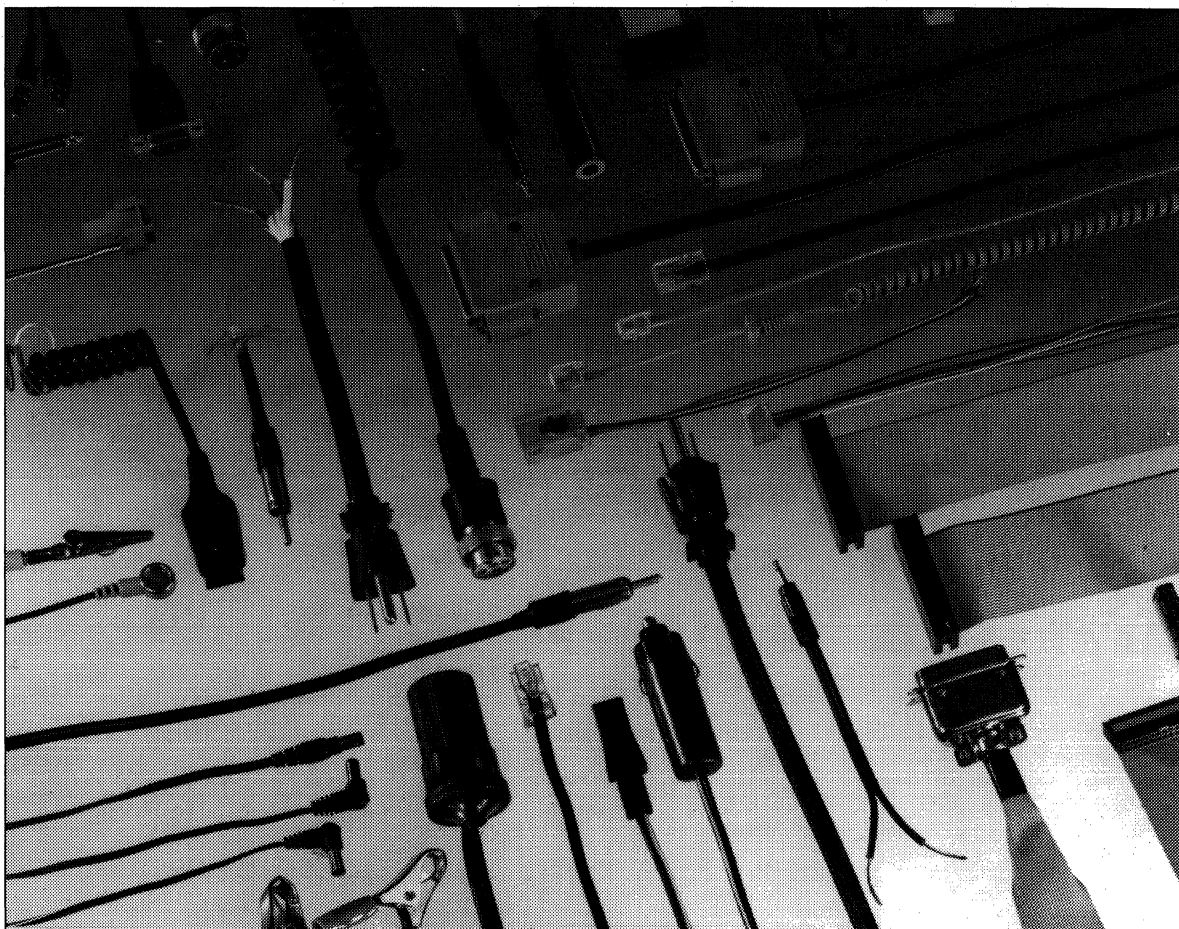
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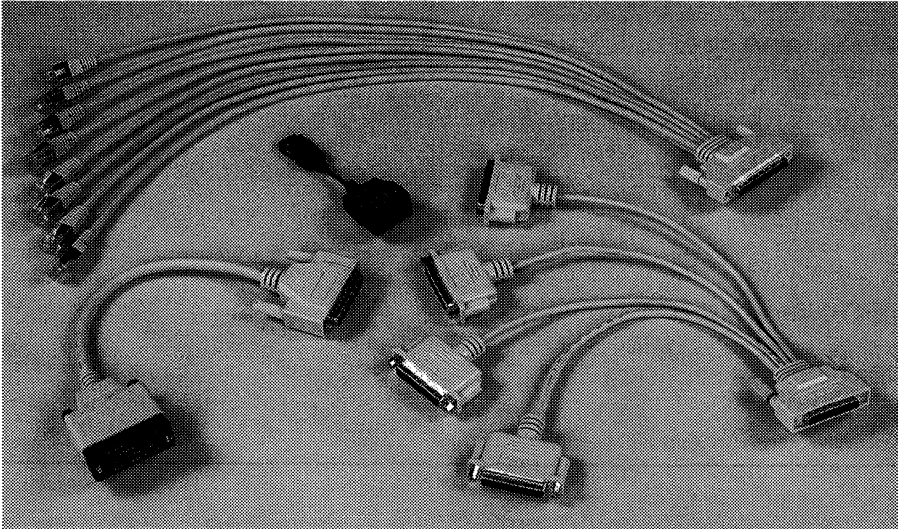
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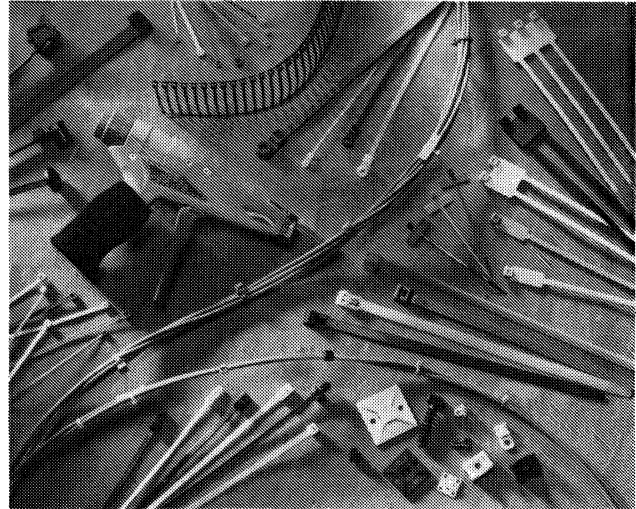
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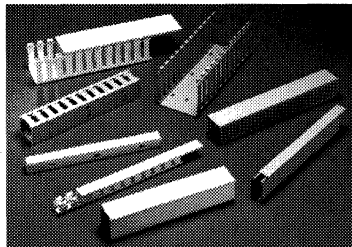
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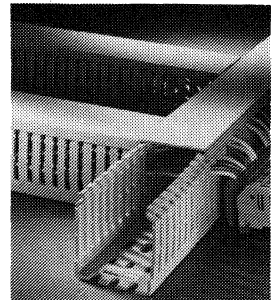
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Tyton Hellermann PVC Pro-Duct wiring duct routes and protects wire and cable. Available in 3 styles (slotted, high density slotted, and solid) and many sizes, Tyton Hellermann has wiring duct to fit your cabling needs.



Tyton Hellermann manufactures wiring duct in standard slotted, high density slotted, and solid styles in many sizes.



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- The covers of Tyton Hellermann wiring duct are flush with the side of the duct, allowing for tight side by side placement. Another installer preferred feature includes two score lines on the slotted duct for easy break-aways when a greater opening is required.
- Tyton Hellermann wiring duct comes in over 27 sizes ranging from .5" x .5" upward to 4" x 5" and more.

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Here's How To Contact Us: 1-800-822-4352

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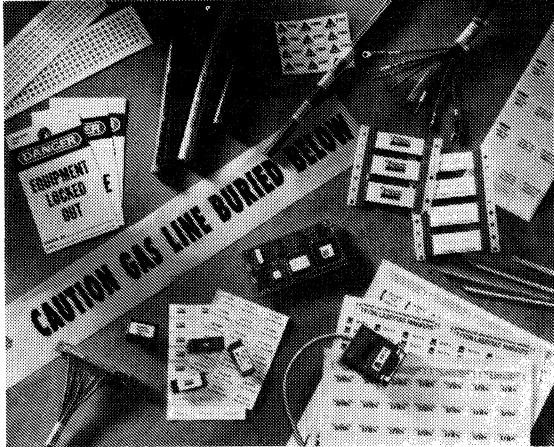
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Identification Products



LABELS

Tyton Hellermann offers a wide variety of identification products for wire, cable, and component marking. **Self laminating labels** are used on wire and cable and come with a clear overwrap to protect information. **Blank labels** are used to mark components, terminal blocks, printed circuit boards, flag wire and cable, and much more. Both styles of labels are available in different sizes, materials, and printing options to suit a wide variety of requirements.

Tyton Hellermann has labels in different sizes and materials for printers:

- ✓ Dot Matrix
- ✓ Laser
- ✓ Thermal Transfer
- ✓ Ink Jet

LABELING SOFTWARE

Tagprint labeling software works with all of Tyton Hellermann's computer printable labels. Easy to use, Tagprint speeds production while offering options such as bar coding, serialization, label sets, and text choices. As your labeling needs change and expand, Tagprint will accommodate all your requirements.

THERMAL TRANSFER LABELING SYSTEMS

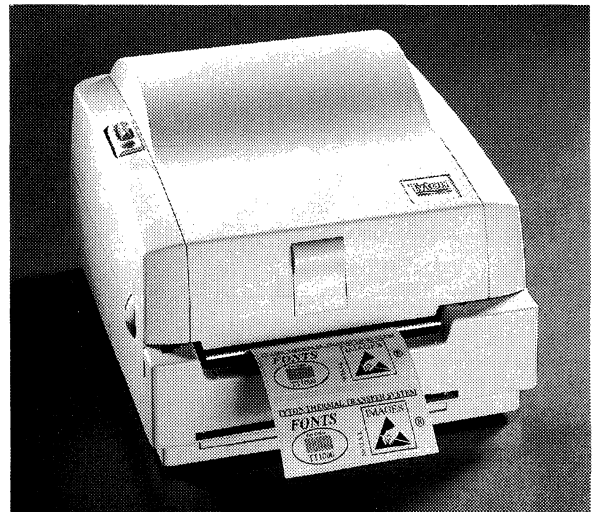
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HOOK-UP WIRE PVC INSULATED

MIL-W-16878/1

TYPE B - 600V

(PASSES UL VW-1 FLAME TEST)

DESCRIPTION:

Stranded Tinned Copper, Color Coded
Polyvinylchloride Insulation

CHARACTERISTICS:

- Temperature Rating: -55°C to +105°C
- Voltage Rating: 600 Volts

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
1130	M16878/1BBB-X	30	7/38	.010	.032
1128	M16878/1BCB-X	28	7/36	.010	.034
1126	M16878/1BDB-X	26	7/34	.010	.038
1126/19	M16878/1BDE-X	26	19/38	.010	.038
1124	M16878/1BEB-X	24	7/32	.010	.043
1124/19	M16878/1BEE-X	24	19/36	.010	.043
1122	M16878/1BFB-X	22	7/30	.010	.050
1122/19	M16878/1BFE-X	22	19/34	.010	.050
1120	M16878/1BGB-X	20	7/28	.010	.058
1120/19	M16878/1BGE-X	20	19/32	.010	.058
1118	M16878/1BHB-X	18	7/26	.010	.068
1118/19	M16878/1BHE-X	18	19/30	.010	.068
1116/19	M16878/1BJE-X	16	19/29	.010	.077
1114/19	M16878/1BKE-X	14	19/27	.010	.091

MIL-W-16878/2

TYPE C - 1000V

(PASSES UL VW-1 FLAME TEST)

DESCRIPTION:

Stranded Tinned Copper, Color Coded
Polyvinylchloride Insulation.

CHARACTERISTICS:

- Temperature Rating: -55°C to +105°C
- Voltage Rating: 1000 Volts

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
1224	M16878/2BEB-X	24	7/32	.016	.058
1222	M16878/2BFB-X	22	7/30	.016	.064
1220	M16878/2BGB-X	20	7/28	.016	.072
1218	M16878/2BHB-X	18	7/26	.016	.082
1216/19	M16878/2BJE-X	16	19/29	.016	.091
1214/19	M16878/2BKE-X	14	19/27	.016	.105
1212/19	M16878/2BLE-X	12	19/25	.016	.124

MIL-W-16878/3

TYPE D - 3000V

(PASSES UL VW-1 FLAME TEST)

DESCRIPTION:

Stranded, Tinned Copper, Color Coded
Polyvinylchloride Insulation

CHARACTERISTICS:

- Temperature Rating: -55°C to +105°C
- Voltage Rating: 3000 Volts

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
1324	M16878/3BEB-X	24	7/32	.029	.082
1322	M16878/3BFB-X	22	7/30	.029	.088
1320	M16878/3BGB-X	20	7/28	.029	.096
1318	M16878/3BHB-X	18	7/26	.029	.106
1316/19	M16878/3BJE-X	16	19/29	.029	.115
1314/19	M16878/3BKE-X	14	19/27	.029	.129
1312/19	M16878/3BLE-X	12	19/25	.034	.158
1310	M16878/3BMG-X	10	37/26	.037	.185
1308	M16878/3BNL-X	8	133/29	.040	.247
1306	M16878/3BPL-X	6	133/27	.040	.290
1304	M16878/3BRL-X	4	133/25	.046	.358
1302	M16878/3BSP-X	2	665/30	.046	.432

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

X Denotes 0-9 color coding Standard Put-Ups: 100 ft., 1000 ft.

**STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE PVC INSULATED

MIL-W-16878/1 PREBONDED TYPE B - 600V

(PASSES UL VW-1 FLAME TEST)

WEICO NO.	SIZE	CONDUCTOR		NOM. O.D. (INCHES)
		STRAND		
1526	26	7/34		.039
1524	24	7/32		.044
1522	22	7/30		.051
1520	20	7/28		.059
1518	18	7/26		.070

DESCRIPTION:

Stranded Double Tinned, Pre-Bonded Copper Conductor, Color Coded PVC Insulation.

CHARACTERISTICS:

- Temperature Rating: -55°C to +105°C
- Voltage Rating: 600 Volts

APPLICATION:

The pre-bond conductor maintains much of the flexibility of an ordinary stranded wire but reduces processing and handling costs on soldering, retwisting of strands after stripping, and hand tinning operations.

MIL-W-16878/17 NYLON JACKET TYPE BN-600V

WEICO NO.	MILITARY NO.	CONDUCTOR		INSULATION THICKNESS	NYLON JACKET THICKNESS	NOM. O.D. (INCHES)
		SIZE	STRAND			
1926/19	M16878/17BDE-X	26	19/38	.010	.003	.044
1926	M16878/17BDB-X	26	7/34	.010	.003	.044
1924/19	M16878/17BEE-X	24	19/36	.010	.003	.049
1924	M16878/17BEB-X	24	7/32	.010	.003	.049
1922/19	M16878/17BFE-X	22	19/34	.010	.003	.056
1922	M16878/17BFB-X	22	7/30	.010	.003	.056
1920/19	M16878/17BGE-X	20	19/32	.010	.003	.064
1918/19	M16878/17BHE-X	18	19/30	.010	.003	.074
1916/19	M16878/17BJE-X	16	19/29	.010	.003	.083
1914/19	M16878/17BKE-X	14	19/27	.010	.004	.099

DESCRIPTION:

Conductor, Stranded Tinned Copper. Insulation, Color Coded PVC. Jacket, Clear Nylon.

CHARACTERISTICS:

- Temperature Rating: -55°C to +115°C
- Voltage Rating: 600 Volts

MIL-W-76B TYPE MW-1000V

(PASSES UL VW-1 FLAME TEST)

WEICO NO.	TYPE DESIGNATION	CONDUCTOR		INSULATION THICKNESS	NOM. O.D. (INCHES)
		SIZE	STRAND		
1624	MW-C24(7)U	24	7/32	.016	.059
1622	MW-C22(7)U	22	7/30	.016	.064
1620	MW-C20(10)U	20	10/30	.016	.073
1618	MW-C18(16)U	18	16/30	.016	.084
1616	MW-C16(26)U	16	26/30	.016	.095
1614	MW-C14(41)U	14	41/30	.016	.110
1612	MW-C12(65)U	12	65/30	.016	.125

DESCRIPTION:

Conductor, Stranded Tinned Copper. Insulation, Color Coded PVC.

CHARACTERISTICS:

- Temperature Rating: -40°C to +80°C
- Voltage Rating: 1000 Volts

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

X Denotes 0-9 color coding Standard Put-Ups: 100 ft., 1000 ft.

**STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE IRRADIATED PVC INSULATED

MIL-W-16878/1
MIL-W-16878/2
MIL-W-16878/3
TYPES B, C & D IRRADIATED

UL 1429 1430 1431

TYPE B—UL STYLE 1429

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
1428	28	7/36	.010	.035
1426	26	7/34	.010	.038
1424	24	7/32	.010	.043
1424/19	24	19/36	.010	.043
1422	22	7/30	.010	.050
1422/19	22	19/34	.010	.050
1420	20	7/28	.010	.058
1420/19	20	19/32	.010	.058
1418	18	7/26	.010	.068
1418/19	18	19/30	.010	.068
1416/19	16	19/0.117	.010	.077
*1414/19	14	19/0.147	.012	.095

† UL 1534

DESCRIPTION:

Stranded Tinned Copper,
Irradiated PVC Insulation

CHARACTERISTICS:

- Temperature Rating:
 MIL-W-16878: -55°C to +105°C
 UL 1429: +80°C
 UL 1430: +105°C
 UL 1431: +105°C
- Voltage Rating:
 MIL-W-16878
 Type B: 600 Volts
 Type C: 1000 Volts
 Type D: 3000 Volts
 UL Style 1429: 150 Volts
 UL Style 1430: 300 Volts
 UL Style 1431: 600 Volts

TYPE C—UL STYLE 1430

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
1446	24	7/32	.016	.058
1446/19	24	19/36	.016	.058
1447	22	7/30	.016	.064
1447/19	22	19/34	.016	.064
1448	20	7/28	.016	.072
1448/19	20	19/32	.016	.072
1449	18	7/26	.016	.082
1449/19	18	19/30	.016	.082
1450	16	19/0.117	.016	.091
† 1451	14	19/0.147	.016	.105
† 1452	12	19/0.186	.016	.124

† UL 3317

TYPE D—UL STYLE 1431

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
1468	22	7/30	.032	.094
1467	20	19/32	.032	.103
1466	18	19/30	.032	.111
1465	16	19/0.117	.032	.120
1464	14	19/0.147	.032	.134
1463	12	19/0.186	.032	.153
1462	10	37/0.168	.032	.177
1461	8	133/29	.047	.263
1460	6	133/27	.065	.343

COLORS:

0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
 1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

STANDARD PUT-UPS: 100 ft., 1000 ft.

** STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE PVC INSULATED THHN UNIVERSAL CIRCUIT WIRE

1007 1569
CSA TR-64
(PASSES UL VW-1 FLAME TEST)



DESCRIPTION:

Stranded Tinned Copper, Color Coded
Polyvinylchloride Insulation, .016" nominal
Insulation Thickness

CHARACTERISTICS:

- Temperature Range: -40°C to +105°C
- Voltage Rating: 300 Volts

WEICO NO.	SIZE	CONDUCTOR	STRAND	NOM. O.D. (INCHES)
3026	26		7/34	.051
3024	24		7/32	.057
3022	22		7/30	.064
3020	20		10/30	.072
3018	18		16/30	.082
3016	16		26/30	.095
3014	14		41/30	.110

STANDARD PUT-UPS: 100 ft., 1000 ft.

1015 **MTW**
CSA TEW
(PASSES UL VW-1 FLAME TEST)



DESCRIPTION:

Stranded Tinned Copper, Color Coded
Polyvinylchloride Insulation, .032" nominal
Insulation Thickness

CHARACTERISTICS:

- Temperature Range: -40°C to +105°C
- Voltage Rating: 600 Volts

WEICO NO.	SIZE	CONDUCTOR	STRAND	NOM. O.D. (INCHES)
3224	24		7/32	.088
3222	22		7/30	.095
3220	20		10/30	.102
3218	18		16/30	.112
3216	16		26/30	.125
3214	14		41/30	.142
3212	12		65/30	.156
3210	10		105/30	.184
*3208	8		133/29	.265
**3206	6		133/27	.341

STANDARD PUT-UPS: 100 ft., 1000 ft.

*UL1028 **UL1283

THHN UNIVERSAL CIRCUIT WIRE 600V



DESCRIPTION:

Stranded or Solid Bare Copper, PVC
Insulation and Clear Nylon Jacket
Overall. Used for Building Wire, Machine
Tool Wire, Appliances, Lighting Ballasts
and General Hook-up Wire.

CHARACTERISTICS:

- Temperature Rating: +105°C
- Voltage Rating: 600 Volts

COLORS:

0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

WEICO NO.	COND. SIZE (AWG) & STRANDING	INSULATION THICKNESS	NOMINAL JACKET THICKNESS	NOM. O.D. (INCHES)
1431	#14 Solid	.015	.004	.110
1432	#12 Solid	.015	.004	.125
1433	#10 Solid	.020	.004	.155
†1429	#18 (19)	.015	.004	.090
†1434	#16 (19)	.015	.004	.100
1435	#14 (19)	.015	.004	.116
1436	#12 (19)	.015	.004	.135
1437	#10 (19)	.020	.004	.170
1438	#8 (19)	.030	.005	.225
1439	#6 (19)	.030	.005	.260
1440	#4 (19)	.040	.006	.335
1441	#2 (19)	.040	.006	.400
1442	#1 (19)	.050	.007	.450
1443	#1/0 (19)	.050	.007	.500
1444	#2/0 (19)	.050	.007	.540

† TFFN

STANDARD PUT-UP: #18 Thru #6—500 ft. #4 & LARGER—100 ft.

**STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE PVC • POLYOLEFIN INSULATED

1061 SEMI-RIGID

CSA SR-PVC

(PASSES UL VW-FLAME TEST)



DESCRIPTION:

Stranded Tinned Copper, Color Coded Semi-Rigid Polyvinylchloride Insulation

CHARACTERISTICS:

- Temperature Range: -10°C to +80°C
- Voltage Rating: 300 Volts

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
3326	26	7/34	.010	.038
3324	24	7/32	.010	.042
3322	22	7/30	.010	.048
3320	20	7/28	.010	.056
3318	18	7/26	.010	.068

STANDARD PUT-UPS: 100 ft., 1000 ft.

APPLICATIONS:

Internal Wiring of Computers, Electric bookkeeping, Accounting machines, and other office and Control Equipment.

