

Publication Number
GC22-7069-2

**IBM Input/Output
Equipment Reference
Installation Manual – Physical
Planning:**

System/360

System/370

4300 Processors

IBM



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S360/S370/4300-15

Federal Communications Commission (FCC) Statement

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

The preceding statement applies to equipment covered by this Installation Manual—Physical Planning (IM—PP). This equipment has been tested and found to comply with the limits for a Class A computing device as described.

For machines manufactured before January 1, 1981, the FCC does not require compliance. To determine the exact category of your machine, refer to the label attached to the machine.

CAUTION

The power attachment cable plug (when supplied) is approved for use with the particular machines and meets the relevant testing laboratory or country/test-house standards. For the user's safety, the plug must be connected to a properly wired and grounded receptacle. An improperly wired receptacle could place a hazardous voltage on accessible metal parts of the machine. The customer is responsible for receptacle wiring.

Third Edition (August 1983)

This major revision obsoletes GC22-7069-0, GC22-7069-1, and Technical Newsletters GN22-2180 and GN22-2191. Information to support cable changes to the 1255 and 1419 Magnetic Character Readers has been added. Changes to the text and illustrations are indicated by a vertical line to the left of the change.

Changes are made periodically to the information herein; before using this publication in connection with the installation and operation of IBM equipment, refer to the latest *IBM System/360 Bibliography*, GC20-0360, and *IBM System/370 and 4300 Processors Bibliography*, GC20-0001, for the editions that are applicable and current.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM program product in this publication is not intended to state or imply that only IBM's program product may be used. Any functionally equivalent program may be used instead.

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This manual contains information necessary for planning the physical installation of IBM input/output equipment.

The customer, in planning the installation, may request the assistance of an IBM Installation Planning representative.

This manual is divided into two sections with five reference appendixes:

- **Section 1** contains machine specifications and cabling information for input/output equipment.
- **Section 2** has other general cabling information.

The five reference appendixes, which are listed in the Contents, contain additional information and cross-references.

The following publications may be used in conjunction with this manual depending on the specific system configuration:

IBM System/370 Input/Output Configurator, GA22-7002

IBM 3790 Communication System Installation Manual—Physical Planning, GA27-2769

IBM 3270 Information Display System Installation Manual—Physical Planning, GA27-2787

Assembly of Coaxial Cable and Accessories for Attachment to IBM Products, GA27-2805

Additional information about specific systems and machines can be found in the following publications:

IBM 3750 Switching System Installation Manual—Physical Planning, GA19-5003

IBM 3600 Plant Communication System Installation Manual—Physical Planning, GA24-3675

IBM 8100 Information System Installation Manual—Physical Planning, GA27-2877

IBM 8100 Loop Installation Manual—Physical Planning, GA27-2878

IBM Remote Multiplexers and Communications Terminals Installation Manual—Physical Planning, GA27-3006

Note: This manual contains various plan views scaled in millimeters with the equivalent English measurements shown in parentheses. All applicable plan views are labeled metric. Those plan views scaled in English remain unchanged. All plan view pages show scale used.

This manual is a companion to and should be used with the following manuals:

IBM System/360 Installation Manual—Physical Planning, GC22-6820

IBM System/360 World Trade Installation Manual—Physical Planning, GC19-0001

IBM System/370 Installation Manual—Physical Planning, GC22-7004

IBM 4300 Processors Installation Manual—Physical Planning, GA24-3667

For input/output products not listed in this manual, see *IBM Input/Output Equipment Installation Manual—Physical Planning: System/360, System/370, 4300 Processors*, GC22-7064.



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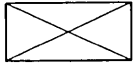
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Standard Symbols

This chart shows standard symbols used in this Installation Manual—Physical Planning (IM—PP). Frame numbers are shown circled on plan views and cabling schematics, for example, (04).

In Plan Views:



Cable Entry and Exit Area in Base of Machine. Locating dimensions are measured from edge of frame, not cover



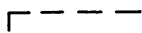
Power Cord Exit



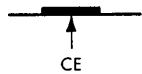
Swinging Gate



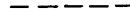
Standard Equipment Outline (Shows machine with covers closed)



Optional Equipment Outline



Customer Engineer Indicator Panel



Service Area Boundary (Service clearances are measured from machine with covers closed) (New symbol shown. Old symbol retained on plan views is -o-o-)



Casters (Locating dimensions are measured from edge of frame, not cover)



Leveling Pads or Glides (3-1/2" [8.9 cm] Typical Diameter) (Locating dimensions are measured from edge of frame, not cover)



Legs



Nonraised Floor Cable Exit

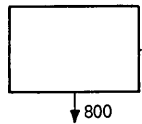


Meter Location

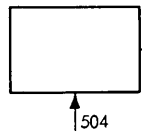


Unit Emergency Power-Off Switch

In Cabling Schematics:



Indicates Cable Group from a machine, and



Indicates Cable Group to a machine

Hinged Covers



Single



Bifold



Offset Bifold

Note: Power cords are supplied in 14-foot (427-cm) lengths, unless otherwise noted on the specifications page. The length is measured from the symbol ⊕.

Abbreviations and Definitions

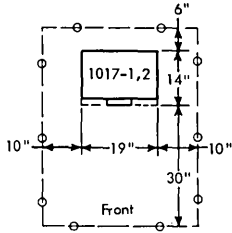
A	ampere	H	height/Hubbell
ac	alternating current	hp	high pressure/horsepower
ADU	automatic dialing unit	Hz	hertz
ambient	environment		
AWG	American wire gauge	ICA	Integrated Communications Adapter
		ID	identification
blk mpxr	block multiplexer	IDA	Integrated Data Adapter
bpi	bits per inch	IFA	Integrated File Adapter
bps	bits per second	in.	inch
BSM	basic storage module	I/O	input/output
BTU	British thermal unit	IPA	Integrated Printer Adapter
bus	one or more conductors used for transmitting signals or power	IPCEA	International Power Cables Engineering Association
		ISC	Integrated Storage Controls
C	Celsius/coupler	kb	kilobyte
CCITT	Consultant Committee of International Telephone & Telegraph (WT)	kbps	kilobytes per second
CDU	coolant distribution unit	kcal/hr	kilocalories per hour
CE	customer engineer	kg	kilogram
CER	customer engineering room	kg/m ²	kilograms per square meter
cfm	cubic feet per minute	kVA	kilovolt ampere
ch	channel	kW	kilowatt
cm	centimeter	kybd	keyboard
cnsl	console		
coax	coaxial	LA	Line Adapter
cond	conductor	lb	pound
conn	connector	LIB	line interface base
cont	continuous	lumens/m ²	lumens per square meter
conv	converter		
CRT	cathode-ray tube	m	meter
C-T-C	connector-to-connector	max	maximum
ctrl	control	MCM	thousand circular mils
Cu	copper	m ³ /min	cubic meter per minute
CW	copperweld	MES	Miscellaneous Equipment Specification
		mfg	manufacturing
		MG	motor generator
		min	minimum/minute
		mm	millimeter
		modem	modulator/demodulator
		modulator/demodulator	device that modulates and demodulates signals transmitted over communication facilities
		MP	multiprocessing
		mpxr	multiplexer
		ms	millisecond
		MSC	mass storage control
		MSF	mass storage facility
		MSS	mass storage system
		MTU	magnetic tape unit
		NEC	National Electrical Code
		NEMA	National Electrical Manufacturers' Association
		NFPA	National Fire Protection Association
		No.	number
		nom	nominal
		NTT	Nippon Telephone and Telegraph
		OD	outside diameter
		OEM	original equipment manufacturer
		oersted	centimeter-gram-second electromagnetic unit of magnetic intensity
gpm	gallons per minute		

P&S	Pass and Seymour	SDA	Synchronous Data Adapter
PCDU	power and coolant distribution unit	sec	second
PDU	power distribution unit	seq	sequential
pH	hydrogen-ion concentration	service clearance	minimum space required to allow working room for the machine operator and/or the customer engineer for servicing the unit
port	entry/exit in mass storage control of 3851 for attachment of external devices		
ppm	parts per million	SF	special feature/sales feature
proc	processing	slr	selector
psi	pounds per square inch	SNA	systems network architecture
psig	pounds per square inch gauge	stg	storage
PTT	postal telephone and telegraph	SVP	service processor
PVC	polyvinyl chloride		
pwr	power	TNL	Technical Newsletter
R	rear	UK	United Kingdom
R&S	Russell & Stoll	UL	Underwriters Laboratory
rdr	reader	UPS	uninterrupted power supply
Rel	relative	U.S.	United States
rft	radio-frequency interference		
RPQ	Request for Price Quotation	V	volt
Rt	right	VFL	variable field length
S	side	WE	Western Electric
SCU	storage control unit	WT	World Trade

Section 1. Machine Specifications and Cabling Schematics

1017 PAPER TAPE READER MODELS 1 AND 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2826.

SPECIFICATIONS

Dimensions:

	F	S	H	
			Model 1	Model 2
Inches	19	14	11-1/2	15
(cm)	(48)	(36)	(29)	(38)

Service Clearances:

	F	R	Rt	L
Inches	30	6	10	10
(cm)	(76)	(15)	(25)	(25)

Weight:	Model 1	Model 2
lb	42	60
(kg)	(20)	(28)

Heat Output:

BTU/hr	300	750
(kcal/hr)	(76)	(190)

Power Requirements:

kVA	0.1	0.4
Phases	1	1

60-Hz Requirements	Computer Room R&S Type No.	Remote Installation H or P&S Type Nos. ***			
		Nonlocking		Locking	
Voltage	208/230	115	208/230	115	208/230
Plug*	**	5266	5666	4720	4770
Connector	**	5269	5669	4730	4780
Receptacle	**	5261	5661	4700	4750
		5262	5662	4710	4760

50-Hz Requirements	
Voltage†	112.5, 123.5, 195, 208, 220, 230, 235
Power Cord Style††	A9

Environment, Operating:

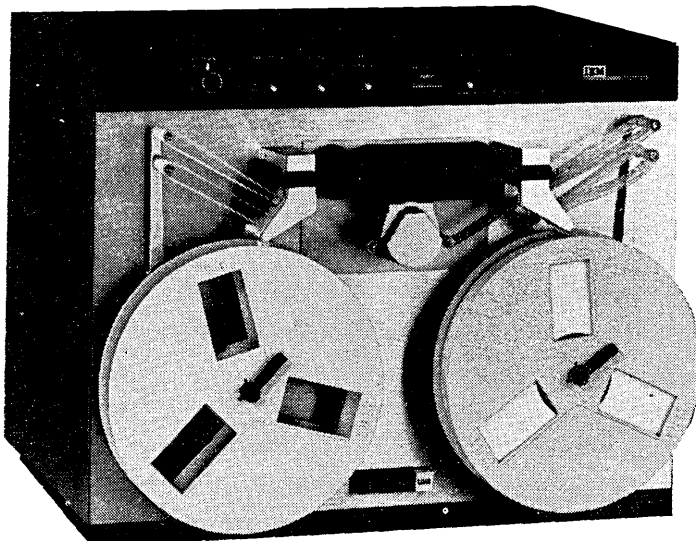
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

Environment, Nonoperating:

Temperature	50°F-125°F (10°C-52°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

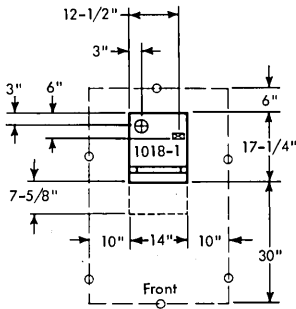
Notes:

- * Plug type to be specified on the order.
- ** Powered from 2826.
- *** Or equivalent.
- † 112.5 and 123.5 V for remote installation only.
- †† Remote installation only. When 1017 is installed in computer room, power is provided from 2826.



1018 PAPER TAPE PUNCH MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2826.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	14	17-1/4	14
(cm)	(36)	(44)	(36)

Service Clearances:

	F	R	Rt	L
Inches	30	6	10	10
(cm)	(76)	(15)	(25)	(25)

Weight: 67 lb (31 kg)

Heat Output: 600 BTU/hr (160 kcal/hr)

Power Requirements:

kVA	0.2
Phases	1

60-Hz Requirements	Computer Room R&S Type No.	Remote Installation H or P&S Type Nos.**			
		Nonlocking		Locking	
Voltage	208/230	115	208/230	115	208/230
Plug*	FS3720	5266	5666	4720	4770
Connector	FS3913	5269	5669	4730	4780
Receptacle	FS3743	5261	5661	4700	4750
		5262	5662	4710	4760

50-Hz Requirements	
Voltage***	112.5, 123.5, 195, 208, 220, 230, 235
Power Cord Style	A9

Environment, Operating:

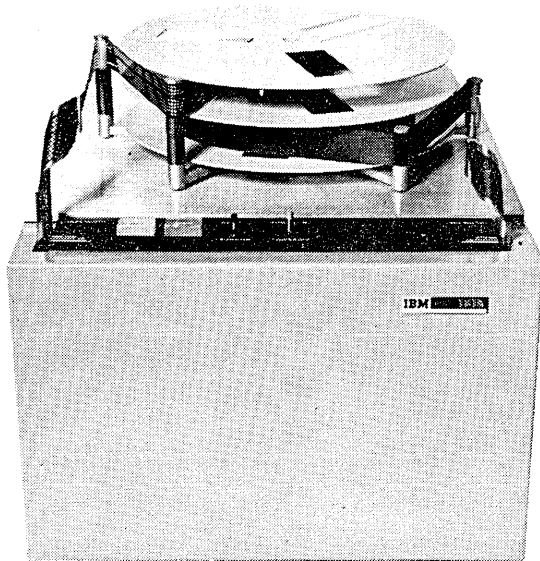
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

Environment, Nonoperating:

Temperature	50°F-125°F (10°C-52°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

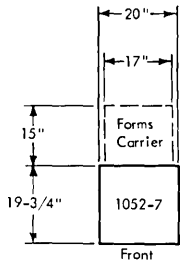
Notes:

- * Plug type to be specified on the order.
- ** Or equivalent.
- *** 112.5 and 123.5 V for remote installation only.



1052 PRINTER-KEYBOARD MODEL 7

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	23*	19-3/4	9
(cm)	(58*)	(50)	(23)

Service Clearances:

	F	R	Rt	L
Inches	**	**	**	**
(cm)	(**)	(**)	(**)	(**)

Weight: 65 lb (30 kg)

Heat Output: 570 BTU/hr (150 kcal/hr)

Airflow: 0 cfm (0 m³/min)

Power Requirements:***

kVA 0.17

Environment, Operating:

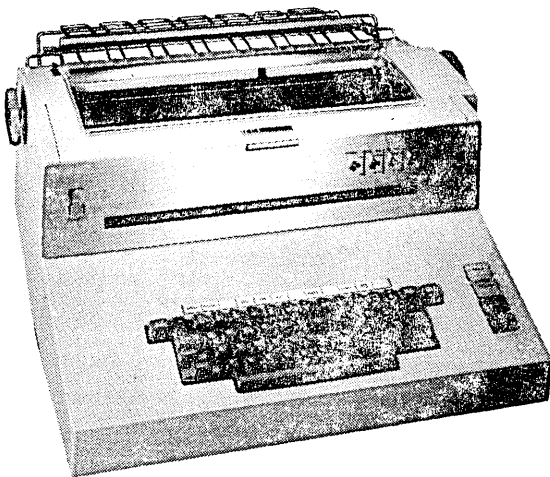
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	10%-80%
Max Wet Bulb	80°F (27°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	10%-80%
Max Wet Bulb	80°F (27°C)

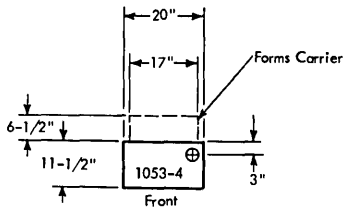
Notes:

- * Dimension includes 1-1/2 inches (4 cm) on each side for platen knobs.
- ** Controlled by processor configuration. Provide operator access and sufficient clearance for forms carrier and forms travel.
- *** Powered from processor.



1053 PRINTER MODEL 4 (2848 ATTACHMENT)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2848.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	23*	11-1/2	9
(cm)	(58*)	(29)	(23)

Service Clearances:

	F	R	Rt	L
Inches	**	**	**	**
(cm)	(**)	(**)	(**)	(**)

Weight: 35 lb (16 kg)

Heat Output: 570 BTU/hr (150 kcal/hr)

Airflow: 0 cfm (0 m³/min)

Power Requirements:***

kVA	0.2	
Phases	1	
	115 V	208/230 V
Plug	H or P&S, 5266	H or P&S, 5666
Connector	H or P&S, 5269	H or P&S, 5669
Receptacle	H or P&S, 5261 or 5262	H or P&S, 5661 or 5662
Power Cord Style	G2	

Environment, Operating:

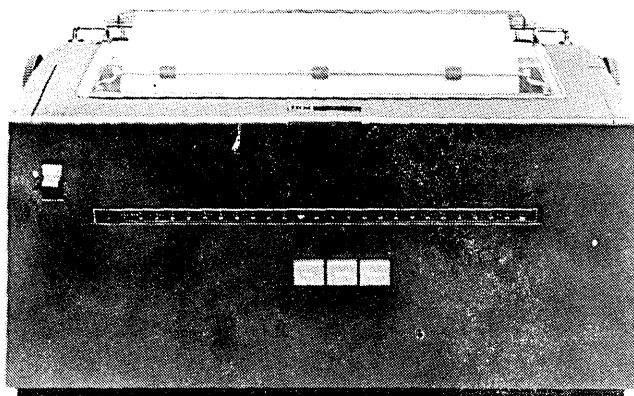
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	10%-80%
Max Wet Bulb	80°F (27°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	10%-80%
Max Wet Bulb	80°F (27°C)

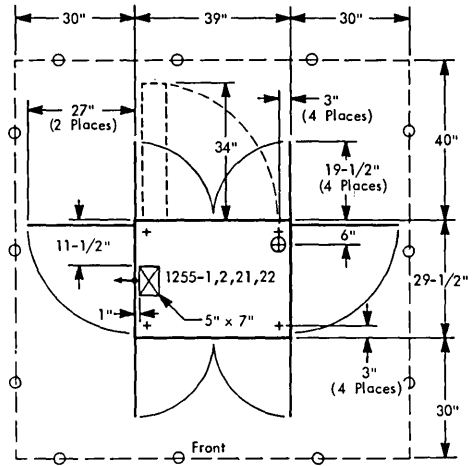
Notes:

- * Dimension includes 1-1/2 inches (4 cm) on each side for platen knobs.
- ** Provide operator access and sufficient clearance for forms carrier and forms travel.
- *** Model 4 is available for remote installation only.