3271

CSA CL 1251

(PASSES UL VW-FLAME TEST)



DESCRIPTION:

Stranded Tinned Copper, Color Coded Irradiated Cross Linked Polyolefin (XLPE), .032" Nominal Insulation Thickness

CHARACTERISTICS:

- Temperature Range: -55°C to +125°C
- Voltage Rating: 600 Volts

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. O.D. (INCHES)
3620	20	7/28	.101
3618	18	16/30	.109
3616/19	16	19/29	.122
3614/41	14	41/30	.137
3612/65	12	65/30	.156
3610/105	10	105/30	.182

STANDARD PUT-UPS: 100 ft., 1000 ft.

3266

CSA CL 1252

(PASSES UL VW-1 FLAME TEST)



DESCRIPTION:

Stranded Tinned Copper, Color Coded Irradiated Cross Linked Polyolefin (XLPE), .016" Nominal Insulation Thickness

CHARACTERISTICS:

- Temperature Range: -55°C to +125°C
- Voltage Rating: 300 Volts

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. O.D. (INCHES)
*3524/19	24	19/36	.057
3522	22	7/30	.062
3522/19	22	19/34	.064
3520/19	20	19/32	.072
3518/19	18	19/30	.082
3516/19	16	19/29	.089
3514/19	14	19/27	.106

*AWM only

STANDARD PUT-UPS: 100 ft., 1000 ft.

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

**STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE POLYETHYLENE • * "TEFLON" INSULATED

3173 SIS CSA CL1251



DESCRIPTION:

Stranded Tinned Copper, Color Coded
Cross-Linked Polyethylene Insulation.

CHARACTERISTICS:

- Temperature Range:
UL 3173: -35°C to +125°C
SIS: -35°C to +90°C
- Voltage Rating: 600 V

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
** 3718/16	18	16/30	.030	.113
** 3716/26	16	26/30	.030	.125
3714/41	14	41/30	.030	.141
3712/65	12	65/30	.030	.158
3710/105	10	105/30	.030	.192
†3708/133	8	133/29	.045	.262

** UL 3173 + CSA only

† UL 3095

1180 CSA AWM



DESCRIPTION:

Stranded Silver Plated Copper
Conductor, Extruded TFE "Teflon" *
Insulation, UL & CSA Imprinted

CHARACTERISTICS:

- Temperature Range: -60°C to +200°C
- Voltage Rating: 300 V

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2224/19UL	24	19/36	.015	.054
2222/19UL	22	19/34	.015	.060
2220/19UL	20	19/32	.015	.068
2218/19UL	18	19/30	.015	.077
2216/19UL	16	19/0117	.015	.085
2214/19UL	14	19/0147	.015	.099
2212/19UL	12	19/0185	.015	.119
2210UL	10	37/0167	.015	.143

1199 CSA AWM



DESCRIPTION:

Stranded Silver Plated Copper
Conductor, Extruded TFE "Teflon" *
Insulation, UL & CSA Imprinted

CHARACTERISTICS:

- Temperature Range: -60°C to +200°C
- Voltage Rating: 600 V

WEICO NO.	SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2622/19UL	22	19/34	.022	.074
2620/19UL	20	19/32	.022	.082
2618/19UL	18	19/30	.022	.091
2616/19UL	16	19/0117	.022	.100
2614/19UL	14	19/0147	.022	.114
2612/19UL	12	19/0185	.022	.133
2610UL	10	37/0167	.022	.158

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

STANDARD PUT-UPS: 100 ft., 1000 ft.

*DuPont's Registered Trademark **STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE * "TEFLON" INSULATED

MIL-W-22759/11 600V



DESCRIPTION:

Stranded Silver Plated Copper,
Extruded TFE "Teflon" Insulation

CHARACTERISTICS:

- Temperature Rating: -60°C to +200°C
- Voltage Rating: 600 Volts
- Printed with Military Part Number,
& Manufacturer's Code Identification

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRANDING	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2428	M22759/11-28-X	28	7/36	.009	.033
2426/19	M22759/11-26-X	26	19/38	.010	.038
2424/19	M22759/11-24-X	24	19/36	.010	.043
2422/19	M22759/11-22-X	22	19/34	.010	.049
2420/19	M22759/11-20-X	20	19/32	.010	.058
2418/19	M22759/11-18-X	18	19/30	.010	.068
2416/19	M22759/11-16-X	16	19/29	.011	.075
2414/19	M22759/11-14-X	14	19/27	.012	.090
2412/19	M22759/11-12-X	12	19/25	.014	.111
2410/19	M22759/11-10-X	10	37/26	.016	.139

MIL-W-16878/4 TYPE E - 600V

(PASSES UL VW-FLAME TEST)

UL 1213



DESCRIPTION:

Stranded Silver Plated Copper,
Extruded TFE "Teflon" Insulation

CHARACTERISTICS:

- Temperature Rating:
MIL-W-16878: -60°C to +200°C
UL 1213: +105°C
- Voltage Rating:
MIL-W-16878: 600 Volts
UL 1213: Not Rated

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2132	M16878/4BAB-X	32	7/40	.010	.030
2130	M16878/4BBB-X	30	7/38	.010	.032
2128	M16878/4BCB-X	28	7/36	.010	.036
2128/19	M16878/4BCE-X	28	19/40	.010	.036
2126	M16878/4BDB-X	26	7/34	.010	.040
2126/19	M16878/4BDE-X	26	19/38	.010	.041
2124	M16878/4BEB-X	24	7/32	.010	.044
2124/19	M16878/4BEE-X	24	19/36	.010	.045
2122	M16878/4BFB-X	22	7/30	.010	.050
2122/19	M16878/4BFE-X	22	19/34	.010	.051
2120	M16878/4BGB-X	20	7/28	.010	.058
2120/19	M16878/4BGE-X	20	19/32	.010	.059
2118†	M16878/4BHB-X	18	7/26	.010	.068
2118/19†	M16878/4BHE-X	18	19/30	.010	.070
2116/19†	M16878/4BJE-X	16	19/29	.010	.077
2114/19†	M16878/4BKE-X	14	19/27	.012	.094
2112/19†	M16878/4BLE-X	12	19/25	.012	.113
2110/19†	M16878/4BMG-X	10	37/26	.012	.134

NOTE: AWG 18-10 must be surface marked to comply with UL, please specify when ordering.

† Not UL listed

MIL-W-16878/4 SOLID CONDUCTOR TYPE E - 600V

(PASSES UL VW-1 FLAME TEST)

UL 1213



DESCRIPTION:

Solid Silver Plated Copper,
Extruded TFE "Teflon" Insulation

CHARACTERISTICS:

- Temperature Rating:
MIL-W-16878: -60°C to +200°C
UL 1213: +105°C
- Voltage Rating:
MIL-W-16878: 600 Volts
UL 1213: Not Rated

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2830	M16878/4BBA-X	30	Solid	.010	.030
2828	M16878/4BCA-X	28	Solid	.010	.033
2826	M16878/4BDA-X	26	Solid	.010	.036
2824	M16878/4BEA-X	24	Solid	.010	.040
2822	M16878/4BFA-X	22	Solid	.010	.045
2820	M16878/4BGA-X	20	Solid	.010	.052
2818†	M16878/4BHA-X	18	Solid	.010	.060

NOTE: † Not UL listed

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

X Denotes 0-9 color coding Standard Put-Ups: 100 ft., 1000 ft.

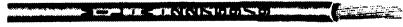
*DuPont's Registered Trademark. **STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE * "TEFLON" INSULATED

MIL-W-22759/9 1000V



DESCRIPTION:

Stranded Silver Plated Copper,
Extruded TFE "Teflon" * Insulation

CHARACTERISTICS:

- Temperature Rating: -60°C to +200°C
- Voltage Rating: 1000 Volts
- Printed with Military Part Number & Manufacturers Code Identification.

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2726/19	M22759/9-26-X	26	19/38	.015	.048
2724/19	M22759/9-24-X	24	19/36	.015	.053
2722/19	M22759/9-22-X	22	19/34	.015	.060
2720/19	M22759/9-20-X	20	19/32	.015	.068
2718/19	M22759/9-18-X	18	19/30	.016	.078
2716/19	M22759/9-16-X	16	19/29	.016	.085
2714/19	M22759/9-14-X	14	19/27	.017	.100
2712/19	M22759/9-12-X	12	19/25	.017	.120
2710	M22759/9-10-X	10	37/26	.017	.141

MIL-W-16878/5 MIL-W-16878/22 MIL-W-16878/34 TYPE EE-1000V UL 1180



DESCRIPTION:

Stranded Silver Plated Copper
Extruded TFE "Teflon" * Insulation

CHARACTERISTICS:

- Temperature Rating
MIL-W-16878: -60°C to +200°C
UL 1180: +200°C
- Voltage Rating
MIL-W-16878: 1000 Volts
UL 1180: 300 Volts

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2224	M16878/5BEB-X	24	7/32	.015	.054
2224/19	M16878/5BEE-X	24	19/36	.015	.055
2222	M16878/5BFB-X	22	7/30	.015	.060
2222/19	M16878/5BFE-X	22	19/34	.015	.062
2220	M16878/5BGB-X	20	7/28	.015	.068
2220/19	M16878/5BGE-X	20	19/32	.015	.070
2218/19	M16878/5BHE-X	18	19/30	.015	.080
2216/19	M16878/5BJE-X	16	19/29	.015	.089
2214/19	M16878/5BKE-X	14	19/27	.017	.106
2212/19	M16878/5BLE-X	12	19/25	.017	.124
2210	M16878/5BMG-X	10	37/26	.017	.145
2208	M16878/22BNL-X	8	133/29	.020	.210
2206	M16878/22BPL-X	6	133/27	.020	.252
2204	M16878/34BRL-X	4	133/25	.020	.315

**NOTE: 2220/19-2224 Dual rated to UL1180. For UL & CSA approved wire.
See UL1180 + CSA imprinted wire - 2 pages prior.**

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

X Denotes 0-9 color coding Standard Put-ups: 100 ft., 1000 ft.

*DuPont's Registered Trademark **STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.

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HOOK-UP WIRE **KYNAR • * "TEFLON" INSULATED

MIL-W-16878/6 TYPE ET - 250V

(PASSES UL VW-1 FLAME TEST)



DESCRIPTION:

Stranded Silver Plated Copper,
Extruded TFE "Teflon" * Insulation

CHARACTERISTICS:

- Temperature Rating: -60°C to +200°C
- Voltage Rating: 250 Volts

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2332	M16878/6BAB-X	32	7/40	.006	.021
2330	M16878/6BBB-X	30	7/38	.006	.024
2328	M16878/6BCB-X	28	7/36	.006	.027
2328/19		28	19/40	.006	.027
2326	M16878/6BDB-X	26	7/34	.006	.031
2326/19	M16878/6BDE-X	26	19/38	.006	.032
2324	M16878/6BEB-X	24	7/32	.006	.036
2324/19	M16878/6BEE-X	24	19/36	.006	.037
2322	M16878/6BFB-X	22	7/30	.006	.042
2322/19	M16878/6BFE-X	22	19/34	.006	.044

STANDARD PUT-UPS: 100 ft., 1000 ft.

MIL-W-16878/6 SOLID CONDUCTOR

TYPE ET - 250V

(PASSES UL WV-1 FLAME TEST)



DESCRIPTION:

Solid Silver Plated Copper,
Extruded TFE "Teflon" * Insulation

CHARACTERISTICS:

- Temperature Range: -60°C to +200°C
- Voltage Rating: 250 Volts

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2932	M16878/6BAA-X	32	Solid	.006	.019
2930	M16878/6BBA-X	30	Solid	.006	.022
2928	M16878/6BCA-X	28	Solid	.006	.025
2926	M16878/6BDA-X	26	Solid	.006	.028
2924	M16878/6BEA-X	24	Solid	.006	.032

STANDARD PUT-UPS: 100 ft., 1000 ft. *DuPont's Registered Trademark

**KYNAR INSULATED



SOLID CONDUCTOR

(PASSES UL VW-1 FLAME TEST)

DESCRIPTION:

Solid, Silver-Plated, Oxygen-Free, High Conductivity (OFHC) Copper Conductor, Kynar Insulation.

CHARACTERISTICS:

- Temperature Rating: +125°C (UL Rated at 105°C)
- High Cut-thru and Abrasion Resistance

WEICO NO.	CONDUCTOR SIZE	STRAND	NOM. WALL THICKNESS	NOM. O.D. (INCHES)
2030	30	Solid	.005	.019
2028	28	Solid	.005	.023
2026	26	Solid	.005	.026
2024	24	Solid	.005	.030

STANDARD PUT-UPS: 1000 ft. **Registered Trademark of Pennwalt

X Denotes 0-9 color coding

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes †
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

† STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes.



HOOK-UP WIRE, CROSS LINKED

MIL-W-22759/32 CROSS-LINKED ETFE

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. O.D. (INCHES)
2530	M22759/32-30-X	30	7/38	.024
2528	M22759/32-28-X	28	7/36	.027
2526/19	M22759/32-26-X	26	19/38	.032
2524/19	M22759/32-24-X	24	19/36	.037
2522/19	M22759/32-22-X	22	19/34	.043
2520/19	M22759/32-20-X	20	19/32	.050
2518/19	M22759/32-18-X	18	19/30	.060
2516/19	M22759/32-16-X	16	19/29	.068
2514/19	M22759/32-14-X	14	19/27	.085
2512/37	M22759/32-12-X	12	37/28	.103

DESCRIPTION:

Stranded, Tinned Copper, Color Coded
Irradiation Cross-Linked Extruded
Modified Ethylene Tetrafluoroethylene
Copolymer (ETFE)

CHARACTERISTICS:

- Temperature Rating: 150°C
- Voltage Rating: 600 Volts

MIL-W-81044/12 CROSS-LINKED POLYALKENE PVF

WEICO NO.	MILITARY NO.	CONDUCTOR SIZE	STRAND	NOM. O.D. (INCHES)
9898	M81044/12-28-X	28	7/36	.032
9897	M81044/12-26-X	26	19/38	.036
9896	M81044/12-24-X	24	19/36	.042
9895	M81044/12-22-X	22	19/34	.049
9894	M81044/12-20-X	20	19/32	.057
9893	M81044/12-18-X	18	19/30	.067
9892	M81044/12-16-X	16	19/29	.075
9891	M81044/12-14-X	14	19/27	.093
9890	M81044/12-12-X	12	37/28	.112

DESCRIPTION:

Stranded, Tinned Copper, Color Coded
Irradiation Cross-Linked Extruded
Polyalkene with Clear Irradiation
Cross-Linked Extruded Polyvinylidene
Fluoride (PVF) Jacket.

CHARACTERISTICS:

- Temperature Rating: 150°C
- Voltage Rating: 600 Volts

COLORS: 0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray Stripes**
1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

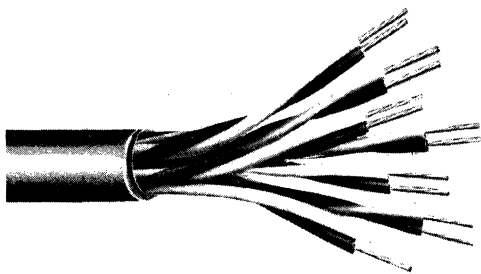
X Denotes 0-9 color coding Standard Put-Ups: 100 ft., 1000 ft.

**STRIPES: Any of the above colors are available in any combination of stripes up to a maximum of three stripes



COMMUNICATION AND CONTROL CABLE

MULTIPAIR UNSHIELDED 80°C-300V-PVC 22 AND 18 GAUGE



22 AWG-SOLID CONDUCTORS NOM. INS. THICKNESS .010

WEICO NO.	NO. OF PAIRS	NO. OF COND.	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7102	1	2	.032	.150
7104	2	4	.032	.209
7106	3	6	.032	.244
7108	4	8	.032	.259
7110	5	10	.035	.297
7112	6	12	.035	.305
7118	9	18	.037	.354
7122	11	22	.037	.369
7126	13	26	.037	.394
7130	15	30	.040	.405
7132	16	32	.040	.425
7138	19	38	.040	.430
7146	23	46	.040	.495
7154	27	54	.045	.535

SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

Each Conductor Solid or Stranded Tinned Copper, Color Coded Polyvinylchloride Insulation Conductors Twisted into Pairs, Gray Polyvinylchloride Jacket Overall.

22 AWG (7/30)-STRANDED CONDUCTORS NOM. INS. THICKNESS .010

WEICO NO.	NO. OF PAIRS	NO. OF COND.	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7002	1	2	.032	.165
7004	2	4	.032	.238
7006	3	6	.032	.284
7008	4	8	.032	.299
7010	5	10	.032	.304
7012	6	12	.035	.320
7018	9	18	.037	.389
7022	11	22	.035	.400
7024	12	24	.040	.425
7030	15	30	.040	.440
7038	19	38	.040	.505
7046	23	46	.045	.555
7054	27	54	.045	.580
7054/51	51	102	.045	.800

18 AWG (16/30)-STRANDED CONDUCTORS NOM. INS. THICKNESS .016

WEICO NO.	NO. OF PAIRS	NO. OF COND.	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7202	1	2	.032	.222
7204	2	4	.035	.287
7206	3	6	.037	.362
7208	4	8	.040	.358
7210	5	10	.050	.416
7212	6	12	.050	.475
7216	8	16	.050	.478
7218	9	18	.055	.575
7224	12	24	.055	.675
7230	15	30	.060	.785
7238	19	38	.070	.865
7254	27	54	.070	.965

COLOR CODE: Consult Factory.

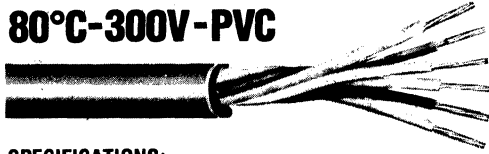
Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTICONDUCTOR— UNSHIELDED 80°C-300V-PVC



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

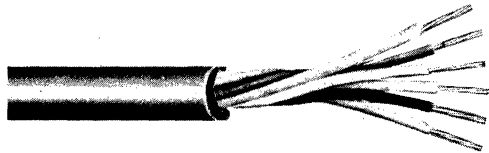
Each Conductor Stranded Tinned Copper,
Color Coded Polyvinylchloride Insulation,
Gray Polyvinylchloride Jacket Overall.

COLOR CODE: Consult Factory.

MULTI-CONDUCTOR 22-AWG (7/30) NOM. INS. THICKNESS .010

WEICO NO.	NO. OF COND.	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
4002	2	.032	.164
4003	3	.032	.169
4004	4	.032	.194
4005	5	.032	.199
4006	6	.032	.209
4007	7	.032	.214
4008	8	.032	.224
4009	9	.032	.249
4010	10	.032	.259
4012	12	.032	.279
4015	15	.032	.304
4020	20	.032	.324
4025	25	.032	.364
4030	30	.032	.379
4040	40	.032	.439
4050	50	.035	.500
4060	60	.035	.530

MULTICONDUCTOR— UNSHIELDED 80°C-300V-PVC



SPECIFICATIONS:



- UL Listed, NEC Type CM or CL2 (see table), 75°C
- UL AWM Style 2095, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

Each Conductor Stranded Tinned Copper,
Color Coded Polyvinylchloride
Insulation, Gray Polyvinylchloride Jacket
Overall.

MULTI-CONDUCTOR: NOM. INSULATION THICKNESS .016

WEICO NO.	NO. OF COND.	CONDUCTOR AWG	STRAND	NOM. JACKET THICKNESS (INCHES)	UL NEC RATING	NOM. O.D. (INCHES)
4002/20	2	20	10/30	.020	CL2	.180
4003/20	3	20	10/30	.020	CL2	.190
4004/20	4	20	10/30	.020	CL2	.215
4005/20	5	20	10/30	.020	CL2	.233
4006/20	6	20	10/30	.020	CL2	.255
4007/20	7	20	10/30	.020	CL2	.255
4008/20	8	20	10/30	.020	CL2	.270
4009/20	9	20	10/30	.020	CL2	.300
4010/20	10	20	10/30	.020	CL2	.335
4012/20	12	20	10/30	.020	CL2	.350
4015/20	15	20	10/30	.030	CL2	.395
4002/18	2	18	16/30	.020	CM	.200
4003/18	3	18	16/30	.020	CM	.210
4004/18	4	18	16/30	.020	CM	.240
4005/18	5	18	16/30	.020	CM	.262
4006/18	6	18	16/30	.020	CM	.290
4007/18	7	18	16/30	.020	CM	.286
4008/18	8	18	16/30	.025	CM	.315
4009/18	9	18	16/30	.025	CM	.346
4010/18	10	18	16/30	.025	CM	.370
4012/18	12	18	16/30	.025	CM	.385
4015/18	15	18	16/30	.030	CM	.445
4019/18	19	18	16/30	.030	CM	.470
4025/18	25	18	16/30	.035	CM	.558
4002/16	2	16	26/30	.020	CL2	.225
4003/16	3	16	26/30	.020	CL2	.245
4004/16	4	16	26/30	.020	CL2	.270

COLOR CODE: Consult Factory.

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTICONDUCTOR 80°C-300V-PVC



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM STYLE 2464, 80°C, 300V
- CSA Certified PCC FT-4
- OSHA Acceptable

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyvinylchloride Insulation, Gray Polyvinylchloride Jacket Overall Clear Mylar Tape Wrap .001"

22-AWG (7/30)

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
4102	2	.032	.170
4103	3	.032	.180
4104	4	.032	.195
4106	6	.032	.225
4108	8	.032	.240
4110	10	.032	.270
4115	15	.032	.300
4120	20	.032	.340
4125	25	.032	.375
4130	30	.032	.400
4140	40	.032	.445
4150	50	.032	.485
4160	60	.032	.525

COLOR CODE: Consult Factory.

MULTICONDUCTOR FOIL SHIELD 60°C-PE/PVC-300V



SPECIFICATIONS:



- UL Listed, NEC Type CM or CL2 (see table), 75°C
- UL AWM Style 2092, 2093, 2094*, 60°C, 300V

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyethylene Insulation, Conductors Twisted, Wrapped Mylar Supported Aluminum Foil Shield, Drain Wire, Gray Polyvinylchloride Jacket Overall.