1255 MAGNETIC CHARACTER READER MODELS 1, 2, 21, AND 22 (50 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 1255.5.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	39	29-1/2	55
(cm)	(99)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	30	40	30	30
(cm)	(76)	(102)	(76)	(76)

Weight: 560 lb (260 kg)

Heat Output: 2,600 BTU/hr (660 kcal/hr)

Airflow: 300 cfm (9 m³/min)

Power Requirements:

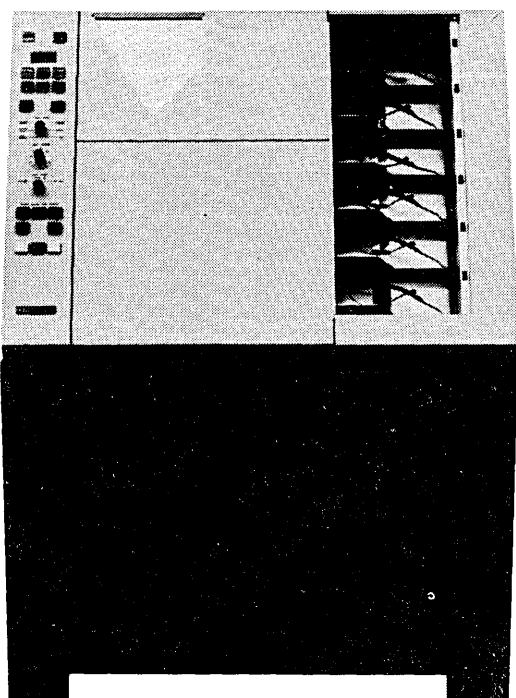
- kVA 0.96
- Phases 1
- Plug R&S, FS3720
- Connector R&S, FS3913
- Receptacle R&S, FS3743
- Power Cord Style A1
- Power Cord Length 10 feet (305 cm)

Environment, Operating:

- Temperature 60°F-90°F (16°C-32°C)
- Rel Humidity 20%-80%
- Max Wet Bulb 78°F (26°C)

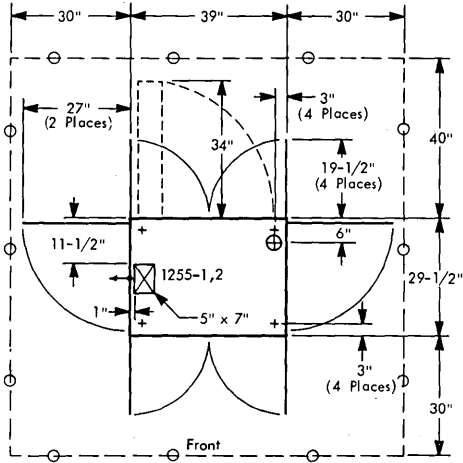
Environment, Nonoperating:

- Temperature 50°F-110°F (10°C-43°C)
- Rel Humidity 8%-80%
- Max Wet Bulb 80°F (27°C)



1255 MAGNETIC CHARACTER READER MODELS 1 AND 2 (60 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 1255.5.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	39	29-1/2	55
(cm)	(99)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	30	40	30	30
(cm)	(76)	(102)	(76)	(76)

Weight: 560 lb (260 kg)

Heat Output: 2,600 BTU/hr (660 kcal/hr)

Airflow: 300 cfm (9 m³/min)

Power Requirements:

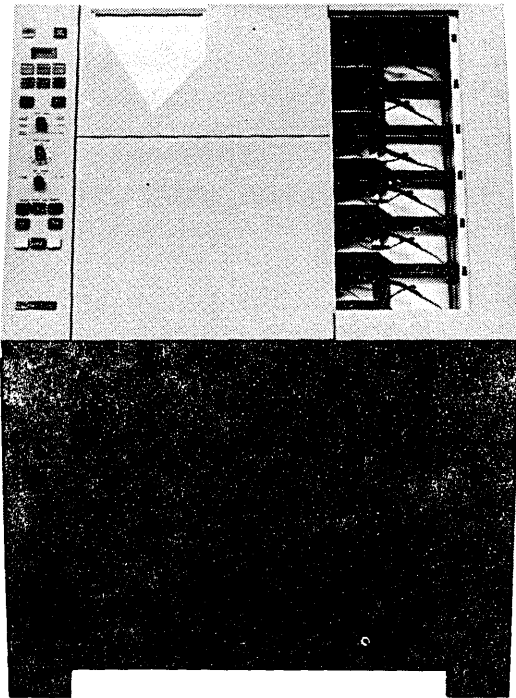
kVA	0.96
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1
Power Cord Length	10 feet (305 cm)

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

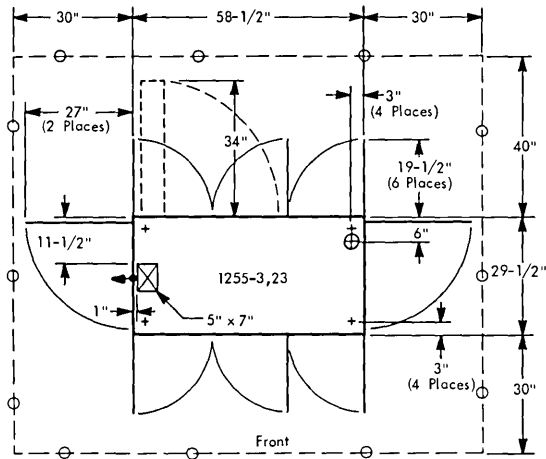
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



1255 MAGNETIC CHARACTER READER MODELS 3 AND 23 (50 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 1255.5.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	58-1/2	29-1/2	55
(cm)	(149)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	30	40	30	30
(cm)	(76)	(102)	(76)	(76)

Weight: 700 lb (320 kg)

Heat Output: 2,600 BTU/hr (660 kcal/hr)

Airflow: 300 cfm (9 m³/min)

Power Requirements:

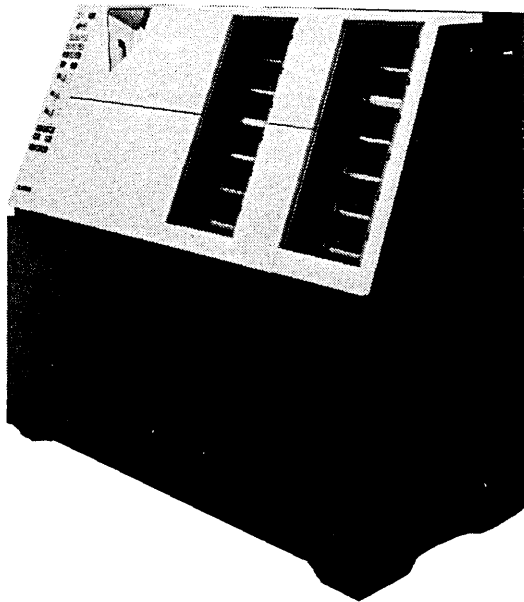
kVA	0.96
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1
Power Cord Length	10 feet (305 cm)

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

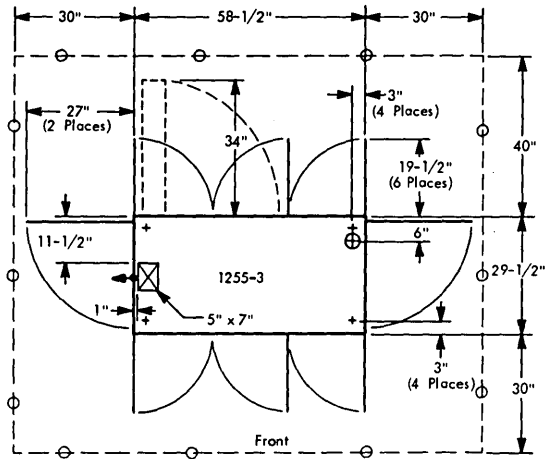
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

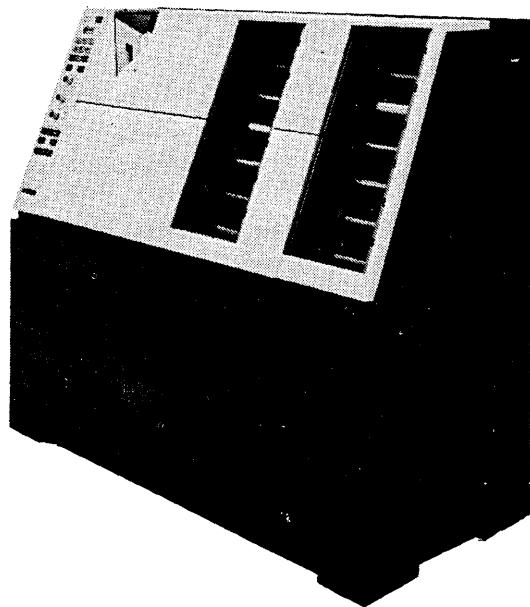


1255 MAGNETIC CHARACTER READER MODEL 3 (60 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 1255.5.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	58-1/2	29-1/2	55
(cm)	(149)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	30	40	30	30
(cm)	(76)	(102)	(76)	(76)

Weight: 700 lb (320 kg)

Heat Output: 2,600 BTU/hr (660 kcal/hr)

Airflow: 300 cfm (9 m³/min)

Power Requirements:

kVA	0.96
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1
Power Cord Length	10 feet (305 cm)

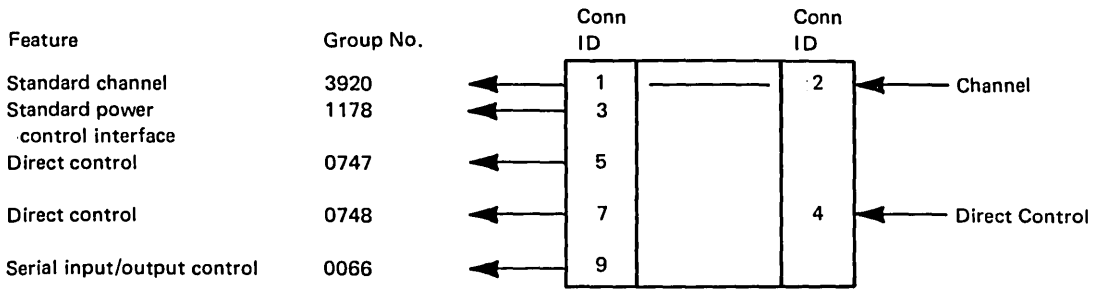
Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

1255 MAGNETIC CHARACTER READER CABLING SCHEMATIC (ALL MODELS)



Cabling from 1255

Feature	Group No.	No. of Cables	Conn ID	Max Length		Model	Notes
				M	Ft		
Std	3920	2	1	61	200	All	—
Std	1178	1	3	42.3	140	All	—
Std	0747	1	5	61	200	All	1,4
Std	0748	1	7	61	200	All	2,4
Std	0066	1	9	12.2	40	All	3

Connections for Cabling to 1255

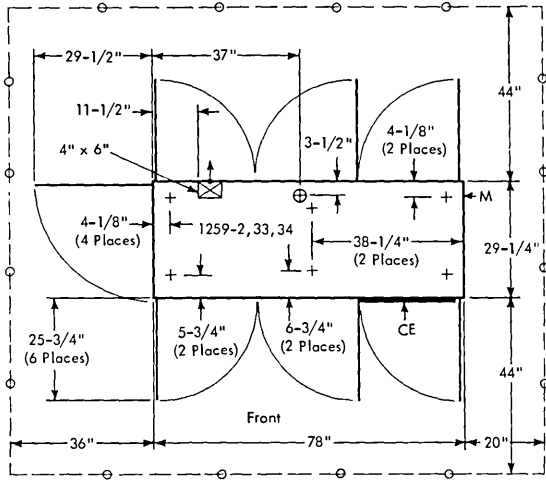
Conn ID	Model	Notes
2	All	—
4	All	2

Notes:

1. For direct control, use cable group 0747 from 1255 to processor.
2. For direct control, use cable group 0748 from 1255 to 1255.
3. Required for serial input/output control when attached to S/360 Model 20.
4. The sum of the lengths of cable groups 0747 and 0748 cannot exceed 61 m (200 ft).