WEICO NO.	NO. OF COND.	CONDUCTOR AWG	CONDUCTOR STRAND	NOM. INS. THICKNESS (INCHES)	NOM. WALL THICKNESS (INCHES)	NOM. O.D. (INCHES)	UL NEC RATING	COND. COLOR CODE
9201	2	24	7/32	.016	.020	.160	CM	1,3
9202	2	22	7/30	.016	.020	.170	CM	1,3
9203	2	22	7/30	.016	.020	.170	CM	1,2
9204	3	22	7/30	.016	.020	.185	CM	1,2,3
9205	4	22	7/30	.016	.020	.210	CM	1,2,3,4
9206	2	20	10/30	.016	.020	.186	CL2	1,3
9207	2	20	10/30	.016	.020	.186	CL2	1,2
9208	3	20	10/30	.016	.020	.205	CL2	1,2,3
9209	4	20	10/30	.016	.020	.225	CL2	1,2,3,4
9210	2	18	16/30	.016	.020	.210	CM	1,3
9211	2	18	16/30	.016	.020	.210	CM	1,2
9212	3	18	16/30	.016	.020	.230	CM	1,2,3
9214	4	18	16/30	.016	.020	.255	CM	1,2,3,4
9215	2	16	26/30	.016	.020	.245	CL2	1,2
9216	3	16	26/30	.016	.020	.270	CL2	1,2,3

*2 Cond.—UL 2092, 3 Cond.—UL 2093, 4 Cond.—UL 2094

COLOR CODE: 1= Black 2= Red 3= Clear 4= Green

MULTICONDUCTOR - FOIL SHIELD 105°C-PP/PVC-200V



Insulation Thickness 0.008"

DESCRIPTION:

Conductor, Stranded or Solid Tinned Copper. Insulation, Color Coded Polypropylene (PP). Shield, Aluminum/Polyester Tape, Foil Facing Inward (100% Coverage). Drain Wire, 22 AWG Tinned Copper. Jacket, Gray PVC

WEICO NO.	NO. OF COND.	CONDUCTOR AWG	CONDUCTOR STRAND	JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
9217	2	22	Solid	.018	0.120
9218	2	22	7/30	.020	0.130

COLOR CODE: Black, Red

CHARACTERISTICS:

- Temperature Range: -20°C to +105°C
- Voltage Rating: 200 Volts

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTIPAIR 75°C - POLYPROPYLENE INSULATED



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- CSA Certified PCC FT-4
- Suggested working voltage - 300V

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Polypropylene insulation, twisted into pairs (Black with Red and Green with White). Each Pair Aluminum Polyester Shielded with Stranded Tinned Copper Common Drain Wire, Overall Gray PVC Jacket.

22—STRANDED (7/30)

WEICO NO.	NO. OF PAIRS	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
8004	2	4	.020	.165

INDIVIDUALLY FOIL SHIELDED 80°C - PE/PVC



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2919, 80°C, 30V
- CSA Certified PCC FT-1
- Suggested working voltage for non UL applications:
22 AWG - 300V
18 AWG - 400V

DESCRIPTION:

Each Conductor Tinned Copper, Color Coded Polyethylene Insulation, Conductors Twisted into Pairs, Mylar-Supported Aluminum Foil Shield, Aluminum Facing Inward Stranded Tinned Copper Drain Wire, Gray Polyvinylchloride Jacket.

#22—SOLID NOM. INS. THICKNESS .013"

WEICO NO.	NO. OF PAIRS	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
8106	3	6	.037	.279
8112	6	12	.037	.379
8118	9	18	.040	.425
8122	11	22	.040	.470
8130	15	30	.045	.525

#22—STRANDED (7/30) NOM. INS. THICKNESS .010"

8006	3	6	.048	.301
8012	6	12	.048	.401
8018	9	18	.048	.443
8022	11	22	.048	.486
8024	12	24	.048	.486
8030	15	30	.065	.580
8034	17	34	.065	.615
8038	19	38	.065	.625
8054	27	54	.070	.745

#18—STRANDED (16/30) NOM. INS. THICKNESS .016"

8006/18	3	6	.048	.398
8012/18	6	12	.065	.570
8018/18	9	18	.065	.655
8024/18	12	24	.070	.750
8030/18	15	30	.070	.820

COLOR CODE: Consult Factory.

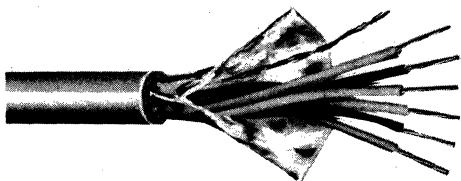
Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTICONDUCTOR OVERALL FOIL SHIELD 300V-24 GAUGE



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

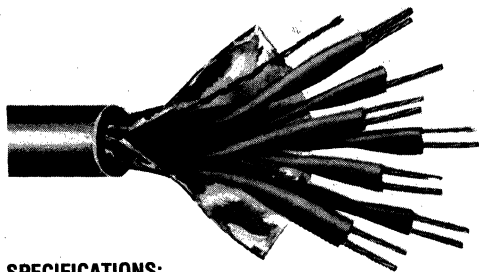
Each Conductor Tinned Copper, Color Coded Polyvinylchloride Insulation, Conductors Cabled. Overall Mylar Supported Aluminum Foil Shield, Stranded 24 Gauge Tinned Copper Drain Wire, Gray Polyvinylchloride Jacket Overall.

#24—STRANDED (7/32) NOM. INS. THICKNESS .010"

WEICO NO.	NO. OF CONDUCTORS	COLOR CODE	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7503	3	D	.035	.168
7504	4	D	.035	.190
7505	5	D	.035	.195
7506	6	D	.035	.215
7507	7	D	.035	.215
7508	8	D	.035	.220
7509	9	D	.035	.250
7510	10	D	.035	.250
7515	15	E	.035	.280
7520	20	E	.035	.320
7525	25	E	.040	.360
7530	30	E	.040	.380
7540	40	E	.040	.430
7550	50	E	.045	.490

COLOR CODE: Consult Factory.

MULTIPAIR OVERALL FOIL SHIELD 300V-24 GAUGE



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

Each Conductor Tinned Copper, Color Coded Polyvinylchloride Insulation, Conductors Twisted into Pairs. Overall Mylar Supported Aluminum Foil Shield, Stranded Tinned Copper Drain Wire, Gray Polyvinylchloride Jacket Overall.

#24—STRANDED (7/32) NOM. INS. THICKNESS .010"

WEICO NO.	NO. OF PAIRS	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7302	1	2	.032	.156
7304	2	4	.032	.222
7306	3	6	.032	.232
7308	4	8	.032	.265
7310	5	10	.035	.295
7312	6	12	.035	.295
7314	7	14	.035	.300
7316	8	16	.035	.330
7318	9	18	.035	.340
7320	10	20	.040	.380
7330	15	30	.040	.425
7338	19	38	.040	.460
7350	25	50	.045	.515
7300*	50	100	.050	.700

COLOR CODE: Consult Factory.

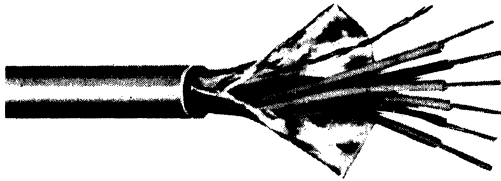
Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTICONDUCTOR FOIL SHIELD 300V-22 GAUGE



SPECIFICATIONS



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4
- OSHA Acceptable

DESCRIPTION:

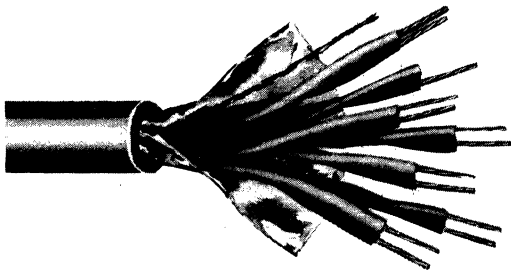
Each Conductor Stranded Tinned Copper, Color Coded Polyvinylchloride (UL Style 1061) Insulated, Overall Aluminum/Polyester Shield with Stranded Tinned Copper Drain Wire, Nylon Rip Cord for Ease of Jacket Stripping, Gray PVC Jacket Overall.

22 AWG 7/30 Insulation Thickness .010"

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7602	2	.032	.180
7603	3	.032	.190
7604	4	.032	.210
7606	6	.032	.230
7608	8	.032	.260
7610	10	.032	.280
7615	15	.032	.320
7620	20	.032	.350
7625	25	.032	.380
7630	30	.032	.410
7640	40	.032	.460
7650	50	.032	.500
7660	60	.032	.540
7670	70	.053	.620
7680	80	.053	.650
7690	90	.053	.690
7600	100	.053	.720

COLOR CODE: Consult Factory.

MULTIPAIR, FOIL SHIELD 300V-22 GAUGE



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4
- OSHA Acceptable

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyvinylchloride (UL Style 1061) Insulated, Twisted into Pairs, Overall Aluminum/Polyester Shield with Stranded Tinned Copper Drain Wire, Nylon Rip Cord for Ease of Jacket Stripping, Gray PVC Jacket Overall.

22 AWG 7/30 INSULATION THICKNESS .010"

WEICO NO.	NO. OF PAIRS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
7702	1	.032	.180
7704	2	.032	.230
7706	3	.032	.260
7708	4	.032	.280
7710	5	.032	.310
7712	6	.032	.330
7718	9	.032	.380
7722	11	.032	.410
7730	15	.032	.460
7738	19	.032	.500
7754	27	.053	.610
7701	51	.083	.860

COLOR CODE: Consult Factory.

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTICONDUCTOR SPIRAL SHIELD 80°C-300V-PVC



SPECIFICATIONS:



- UL Listed, NEC Type CM or CL2 (see table), 75°C
- UL AWM Style 2095, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

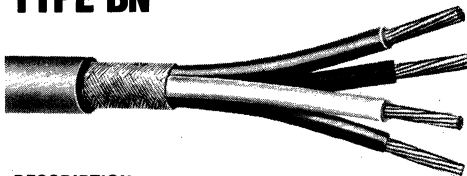
Each Conductor Stranded or Solid Tinned Copper, Color Coded Polyvinylchloride Insulation, Spiral Wrapped Bare Copper Shield-95% Shield Coverage. Nom. .020" Gray Polyvinylchloride Jacket Overall.

- COLOR CODE:** 1 = Black 3 = White 5 = Yellow
2 = Red 4 = Green 6 = Blue

WEICO NO.	NO. OF COND.	CONDUCTOR AWG	STRAND	NOM. INS. THICKNESS (INCHES)	UL NEC RATING	NOM. O.D. (INCHES)
9301	2	22	Solid	.016	CM	.170
9302	1	22	7/30	.016	*	.115
9303	2	22	7/30	.016	CM	.175
9304	3	22	7/30	.016	CM	.190
9305	4	22	7/30	.016	CM	.200
9306	6	22	7/30	.016	CM	.235
9307	1	20	10/30	.016	*	.130
9308	2	20	10/30	.016	CL2	.195
9309	3	20	10/30	.016	CL2	.210
9310	4	20	10/30	.016	CL2	.225
9311	6	20	10/30	.016	CL2	.265
9312	1	18	16/30	.016	*	.135
9314	2	18	16/30	.016	CM	.230
9315	3	18	16/30	.016	CM	.235
9316	4	18	16/30	.016	CM	.245
9317	2	16	26/30	.016	CL2	.240
9318	3	16	26/30	.016	CL2	.245
9319	2	14	41/30	.020	CL2	.285
9320	3	14	41/30	.020	CL2	.290

* Single Conductor Cables UL AWM Style 1108, 80°C, 300V, VW-1.

MULTICONDUCTOR BRAIDED SHIELD 105°C-PVC/NYLON-600V MIL-W-16878 TYPE BN



DESCRIPTION:

Each Conductor Stranded Tinned Copper, .010" Polyvinylchloride Insulation, Color Coded, Clear Nylon (Polyamide) Jacket, Conductors Cabled, Braided Tinned Copper Shield 90% Coverage, Gray Polyvinylchloride Jacket Overall.

CHARACTERISTICS:

- Temperature Rating: -55°C to +105°C
- Voltage Rating: 600 Volts

**MIL-W-16878 TYPE BN CONDUCTORS
NOMINAL INS. THICKNESS—.010"—NOMINAL NYLON THICKNESS .003"**

WEICO NO.	NO. OF COND.	CONDUCTOR SIZE	STRAND	NOM. JKT. THICKNESS (INCHES)	NOM. O.D. (INCHES)
6126	1	26	7/34	.010	.087
6226	2	26	7/34	.014	.138
6326	3	26	7/34	.014	.142
6426	4	26	7/34	.016	.162
6124	1	24	19/36	.010	.092
6224	2	24	19/36	.016	.152
6324	3	24	19/36	.016	.161
6424	4	24	19/36	.017	.172
6122	1	22	19/34	.010	.100
6222	2	22	19/34	.016	.168
6322	3	22	19/34	.017	.178
6422	4	22	19/34	.019	.194
6120	1	20	19/32	.010	.106
6220	2	20	19/32	.019	.186
6320	3	20	19/32	.019	.196
6420	4	20	19/32	.021	.218
6118	1	18	19/30	.012	.120
6218	2	18	19/30	.021	.210
6318	3	18	19/30	.022	.227
6418	4	18	19/30	.023	.250
6116	1	16	19/29	.016	.137
6216	2	16	19/29	.023	.236
6316	3	16	19/29	.023	.240
6416	4	16	19/29	.025	.274

- COLOR CODE:** 1 = White 2 = Black 3 = Red 4 = Green

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COMMUNICATION AND CONTROL CABLE

MULTICONDUCTOR BRAIDED SHIELD 80°C-PE/PVC-600V



DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyethylene Insulation, Cabled with Fillers Where Necessary, Mylar Wrap, Braided Tinned Copper Shield, Gray Polyvinylchloride Jacket Overall.

CHARACTERISTICS:

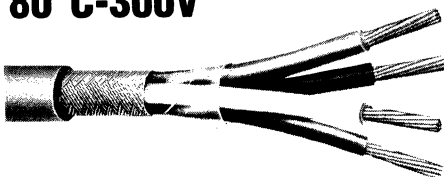
- Temperature Range: -20°C to +80°C
- Suggested Working Voltage: 600 Volts

20 AWG-26/34 STRANDED CONDUCTOR—NOMINAL INS. THICKNESS .015"

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
9401	2	.030	.245
9402	3	.035	.250
9403	4	.035	.260
9404	5	.035	.275
9405	6	.035	.300
9406	8	.035	.330
9407	10	.035	.375
9408	12	.035	.380
9409	15	.035	.410
9410	20	.035	.455

COLOR CODE: Consult Factory.

MULTICONDUCTOR BRAIDED SHIELD 80°C-300V



SPECIFICATIONS:



- UL Listed, NEC Type CM or CL2 (see table), 75°C
- UL AWM Style 2095, 80°C, 300V
- CSA Certified PCC FT-4

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyvinylchloride Insulated, Tinned Copper Braided Shield, Gray PVC Jacket Overall.

INSULATION THICKNESS .016"

WEICO NO.	NO. OF CONDUCTORS	CONDUCTOR AWG	STRAND	NOM. JACKET THICKNESS (INCHES)	UL NEC RATING	NOM. O.D. (INCHES)
9450	1	22	7/30	.020	*	.120
9451	2	22	7/30	.020	CM	.180
9452	3	22	7/30	.020	CM	.200
9453	4	22	7/30	.020	CM	.210
9454	1	20	10/30	.020	*	.130
9455	2	20	10/30	.020	CL2	.200
9456	3	20	10/30	.020	CL2	.220
9457	4	20	10/30	.020	CL2	.230
9458	1	18	16/30	.020	*	.140
9459	2	18	16/30	.020	CM	.230
9460	3	18	16/30	.020	CM	.240
9461	4	18	16/30	.020	CM	.250
9462	2	16	26/30	.020	CL2	.250
9463	3	16	26/30	.020	CL2	.250

COLOR CODE: Consult Factory.

* Single Conductor Cables UL AWM Style 1108, 80°C, 300V, VW-1.

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

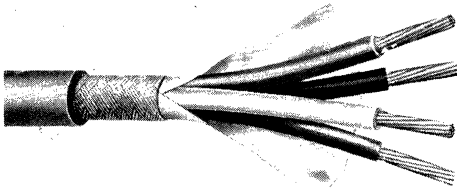
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COMMUNICATION AND CONTROL CABLE

MAGNASHIELD

**MULTICONDUCTOR
MAGNASHIELD
80°C-300V**



SPECIFICATIONS:



- UL Listed, NEC Type CM, 75°C
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4
- OSHA Acceptable
- Meets FCC Docket 20780
- MIL-STDS 461 and 462B and Tempest.

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyvinylchloride Insulation, MAGNASHIELD (Aluminum Foil/Polyester/Aluminum Foil with Drain Wire and Tinned Copper Braid) Nylon Rip Cord for Ease of Jacket Stripping, Gray PVC Jacket Overall.

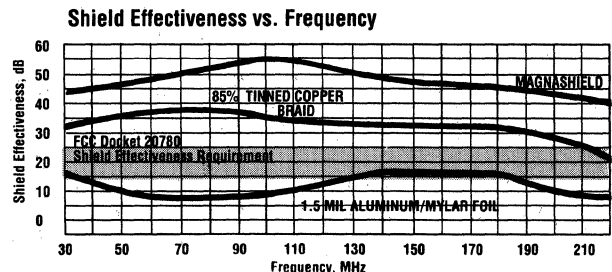
MAGNASHIELD CABLE SHIELDING:

The proper shielding of electronic cables is paramount to overall systems performance. Many applications now require shielding that is more effective than aluminum foil or tinned copper braid. In response to this demand, Weico has created MAGNASHIELD. Employing a triple laminate foil shield (foil/polyester/foil) with drain wire plus tinned copper braid, MAGNASHIELD virtually eliminates the effects of radiated signals (EMI/RFI) and electrostatic discharges.

Providing a 100% increase in shielding effectiveness over braid alone, MAGNASHIELD exceeds the requirements of FCC Docket 20780, MIL STDS 461 & 462B and Tempest.

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
#22 STRANDED (7/30) NOM. INS. THICKNESS .010"			
9102	2	.032	.190
9103	3	.032	.200
9104	4	.032	.215
9106	6	.032	.245
9108	8	.032	.255
9110	10	.032	.290
9115	15	.032	.330
9120	20	.032	.360
9125	25	.032	.400
9130	30	.032	.420
9140	40	.032	.465
9150	50	.032	.510
9160	60	.032	.560
9170	70	.050	.635
9180	80	.050	.660
9190	90	.050	.690
9100	100	.050	.745
#18 STRANDED (16/30) NOM. INS. THICKNESS .017"			
9102/18	2	.032	.250
9103/18	3	.032	.280
9104/18	4	.032	.310
9106/18	6	.032	.350
9108/18	8	.032	.380
9110/18	10	.032	.410
9115/18	15	.032	.480
9120/18	20	.032	.530
9125/18	25	.053	.620
#16 STRANDED (19/29) NOM. INS. THICKNESS .017"			
9102/16	2	.032	.280
9103/16	3	.032	.320
9104/16	4	.032	.340
9106/16	6	.032	.390
9108/16	8	.032	.430
9110/16	10	.032	.470
9115/16	15	.032	.550
9120/16	20	.053	.650
9125/16	25	.053	.710

COLOR CODE: Consult Factory.



STANDARD PUT-UPS: 100 ft., 500 ft., 1000 ft.

WEICO WIRE & CABLE INC. • 161 Rodeo Drive • Edgewood, N.Y. 11717 • TEL 516-254-2970 • FAX 516-254-2099



COMMUNICATION AND CONTROL CABLE

MAGNA Shield

THE MINIATURE SERIES

MULTICONDUCTOR MAGNASHIELD 80°C-300V



SPECIFICATIONS:



- UL Listed, NEC Type CL-2, 75°C, 150V
- UL AWM Style 2464, 80°C, 300V
- CSA Certified PCC FT-4
- Meets FCC Docket 20780
- MIL-STD 461 and MIL-STD 462B and Tempest.

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Semi-Rigid Polyvinylchloride Insulation, MAGNASHIELD (Aluminum Foil/Polyester/Aluminum Foil with Drain Wire and Tinned Copper Braid), Gray PVC Jacket Overall.

MAGNASHIELD CABLE SHIELDING:

The proper shielding of electronic cables is paramount to overall systems performance. Many applications now require shielding that is more effective than aluminum foil or tinned copper braid. In response to this demand, Weico has created MAGNASHIELD. Employing a triple laminate foil shield (foil/polyester/foil) with drain wire plus tinned copper braid, MAGNASHIELD virtually eliminates the effects of radiated signals (EMI/RFI) and electrostatic discharges.

Providing a 100% increase in shielding effectiveness over braid alone, MAGNASHIELD exceeds the requirements of FCC Docket 20780, MIL STDS 461 & 462B and Tempest.

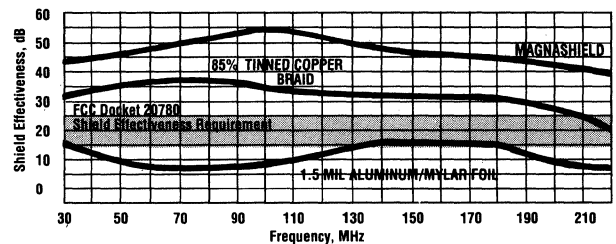
#28 STRANDED (7/36) NOM. INS. THICKNESS .010"

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
9103/28*	3	.035	.16
9104/28	4	.035	.17
9105/28	5	.035	.18
9106/28	6	.035	.19
9107/28	7	.035	.19
9108/28	8	.035	.21
9109/28	9	.035	.22
9110/28	10	.035	.23
9115/28	15	.035	.26
9125/28	25	.035	.30
9137/28	37	.035	.34
9150/28	50	.035	.40

* AWM only.

COLOR CODE: Consult Factory

Shield Effectiveness vs. Frequency



STANDARD PUT-UPS: 100 ft., 500 ft., 1000 ft.

MULTIPAIR DUAL SHIELD LOW CAPACITANCE 80°C-30V



SPECIFICATIONS:



- UL Listed, NEC Type CL-2
- UL AWM Style 2960, 60°C, 30V
- CSA Certified PCC FT-1
- Nominal Capacitance Between Conductors: 15.5pF/ft.

DESCRIPTION:

Each Conductor Stranded Tinned Copper, Color Coded Polyethylene Insulation, Conductors Twisted into Pairs, Mylar supported Aluminum Foil Shield with Drain Wire, Overall Tinned Copper Braid Shield, 90% Minimum Coverage, Gray PVC Jacket Overall.

WEICO NO.	NO. OF PAIRS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
8702	2	.035	.214
8703	3	.035	.222
8704	4	.035	.237
8705	5	.035	.240
8707	7	.035	.256
8709	9	.035	.290
8712	12	.035	.319
8713	13	.035	.336
8718	18	.035	.365
8725	25	.035	.429
8731	31	.040	.462

COLOR CODE: Consult Factory.