1259 MAGNETIC CHARACTER READER MODELS 2, 33, AND 34 (50 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	78	29-1/4	61-5/8*
(cm)	(198)	(74)	(157*)

Service Clearances:

	F	R	Rt	L
Inches	44	44	20	36
(cm)	(112)	(112)	(51)	(91)

Weight: 1,400 lb (640 kg)

Heat Output: 5,000 BTU/hr (1 300 kcal/hr)

Airflow: 260 cfm (8 m³/min)

Power Requirements:

kVA	2.4 (195/220/235/408 V-50 Hz)
	2.3 (208/230 V-60 Hz; 380 V-50 Hz)
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D3

Environment, Operating:

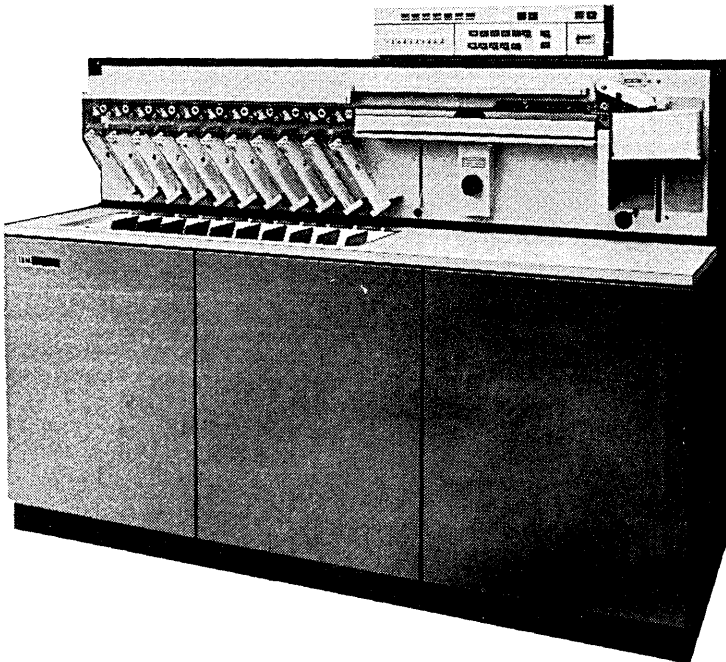
Temperature	65°F-80°F (18°C-27°C)
Rel Humidity	20%-65%
Max Wet Bulb	70°F (21°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	104°F (40°C)

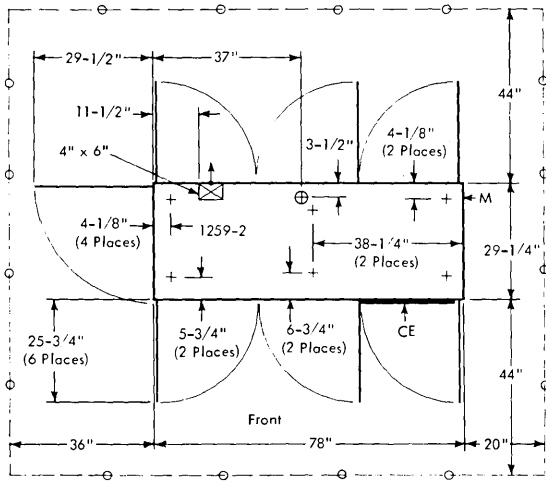
Notes:

* Shipping height is 56-1/8" (143 cm).



1259 MAGNETIC CHARACTER READER MODEL 2 (60 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	78	29-1/4	61-5/8*
(cm)	(198)	(74)	(157*)

Service Clearances:

	F	R	Rt	L
Inches	44	44	20	36
(cm)	(112)	(112)	(51)	(91)

Weight: 1,400 lb (640 kg)

Heat Output: 5,000 BTU/hr (1 300 kcal/hr)

Airflow: 260 cfm (8 m³/min)

Power Requirements:

kVA	2.4 (195/220/235/408 V-50 Hz)
	2.3 (208/230 V-60 Hz; 380 V-50 Hz)
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D3

Environment, Operating:

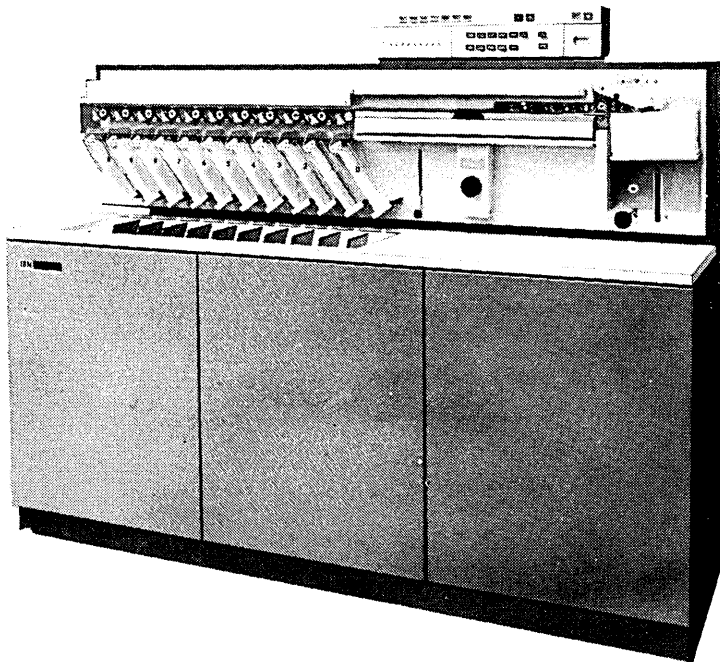
Temperature	65°F-80°F (18°C-27°C)
Rel Humidity	20%-65%
Max Wet Bulb	70°F (21°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	104°F (40°C)

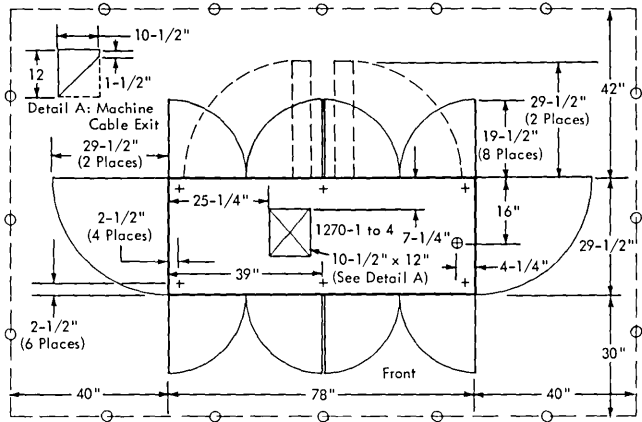
Notes:

* Shipping height is 56-1/8" (143 cm).



1270 OPTICAL READER SORTER MODELS 1 TO 4 (50 HZ)

PLAN VIEW



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	78*	29-1/2	55
(cm)	(198*)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	30	42	40	40
(cm)	(76)	(107)	(102)	(102)

Weight: 1,430 lb (650 kg)

Heat Output: 8,000 BTU/hr (2 050 kcal/hr)

Airflow: 400 cfm (12 m³/min)

Power Requirements:

kVA	3.0
Phases	3
Power Cord Style	B1

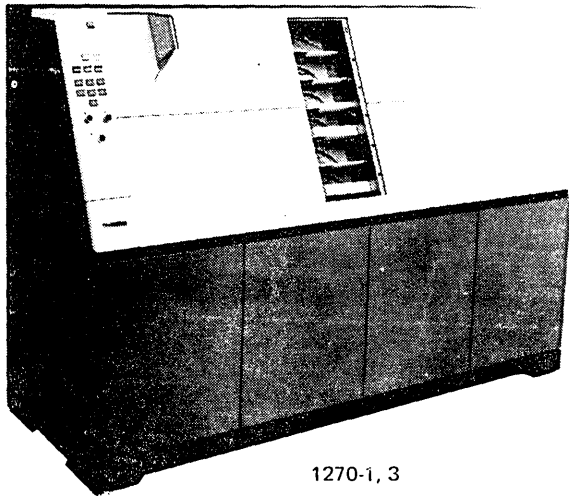
Environment Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity**	20%-80%
Max Wet Bulb	78°F (26°C)

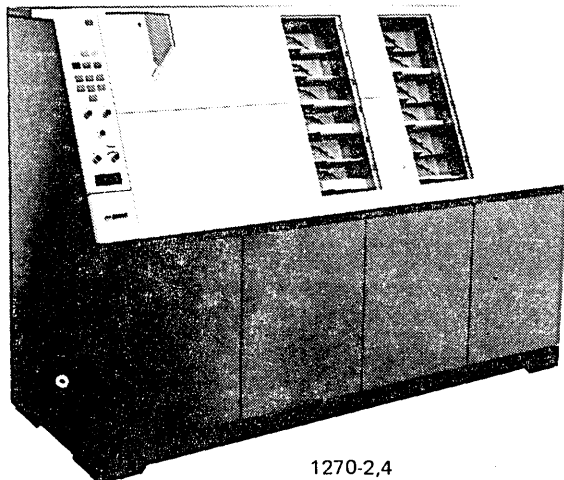
Notes:

* The 1270 *cannot* be reduced to 60" (152 cm) for shipping.

** Equivalent relative humidity should not exceed 65% for paper documents used in this machine.



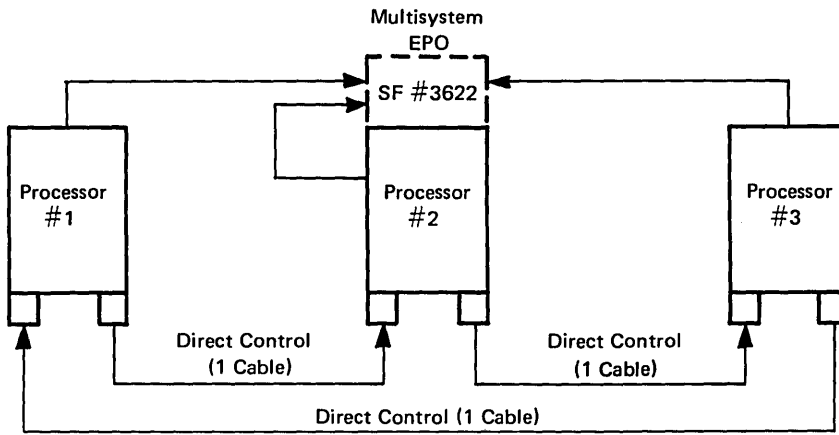
1270-1, 3



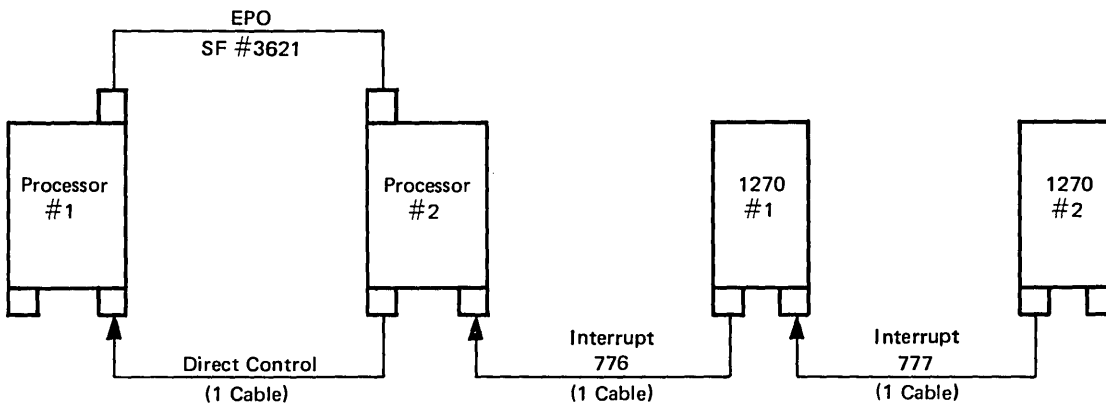
1270-2, 4

1270 DIRECT CONTROL CABLING

Multiple Processors (Notes 1 and 2)



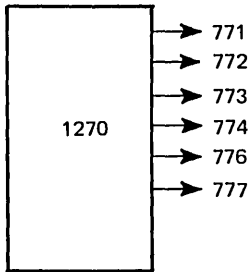
Two Processors with External Devices (Notes 1, 2, and 3)



Notes:

1. Cabling shown above is in addition to basic channel requirements.
2. Processor may be System/360 or System/370.
3. The total length of 776 plus 777 must not exceed 200 feet.

1270 WITH INTEGRAL OR ABUTTED CONTROLS



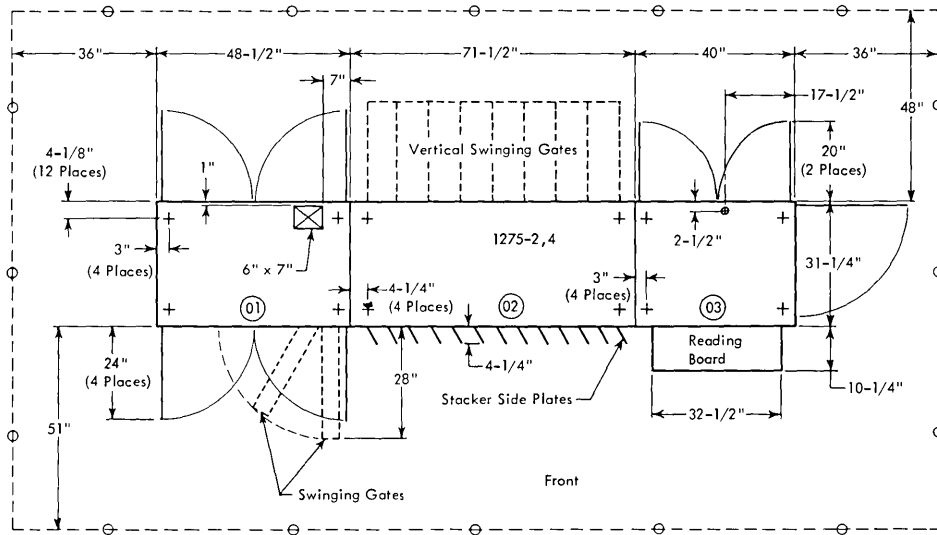
<i>Group No.</i>	<i>No. of Cables</i>	<i>From</i>	<i>To</i>	<i>Max Length (ft)</i>	<i>Notes</i>
771	2	1270	Multiplexer Channel	—	1
772	2	1270	Control Unit	—	1
773	1	1270	Channel	150	2
774	2	1270	Channel-to-Channel Adapter	—	1,3
776	1	1270	System/360 or System/370 Processor	—	4,5
777	1	1270	Reader Device	—	4,5

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. To channel-to-channel adapter (SF #1850).
4. For SF #3898 on System/370 Models 115 and 125, or for SF #3895 or SF #3274 on System/360 or other System/370 processors.
5. 200 feet (unless modified by direct control cabling schematic) total length of 776 plus 777.

1275 OPTICAL READER SORTER MODELS 2 AND 4 (50 HZ)

PLAN VIEW



Frame	Weight	
	lb	kg
01	660	300
02	1,805	820
03	1,000	460

1275 OPTICAL READER SORTER MODELS 2 AND 4

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	160*	41-1/2*	60-1/2
(cm)	(406*)	(105*)	(154)

Service Clearances:

	F	R	Rt	L
Inches	51	48	36	36
(cm)	(130)	(122)	(91)	(91)

Weight: 3,465 lb (1 600 kg)

Heat Output: 17,000 BTU/hr (4 300 kcal/hr)

Airflow: 500 cfm (15 m³/min)

Power Requirements:

kVA	6.0
Phases	3
Power Cord Style	D1

Environment Operating:

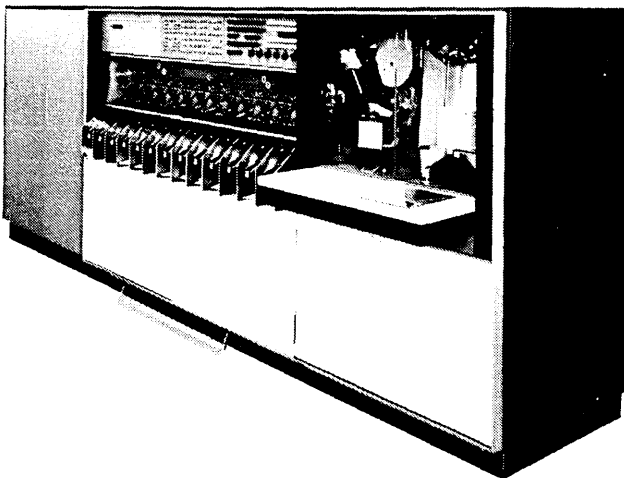
Temperature	65 ^o F-80 ^o F (18 ^o C-27 ^o C)
Rel Humidity	20%-65%

Environment Nonoperating:

Temperature	50 ^o F-110 ^o F (10 ^o C-43 ^o C)
Rel Humidity	8%-80%

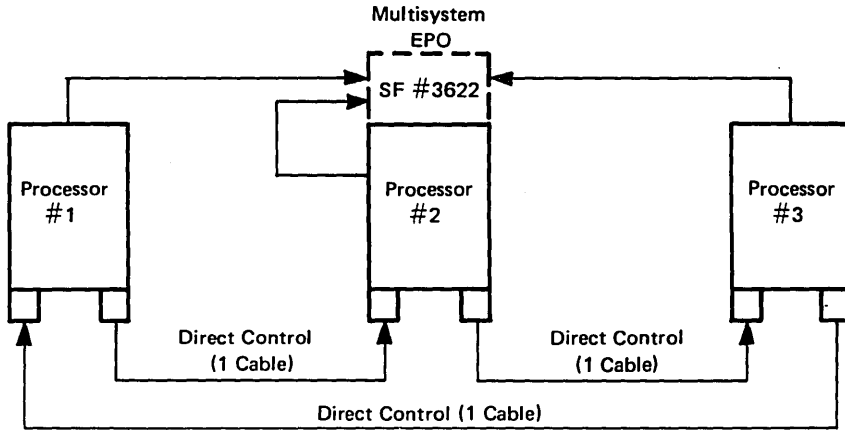
Notes:

* Reading board is removed and frames are separated for shipment. Side dimension includes 10-1/4" (26 cm) for reading board projection.