STANDARD PUT-UPS: 100 ft., 500 ft., 1000 ft.



COMMUNICATION AND CONTROL CABLE

BRAIDED SHIELD
*** **“TEFLON” (TFE)**
TAPE WRAPPED JACKET
200°C-600V
MIL-W-16878/4
TYPE E



DESCRIPTION:

Each Conductor Stranded Silver Plated Copper, Type E Extruded .010" TFE **“Teflon” Insulation, Color Coded, Cabled, Braided Silver Plated Copper Shield 90% Coverage, Sintered Wrapped White Teflon Tape.

CHARACTERISTICS:

- Temperature Range: -65°C to +200°C
- Voltage Rating: 600 Volts

COLOR CODE: 1 = White 2 = Black 3 = Red 4 = Green

** DuPont's Registered Trademark

WEICO NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOM. JKT. (INCHES)	NOM. O.D. AT HIGH POINT (INCHES)	NOM. SHIELD TO COND.	NOM. CAP IN MMF COND. TO COND.
5128/7	1	28	7/36	.010	.079	35	—
5228/7	2	28	7/36	.010	.121	32	18
5126/7	1	26	7/34	.010	.083	40	—
5226/7	2	26	7/34	.010	.129	36	20
5326/7	3	26	7/34	.010	.129	33	19
5126	1	26	19/38	.010	.083	40	—
5226	2	26	19/38	.010	.129	36	20
5326	3	26	19/38	.010	.129	33	19
5426	4	26	19/38	.010	.146	32	18
5124	1	24	19/36	.012	.095	45	—
5224	2	24	19/36	.012	.140	35	25
5324	3	24	19/36	.012	.147	35	20
5424	4	24	19/36	.012	.159	35	20
5122	1	22	19/34	.012	.102	55	—
5222	2	22	19/34	.012	.154	45	25
5322	3	22	19/34	.012	.162	35	25
5422	4	22	19/34	.012	.176	35	25
5120	1	20	19/32	.012	.110	55	—
5220	2	20	19/32	.012	.170	95	25
5320	3	20	19/32	.012	.180	85	25
5420	4	20	19/32	.012	.195	140	30
5118	1	18	19/30	.012	.120	70	—
5218	2	18	19/30	.012	.190	60	35
5318	3	18	19/30	.012	.203	60	35
5418	4	18	19/30	.012	.220	55	35
5116	1	16	19/29	.012	.130	107	—
5216	2	16	19/29	.012	.210	67	25
5316	3	16	19/29	.012	.211	56	30
5416	4	16	19/29	.012	.243	54	29
5114	1	14	19/27	.012	.144	84	—
5214	2	14	19/27	.012	.239	61	34
5314	3	14	19/27	.012	.227	56	31
5112	1	12	19/25	.012	.164	96	—
5212	2	12	19/25	.012	.279	72	40
5312	3	12	19/25	.012	.265	61	34

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.



COMMUNICATION AND CONTROL CABLE

MIL-C-27500 AEROSPACE ELECTRONIC CABLE

TYPE RC (MIL-W-22759/11) 06



APPLICATIONS:

For general aerospace flight vehicle applications. These cables use M22759/11 insulated conductors in their construction. QPL to Mil-W-22759/11 is required on the insulated conductors in these cables.

SPECIFICATIONS:

Conductor: Stranded silver plated copper wire.

Insulation: Extruded polytetrafluoroethylene (*Teflon PTFE) in accordance with Mil-W-22759/11.

Cable: Up to seven conductors available in cable configuration.

Shield: Silver plated copper wire braid, 85% minimum coverage, #38 AWG on core diameters less than 0.060", #36 AWG on 0.060" and larger.

Jacket: Taped and fused white polytetrafluoroethylene (PTFE).

Voltage Rating: 600V RMS

Temperature Rating: -55°C to +200°C

Identification: Marker tape under the shield with cable code and manufacturer's I.D. except single conductor where identification is printed on the conductor insulation.

WEICO NO.	MILITARY NO.	NO. OF COND.	AWG SIZE	STRANDS	INSUL O.D.	APPROX. CABLE O.D.	APPROX. WGT. LBS/1000'
55126	M27500-26RC1S06	1	26	19/38	.038	.081	7.0
55226	M27500-26RC2S06	2	26	19/38	.038	.118	13.5
55326	M27500-26RC3S06	3	26	19/38	.038	.125	16.8
55426	M27500-26RC4S06	4	26	19/38	.038	.135	19.9
55124	M27500-24RC1S06	1	24	19/36	.043	.083	8.2
55224	M27500-24RC2S06	2	24	19/36	.043	.135	15.9
55324	M27500-24RC3S06	3	24	19/36	.043	.140	20.2
55424	M27500-24RC4S06	4	24	19/36	.043	.150	23.8
55122	M27500-22RC1S06	1	22	19/34	.049	.090	9.6
55222	M27500-22RC2S06	2	22	19/34	.049	.145	19.3
55322	M27500-22RC3S06	3	22	19/34	.049	.150	24.9
55422	M27500-22RC4S06	4	22	19/34	.049	.162	29.8
55120	M27500-20RC1S06	1	20	19/32	.058	.098	12.3
55220	M27500-20RC2S06	2	20	19/32	.058	.165	24.5
55320	M27500-20RC3S06	3	20	19/32	.058	.170	32.5
55420	M27500-20RC4S06	4	20	19/32	.058	.190	52.5
55118	M27500-18RC1S06	1	18	19/30	.068	.115	17.5
55218	M27500-18RC2S06	2	18	19/30	.068	.185	31.7
55318	M27500-18RC3S06	3	18	19/30	.068	.195	42.5
55418	M27500-18RC4S06	4	18	19/30	.068	.215	62.8
55116	M27500-16RC1S06	1	16	19/29	.075	.125	20.5
55216	M27500-16RC2S06	2	16	19/29	.075	.200	37.5
55316	M27500-16RC3S06	3	16	19/29	.075	.205	50.5
55416	M27500-16RC4S06	4	16	19/29	.075	.230	66.0
55114	M27500-14RC1S06	1	14	19/27	.090	.140	27.5
55214	M27500-14RC2S06	2	14	19/27	.090	.230	51.2
55314	M27500-14RC3S06	3	14	19/27	.090	.240	70.3
55414	M27500-14RC4S06	4	14	19/27	.090	.265	88.5
55112	M27500-12RC1S06	1	12	19/25	.111	.160	39.0
55212	M27500-12RC2S06	2	12	19/25	.111	.270	74.0
55312	M27500-12RC3S06	3	12	19/25	.111	.285	105.0
55412	M27500-12RC4S06	4	12	19/25	.111	.315	131.0

*DuPont's Registered Trademark

STANDARD PUT-UPS: 100 ft., 500 ft., 1000 ft.

WEICO WIRE & CABLE INC. • 161 Rodeo Drive • Edgewood, N.Y. 11717 • TEL 516-254-2970 • FAX 516-254-2099



COAXIAL CABLE

MIL-C-17 COAXIAL CABLE (POLY- ETHYLENE DIELECTRIC)



WEICO NO.	RG CABLE TYPE	JKT. O.D.	JKT. MAT	MECHANICAL SPECIFICATIONS				ELECTRICAL SPECIFICATIONS				
				OUTER SHIELD	INNER SHIELD	DIELEC-TRIC O.D.	DIELEC-TRIC MAT.	CENTER COND.	NOM IMPED. (OHMS)	NOM CAP. MMFD/FT.	MAX OPERAT-ING VOLT (RMS)	V.P. 0/0
W006A	6A/U	.336	NCV	C	SC	.189	PE	21 CW SOLID	75	20.0	2700	65.9
W008	8/U	.415	V	—	C	.289	PE	13 C 7/21	52	29.5	5000	65.9
W008A	8A/U	.415	NCV	—	C	.295	PE	13 C 7/21	52	29.5	5000	65.9
W011	11/U	.415	V	—	C	.295	PE	18 TC 7/26	75	20.5	5000	65.9
W011A	11A/U	.412	NCV	—	C	.292	PE	18 TC 7/26	75	20.5	5000	65.9
W055B	55B/U	.206	PE	TC	TC	.116	NP	20 SC SOLID	53.5	28.8	1900	66.0
W058	58/U	.200	V	—	TC	.121	PE	20 C SOLID	53.5	28.5	1900	65.9
8918	58/U TYPE	.195	V	—	TC	.116	FPE	20 C SOLID	50	26.0	LOW VOLTAGE APPLICATION	78.0
W058A	58A/U	.199	V	—	TC	.120	PE	20 C 19/33	50	29.5	1900	65.9
W058C	58C/U	.199	NCV	—	TC	.120	PE	20 TC 19/33	50	29.5	1900	65.9
W058Q	58C/U	.195	NCV	—	TC	.116	PE	20 TC 19/33	50	30.8	1900	66.0
M17/28-RG058												
W059	59/U	.250	V	—	C	.150	PE	22 CW SOLID	73	21.0	2300	65.9
W059B	59B/U	.246	NCV	—	C	.150	PE	23 CW SOLID	75	20.5	2300	65.9
W059BD	59B/U	.242 X	NCV	—	C	.146	PE	23 CW SOLID	75	20.1	2300	66.0
DUAL		.504										
W059F	59/U TYPE	.242	V	—	C	.146	FPE	22 C 7/30	75	17.3	1500	78.0
W062	62/U	.250	V	—	C	.151	SSP	22 CW SOLID	93	13.5	750	84.0
W062A	62A/U	.249	NCV	—	C	.151	SSP	22 CW SOLID	93	13.5	750	84.0
W062B	62B/U	.242	NCV	—	C	.146	SSP	24 CW 7/32	93	13.5	750	84.0
W063B	63B/U	.415	NCV	—	C	.295	SSP	22 CW SOLID	125	10.0	1000	84.0
W108A	108A/U	.235	NCV	—	TC	.158	PE	20 1 COND TC 7/28 20 1 COND C 7/28	78	19.7	1000	66.0
W174	174/U	.105	NCV	—	TC	.060	PE	26 CW 7/34	50	30.0	1500	65.9
W174A	174A/U	.110	NCV	—	TC	.060	PE	26 CW 7/34	50	30.8	1500	66.0
W213	213/U	.412	NCV	—	C	.292	PE	.0888 C 7/.0296	50	30.5	5000	65.9
W214	214/U	.432	NCV	SC	SC	.292	PE	.0888 SC 7/.0296	50	30.5	5000	65.9
W217	217/U	.555	NCV	C	C	.380	PE	10 C SOLID	50	30.0	7000	65.9
W218	218/U	.880	NCV	—	C	.690	PE	.195 C SOLID	50	30.0	11000	65.9
W223	223/U	.216	NCV	SC	SC	.120	PE	19 SC SOLID	50	30.0	1900	65.9
W701	TWINAX	.330	V	—	TC	.228	PE	20 1 COND TC 7/28 20 1 COND C 7/28	100	15.5	LOW VOLTAGE APPLICATION	66.0
W702	—	.150	V	—	TC	.100	PE	27 CW 7/35	75	20.5	2500	66.0
W703	—	.305	PE	TC	TC	.198	PE	20 C SOLID	75	21.0	2700	66.0
8922	TWINAX	.244	V	—	TC	.158	PE	20 1 COND TC 7/28 20 1 COND C 7/28	78	19.7	LOW VOLTAGE APPLICATION	66.0
8929	ETHERNET*	.405	V	ALUM FOIL TC BRAID	ALUM FOIL TC BRAID	.247	FPE	12 C SOLID	50	26.0	LOW VOLTAGE APPLICATION	78.0

*XEROX TRADEMARK

C—Bare Copper
TC—Tinned Copper
SC—Silver Covered Copper
CW—Copper Covered Steel

FPE—Cellular Polyethylene
FEP—Fluorinated Ethylene Propylene Type IX
PTFE—Polytetrafluoroethylene
FG—Braid V—Fiberglass, Impregnated Type V Per MIL-C-17
PFA—Perfluoroalkoxy

PE—Solid Polyethylene
SSP—Semi Solid Polyethylene
BP—Black Polyethylene—Type IIIA
NP—Natural Polyethylene—Type III

V—Polyvinylchloride—Type 1
NCV—Non-Contaminating Polyvinylchloride—Type IIA
All Dimensions Are Max.
Except Where Indicated

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

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COAXIAL CABLE, PLENUM COAXIAL CABLE

MIL-C-17 COAXIAL CABLE ("TEFLON"**) DIELECTRIC)



WEICO NO.	MILITARY NO.	RG TYPE	COND.	NOM. WALL THICK	NOM. JKT. THICK	JACKET TYPE	MAX. O.D.	NOM. CAP.	IMPED. OHMS.	MAX. OPER. VOLTAGE
W142B	M17/60RG142	142B/U	1/.039	.039	.012	Extruded FEP	.200	28.5	50 ± 2	1900
W178B	M17/93RG178	178B/U	7/.004	.012	.010	Extruded FEP	.075	27.9	50 ± 2	1000
W179B	M17/94RG179	179B/U	7/.004	.021	.010	Extruded FEP	.105	20.4	75 ± 3	1200
W180B	M17/95RG180	180B/U	7/.004	.045	.010	Extruded FEP	.145	15.3	93 ± 2	850
W187A	PER MIL-C-17D	187A/U	7/.004	.024	.012	Fused TFE Tape	.110	19.5	75 ± 3	1200
W188A	PER MIL-C-17D	188A/U	7/.0067	.020	.012	Fused TFE Tape	.110	27.5	50 ± 2	1200
W195A	PER MIL-C-17D	195A/U	7/.004	.045	.014	Fused TFE Tape	.155	14.5	95 ± 3	1500
W196A	PER MIL-C-17D	196A/U	7/.004	.011	.012	Fused TFE Tape	.080	28.5	50 ± 2	1000
W225	PER MIL-C-17D	225/U	7/.0312	.096	.035	FG-Braid-V	.430	29.4	50 ± 2	5000
W302	M17/110RG302	302/U	1/.025	.061	.013	Extruded FEP	.207	19.5	75 ± 2	2300
W316	M17/113RG316	316/U	7/.0067	.020	.007	Extruded FEP	.102	29.0	50 ± 2	1200
W393	M17/127RG393	393/U	7/.0312	.096	.015	Extruded FEP	.390	29.4	50 ± 2	5000
W400	M17/128RG400	400/U	19/.008	.039	.012	Extruded FEP	.195	29.3	50 ± 2	1900
W704	M17/176-00002	—	2 Cond. 19/.005	.010	.012	PFA	.129	24.0	77 ± 2	750

COAXIAL-CL2P (NEC-725-2b)



DESCRIPTION:

Fluoropolymer Coaxial Cables are made to the most exacting specifications in the wire and cable industry. WEICO'S designs and standards allow for dramatic improvements in critical data communications electrical characteristics such as: signal speed, attenuation, and capacitance.

CHARACTERISTICS

- High Transmission Speed
- Allows Longer Cable Lengths In Computer Systems
- Can Be Installed In Air Ducts And Plenums Without Conduit
- UL Listed
- Temp. Range: -90°C to +200°C

WEICO NO.	RG TYPE	CENTER COND.	NOM. O.D. IN.	WEIGHT LBS/MFT	NOM. IMP. (OHM)	NOM. CAP. (PF/FT)	V.P. %
WP06	6	18 SOLID BC	.255	55.9	75	17	80
WP11	11	14 SOLID BC	.350	95	75	17	80
WP58	58	20 SOLID BC	.178	38.5	50	27	70
WP59	59	20 SOLID BCW	.196	31.05	75	17	80
WP60	59	22 SOLID BCW	.189	35.6	75	19	80
WP59D	59 DUAL	20 SOLID BCW	.206 x .457	70.5	75	17	80
WP60D	59 DUAL	23 SOLID BCW	.225 x .430	86	75	19	70
WP62	62	22 SOLID BCW	.198	29.9	93	13	83
WP01	TWINAX	20-7-B.C. 20-7-T.C.	.264	55.60	100	12	80
WP02	ETHERNET*	SOLID .085 T.C.	.375	128	50	26	80

*XEROX TRADEMARK

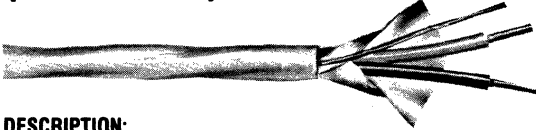
**DuPont's Registered Trademark.

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PLENUM CABLE, WELDING CABLE

FIRE ALARM-FPLP (NEC-760-4d)-SHIELDED



DESCRIPTION:

Each Conductor Solid Tinned Copper,
Color Coded Fluoropolymer Resin
Insulated, Twisted Pair Overall
Aluminum Foil Shield (100% coverage)
Drain Wire, Fluoropolymer Jacket
Overall.

WEICO NO.	NUMBER OF CONDUCTORS	GAUGE (AWG)	NOM. O.D. (INCHES)	WEIGHT LBS/MFT
9869	2	18	.200	34.5
9870	2	16	.220	42

FIRE ALARM-FPLP LOCAL LAW - 5 CLASS E-SHIELDED



DESCRIPTION:

Each Conductor Solid Tinned Copper,
Color Coded Fluoropolymer Resin
Insulated, Twisted Pair, Overall
Aluminum Foil Shield (100% coverage)
Drain Wire, Fluoropolymer Jacket
Overall.

WEICO NO.	NUMBER OF CONDUCTORS	GAUGE (AWG)	NOM. O.D. (INCHES)	WEIGHT LBS/MFT
9871	2	18	.200	31.2
9872	2	16	.220	41.2

WELDING CABLE

NEOPRENE



DESCRIPTION:

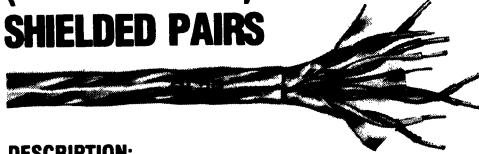
- Stranded Bare Copper Conductor
- Black Neoprene Jacket
- Temperature Range: -30°C to +90°C

WEICO NO.	CONDUCTOR AWG.	STRAND	NOM. OVERALL DIAMETER (INCHES)	CURRENT CARRYING CAPACITY (AMPS)	APPROX. NET. WT. LBS./M.FT.
1006	6	266/30	.39	75	134
1004	4	420/30	.42	100	187
1003	3	532/30	.45	150	233
1002	2	665/30	.55	200	299
1001	1	833/30	.60	250	365
1010	1/0	1057/30	.66	300	457
1020	2/0	1317/30	.73	375	555
1030	3/0	1622/30	.80	450	698
1040	4/0	2109/30	.87	550	871



PLENUM CABLE

CL2P-(NEC-725-2b) (NON-CONDUIT) SHIELDED PAIRS



DESCRIPTION:

Each Conductor Stranded, Tinned Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Twisted into Pairs, Overall Aluminum Foil Shield (100% coverage) Stranded Drain Wire, Fluoropolymer Jacket Overall.

PAIRED—SHIELDED

WEICO NO.	NUMBER OF PAIRS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9830	1	24	.120	9.80
9831	2	24	.159	14.10
9833	3	24	.170	21.35
9834	4	24	.184	26.75
9835	6	24	.221	37.35
9836	12½	24	.294	68.09
9837	25	24	.408	131.50

CL2P-(NEC-725-2b) (NON-CONDUIT) UNSHIELDED PAIRS



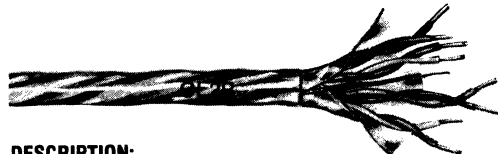
DESCRIPTION:

Each Conductor Stranded, Tinned Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Twisted into Pairs, Fluoropolymer Jacket Overall.

PAIRED—UNSHIELDED

WEICO NO.	NUMBER OF PAIRS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9838	1	24	.110	9.30
9839	2	24	.155	14.00
9840	3	24	.165	18.95
9841	4	24	.179	24.10
9842	6	24	.217	34.50
9843	12½	24	.290	66.30
9844	25	24	.400	128.00

CL2P-(NEC-725-2b) (NON-CONDUIT) LOW CAPACITANCE- SHIELDED PAIRS (12.5 PF/FT NOM.)



DESCRIPTION:

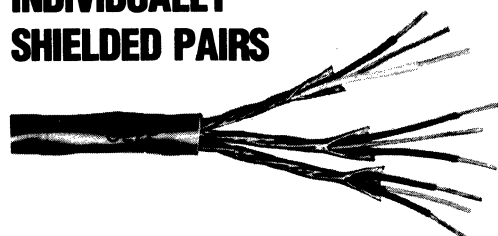
Each Conductor Stranded, Tinned Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Twisted into Pairs,

Overall Aluminum Foil Shield (100% coverage) Stranded Drain Wire, Fluoropolymer Jacket Overall.

PAIRED—SHIELDED

WEICO NO.	NUMBER OF PAIRS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9860	1	24	.140	11.00
9861	2	24	.178	18.60
9862	3	24	.190	24.35
9863	4	24	.208	30.35
9864	6	24	.250	42.65
9865	9	24	.295	60.25
9866	12½	24	.335	80.15

CL2P-(NEC-725-2b) (NON-CONDUIT) INDIVIDUALLY SHIELDED PAIRS



DESCRIPTION:

Each Conductor Stranded, Tinned Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Twisted into Pairs, Each Pair Individually Aluminum Foil Shielded, Stranded Drain Wire, Fluoropolymer Jacket Overall.