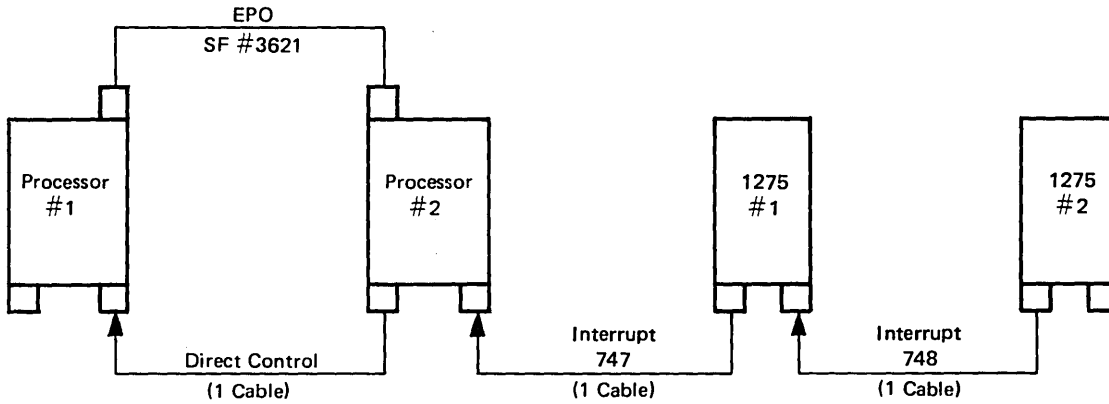


1275 DIRECT CONTROL CABLING

Multiple Processors (Notes 1 and 2)



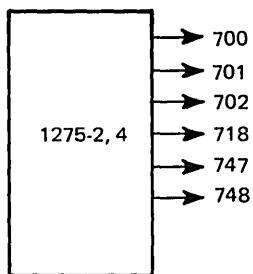
Two Processors with External Devices (Notes 1, 2, and 3)



Notes:

1. Cabling shown above is in addition to basic channel requirements.
2. Processor may be System/360 or System/370.
3. The total length of 747 plus 748 must not exceed 200 feet.

1275 WITH INTEGRAL OR ABUTTED CONTROLS



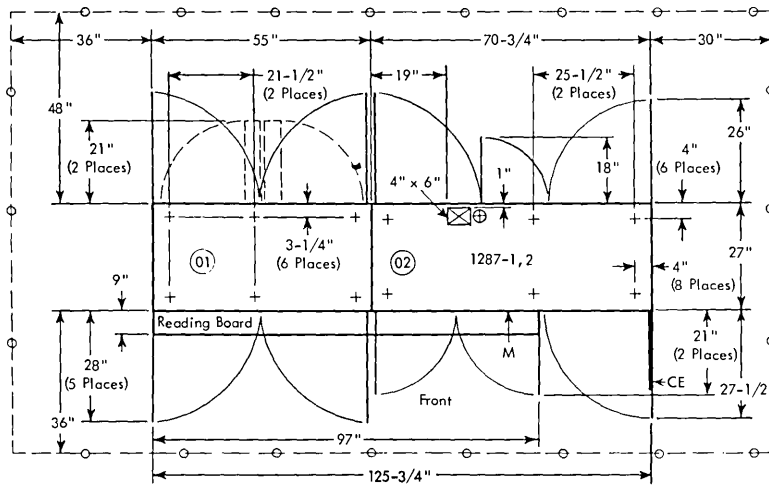
<i>Group No.</i>	<i>No. of Cables</i>	<i>From</i>	<i>To</i>	<i>Max Length (ft)</i>	<i>Notes</i>
700	2	Reader-Sorter	Multiplexer Channel	—	1,6,7
701	2	Reader-Sorter	Control Unit	—	1,6,7
702	1	Reader-Sorter	Channel	150	2
718	2	Reader-Sorter	Channel-to-Channel Adapter	—	1,3,6,7
747	1	Reader-Sorter	System/360 or System/370 Processor	—	4,5
748	1	Reader-Sorter	Reader Device	—	4,5

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. To channel-to-channel adapter (SF #1850).
4. For SF #3898 on System/370 Models 115 and 125, or for SF #3895 or SF #3274 on System/360 or other System/370 processors.
5. 200 feet (unless modified by direct control cabling schematic) total length of 747 (plus 748).
6. Use for 1419 machines with SF #7730 (dual address).
7. When installing a 3890 on a raised floor, cables enter the machine through the cable entry in the control unit 2 module (frame 06). When installing a 3890 on a nonraised floor, cables must be routed under the control unit 1 module (frame 01), and must exit at the left end of the machine; or they must be routed under the control unit 2 module (frame 06), the feed module (frame 02), and the microfilm module (frame 03, if installed), and must exit under the first stacker unit. The sequence and control (EPO) cable enters the machine through frame 06.

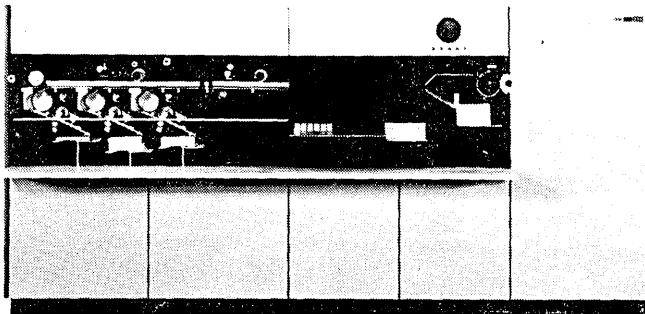
1287 OPTICAL READER MODELS 1 AND 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	1,000	460
02	1,900	870

Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	125-3/4*	36*	60
(cm)	(319*)	(91*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	48	30	36
(cm)	(91)	(122)	(76)	(91)

Weight: 2,900 lb (1 350 kg)

Heat Output: 10,000 BTU/hr (2 550 kcal/hr)

Airflow: 900 cfm (26 m³/min)

Power Requirements:

kVA	4.0
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

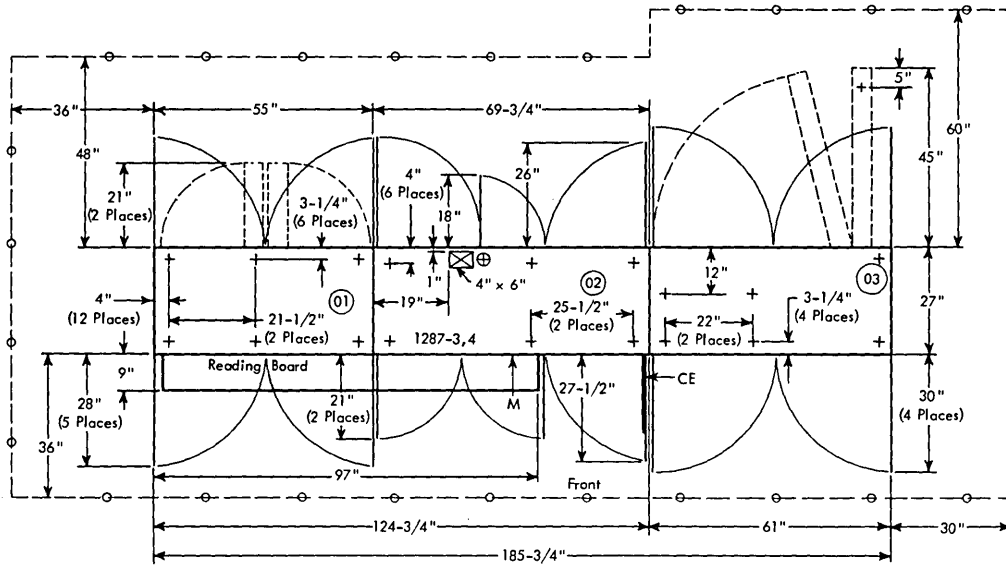
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Reading board is removed and frames are separated for shipment. Side dimension includes 9" (23 cm) for reading board projection.

1287 OPTICAL READER MODELS 3 AND 4

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	900	410
02	2,000	910
03	1,000	460

Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	185-3/4*	36*	60
(cm)	(472*)	(91*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	**	30	36
(cm)	(91)	(**)	(76)	(91)

Weight: 3,900 lb (1 800 kg)

Heat Output: 13,300 BTU/hr (3 400 kcal/hr)

Airflow: 1,400 cfm (40 m³/min)

Power Requirements:

kVA	5.0
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

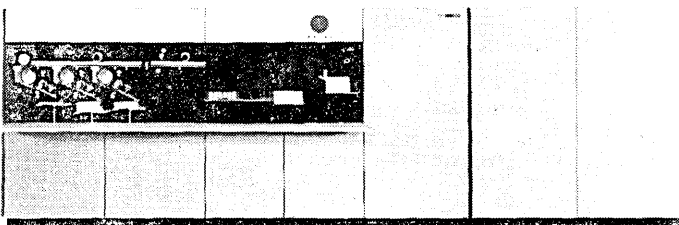
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

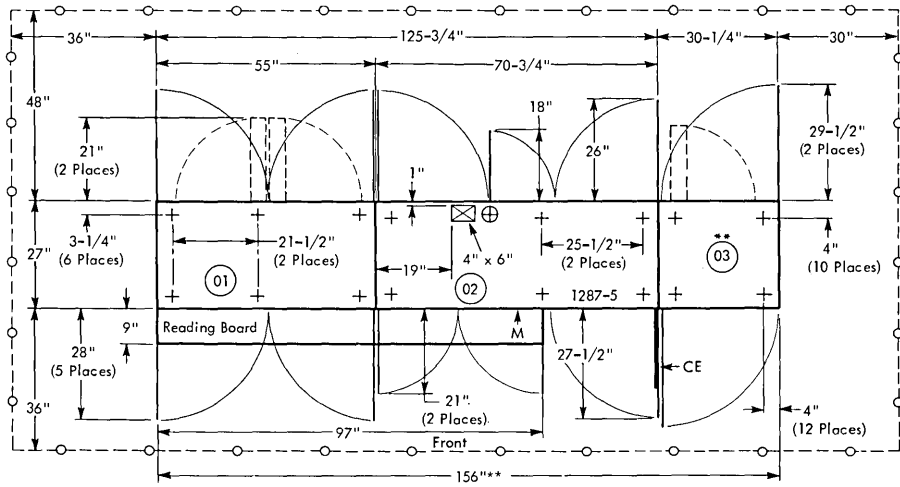
* Reading board is removed and frames are separated for shipment. Side dimension includes 9" (23 cm) for reading board projection.