PAIRED—SHIELDED

WEICO NO.	NUMBER OF PAIRS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9867	2	22	.167	23.45
9868	3	22	.244	38.00

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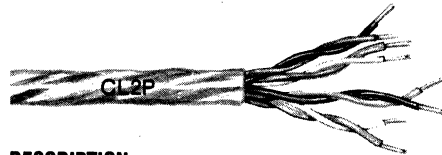
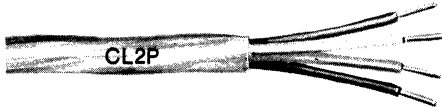
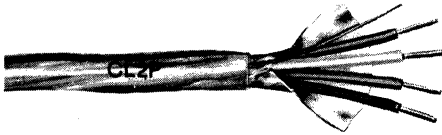


PLENUM CABLE

**CL2P-(NEC-725-2b)
(NON-CONDUIT)**



**SHIELDED - UNSHIELDED,
PAIRED - UNPAIRED**



UNPAIRED—SHIELDED

WEICO NO.	NO. OF COND.	COND. AWG (STRANDING)	INSULATION THICKNESS (IN)	JACKET THICKNESS (IN)	NOM. O.D. (IN)	APPROX. WT/MFT (LBS)
9820	2	18 (SOLID)	.010	.020	.169	24
9821	2	16 (SOLID)	.010	.020	.189	28
9822	4	22 (SOLID)	.010	.020	.156	22
9823	4	18 (SOLID)	.010	.020	.190	41

UNPAIRED—UNSHIELDED

WEICO NO.	NO. OF COND.	COND. AWG (STRANDING)	INSULATION THICKNESS (IN)	JACKET THICKNESS (IN)	NOM. O.D. (IN)	APPROX. WT/MFT (LBS)
9824	2	18 (SOLID)	.010	.020	.162	23
9825	2	16 (SOLID)	.010	.020	.185	27
9826	4	18 (SOLID)	.010	.020	.186	37

PAIRED—UNSHIELDED

WEICO NO.	NO. OF PAIRS	COND. AWG (STRANDING)	INSULATION THICKNESS (IN)	JACKET THICKNESS (IN)	NOM. O.D. (IN)	APPROX. WT/MFT (LBS)
9828	2	22 (SOLID)	.010	.020	.205	22
9829	3	22 (SOLID)	.010	.020	.212	30

DESCRIPTION:

Conductors Tinned or Bare Copper Insulated with Fluoropolymer Resin, Conductors Paired or Cabled, Unshielded or Overall Foil Shield (100% Coverage), Drain Wire, Extruded Fluoropolymer Transparent Jacket Overall.

APPLICATION:

Computer Interconnect, Instrumentation and Control, Business Machines, and Remote Control Signaling.



PLENUM TELEPHONE CABLE

CMP-(NEC-800-3d) (NON-CONDUIT)



DESCRIPTION:

Each Conductor Solid Bare Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Cabled, Extruded Fluoropolymer Jacket Overall.

APPLICATION:

General Intercommunications, Sound Systems, Industrial And Residential Telephone Service.

UNPAIRED—UNSHIELDED

WEICO NO.	NO. OF CONDUCTORS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9624	2	24	.123	11
9634	3	24	.130	14
9644	4	24	.139	16
9622	2	22	.131	12
9632	3	22	.137	15
9642	4	22	.151	18

CMP-(NEC-800-3d) (NON-CONDUIT)



DESCRIPTION:

Each Conductor Solid Bare Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Twisted into Pairs, Overall Aluminum Foil Shield (100% coverage) Stranded Drain Wire, Fluoropolymer Jacket Overall.

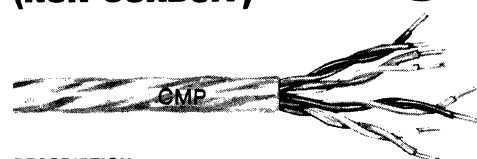
APPLICATION:

General Intercommunications, Sound Systems, Industrial And Residential Telephone Service.

PAIRED—SHIELDED

WEICO NO.	NUMBER OF PAIRS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9730	3	24	.141	15.5
9731	4	24	.150	18.65
9732	6	24	.180	25.75
9733	10	24	.248	51.25
9734	25	24	.317	90.15
9735	50	24	.464	168.00
9736	100	24	.611	323.43

CMP-(NEC-800-3d) (NON-CONDUIT)



DESCRIPTION:

Each Conductor Solid Bare Copper, Color Coded Fluoropolymer Resin Insulated, Conductors Twisted into Pairs, Fluoropolymer Jacket Overall.

APPLICATION:

General Intercommunications, Sound Systems, Industrial And Residential Telephone Service.

PAIRED—UNSHIELDED

WEICO P/N	NUMBER OF PAIRS	GAUGE (AWG)	NOM. O.D. (INCHES)	APPROX. LBS/MFT
9702	2	24	.118	10.50
9703	3	24	.131	12.25
9704	4	24	.142	15.65
9706	6	24	.155	22.35
9710	10	24	.245	50.00
9712	12	24	.253	53.00
9725	25	24	.311	86.75
9750	50	24	.459	166.00
9700	100	24	.605	321.43

COLOR CODE: Western Electric



BRAID, TINNED COPPER

FLAT BRAID QQ-B-575 F ASTM-B-33



WEICO NO.	MILITARY NO.	NOM. FLAT WIDTH	NOM. THICKNESS	BRAID AWG. OF INDIV. ENDS	CONSTRUCTION CAR-RIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG. EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAP. (Amps)
BF-.025	—	.025"	.015"	36	8	8	27	200	4.0
BF-1/32	—	1/32"	.020"	36	16	16	24	400	6.0
BF-3/64	QQB575F36T031	3/64"	.020"	36	24	24	22	600	7.0
BF-3/32	—	3/32"	.020"	36	16	48	19	1200	11.0
BF-1/8	QQB575F36T078	1/8"	.020"	36	24	72	18	1800	16.0
BF-3/16	QQB575F36T125	3/16"	.020"	36	24	120	15	3000	25.0
BF-1/4	QQB575F36T171	1/4"	.030"	36	24	168	14	4200	32.0
BF-3/8	—	3/8"	.030"	36	48	288	12	7200	46.0
BF-1/2	—	1/2"	.030"	36	48	384	10	9600	53.0
BF-5/8	QQB575F36T375	5/8"	.030"	36	48	384	10	9600	53.0
BF-3/4	QQB575F36T781	3/4"	.040"	36	48	864	7	20800	88.0
BF-1	—	1"	.045"	36	48	864	7	20800	88.0
BF-1 3/8	QQB575F30T875	1 3/8"	.050"	30	48	336	5	33700	100.0
BF-1 1/2	QQB575F30T1375	1 1/2"	.060"	30	48	528	3	53064	150.0
BF-1 3/4	—	1 3/4"	.080"	30	48	1248	2/0	125424	280.0
BF-2	—	2"	.120"	30	48	1436	3/0	154368	310.0

DESCRIPTION:

Tinned Copper Strands Woven And Rolled Flat At Time of Manufacture To Specific Width Depending on Construction

APPLICATION:

Used For Bonding, Straps, Grounding or Connecting Moving Parts. Recommended For High Current.

TUBULAR BRAID QQ-B-575 R ASTM-B-33



WEICO NO.	MILITARY NO.	NOM. I.D. WHEN ROUNDED	BRAID AWG. OF INDIV. ENDS	CONSTRUCTION CAR-RIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG. EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAP. (AMPS)
BT-1/32	QQB575R36T031	1/32"	36	24	24	22	600	7.0
BT-1/16	QQB575R36T062	1/16"	36	24	48	19	1200	11.0
BT-5/64	QQB575R36T078	5/64"	36	24	72	18	1800	16.0
BT-7/64	QQB575R36T109	7/64"	36	24	96	16	2400	19.0
BT-1/8	QQB575R36T125	1/8"	36	24	120	15	3000	25.5
BT-5/32	QQB575R36T156	5/32"	36	24	240	12	6000	40.0
BT-11/64	QQB575R36T171	11/64"	36	24	168	14	4200	32.0
BT-13/64	QQB575R34T203	13/64"	34	24	192	11	7630	46.0
BT-1/4	QQB575R36T250	1/4"	36	24	384	10	9600	53.0
BT-9/32	QQB575R30T281	9/32"	30	24	120	9	12060	60.0
BT-3/8	QQB575R36T375	3/8"	36	48	384	10	9600	53.0
BT-7/16	QQB575R30T437	7/16"	30	24	240	6	24120	90.0
BT-1/2	QQB575R36T500	1/2"	36	48	528	9	13200	62.0
BT-9/16	QQB575R30T562	9/16"	30	48	480	3	48240	145.0
BT-21/32	QQB575R30T656	21/32"	30	48	768	1	77180	190.0
BT-25/32	QQB575R36T781	25/32"	36	48	864	7	21600	88.0
BT-1	QQB575R30T1000	1"	30	48	384	4	38600	120.0

DESCRIPTION:

Tinned Copper Braid Woven in Completely Round Configuration as Outlined in SPEC QQ-B-575.

APPLICATION:

Used As Both Shielding and Protective Covering. Shielding is 95% Or More When Placed Over Equivalent Diameter Mandrel To The Inside Diameter of Tubular Braid.

Standard Put-Ups: 100 ft., 500 ft., 1000 ft.

* Values shown are for bare cable in free air at 30°C (86°F) and intended as a reference guide only. Actual values will depend on permissible temperature rise. Permissible voltage drop and other conditions of service.

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BUS BAR TINNED COPPER

SOFT DRAWN BUS MIL-W-3861 TYPE S QQ-W-343 TYPE S ASTM-B-33

WEICO NO.	CONDUCTOR SIZE (AWG)	NOMINAL CIRCULAR MIL AREA	NOMINAL O.D. (INCHES)
9030	30	100.5	.010
9028	28	159.8	.013
9026	26	254.1	.016
9024	24	404.0	.020
9022	22	642.4	.025
9020	20	1022.0	.033
9018	18	1642.0	.040
9016	16	2583.0	.051
9014	14	4107.0	.065
9012	12	6530.0	.082
9010	10	10380.0	.103
9008	8	16510.0	.129

DESCRIPTION:

Electrolytic, Soft Drawn and Annealed, Solid Tin-Plated Copper.

APPLICATION:

Point to Point Wiring, Component Leads and Ground Wire

Standard Put-Ups: 100 ft., 1000 ft.

HARD DRAWN BUS MIL-W-3861 TYPE S

WEICO NO.	CONDUCTOR SIZE (AWG)	NOMINAL CIRCULAR MIL AREA	NOMINAL O.D. (INCHES)
W2424	24	404.0	.020
W2222	22	642.4	.025
W2020	20	1022.0	.033
W1818	18	1642.0	.040
W1616	16	2583.0	.051
W1414	14	4107.0	.065
W1212	12	6530.0	.082
W1010	10	10380.0	.103

DESCRIPTION:

Electrolytic, Hard Drawn Copper Electro-tinned Plated, Straightened and Cut to 2 Ft. Lengths.

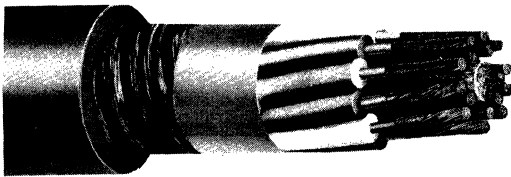
APPLICATION:

For Hooking Up All Types of Transmitters, Especially Ultra Shortwave Equipment Connecting Common Connector Terminals.

Standard Put-Ups: 100 Pcs., 2 Ft. Each, Per Package

COMMUNICATION AND CONTROL CABLE

NEOPRENE JACKET (MULTI-SO)


DESCRIPTION:

Each Conductor Stranded Bare Copper, Color Coded Rubber Insulation, Cabled with Fillers where Necessary, Wrap Over Conductors, Heavy Black Neoprene Jacket Overall.

CHARACTERISTICS:

- Temperature Range: -30°C to +90°C
- Voltage Rating: 600 Volts

18 16/30—STRANDED BARE COPPER—2/64" INSULATION THICKNESS

WEICO NO.	NO. OF CONDUCTORS	NOMINAL JKT. THICKNESS (INCHES)	NOMINAL O.D. (INCHES)
NO-518	5	.078	.485
NO-618	6	.078	.510
NO-818	8	.078	.560
NO-918	9	.078	.595
NO-1018	10	.078	.620

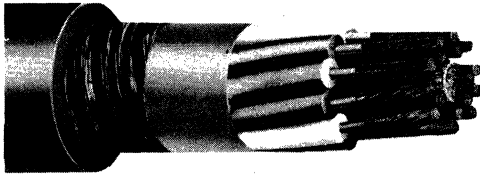
16 26/30—STRANDED BARE COPPER—2/64" INSULATION THICKNESS

NO-516	5	.078	.520
NO-616	6	.078	.540
NO-716	7	.078	.540
NO-816	8	.078	.580
NO-1016	10	.094	.720
NO-1216	12	.094	.745
NO-1416	14	.094	.765
NO-1616	16	.094	.810
NO-2016	20	.094	.890
NO-2216	22	.094	.920
NO-2416	24	.109	1.000
NO-2616	26	.109	1.030
NO-3016	30	.109	1.080



COMMUNICATION AND CONTROL CABLE

CONTROL CABLE, (MULTI-SO)



14 41/30—STRANDED BARE COPPER—3/64" INSULATION THICKNESS

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
NO-514	5	.095	.675
NO-614	6	.094	.705
NO-714	7	.094	.710
NO-814	8	.094	.760
NO-914	9	.094	.810
NO-1014	10	.094	.870
NO-1214	12	.094	.900

12 65/30—STRANDED BARE COPPER—3/64" INSULATION THICKNESS

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
NO-512	5	.094	.740
NO-612	6	.094	.790
NO-712	7	.094	.790
NO-812	8	.094	.820
NO-912	9	.109	.900
NO-1012	10	.109	1.010
NO-1212	12	.109	1.040
NO-1612	16	.109	1.160
NO-1812	18	.109	1.220

10 104/30—STRANDED BARE COPPER—3/64" INSULATION THICKNESS

WEICO NO.	NO. OF CONDUCTORS	NOM. JACKET THICKNESS (INCHES)	NOM. O.D. (INCHES)
NO-510	5	.094	.800
NO-610	6	.094	.850
NO-810	8	.094	.910
NO-1010	10	.109	1.120

COLOR CODE: Per IPCEA

PORTABLE CORDS 300-600V

LISTED SJO, SO



NEOPRENE PORTABLE CORD 300 VOLT

WEICO NO.	TYPE	NO. OF COND.	AWG	NOM. INS. THICKNESS (INCHES)	NOM. JKT. THICKNESS (INCHES)	CURRENT CAPACITY IN AMPS	NOM. O.D. (INCHES)
NJO-218	SJO	2	18	.032	.032	7	.305
NJO-318	SJO	3	18	.032	.032	7	.330
NJO-216	SJO	2	16	.032	.032	10	.330
NJO-316	SJO	3	16	.032	.032	10	.360

NEOPRENE PORTABLE CORD 600 VOLT

WEICO NO.	TYPE	NO. OF COND.	AWG	NOM. INS. THICKNESS (INCHES)	NOM. JKT. THICKNESS (INCHES)	CURRENT CAPACITY IN AMPS	NOM. O.D. (INCHES)
NO-218	SO	2	18	.030	.060	7	.390
NO-318	SO	3	18	.030	.060	7	.405
NO-418	SO	4	18	.030	.060	6	.435
NO-216	SO	2	16	.030	.060	10	.405
NO-316	SO	3	16	.030	.060	10	.430
NO-416	SO	4	16	.030	.060	8	.485
NO-214	SO	2	14	.045	.075	15	.530
NO-314	SO	3	14	.045	.075	15	.560
NO-414	SO	4	14	.045	.075	12	.605
NO-212	SO	2	12	.045	.090	20	.600
NO-312	SO	3	12	.045	.090	20	.635
NO-412	SO	4	12	.045	.090	16	.665
NO-210	SO	2	10	.045	.090	25	.640
NO-310	SO	3	10	.045	.090	25	.690
NO-410	SO	4	10	.045	.090	20	.745

DESCRIPTION:

Each Conductor Stranded Bare Copper, Color Coded Rubber Insulation, Cabled with Fillers, Separator, Black Neoprene Jacket Overall.

CHARACTERISTICS:

- Temperature Range: -30°C to +90°C
- Voltage Rating:
 - SJO: 300 Volts
 - SO: 600 Volts

Standard Put-Ups: 250 ft.

COLORS: 1 = White 2 = Black 3 = Green 4 = Red

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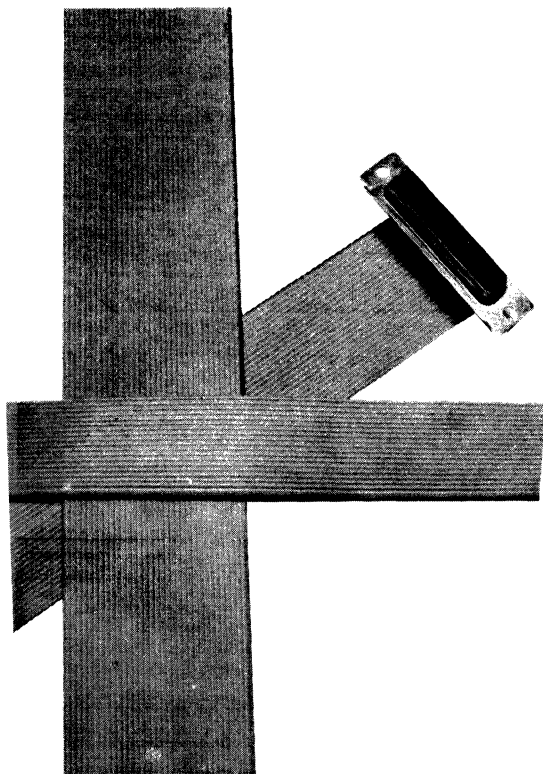


FLAT CABLE GRAY

105°C PVC

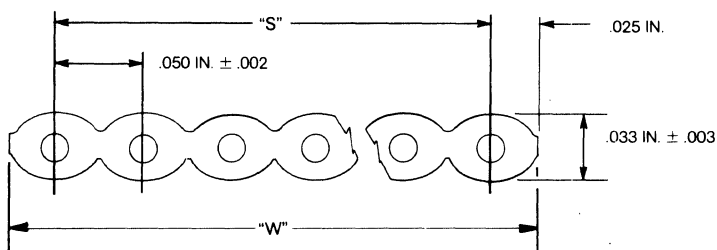
2651

(PASSES UL VW-1 FLAME TEST)



Weico's gray Flat Cable is designed for general purpose applications. Because of its exacting specifications, it provides consistent reliable performance. Being ribbed on both sides permits reverse plane termination ability on the same cable length. Flexibility and excellent teardown characteristics allow intricate circuit routing and uniform breakouts for harness production. Weico's Flat Cable is stocked in bulk (100 Ft./Reel).

WEICO NO.	NO. OF CONDUCTORS	NOMINAL OVERALL WIDTH (W) (INCHES)	NOMINAL SPAN (S) (INCHES)
WR-9	9	.45	.40
WR-10	10	.50	.45
WR-14	14	.70	.65
WR-15	15	.75	.70
WR-16	16	.80	.75
WR-20	20	1.00	.95
WR-24	24	1.20	1.15
WR-25	25	1.25	1.20
WR-26	26	1.30	1.25
WR-34	34	1.70	1.65
WR-37	37	1.85	1.80
WR-40	40	2.00	1.95
WR-50	50	2.50	2.45
WR-60	60	3.00	2.95
WR-64	64	3.20	3.15



DESCRIPTION:

- 28 AWG (7/36) stranded tinned copper conductor
- Nominal Insulation Thickness: .010" PVC
- Conductors on .050" centers
- Gray PVC with red stripe on leading edge
- UL listed—Style 2651
- Passes UL VW-1

CHARACTERISTICS:

- Temperature Rating: —105°C
- Voltage Rating: 300 Volts
- Capacitance: 14 pF/ft nom.*
- Propagation Delay: 1.4 ns/ft—.18 ns rise time pulse @ 1 mhz*
- Impedance: 105 ohms nom.*
- Crosstalk: nom. between two adjacent signal lines @ 1 ns rise time over 10 ft. length; near end 3.2%—far end 11.5%*
- Environmental: resists acids, alkalis, oil, moisture, solvents, ozone and fungus

Standard Packaging: 100 foot spool

*Transmission Characteristics: Ground-Signal-Ground-Signal Etc. With All Grounds Common

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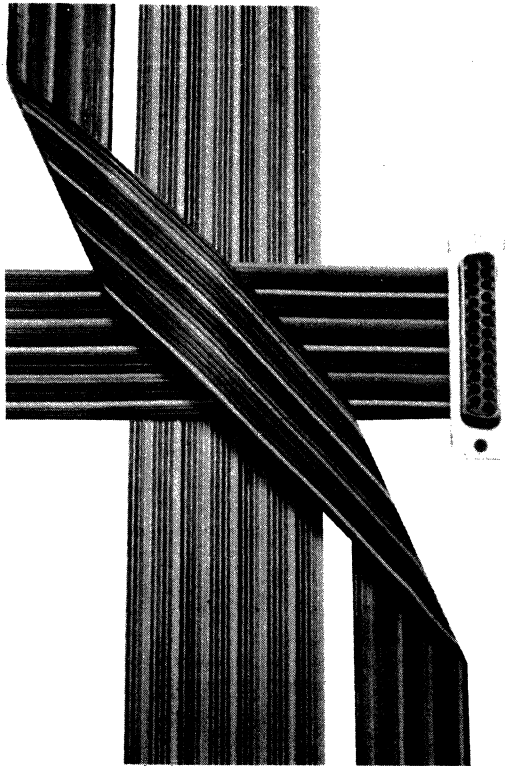


FLAT CABLE COLOR CODED

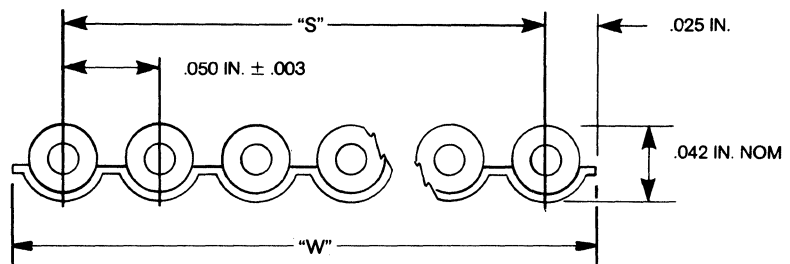
105°C PVC

UL 2884

(PASSES UL VW-1 FLAME TEST)



WEICO NO.	NO. OF CONDUCTORS	NOMINAL OVERALL WIDTH (W) (INCHES)	NOMINAL SPAN (S) (INCHES)
WC-9	9	.45	.40
WC-10	10	.50	.45
WC-14	14	.70	.65
WC-15	15	.75	.70
WC-16	16	.80	.75
WC-20	20	1.00	.95
WC-24	24	1.20	1.15
WC-25	25	1.25	1.20
WC-26	26	1.30	1.25
WC-34	34	1.70	1.65
WC-37	37	1.85	1.80
WC-40	40	2.00	1.95
WC-50	50	2.50	2.45
WC-60	60	3.00	2.95
WC-64	64	3.20	3.15



Weico's color coded Flat Cable is manufactured from pre-insulated color coded conductors which are then laminated on .050 center to center spacing. This permits conventional termination using insulation displacement connectors. Color coding affords immediate identification of discrete wires for positive termination and traceability. Weico's Flat Cable is stocked in bulk (100 ft/reel).

DESCRIPTION:

- 28 AWG (7/36) stranded tinned copper conductor
- 0.10" nom. wall PVC
- Conductors laminated to a sheet of .009" clear PVC
- Color Code: brown, red, orange, yellow, green, blue, violet, gray, white, black. Color code repeats beyond 10 conductors
- UL listed-Style 2884
- Passes UL VW-1

CHARACTERISTICS:

- Temperature Rating: 105°C
- Voltage Rating: 300 Volts
- Capacitance: 14 pF/ft @ 1mhz*
- Propagation Delay: 1.4 ns/ft—.18 ns rise time pulse*
- Impedance: 105 ohms nom.*
- Crosstalk: nom. between two adjacent signal lines @ 1 ns rise time over 10 ft. length; near end 3.2%—far end 11.5%*
- Environmental: resists acids, alkalis, oil, moisture, solvents, ozone and fungus

Standard Packaging: 100 foot spool

*Transmission Characteristics: Ground-Signal-Ground-Signal Etc. With All Grounds Common

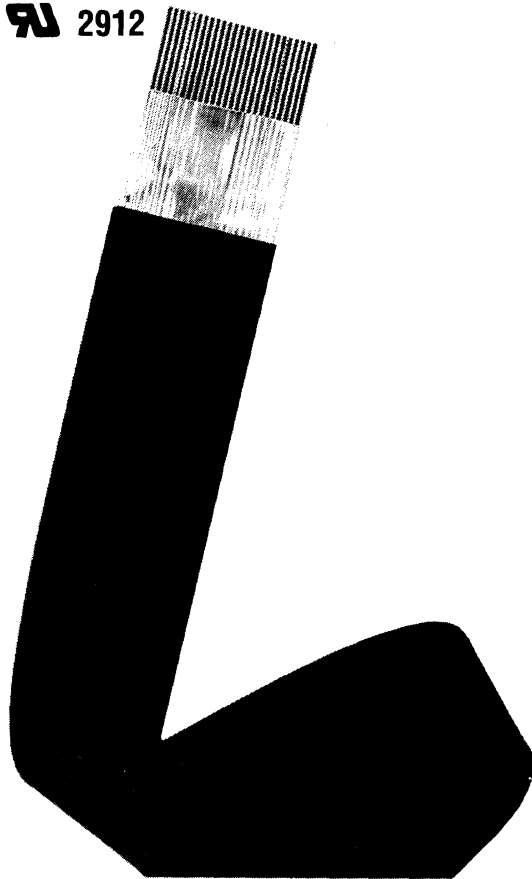
WEICO WIRE & CABLE INC. • 161 Rodeo Drive • Edgewood, N.Y. 11717 • TEL 516-254-2970 • FAX 516-254-2099



FLAT CABLE, SHIELDED AND JACKETED

105°C PVC

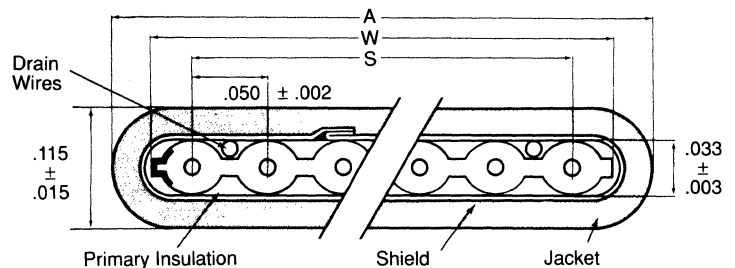
UL 2912



Weico's shielded and jacketed flat cable is designed for use in high frequency applications where RF protection is mandated. This general purpose shielded cable minimizes electrical interference and crosstalk in such applications.

This series uses Weico's gray flat cable and an aluminum/polyester shield. The shielding is folded to provide excellent metal to metal contact and utilizes two drain wires to facilitate grounding. The jacket is a rugged .030" thick flame retardant 105°C black PVC with excellent abrasion resistance.

WEICO NO.	NO. OF CONDUCTORS	JACKET WIDTH "A"	CABLE WIDTH "W"	CABLE SPAN "S"
WSJ-14	14	.770 ± .030	.700 ± .008	.650 ± .008
WSJ-16	16	.870 ± .030	1.800 ± .008	.750 ± .008
WSJ-20	20	1.070 ± .030	1.000 ± .008	.950 ± .008
WSJ-25	25	1.320 ± .030	1.250 ± .008	1.200 ± .008
WSJ-26	26	1.370 ± .030	1.300 ± .008	1.250 ± .008
WSJ-34	34	1.770 ± .035	1.700 ± .012	1.650 ± .012
WSJ-40	40	2.070 ± .035	2.000 ± .012	1.950 ± .012
WSJ-50	50	2.570 ± .035	2.500 ± .012	2.450 ± .012
WSJ-60	60	3.070 ± .035	3.000 ± .012	2.950 ± .012



DESCRIPTION:

- 28 AWG (7/36) stranded tinned copper conductor
- Nominal Insulation Thickness: .010" PVC
- Conductors on .050" centers
- Gray PVC with red stripe on leading edge
- Overall Aluminum/Polyester shield with two stranded tinned copper drain wires- 28 AWG (7/36)
- Black PVC Jacket-Thickness: .030" Minimum
- UL STYLE 2912
- Passes UL VW-1 flame test.

CHARACTERISTICS:

- Temperature Rating: 105°C
- Voltage Rating: 150 V
- Capacitance: 20 pF/ft nom.*
- Propagation Delay: 1.45 ns/ft.-.10 ns rise time pulse @ 1mhz*
- Impedance: 70 ohms nom.
- Crosstalk: 5.5% near end; 1.6% far end; 10 ft. sample @ 3.5 ns rise time pulse; 2.0% near end; .50% far end 10 ft. sample @ 7.0 ns rise time pulse

Standard Packaging: 100 foot spool

*Transmission Characteristics: Ground-Signal-Ground-Signal Etc. With All Grounds Common



POWER SUPPLY CORDS, SHIELDED, UNSHIELDED

3 CONDUCTOR
N.A. COLOR CODING
CEE COLOR CODING



NEMA 5-15P



OUTER JACKET STRIPPED 2".
 CONDUCTORS STRIPPED AND TWISTED 5/8"

DESCRIPTION:

- Stranded Bare Copper Conductors
- Color Coded PVC or Rubber Insulation
- PVC (SVT-SJT), Rubber (SV-SJ) Or Neoprene (SJO) Jacket
- One End Fitted With Molded Three Prong Male Plug, Other End Has Jacket and Conductors Stripped Back
- Shielded or Unshielded As Indicated In Table

APPLICATIONS:

- Type SV-SVT: Small Tools, Business Machines, Light-Duty Equipment
- Type SJ-SJT-SJO: Heavier Duty Tools, Electric Saws, Small Motors, Grinders, Saws, Sanders

WEICO NO.	LENGTH (FT.)	COLOR CODING	AWG (STRAND-ING)	NOM. O.D. (INCHES)	RATING	UL TYPE	COLOR
UNSHIELDED							
30306	6	NA	18(16x30)	0.328	1250 Watts 10A-125V	SJ	Black
30406	6	NA	18(16x30)	0.315	1250 Watts 10A-125V	SJT	Gray
30407/ECC	6'7"	CEE	18(41x34)	0.315	1250 Watts 10A-125V	SJT	Black
30308	8	NA	18(16x30)	0.328	1250 Watts 10A-125V	SJ	Black
30508	8	NA	18(16x30)	0.328	1250 Watts 10A-125V	SJO	Black
30312	12	NA	18(16x30)	0.328	1250 Watts 10A-125V	SJ	Black
30309/16	9	NA	16(26x30)	0.353	1625 Watts 13A-125V	SJ	Black
30410/16ECC	9'10"	CEE	16(65x34)	0.340	1625 Watts 13A-125V	SJT	Black
30312/16	12	NA	16(26x30)	0.353	1625 Watts 13A-125V	SJ	Black

SHIELDED							
33207/ECC	6'7"	CEE	18(41x34)	0.270	1250 Watts 10A-125V	SVT Shielded	Black
33210/ECC	9'10"	CEE	18(41x34)	0.270	1250 Watts 10A-125V	SVT Shielded	Black
33410/14ECC	9'10"	CEE	14(41x30)	0.402	1875 Watts 15A-125V	SJT Shielded	Black



NEMA 5-15P



OUTER JACKET STRIPPED 1 1/2".
 CONDUCTORS STRIPPED AND TWISTED 5/8"

UNSHIELDED							
30106	6	NA	18(41x34)	0.246	1250 Watts 10A-125V	SV	Black
30108	8	NA	18(41x34)	0.246	1250 Watts 10A-125V	SV	Black
30206	6	NA	18(41x34)	0.253	1250 Watts 10A-125V	SVT	Gray
30208	8	NA	18(41x34)	0.253	1250 Watts 10A-125V	SVT	Gray

COLOR CODE COMPARISON BY FUNCTION

- Function**
 N = Neutral
 L = Live
 E = Earth or Ground

- North American Color Coding**
 White
 Black
 Green or Green/Yellow

- CEE**
 Light Blue
 Brown
 Green/Yellow



NEMA 5-15P



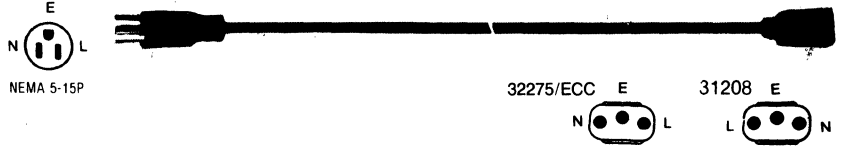
OUTER JACKET STRIPPED 2".
 CONDUCTORS STRIPPED AND TWISTED 3/4"

UNSHIELDED							
30309/14	9	NA	14(41x30)	0.380	1875 Watts 15A-125V	SJ	Black
30315/14	15	NA	14(41x30)	0.380	1875 Watts 15A-125V	SJ	Black



POWER SUPPLY CORDS, SHIELDED, UNSHIELDED

**EXTENSION CORDS,
DETACHABLE
3 CONDUCTORS
N.A. COLOR CODING
CEE COLOR CODING**



WEICO NO.	LENGTH (FT.)	COLOR CODING	AWG (STRAND-ING)	NOM. O.D. (INCHES)	RATING	UL TYPE	COLOR
UNSHIELDED							
31208	8	NA	18(41x34)	0.253	875 Watts 7A-125V	SVT	Gray
32275/ECC	7½	CEE	18(41x34)	0.246	875 Watts 7A-125V	SVT	Gray

DESCRIPTION:

- One End Fitted With Molded Three Prong Male Plug, Other End Fitted With Molded Female Receptable.
- Shielded or Unshielded As Indicated In Table.



UNSHIELDED							
31275	7½	NA	18(41x34)	0.246	1250 Watts 10A-125V	SVT	Black
31275/ECC	7½	CEE	18(41x34)	0.246	1250 Watts 10A-125V	SVT	Black
31407/ECC	6'7"	CEE	18(41x34)	0.315	1250 Watts 10A-125V	SJT	Black
31407/14ECC	6'7"	CEE	14(41x30)	0.380	1875 Watts 15A-125V	SJT	Black
32408/16	7'6"	NA	16(65x34)	0.340	1625 Watts 13A-125V	SJT	Black
31410	9'10"	CEE	18(41x34)	0.315	1250 Watts 10A-125V	SJT	Black

COLOR CODE COMPARISON BY FUNCTION

Function
 N = Neutral
 L = Live
 E = Earth or Ground

North American Color Coding
 White
 Black
 Green or Green/Yellow

CEE
 Light Blue
 Brown
 Green/Yellow

SHIELDED							
33209/ECC	6'7"	CEE	18(41x34)	0.270	1250 Watts 10A-125V	SVT Shielded	Black
34407/ECC	6'7"	CEE	18(41x34)	0.340	1250 Watts 10A-125V	SJT Shielded	Black
34207/ECC	6'7"	CEE	18(41x34)	0.307	1250 Watts 10A-125V	SVT Foil Shield +85% Braid Shld	Black
34410/16 ECC	9'10"	CEE	16(65x34)	0.365	1625 Watts 13A-125V	SJT Shielded	Black
34407/14 ECC	6'7"	CEE	14(41x30)	0.402	1875 Watts 15A-125V	SJT Shielded	Black
34410/14ECC	9'10"	CEE	14(41x30)	0.402	1875 Watts 15A-125V	SJT Shielded	Black



UNSHIELDED							
31310	10	NA	18(16x30)	0.328	1250 Watts 10A-125V	SJ	Black
31310/16	10	NA	16(26x30)	0.340	1625 Watts 13A-125V	SJ	Black



EXPANDABLE BRAIDED POLYESTER SLEEVING

(PASSES VW-1 FLAME TEST)



DESCRIPTION:

WEICO XPT and XFR are lightweight, expandable sleeveings that offer extreme flexibility. The open weave allows for a wide range of sleeving diameters, thus ensuring ease of installation over a wide range of shapes and sizes. This sleeving provides an economical, flexible, protection for bundling wires, harnesses, and cable assemblies on various types of machinery, from industrial robots to CAD/CAM controlled process and machine tool equipment.

GENERAL PURPOSE WEICO NO.	FLAME RETARDANT WEICO NO.	MINIMUM SUPPLIED I.D. (INCHES)	MAXIMUM EXPANDED I.D. (INCHES)	NOM. WALL THICKNESS (INCHES)
XPT 1/8	XFR 1/8	0.093	0.250	.025
XPT 1/4	XFR 1/4	0.125	0.437	.025
XPT 1/2	XFR 1/2	0.250	0.750	.025
XPT 3/4	XFR 3/4	0.500	1.250	.025
XPT 1-1/4	XFR 1-1/4	0.750	1.750	.025
XPT 1-3/4	XFR 1-3/4	1.250	2.750	.025
XPT 2	XFR 2	1.500	3.500	.025

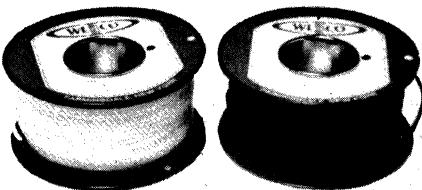
COLOR: Black

CHARACTERISTICS:

- Operating Temperature: -70°C to +125°C
- Applicable Specifications: MIL STD-810B—Method 508
- Fungus inert
- Resists abrasion and cut through, self-extinguishing when used to encase non-flammable wires or cables.

Standard Put-Ups: Consult Factory

TUBING *"TEFLON"



DESCRIPTION:

WEICO'S Teflon Tubing is Rated For Continuous Operation at 260°C While Retaining Exceptional Toughness and Flexibility. The Dielectric Strength of Teflon at High Frequencies is Many Times That of Other Insulators. The Insulation Resistance Properties are Unaffected by Heat Aging or Temperature Use up to 260°C.

SPECIFICATIONS:

ETT: AMS 3654, ASTM D 3295 CLASS A
 TT: AMS 3655, ASTM D 3295 CLASS B
 TS: AMS 3653, ASTM D 3295 CLASS C
 MIL-I-22129

CHARACTERISTICS:

- Operating Temperature: -65°C to +260°C
- Dielectric Strength: 550 Volts/MIL
- Fungus Resistant
- Self-Extinguishing
- Non-Corrosive
- Zero Water Absorption

COLORS: Natural = C

0 = Black 2 = Red 4 = Yellow 6 = Blue 8 = Gray
 1 = Brown 3 = Orange 5 = Green 7 = Violet 9 = White

Standard Put-Ups: 100 ft., 1000 ft.

*DuPont's Registered Trademark.

WEICO NO. AND SIZE			NOM. INSIDE DIA. (INCHES)	ETT WALL THICKNESS (INCHES)	TT WALL THICKNESS (INCHES)	TS WALL THICKNESS (INCHES)
EXTRA THIN WALL	THIN WALL	STANDARD WALL				
ETT-30	TT-30	—	.012	.006	.009	—
ETT-28	TT-28	—	.015	.006	.009	—
ETT-26	TT-26	—	.018	.006	.009	—
ETT-24	TT-24	TS-24	.022	.006	.010	.012
ETT-22	TT-22	TS-22	.028	.006	.010	.012
ETT-20	TT-20	TS-20	.034	.006	.012	.016
ETT-19	TT-19	TS-19	.038	.006	.012	.016
ETT-18	TT-18	TS-18	.042	.006	.012	.016
ETT-17	TT-17	TS-17	.047	.006	.012	.016
ETT-16	TT-16	TS-16	.053	.006	.012	.016
ETT-15	TT-15	TS-15	.059	.006	.012	.016
ETT-14	TT-14	TS-14	.066	.008	.012	.016
ETT-13	TT-13	TS-13	.076	.008	.012	.016
ETT-12	TT-12	TS-12	.085	.008	.012	.016
ETT-11	TT-11	TS-11	.095	.008	.012	.016
ETT-10	TT-10	TS-10	.106	.008	.012	.016
ETT-9	TT-9	TS-9	.118	.008	.015	.020
ETT-8	TT-8	TS-8	.133	.008	.015	.020
ETT-7	TT-7	TS-7	.148	.008	.015	.020
ETT-6	TT-6	TS-6	.166	.010	.015	.020
ETT-5	TT-5	TS-5	.186	.010	.015	.020
ETT-4	TT-4	TS-4	.208	.010	.015	.020
ETT-3	TT-3	TS-3	.234	.010	.015	.020
ETT-2	TT-2	TS-2	.263	.010	.015	.020
ETT-1	TT-1	TS-1	.294	.010	.015	.020
ETT-0	TT-0	TS-0	.330	.012	.015	.020

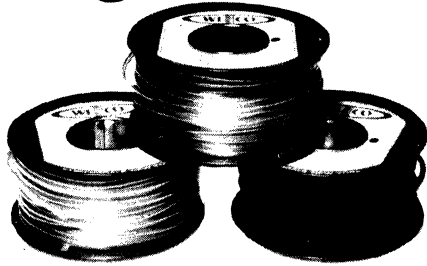
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TUBING

PVC
105°C

(PASSES VW-1 FLAME TEST)



DESCRIPTION:

WEICO'S PVC Tubing is an Economical All-Purpose Insulating Material. It is Flexible, Heat and Oil Resistant and has Superior Thermal, Mechanical and Electrical Properties.

SPECIFICATIONS:

- MIL-I-631-TYPE F, FORM U, GRADE C, CLASS 1, CATEGORY 1

CHARACTERISTICS:

- Operating Temperature: -20°C to +105°C
- Dielectric Strength: 800 Volts/MIL
- Non Corrosive
- Self Extinguishing
- Fungus Resistant

WEICO NO.	SIZE	NOM. INSIDE DIA. (INCHES)	NOM. WALL THICKNESS (INCHES)	STANDARD PUT-UPS
PV-24	24	.022	.013	100',—1000' Spools
PV-22	22	.027	.012	100',—1000' Spools
PV-20	20	.034	.016	100',—1000' Spools
PV-19	19	.038	.016	100',—1000' Spools
PV-18	18	.042	.016	100',—1000' Spools
PV-17	17	.047	.016	100',—1000' Spools
PV-16	16	.053	.016	100',—1000' Spools
PV-15	15	.059	.016	100',—1000' Spools
PV-14	14	.066	.016	100',500' Spools
PV-13	13	.076	.016	100',500' Spools
PV-12	12	.085	.016	100',500' Spools
PV-11	11	.095	.016	100',500' Spools
PV-10	10	.106	.016	100',500' Spools
PV-9	9	.118	.020	100',500' Spools
PV-8	8	.133	.020	100',500' Spools
PV-7	7	.148	.020	100',500' Spools
PV-6	6	.166	.020	100',500' Spools
PV-5	5	.186	.020	100',500' Spools
PV-4	4	.208	.020	100',250' Spools
PV-3	3	.234	.020	100',250' Spools
PV-2	2	.263	.020	100',250' Spools
PV-1	1	.294	.020	100',250' Spools
PV-0	0	.330	.020	100',250' Spools
PV-5/16	5/16"	.312	.025	100',250' Coils
PV-3/8	3/8"	.375	.025	100',250' Spools
PV-7/16	7/16"	.438	.025	100' Coils
PV-1/2	1/2"	.500	.025	100' Coils
PV-9/16	9/16"	.562	.030	100' Coils
PV-5/8	5/8"	.625	.030	100' Coils
PV-3/4	3/4"	.750	.035	50' Coils
PV-7/8	7/8"	.875	.035	50' Coils
PV-1 IN	1"	1.000	.035	50' Coils
PV-1-1/8	1-1/8"	1.125	.035	50' Coils
PV-1-1/4	1-1/4"	1.250	.040	50' Coils
PV-1-3/8	1-3/8"	1.375	.045	50' Coils
PV-1-1/2	1-1/2"	1.500	.045	50' Coils
PV-1-3/4	1-3/4"	1.750	.055	50' Coils
PV-2 IN	2"	2.000	.060	50' Coils
PV-2-1/4	2-1/4"	2.250	.070	50' Coils
PV-2-1/2	2-1/2"	2.500	.070	50' Coils

COLORS: C = Clear 9 = White 2 = Red
0 = Black 4 = Yellow 5 = Green



TUBING

PLASTIC IMPREGNATED FIBERGLASS TUBING



CONFORMS TO:
MIL-I-3190—GRADE B AND MIL-I-21557

THERMAL CLASS B:
(130°C). NEMA Type 3

DIELECTRIC: 4000 VDC

OPERATING TEMPERATURE:
—20°C to +130°C

- Non Corrosive
- Self Extinguishing
- Fungus Resistant

STOCK COLOR: Black
Standard Put-Ups: 100 ft., 1000 ft.

WEICO NO.	SIZE	NOMINAL I.D.	NOM. WALL THICKNESS (INCHES)
FG24	24	.022	.019
FG22	22	.027	.019
FG20	20	.034	.019
FG19	19	.038	.019
FG18	18	.042	.019
FG17	17	.047	.019
FG16	16	.053	.024
FG15	15	.059	.024
FG14	14	.066	.024
FG13	13	.076	.024
FG12	12	.085	.024
FG11	11	.095	.024
FG10	10	.106	.024
FG09	09	.118	.024
FG08	08	.133	.024

WEICO NO.	SIZE	NOMINAL I.D.	NOM. WALL THICKNESS (INCHES)
FG7	7	.148	.024
FG6	6	.166	.024
FG5	5	.186	.031
FG4	4	.206	.031
FG3	3	.234	.031
FG2	2	.263	.031
FG1	1	.294	.036
FG0	0	.330	.036
FG ³ / ₈	³ / ₈ "	.387	.036
FG ⁷ / ₁₆	⁷ / ₁₆ "	.450	.036
FG ¹ / ₂	¹ / ₂ "	.512	.036
FG ⁵ / ₈	⁵ / ₈ "	.640	.036
FG ³ / ₄	³ / ₄ "	.768	.036
FG ⁷ / ₈	⁷ / ₈ "	.893	.036
FG1"	1"	1.018	.036

DESCRIPTION:

The Weico FG Tubing is a Woven Fiberglass Braid Impregnated With a Heat Resistant, Extremely Flexible, Tough Plastic Insulation. It is Formulated

to Provide The Optimum in Electrical, Chemical Resistance, Heat Stability, and Abrasion Resistant Properties.