** See plan view.



1287 OPTICAL READER MODEL 5 (50 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	1,000	460
02	1,800	820
03	500	230

Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

1287 OPTICAL READER MODEL 5 (50 HZ)

SPECIFICATIONS

Dimensions:

	F	S	H	
Inches	125-3/4*	156**	36*	60
(cm)	(319*)	(396**)	(91*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	48	30	36
(cm)	(91)	(122)	(76)	(91)

Weight: 2,800 lb (1 300 kg)
3,300 lb** (1 500 kg**)

Heat Output: 10,000 BTU/hr (2 550 kcal/hr)
12,000 BTU/hr** (3 050 kcal/hr**)

Airflow: 900 cfm (26 m³/min)

Power Requirements:

kVA	4.0	4.5**
Phases	3	
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D1	

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

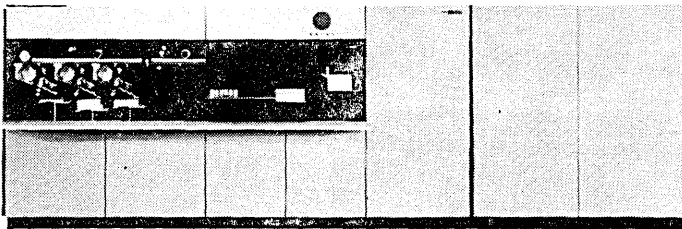
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

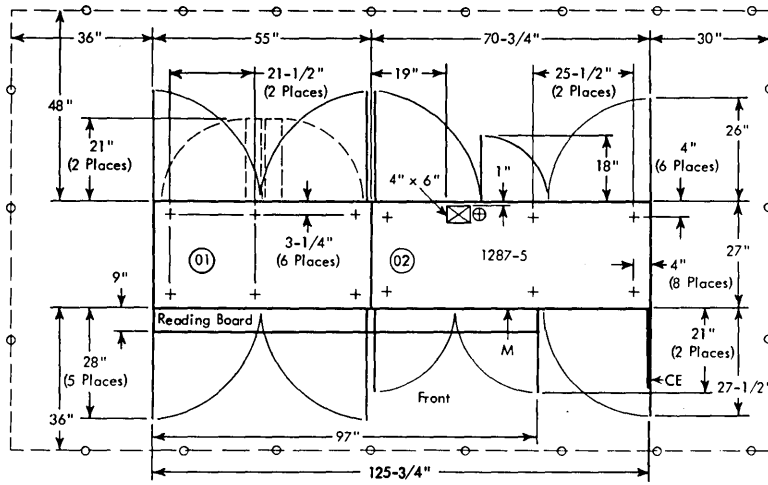
* Reading board is removed and frames are separated for shipment. Side dimension includes 9" (23 cm) for reading board projection.

**With SF #2987, Multifont Preprocessor.



1287 OPTICAL READER MODULES 5 (60 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	1,000	460
02	1,800	820

Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

1287 OPTICAL READER MODEL 5 (60 HZ)

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	125-3/4*	36*	60
(cm)	(319*)	(91*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	48	30	36
(cm)	(91)	(122)	(76)	(91)

Weight: 2,800 lb (1 300 kg)

Heat Output: 10,000 BTU/hr (2 550 kcal/hr)

Airflow: 900 cfm (26 m³/min)

Power Requirements:

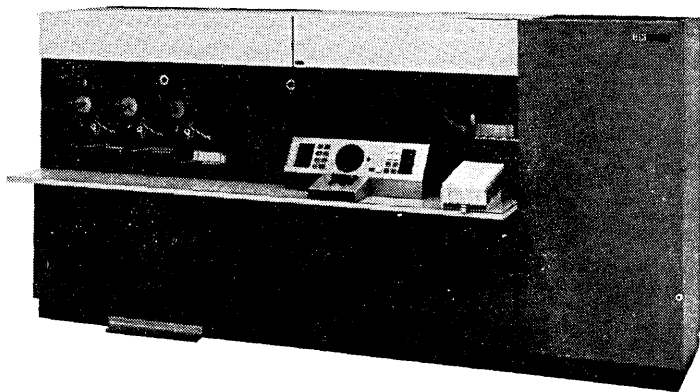
kVA	4.0
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

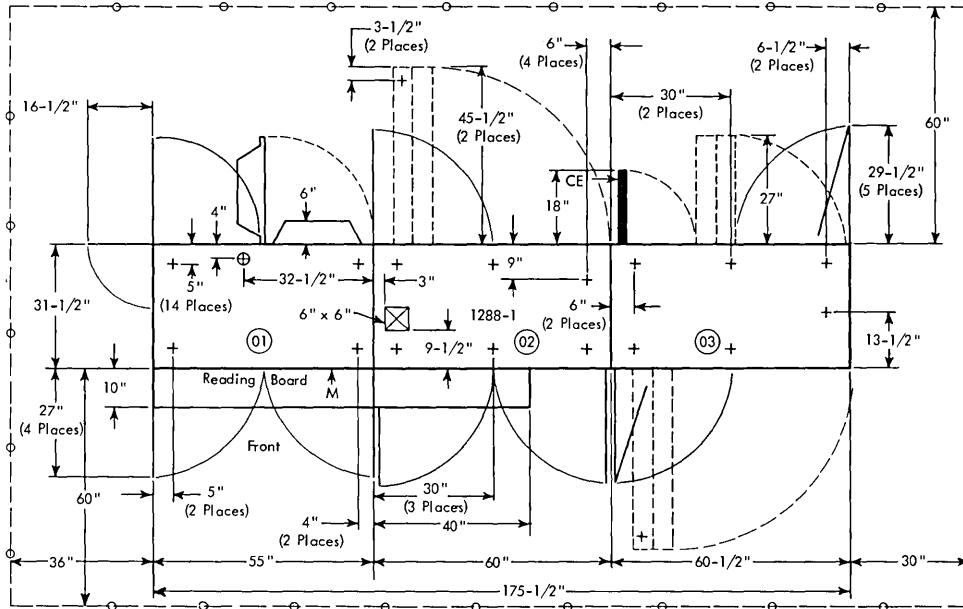


Notes:

* Reading board is removed and frames are separated for shipment. Side dimension includes 9" (23 cm) for reading board projection.

1288 OPTICAL PAGE READER MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	1,160	530
02	1,280	590
03	1,460	670

Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

1288 OPTICAL PAGE READER MODEL 1

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	175-1/2*	41-1/2*	60
(cm)	(446*)	(105*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	60	60	30	36
(cm)	(152)	(152)	(76)	(91)

Weight: 3,900 lb (1 800 kg)

Heat Output: 13,000 BTU/hr (3 300 kcal/hr)

Airflow: 1,330 cfm (38 m³/min)

Power Requirements:

kVA	5.2
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D1

Environment, Nonoperating:

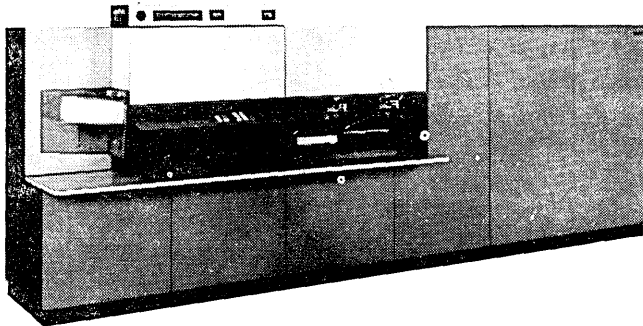
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Operating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

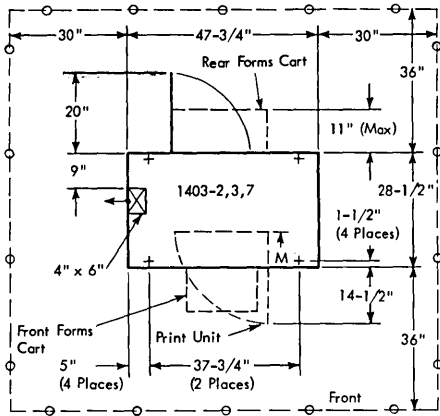
Notes:

* Reading board is removed and frames are separated for shipment. Side dimension includes 10" (25 cm) for reading board projection.



1403 PRINTER MODELS 2, 3, AND 7

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2821, 3125-0, 3125-2, 3135, or 3138.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	47-3/4	28-1/2	53-1/4
(cm)	(121)	(72)	(135)

Service Clearances:

	F	R	Rt	L
Inches	36	36	30	30
(cm)	(91)	(91)	(76)	(76)

Weight:	Model 2	Model 3	Model 7
lb	750	750	750
(kg)	(350)	(350)	(350)

Heat Output:

BTU/hr	3,000	3,600	2,400
(kcal/hr)	(760)	(910)	(610)

Airflow:

cfm	310	350	310
(m ³ /min)	(9)	(10)	(9)

Power Requirements:*

kVA	1.0	1.2	0.8
-----	-----	-----	-----

Environment, Operating:

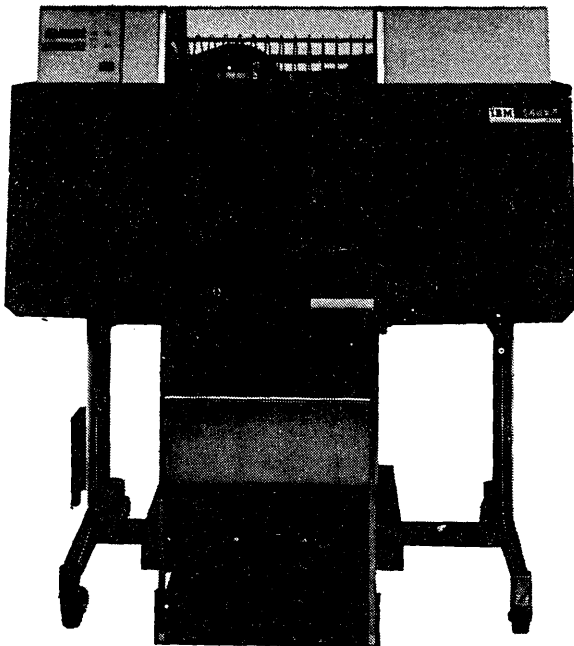
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

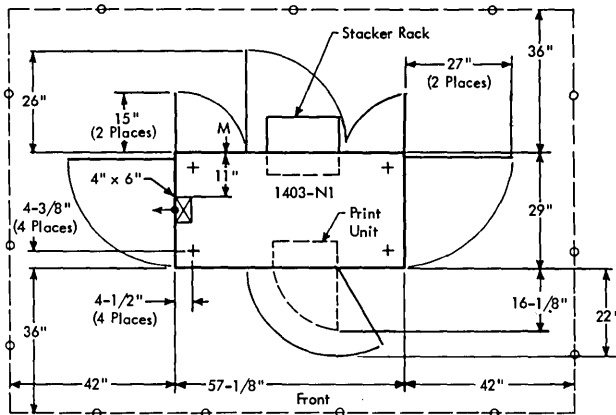
Notes:

* Models 2, 3, and 7 are powered from 2821. Models 2 and 7 are powered from 2025 when SF #4590 is installed; or from 3125-0, 3125-2, 3135, or 3138 when SF #4662 or #4667 is installed.