SILICONE RUBBER COATED FIBERGLASS TUBING



DESCRIPTION:

The WEICO RSF Tubing is a Tightly Woven, Fiberglass Braid, Coated With Silicon Rubber. It Offers High Heat and Superior Electrical Characteristics in Any Application Requiring Class H Insulation, and Maintains Exceptional Flexibility Over Its Entire Operating Temperature Range.

THERMAL CLASS H: for 200°C operation. NEMA Type 5.

GRADE A-1: 8000V. Dielectric.

MEETS MILITARY SPECIFICATIONS:
MIL-I-3190 and MIL-I-18057.

OPERATING TEMPERATURE RANGE:
—85°C to +200°C

- Non Corrosive
- Self Extinguishing
- Fungus Resistant

STOCK COLOR: Natural
Standard Put-Ups: 100 ft., 1000 ft.

WEICO NO.	SIZE	NOM. INSIDE DIAMETER (INCHES)	NOM. WALL THICKNESS (INCHES)
RSF-24	24	.024	.020
RSF-22	22	.029	.020
RSF-20	20	.036	.020
RSF-18	18	.045	.020
RSF-17	17	.050	.020
RSF-16	16	.056	.024
RSF-15	15	.062	.024
RSF-14	14	.068	.024
RSF-13	13	.076	.024
RSF-12	12	.085	.024
RSF-11	11	.096	.024
RSF-10	10	.107	.024
RSF-9	9	.119	.024
RSF-8	8	.135	.024
RSF-7	7	.151	.024
RSF-6	6	.170	.024
RSF-5	5	.190	.028
RSF-4	4	.214	.028
RSF-3	3	.239	.028
RSF-2	2	.268	.028
RSF-1	1	.300	.028
RSF-0	0	.336	.028
RSF- ³ / ₈	³ / ₈ "	.387	.034
RSF- ⁷ / ₁₆	⁷ / ₁₆ "	.450	.034
RSF- ¹ / ₂	¹ / ₂ "	.512	.034
RSF- ⁵ / ₈	⁵ / ₈ "	.640	.034
RSF- ³ / ₄	³ / ₄ "	.768	.034
RSF- ⁷ / ₈	⁷ / ₈ "	.893	.034
RSF-1"	1"	1.018	.034



TUBING, SHRINKABLE

PVC
105°C



SPECIFICATIONS:

- MIL-I-23053/2
- AMS-3582

CHARACTERISTICS:

Operating Temperature: -35°C to $+105^{\circ}\text{C}$
Shrinkage Ratio: to 50% of Supplied Diameter at 175°C
Longitudinal Shrinkage: 10% Nominal
Dielectric Strength: 750 Volts/MIL

WEICO NO.	MILITARY NO.	SIZE (INCHES)	MIN. I.D. BEFORE SHRINKAGE (INCHES)	RECOVERED I.D. AFTER SHRINKAGE (INCHES)	NOM. WALL THICKNESS (INCHES)
SPV-1/16	M23053/2-202-X	1/16	.062	.031	.020
SPV-3/32	M23053/2-203-X	3/32	.093	.046	.020
SPV-1/8	M23053/2-204-X	1/8	.125	.062	.020
SPV-3/16	M23053/2-205-X	3/16	.187	.093	.020
SPV-1/4	M23053/2-206-X	1/4	.250	.125	.025
SPV-3/8	M23053/2-207-X	3/8	.375	.187	.025
SPV-1/2	M23053/2-208-X	1/2	.500	.250	.025
SPV-3/4	M23053/2-209-X	3/4	.775	.375	.030
SPV-1	M23053/2-210-X	1	1.000	.500	.035
SPV-1 1/2	M23053/2-211-X	1 1/2	1.500	.750	.045
SPV-2	M23053/2-212-X	2	2.000	1.000	.050

COLORS: 0 = Black C = Clear

X Denotes color coding

POLYOLEFIN

135°C



WEICO's Polyolefin tubings offer an outstanding balance of properties—electrical, physical and chemical—that make them the most popular choice for a wide variety of industrial and military applications.

Rated for 135°C continuous operation and engineered for superior flame resistance properties, Polyolefin tubings are typically used as a shrink-fit electrical insulation over cable splices and terminations. Polyolefin tubings are also excellent for light-weight wire harness covering, wire marking and bundling, component packaging and fire resistant covering. Polyolefin clear tubings provide excellent visibility for component packaging. All Polyolefin tubings are split-resistant, mechanically tough, easily marked and they resist cold flow.

WEICO NO.	MILITARY NO. (CLEAR)	MILITARY NO. (COLORS)	MILITARY NO.* (CLASS 3*)	SIZE (INCHES)	MIN. I.D. BEFORE SHRINKING (INCHES)	RECOVERED I.D. AFTER SHRINKING (INCHES)	RECOVERED NOM. WALL THICKNESS (INCHES)
SPO-3/64	M23053/5-201-C	M23053/5-101-X	M23053/5-301-X	3/64	.046	.023	.016
SPO-1/16	M23053/5-202-C	M23053/5-102-X	M23053/5-302-X	1/16	.063	.031	.017
SPO-3/32	M23053/5-203-C	M23053/5-103-X	M23053/5-303-X	3/32	.093	.046	.020
SPO-1/8	M23053/5-204-C	M23053/5-104-X	M23053/5-304-X	1/8	.125	.062	.020
SPO-3/16	M23053/5-205-C	M23053/5-105-X	M23053/5-305-X	3/16	.187	.093	.020
SPO-1/4	M23053/5-206-C	M23053/5-106-X	M23053/5-306-X	1/4	.250	.125	.025
SPO-3/8	M23053/5-207-C	M23053/5-107-X	M23053/5-307-X	3/8	.375	.187	.025
SPO-1/2	M23053/5-208-C	M23053/5-108-X	M23053/5-308-X	1/2	.500	.250	.025
SPO-3/4	M23053/5-209-C	M23053/5-109-X	M23053/5-309-X	3/4	.750	.375	.030
SPO-1	M23053/5-210-C	M23053/5-110-X	M23053/5-310-X	1	1.000	.500	.035
SPO-1 1/2	M23053/5-211-C	M23053/5-111-X	M23053/5-311-X	1 1/2	1.500	.750	.040
SPO-2	M23053/5-212-C	M23053/5-112-X	M23053/5-312-X	2	2.000	1.000	.045
SPO-3	M23053/5-213-C	M23053/5-113-X	M23053/5-313-X	3	3.000	1.500	.050
SPO-4	M23053/5-214-C	M23053/5-114-X	M23053/5-314-X	4	4.000	2.000	.055

STANDARD PUT-UPS: 4 ft. lengths, 100 ft./pkg.

Spools—100 ft and 1000 ft./spool

*Please specify Military Number when ordering Class 3 Material.

SPECIFICATIONS:

- MIL-I-23053/5A
- AMS-3636B (Colors) Nonflammable
- AMS-3637B (Clear) Flammable
- Also Available VW1 Approved—Please specify at time of ordering

X Denotes color coding

COLORS: 0 = Black 4 = Yellow 6 = Blue C = Clear
2 = Red 5 = Green 9 = White

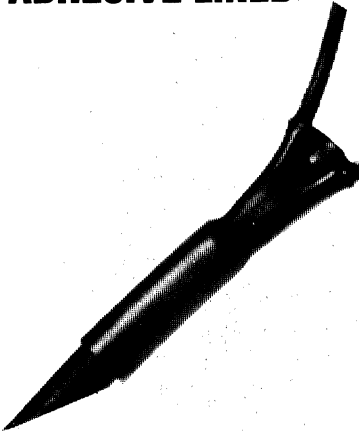
CHARACTERISTICS:

Operating Temperature: -55°C to $+135^{\circ}\text{C}$
Shrinking Ratio: to 50% of Supplied Diameter at 121°C
Longitudinal Shrinkage: 5% Nominal
Dielectric Strength: 1300 Volts/MIL



TUBING, SHRINKABLE

IRRADIATED POLYOLEFIN MULTIPLE WALL ADHESIVE LINED



WEICO NO.	MILITARY NO.	EXPANDED ID MINIMUM (INCHES)	RECOVERED ID MAXIMUM (INCHES)	RECOVERD NOM. WALL THICKNESS TOTAL WALL (INCHES)
SAW - 1/8	—	.125	.063	.030
SAW - 3/16	—	.187	.093	.030
SAW - 1/4	M23053/4-201-0	.250	.125	.030
SAW - 3/8	M23053/4-202-0	.375	.187	.031
SAW - 1/2	M23053/4-203-0	.500	.250	.032
SAW - 3/4	M23053/4-204-0	.750	.375	.037
SAW - 1	M23053/4-205-0	1.000	.500	.046
SAW - 1 1/2	M23053/4-206-0	1.500	.750	.049

COLOR: Black

Standard Put-Ups: 4 ft. lengths

Weico's SAW Tubings are rated for continuous operation at temperatures from -55°C to +110°C and will withstand higher operating temperatures for brief time intervals.

All Weico's SAW Tubings meet the requirements of MIL- I- 23053/4 Class 2.

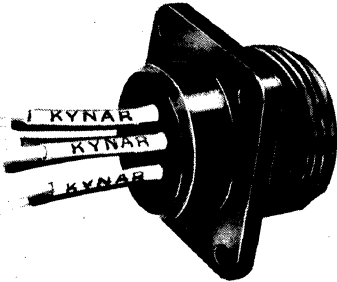
The Weico SAW Series are irradiated multiple wall, flexible and flame retardant polyolefin heat shrink tubings and are lined with a thin layer of special thermoplastic adhesive. When the SAW Tubing has heat applied to it in excess of 121°C (250°F), the outer tubing shrinks and conforms to the unit to be covered, while the inner wall of adhesive melts and flows to provide a moisture and corrosion resistant seal.

The SAW multiple wall tubing is ideally suited for applications where moisture protection of wire splices or bundling of wires is required.



TUBING, SHRINKABLE

KYNAR* TUBING



WEICO'S Kynar is an irradiated, thin-wall, heat-shrinkable tubing offering a high degree of mechanical strength and high-temperature resistance. Kynar is fabricated from polyvinylidene fluoride, hence, their outstanding abrasion resistance and cut-through properties in combination with high dielectric strength. Kynar is inherently flame-retardant and semi-rigid. It is highly resistant to most industrial fuels, chemicals and solvents.

Kynar tubings are recommended for shrink-fit protection and strain relief of wires, solder joints, terminals and connections. Suggested applications include automotive wiring, jackets, fuse coverings and military wire markers. Because the tubing is transparent, it affords see-thru inspection and identification when used as a jacketing for components such as resistors and capacitors. Kynar tubings are readily marked by hot-stamp and print-wheel equipment.

Kynar tubings are rated for continuous operation from -55°C (-67°F) to $+175^{\circ}\text{C}$ ($+347^{\circ}\text{F}$). The tubings will withstand higher operating temperatures for short time intervals.

Minimum shrink temperature for Kynar tubings is $+175^{\circ}\text{C}$ ($+347^{\circ}\text{F}$).

Kynar tubings meet the requirements of MIL-I-23053/8, AMS 3632, and are U.L. recognized for 600 volts @ 150°C ; U.L. VW-1 rated.

CHARACTERISTICS:

- High Mechanical Strength
- High Temperature

WEICO NO.	MILITARY NO.	SIZE (INCHES)	EXPANDED I.D. MINIMUM (INCHES)	RECOVERED I.D. MAXIMUM (INCHES)	RECOVERED NOM. WALL THICKNESS (INCHES)
SKY- $3/64$	M23053/8-001-C	$3/64$	.046	.023	.010
SKY- $1/16$	M23053/8-002-C	$1/16$	.063	.031	.010
SKY- $3/32$	M23053/8-003-C	$3/32$	.093	.046	.010
SKY- $1/8$	M23053/8-004-C	$1/8$	.125	.062	.010
SKY- $3/16$	M23053/8-005-C	$3/16$	.187	.093	.010
SKY- $1/4$	M23053/8-006-C	$1/4$	.250	.125	.012
SKY- $3/8$	M23053/8-007-C	$3/8$	.375	.187	.012
SKY- $1/2$	M23053/8-008-C	$1/2$	.500	.250	.012
SKY- $3/4$	M23053/8-009-C	$3/4$	.750	.375	.017
SKY-1	M23053/8-010-C	1	1.000	.500	.019
SKY- $1\frac{1}{2}$	M23053/8-011-C	$1\frac{1}{2}$	1.500	.750	.020

Standard Put-Ups: 4 ft. Lengths

*Pennwalt Chemical Registered Trademark

COLOR: Clear



TUBING, SHRINKABLE

NEOPRENE TUBING



NEOPRENE very flexible, self-extinguishing, modified polychloroprene tubings combining a high degree of mechanical toughness and oil-resistance with 121°C continuous operating temperature.

WEICO'S Neoprene heat-shrinkable tubings are recommended for applications requiring a tough, highly flexible covering. Neoprene tubings are thick-walled, and provide superior cut-through and abrasion resistance. The tubings are unaffected by common fluids and solvents. Resistance to oils is excellent.

Neoprene tubings maintain flexibility at low temperatures. The tubings are particularly useful for the fabrication and repair of flexible harnesses and wire bundles and for covering of hydraulic couplings. The superior mechanical properties of Neoprene tubings make them ideal choices for the jacketing of cable harnesses and custom-made cables that must operate in severe environmental conditions.

Neoprene tubings are rated for continuous operation from -70°C (-94°F) to +121°C (+250°F). The tubings will withstand higher operating temperatures for short time intervals.

WEICO NO.	MILITARY NO.	SIZE (INCHES)	EXPANDED I.D. MINIMUM (INCHES)	RECOVERED I.D. MAXIMUM (INCHES)	RECOVERED NOM. WALL THICKNESS (INCHES)
SNE-1/8	—	1/8	.125	.072	.030
SNE-3/16	—	3/16	.187	.106	.035
SNE-1/4	M23053/1-201-0	1/4	.250	.125	.035
SNE-3/8	M23053/1-202-0	3/8	.375	.187	.040
SNE-1/2	M23053/1-203-0	1/2	.500	.250	.048
SNE-5/8	M23053/1-204-0	5/8	.625	.312	.052
SNE-3/4	M23053/1-205-0	3/4	.750	.375	.057
SNE-7/8	M23053/1-206-0	7/8	.875	.437	.065
SNE-1	M23053/1-207-0	1	1.000	.500	.070
SNE-1 1/4	M23053/1-208-0	1 1/4	1.250	.612	.087
SNE-1 1/2	M23053/1-209-0	1 1/2	1.500	.750	.095
SNE-1 3/4	M23053/1-210-0	1 3/4	1.750	.875	.107
SNE-2	M23053/1-211-0	2	2.000	1.000	.110
SNE-3	M23053/1-212-0	3	3.000	1.500	.125

COLOR: Black

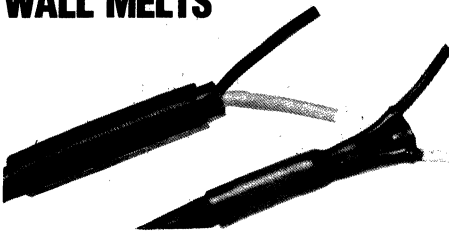
Standard Put-Ups: Spools

Minimum shrinkage temperature for neoprene tubings is +135°C (+275°F)

Neoprene tubings can be readily marked by hot-stamp and print-wheel methods.

Neoprene tubings are self-extinguishing and meet the requirements of MIL-I-23053/1 Class 1 & 2; MIL-R-46846, Type 1, Class 1 and AMS 3623.

IRRADIATED POLYOLEFIN MULTIPLE WALL, INNER WALL MELTS



WEICO'S SMW Tubings are rated for continuous operation at temperatures from -55° to +110°C and will withstand higher operating temperatures for brief time intervals.

WEICO'S SMW Tubings meet the requirements of AMS 3634 and MIL-I-23053/4, Class 1.

WEICO'S SMW is a semi-rigid, 110°C heat-shrinkable polyolefin tubing that is co-extruded and selectively cross-linked to provide an integral, melttable inner wall.

On the application of heat in excess of 135°C WEICO'S SMW Tubing automatically shrinks

WEICO NO.	MILITARY NO.	EXPANDED I.D. MINIMUM (INCHES)	RECOVERED I.D. MAXIMUM (INCHES)	RECOVERED NOM. WALL THICKNESS TOTAL WALL (INCHES)	MELTABLE WALL NOM. (INCHES)
SMW-1/8	M23053/4-101-0	.125	.023	.038	.020
SMW-3/16	M23053/4-102-0	.187	.060	.043	.025
SMW-1/4	M23053/4-103-0	.250	.080	.047	.027
SMW-300	—	.300	.050	.100	.065
SMW-3/8	M23053/4-104-0	.375	.135	.050	.030
SMW-1/2	M23053/4-105-0	.500	.195	.055	.035
SMW-3/4	M23053/4-106-0	.750	.313	.065	.040
SMW-1"	M23053/4-107-0	1.000	.400	.075	.040

COLOR: Black

Standard Put-Ups: 4 ft. Lengths

and closely conforms to the contours of the underlying substrate. The inner melttable wall of the tubing is simultaneously softened and forced by the shrink action into intimate contact with all underlying surfaces, interstices and small voids. Upon cooling, the installed SMW Tubing represents a tough protective and insulating barrier, highly resistant to penetration by moisture and the attack of chemicals and solvents.

Silicone Insulated Wire and Cable

With over 30 years of experience in silicone extrusion, Wiremax offers the flexibility you need with short lead times, high quality production capabilities, and complete extrusion equipment to provide the smallest and largest of wire constructions. An industry leader in silicone jacketing, we are a full-service manufacturer and supplier sensitive to customer needs, including metal and textile coverings for standard and special wire and cable constructions.

SIL-KOAT

High Voltage Silicone Coated and Uncoated Fep Wire

- SIL-KOAT Insulation
- High temperature -55° C through 200° C
- High voltage 1 KVDC through 30 KVDC
- 28 AWG through 20 AWG conductors
- Small diameter
- Available in standard red and natural (other colors available)
- Provides "bond-ready" jacket surface compatible with potting materials and adhesives
- Ozone and corona-resistant
- Available with Nomex Braid

TUFFSIL

Silicone High Voltage Lead Wire

- TUFFSIL insulation (silver-plated conductor is standard)
- High temperature -55° C through 200° C (250° C intermittent)
- High voltage 600 VDC through 100 KVDC
- 24 AWG through 1 AWG Conductors
- High flexibility
- Available in standard white (other colors available)
- Ozone and corona-resistant
- Radiation resistant
- Flame resistance meets the UL 3239 VW-1 flame test
- Ref. MIL-W-16878

Use TUFFSIL and SIL-KOAT Silicone Wire and Cable in TWT's, Laser Systems, CRT Displays, Military and Space, Industrial and Medical, Power Supplies.

UL 3239 - UL-AWM File No. E174208 Silicone High Voltage-High Temperature Appliance Wire (UL & Canadian Certified)

- High temperature 150° C rating
- High voltage 5 KVDC through 60 KVDC
- 24 AWG through 10 AWG conductors
- High flexibility
- Available in standard white (other colors available)
- Ozone and corona resistant
- Meets VW-1 flame test

Use UL 3239 -  Silicone Appliance Wire in Heaters, Furnaces, Ovens, Dryers, Motors, Lighting Fixtures, Signs, Power Supplies, CRT displays, Corona Treating Equipment, Miscellaneous Electronic Equipment.

UL 3616 - UL-AWM File No. E174208 Silicone High Voltage-High Temperature Appliance Wire

- High voltage 20 KVDC through 60 KVDC
- High temperature 150° C rating
- 8 AWG through 2 AWG conductors
- Available in standard white (other colors available)

Use silicone high voltage and appliance wire for the internal wiring of electronic equipment.

Optional wire and cable constructions available:

- Multi-conductor
- Special and custom wire and cable
- Shielded
- Semi-conductive



WIREMAX



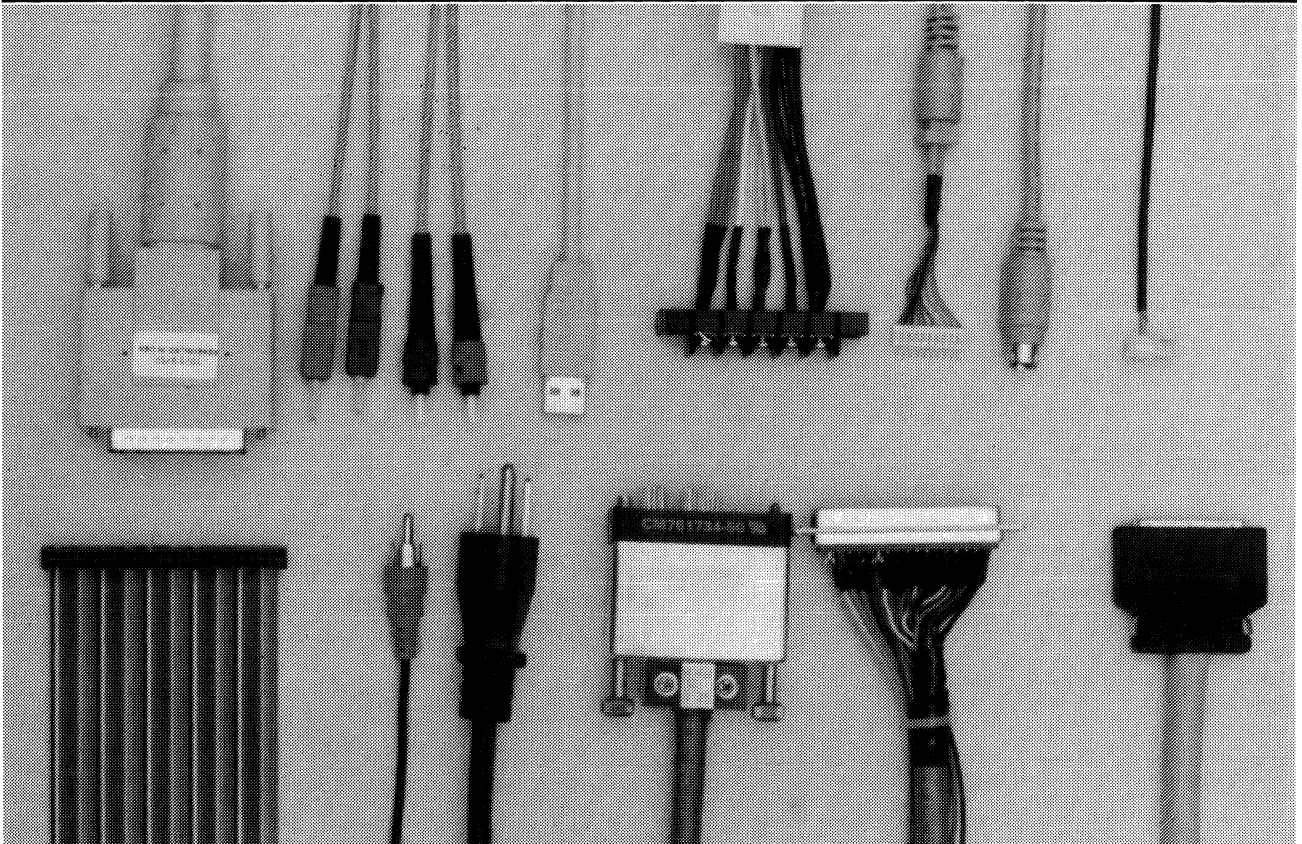
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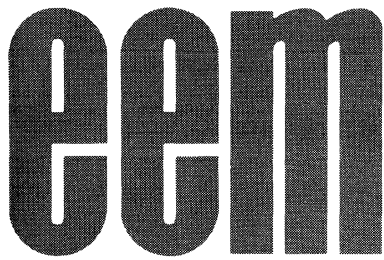
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MINIGLOSSARY CONNECTORS

Connector terminology is often quite confusing. This confusion starts with the very names of connectors. The name of a connector may derive from its shape, application, type of conductor or even method of termination.

Shape—Circular, cylindrical, and rectangular.

Electrical application—High voltage, RF, microwave, input/output, etc.

Mechanical application—Printed circuit, rack & panel, cable, etc.

Conductor type—Coaxial, flat cable, ribbon cable, flex circuit, etc.

Termination method—Wirewrap, soldercup, solderless, etc.

Hardware such as clamps, hoods, and adapters are frequently used to convert cable connectors to rack and panel types. This adds to the name confusion. A very common telephone connector, for example (the "C" type) got its name from the model number of the original maker.

Contact: The part(s) of the connector that actually provides circuit continuity between its two sections—the parts which are normally mated. The back end of the connector should properly be called the *termination*. This is the point where the wires or PC board is attached to the connector.

Contact alignments: Often called *contact float*. Describes the amount of allowable contact movement within the connector body. Permits self-alignment.

Male vs. female: In the U.S. this describes the contact construction. In Europe this term is more often used to describe the outer shell mating action which may be the reverse of the contacts.

Closed entry: A female contact which prevents entry of a male contact larger than a specific size.

Open entry: A female contact designed for a specific size of male contact but which will allow entry of larger male contacts by spring action.

Hermaphrodite: Contacts or connector bodies which are the same configuration. Male/female designations do not apply. Bodies usually have some mechanical means for maintaining polarity.

Hermetic seal: Glass-to-metal seals at terminations. Often used improperly to describe vacuum-tight seals.

Waterproof seal: May or may not be truly *waterproof*. May prevent easy entrance of casual water by means of a rubber or other boot.

Printed circuit connector: Connectors which are used in conjunction with printed circuit boards. There are two distinctly different styles.

Edgeboard. May be called *edge* or *card*. The printed circuit (PC) board edge enters the connector.

Two-piece: One part of the connecting pair is physically attached to the PC board itself. The other part is attached to something else such as a cable or a motherboard.

Readout: Describes the arrangement at the terminating edge of a PC board.

May be single or double. A double read-out PC board has termination strips on each side not usually interconnected.

Ribbon connectors: A type of connector which allows flat "ribbon" cable to be attached to a round or rectangular connector but also used interchangeably for flat connectors to flat cable.

Ribbon contact connector: Describes the contacts in a rectangular connector which have a self-wiping mating action. Not the same as ribbon connector.

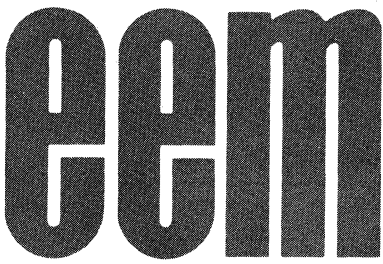
Solderless terminal: Any style of termination which does not require solder for a permanent connection. See *crimp* and *insulation displacement*.

Crimp termination: A stripped wire is inserted into a barrel or trough which is then crimped to the conductor with a suitable tool.

Insulation displacement: Unstripped insulated wire is fitted into a channel containing metal teeth which are forced through the insulation to make contact with the conductor.

Service rating: The maximum rated voltage and/or current which may be applied continuously. May be called *working voltage*. Can be confused with the term used to describe how many times a connector may be mated and separated.

Withstanding voltage: Also called *test voltage*. The voltage a connector must withstand for one minute without breakdown. Applied between connectors and between connectors and shell and any grounding devices of the connector.



MAXIMUM CURRENT CAPACITY— CONDUCTORS

Size, AWG	MIL-W-5088				National Electrical Code	Underwriters Laboratory		American Insurance Association	500 c mils/A
	Copper		Aluminum			60°C	80°C		
	Single- wire	Wire- bundled	Single- wire	Wire- bundled					
30	...	...	...	...	...	0.2	0.4	...	0.20
28	...	...	...	...	...	0.4	0.6	...	0.32
26	...	...	...	...	...	0.6	1.0	...	0.51
24	...	...	...	...	...	1.0	1.6	...	0.81
22	9	5	...	...	...	1.6	2.5	...	1.28
20	11	7.5	...	...	...	2.5	4.0	3	2.04
18	16	10	...	...	6	4.0	6.0	5	3.24
16	22	13	...	...	10	6.0	10.0	7	5.16
14	32	17	...	...	20	10.0	16.0	15	8.22
12	41	23	...	...	30	16.0	26.0	20	13.05
10	55	33	...	...	35	...	...	25	20.8
8	73	46	58	36	50	...	...	35	33.0
6	101	60	86	51	70	...	...	50	52.6
4	135	80	108	64	90	...	...	70	83.4
2	181	100	149	82	125	...	...	90	132.8
1	211	125	177	105	150	...	...	100	167.5
0	245	150	204	125	200	...	...	125	212.0
00	283	175	237	146	225	...	...	150	266.0
000	328	200	...	...	275	...	...	175	336.0
0000	380	225	...	...	325	...	...	225	424.0



WIRE GAUGES— DIAMETER, AREA AND COPPER WEIGHT

Size, AWG	Diameter at 20°C (68°F)		Area at 20°C (68°F)			Weight at 20°C (68°F), bare copper wire		
	mils	mm	mils	c mils	mm	lb/1,000 ft.	lb/mile	kg/km
4/0	460.0	11.68	166,200	211,600	107.2	640.5	3,382	953.2
3/0	409.6	10.40	131,800	167,800	85.01	507.8	2,681	755.7
2/0	364.8	9.266	104,500	133,100	67.43	402.8	2,127	599.5
1/0	324.9	8.252	82,891	105,600	53.49	319.5	1,687	477.6
1	289.3	7.348	85,730	83,690	42.41	253.3	1,338	337.0
2	257.6	6.543	52,120	66,360	33.62	200.9	1,061	298.9
3	229.4	5.827	41,330	52,620	26.67	159.3	841.1	237.1
4	204.3	5.189	32,780	41,740	21.15	126.3	667.1	188.0
5	181.9	4.620	25,990	33,090	16.77	100.2	528.8	149.0
6	162.0	4.115	20,610	26,240	13.30	79.44	419.4	118.2
7	144.3	3.665	16,350	20,820	10.55	63.03	332.8	93.80
8	128.5	3.264	12,970	16,510	8.367	49.98	263.9	74.38
9	114.4	2.906	10,280	13,090	6.631	39.61	209.2	58.95
10	101.9	2.588	8,155	10,380	5.261	31.43	166.0	46.77
11	90.7	2.304	6,460	8,230	4.17	24.90	131	37.1
12	80	2.05	5,130	6,530	3.310	19.8	104	29.4
13	72.0	1.83	4,070	5,180	2.63	15.7	82.9	23.4
14	64.1	1.63	3,230	4,110	2.08	12.4	65.7	18.5
15	57.1	1.45	2,560	3,260	1.650	9.87	52.1	14.7
16	50.8	1.29	2,030	2,580	1.31	7.81	41.2	11.6
17	45.3	1.150	1,610	2,050	1.040	6.21	32.8	9.24
18	40.3	1.02	1,280	1,620	0.823	4.92	26.0	7.32
19	35.9	0.912	1,010	1,290	0.653	3.90	20.6	5.81
20	32.0	0.813	804.0	1,020	0.519	3.10	16.4	4.61
21	28.5	0.724	638.0	812.0	0.412	2.46	13.0	3.66
22	25.3	0.643	503.0	640.0	0.324	1.94	10.2	2.88
23	22.6	0.574	401.0	511.0	0.259	1.55	8.16	2.30
24	20.1	0.511	317.0	404.0	0.205	1.22	6.46	1.82
25	17.9	0.455	252.0	320.0	0.162	0.970	5.12	1.44
26	15.9	0.404	199.0	253.0	0.128	0.765	4.04	1.14
27	14.2	0.361	158.0	202.0	0.102	0.610	3.22	0.908
28	12.6	0.320	125	159.0	0.0804	0.481	2.54	0.715
29	11.3	0.287	100.0	128.0	0.0647	0.387	2.04	0.575
30	10.0	0.254	78.50	100.0	0.0507	0.303	1.60	0.450
31	8.9	0.226	62.20	79.2	0.0401	0.240	1.27	0.357
32	8.0	0.203	50.30	64.0	0.0324	0.194	1.02	0.288
33	7.1	0.180	39.60	50.40	0.0255	0.153	0.806	0.227
34	6.3	0.160	31.20	39.7	0.0201	0.120	0.634	0.179
35	5.6	0.142	24.60	31.4	0.0159	0.0940	0.501	0.141
36	5.0	0.127	19.60	25.00	0.0127	0.0757	0.400	0.113
37	4.50	0.114	15.90	20.20	0.0103	0.0613	0.324	0.0912
38	4.0	0.102	12.60	16.0	0.00811	0.0484	0.256	0.0721
39	3.5	0.0889	9.62	12.2	0.00621	0.0371	0.196	0.0552
40	3.1	0.0787	7.55	9.61	0.00487	0.0291	0.154	0.0433
41	2.8	0.0711	6.16	7.84	0.00397	0.0237	0.125	0.0353
42	2.5	0.0635	4.91	6.25	0.00317	0.0189	0.0999	0.0282
43	2.2	0.0559	3.80	4.84	0.00245	0.0147	0.0774	0.0218
44	2.0	0.0508	3.14	4.00	0.00203	0.0121	0.0639	0.0180
45	1.8	0.0457	2.54	3.24	0.00164	0.00981	0.0519	0.0146
46	1.6	0.0406	2.01	2.56	0.00130	0.00775	0.0409	0.0115
47	1.4	0.0356	1.54	1.96	0.000993	0.00593	0.0313	0.00883
48	1.2	0.0305	1.13	1.44	0.000730	0.00436	0.0230	0.00649
49	1.1	0.0279	0.950	1.21	0.000613	0.00366	0.0193	0.00545
50	1.0	0.0254	0.785	1.00	0.000507	0.00303	0.0160	0.00450

RELATIVE QUANTITY SYMBOLS

≠	not equal to
≈	approximately equal to
∞	proportional to
<	smaller than
≤	smaller than or equal to
≪	much smaller than
>	larger than
≥	larger than or equal to
≫	much larger than
≡	identical to or equivalent
↑	increases
↓	decreases

PREFIXES FOR SI UNITS

Multiple	Prefix	Symbol
10 ¹²	tera	T
10 ⁹	giga	G
10 ⁶	mega	M
10 ³	kilo	k
10 ⁻³	milli	m
10 ⁻⁶	micro	μ
10 ⁻⁹	nano	n
10 ⁻¹²	pico	p

Quantity	Symbol	SI Unit	Symbol	Derivation
acceleration	<i>a</i>	m s ⁻²	—	velocity/time
acceleration due to gravity	<i>g</i>	m s ⁻²	—	velocity/time
amount of substance	<i>n</i>	mole	mol	mole fraction (n) used
amplification factor	<i>μ</i>	<i>a ratio</i>	—	—
angle	<i>θ</i> ₁ , <i>φ</i> ₁ , <i>α</i> ₁	—	—	—
angle of incidence	<i>i</i>	degree or radian	°	—
angle of refraction	<i>r</i>	degree or radian	°	—
angle, Bragg	<i>θ</i>	number	—	—
angle, critical	<i>c</i>	degree or radian	°	—
anode slope resistance	<i>R_A</i>	ohm	Ω	$\Delta V_a / \Delta I_a$
area	<i>A</i>	metres squared	m ²	<i>l</i> × <i>b</i>
atomic number	<i>Z</i>	a number	—	number of protons
Avogadro constant	<i>L</i> , <i>N_A</i>	number	—	—
breadth	<i>b</i>	metre	m	fundamental unit
capacitance	<i>C</i>	farad	F	charge/p.d.
charge, electric	<i>Q</i>	coulomb	C	current × time
charge on electron	<i>e</i>	coulomb	C	1.6 × 10 ⁻¹⁹ C
conductance	<i>G</i>	ohm ⁻¹	Ω ⁻¹	reciprocal of resistance
current, electric	<i>I</i>	ampere	A	fundamental unit
decay constant	<i>λ</i>	<i>a ratio</i>	—	—
density	<i>ρ</i>	kg m ⁻³	—	<i>m/V</i>
distance along path	<i>s</i>	metre	m	fundamental unit
efficiency	<i>η</i>	<i>a ratio</i>	—	work output/work input
electrochemical equiv.	<i>z</i>	g C ⁻¹	—	mass/charge
electromotive force	<i>E</i>	volt	V	energy/charge
electron	<i>e</i>	—	—	—
energy	<i>E</i>	joule	J	N m
energy, kinetic	<i>E_k</i>	joule	J	N m. $E_k = 1/2mv^2$
energy, potential	<i>E_p</i>	joule	J	N m. $E_p = mgh$
Faraday constant	<i>F</i>	coulomb mol ⁻¹	C mol ⁻¹	96,500 C mol ⁻¹
field strength, electric	<i>E</i>	V m ⁻¹	—	potential gradient: p.d./dist.
field-strength magnetic	<i>H</i>	ampere-turns	—	current × no. of turns
flux, magnetic	<i>Φ</i>	weber	Wb	e.m.f./rate of change of flux
flux density	<i>B</i>	tesla	T	flux/area
focal length	<i>f</i>	metre	m	—
force	<i>F</i>	newton	N	kg m s ⁻²
free energy	<i>ΔG</i>	joule	J	—
frequency	<i>f</i>	hertz	Hz	oscillations/time
gas constant	<i>r</i>	joule	J	energy
half-life, radioactivity	<i>t</i> _{1/2}	second	s	fundamental unit
heat capacity	<i>C</i>	J K ⁻¹	—	quantity of heat/temp. rise
heat of reaction	<i>ΔH</i>	joule	J	heat energy
heat capacity, specific	<i>c</i>	J K ⁻¹ kg ⁻¹	—	heat capacity/mass
heat, quantity of	<i>q</i>	joule	J	energy

Quantity	Symbol	SI Unit	Symbol	Derivation
height	h	metre	m	fundamental unit
image distance	v	metre	m	fundamental unit
inductance, mutual	M	henry	H	induced e.m.f./rate of change of current
inductance, self	L	henry	H	—
intensity of radiation	I	a number	—	—
latent heat	L	joule	J	quantity of heat
latent heat, specific	l	J kg ⁻¹	—	quantity of heat
latent heat, molar	L_m	joule mol ⁻¹	J	quantity of heat
length	l	metre	m	fundamental unit
magnetizing force	H	ampere-turns	—	—
magnetic moment	m	Wb m	—	torque in unit magnetic field
magnification, linear	m	a ratio	—	—
mass	m	kilogramme	kg	fundamental unit
mass number	A	a number	—	number of neutrons + protons
molar volume	V_m	(dm ³)	—	volume of 1 mole
molar solution	M	a ratio	—	moles/dm ³
moment of force	—	N m	—	force × perp. distance
neutron number	N	a number	—	number of neutrons
number	n	—	—	—
number of molecules	N	—	—	—
number turns on coil	n	a number	—	—
number order spectrum	p	a number	—	—
object distance	u	metre	m	fundamental unit
peak current	I_0	ampere	A	see current
peak e.m.f.	E_0	volt	V	see e.m.f.
period	T	second	s	fundamental unit
permeability	μ	H m ⁻¹	—	henry/metre
permeability, vacuum	μ_0	H m ⁻¹	—	—
permeability, relative	μ_r	a ratio	—	$\mu = \frac{\mu}{\mu_0}$
permittivity	ϵ	F m ⁻¹	—	farad/metre
permittivity, vacuum	ϵ_0	F m ⁻¹	—	farad/metre
permittivity, relative	ϵ_r	a ratio	—	$\epsilon_r = \frac{\epsilon}{\epsilon_0}$
potential, electric	V	volt	V	energy/charge
potential difference	V	volt	V	energy/charge
power	P	watt	W	J s ⁻¹
pressure	p	pascal	Pa	N m ⁻² ; force/area
radius	r	metre	m	fundamental unit
reactance	X	ohm	Ω	E_0/I_0
refractive index	n	a ratio	—	—
resistance	R	ohm	Ω	p.d./current
resistivity, electrical	ρ	ohm-metre	—	resistance × length
relative density	d	a ratio	—	$\rho_{\text{sub}}/\rho_{\text{water}}$
r.m.s. current	$I_{\text{r.m.s}}$	ampere	A	see current
r.m.s. voltage	$V_{\text{r.m.s}}$	volt	V	see e.m.f.
slit separation	s	metre	m	fundamental unit
tension	T	newton	N	see force
temperature, Celsius	θ	degree C	°C	from kelvin
temp. interval	θ	degree	° or K	—
temp. absolute	T	kelvin	K	fundamental unit
thickness	d	metre	m	fundamental unit
time	t	second	s	fundamental unit
torque	T	Nm	—	see moment
turns ratio	T	a ratio	—	$n_{\text{sec}}/n_{\text{prim}}$
(unit of electricity)	—	kW h	—	kilowatt × hour
velocity	u, v	ms ⁻¹	—	distance/time
velocity, angular	ω	second ⁻¹	s ⁻¹	angle/time
velocity, e.m.waves	c	m s ⁻¹	—	—
velocity of sound	v	m s ⁻¹	—	—
volume	V	metre cubed	m ³	l × b × h
wavelength	λ	metre	m	fundamental unit
work	w	joule	J	force × distance (Nm)
weight	W	newton	N	kg m s ⁻² or mg

These symbols appear on many electrical/electronic components distributed in the world market. They indicate that a country's standard-setting agency has approved the design of the component and/or a testing agency has approved the performance of the component in meeting the standard. This page lists only those countries that have a *symbol* to represent their authority.

	Argentina (IRAM) Instituto Argentino de Racionalization de Materiales		Hong Kong Hong Kong Standards & Testing Centre		Poland Polski Komitet Normalizacji Miar i Jakosci (Polish Committee for Standardization, Measures and Quality Control)
	Australia (SAA) Standards Association of Australia		Hungary (MSZH) Magyar Szabvanyugi Hivatal (Hungarian Office for Standardization)		Portugal (CEP) Comissao Electrotécnica Portuguesa
	Austria (ÖVE) Österreichischer Verband für Elektrotechnik		India (ISI) Indian Standards Institute "Manak Bhavan"	STAS	Romania Institutul Roman de Standardizare (Romanian Standards Institute)
	Belgium (CEB) Comité Electrotechnique Belge		Indonesia Badan Kerjasama Standardisasi LIPI-YDNI (LIPI-YDNI Joint Standardization Committee)		Singapore Singapore Institute of Standards and Industrial Research
ABNT	Brazil (ABNT) Associação Brasileira de Normas Tecnicas		Iran Institute of Standards and Industrial Research of Iran		South Africa (SABS) South African Bureau of Standards
	Canada (CSA) Canadian Standards Association		Ireland (IIRS) Institute for Industrial Research and Standards		Spain (IRANOR) Instituto Nacional de Racionalización y Normalización
	Czechoslovakia Úrad pro Normalizaci a Mereni (Office for Standards and Measurements)	SII	Israel (SII) Standards Institution of Israel		Sweden (SEK) Svenska Elektriska Kommissionen (Swedish Electrotechnical Commission)
	Denmark (DEK) Dansk Elektroteknisk Komite (Danish Electrotechnical Committee)		Italy (CEI) Comitato Elettrotecnico Italiano (Italian Electrotechnical Committee)		Switzerland (SEV) Schweizerischer Elektrotechnischer Verein Postfach
	Egypt (EOS) Egyptian Organization for Standardization and Quality Control		Japan (JISC) Japanese Industrial Standards Committee Agency of Industrial Science and Technology		Turkey (TSE) Turk Standardlari Enstitusu (Turkish Standards Institution)
	Finland (SETI) Electrical Inspectorate		Korea, Republic of (South) Industrial Advance Administration		United Kingdom (BSI) British Standards Institution
	France (UTE) Union Technique de l'Électricité		Mexico (DGN) Dirección General de Normas Secretaria de Patrimonio y Fomento Industrial Puente de Tecamachalco		United States (NEMA) National Electrical Manufacturers Association
	Germany, Democratic Republic of (East) (ASMW) Amt für Standardisierung Messwesen und Warenprüfung (Office for Standardization, Metrology and Quality Control)		Netherlands (NEC) Nederlands Elektrotechnisch Comité		United States (ANSI) American National Standards Institute
	Germany, Federal Republic of (West) (DKE) Deutsche Elektrotechnische Kommission im DIN und VDE (German Electrotechnical Commission of DIN and VDE)		New Zealand (SANZ) Standards Association of New Zealand		Venezuela CODELECTRA en Conjunto con COVENIN Avda. Ppal.
	Germany, Federal Republic of (West) (DKE) Deutsche Elektrotechnische Kommission im DIN und VDE (German Electrotechnical Commission of DIN and VDE)		Norway (NEK) Norsk Elektroteknisk Komite (Norwegian Electrotechnical Committee)		Yugoslavia Federal Institute of Standardization
ELOT	Greece (ELOT) The Hellenic Organization of Standardization		Pakistan Pakistan Standards Institution		