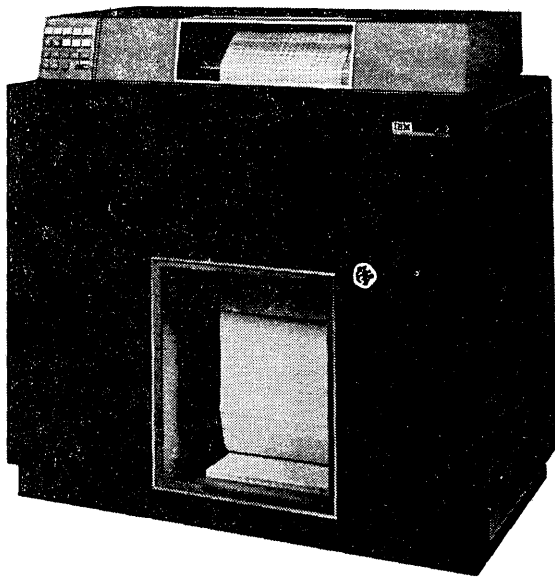


1403 PRINTER MODEL N1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2821, 3125-0, 3125-2, 3135, or 3138.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	57-1/8	29	53-1/2
(cm)	(145)	(74)	(136)

Service Clearances:

	F	R	Rt	L
Inches	36	36	42	42
(cm)	(91)	(91)	(107)	(107)

Weight: 1,250 lb (570 kg)

Heat Output: 4,500 BTU/hr (1 150 kcal/hr)

Airflow: 350 cfm (10 m³/min)

Power Requirements: *

kVA 1.5

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

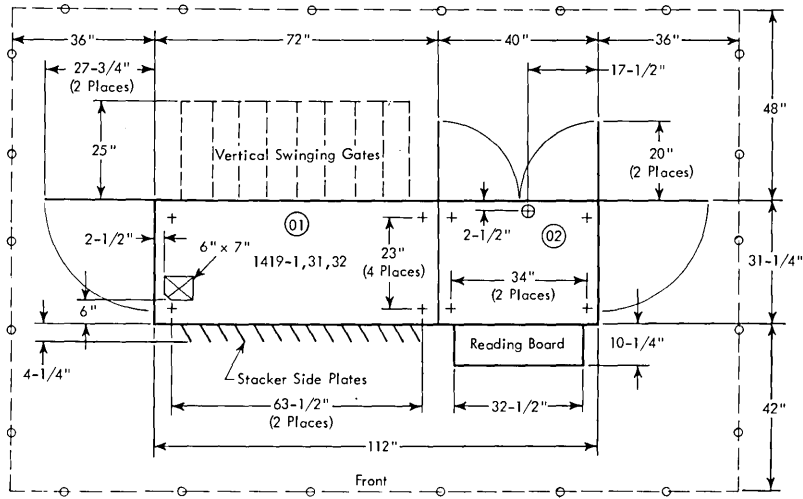
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

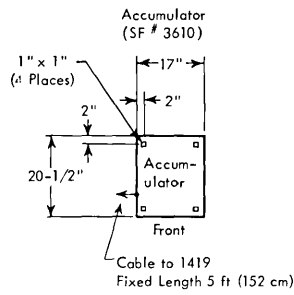
*Powered from 2821; from 2025 when SF #4590 is installed; or from 3125-0, 3125-2, 3135, or 3138 when SF #4668 is installed.

1419 MAGNETIC CHARACTER READER MODELS 1, 31, AND 32 (50 HZ)

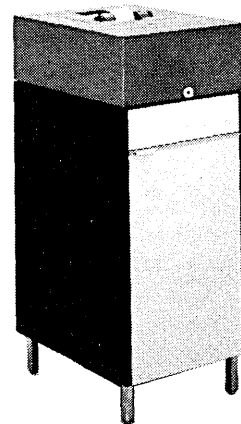
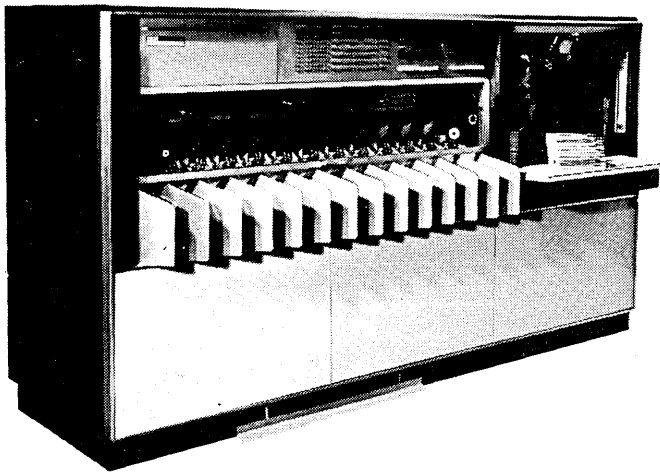
PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	1,675	760
02***	1,075	490



Note: For cabling information, see 1419.5.



Accumulator (SF #3610)

1419 MAGNETIC CHARACTER READER MODELS 1, 31, AND 32 (50 HZ)

Details for Power Requirements and Heat Output

Endorser Unit	Branch Circuit Requirements			Power Requirements*	Heat Output
	Voltage	Max Cont Load (A)	Phases	kVA	BTU/hr (kcal/hr)
With Endorser Unit	208	21.8	1	4.5	13,800 (3 500)
	230	20.8	1	4.7	14,400 (3 650)
Without Endorser Unit	195**	16.0	3	4.6	11,450 (2 900)
	208	18.0	1	3.7	11,350 (2 900)
	220**	14.3	3	4.6	11,450 (2 900)
	230	16.5	1	3.8	11,650 (2 950)
	235**	13.2	3	4.6	11,450 (2 900)
	380**	9.0	3	5.1	12,700 (3 250)
	408**	8.3	3	5.1	12,700 (3 250)
Plug R&S, FS3750 Connector R&S, FS3933 Receptacle R&S, FS3753 Power Cord Style D1					

SPECIFICATIONS

Dimensions:

	F	S	H
<i>Reader-Sorter***</i>			
Inches	112	41-1/2†	60-1/4
(cm)	(284)	(105†)	(153)
<i>Accumulator</i>			
Inches	17	20-1/2	38-1/2
(cm)	(43)	(52)	(98)

Service Clearances:

	F	R	Rt	L
<i>Reader-Sorter</i>				
Inches	42	48	36	36
(cm)	(107)	(122)	(91)	(91)

Accumulator

None required, except provide for operator access at front.

Weight:

	Without Endorser Unit	With Endorser Unit
lb	2,675	2,750
(kg)	(1 250)	(1 250)

Accumulator

105 lb (48 kg)

Heat Output: See Details table.

Airflow:

cfm	400	510
(m ³ /min)	(12)	(15)

Power Requirements: See Details table.

Environment, Operating:

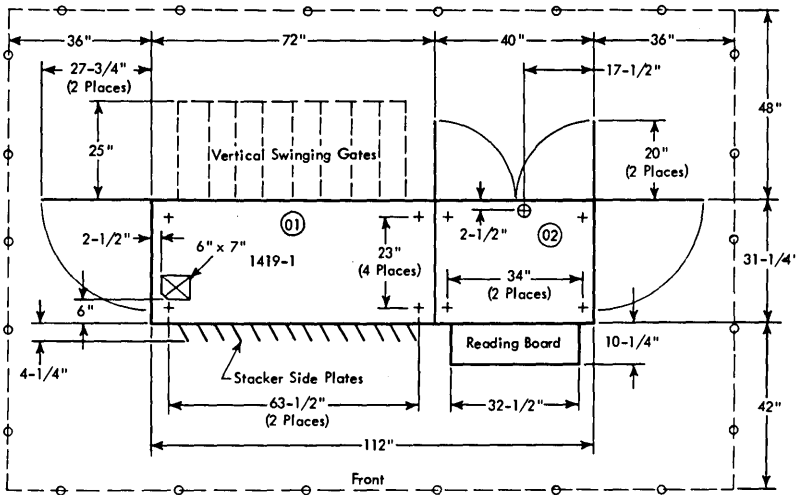
Temperature	65°F-80°F (18°C-27°C)
Rel Humidity	20%-65%

Notes:

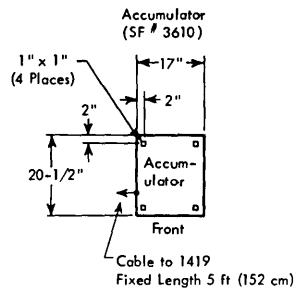
- * Accumulator is powered from 1419.
- ** Apply to 50-Hz machines.
- *** Machine is shipped in two sections.
- † Dimension includes 10-1/4 inches (26 cm) for reading board projection.

1419 MAGNETIC CHARACTER READER MODEL 1 (60 HZ)

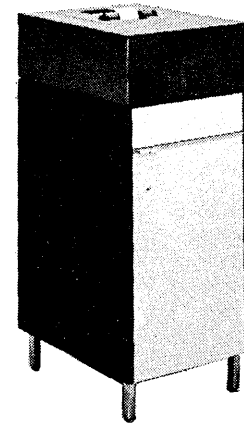
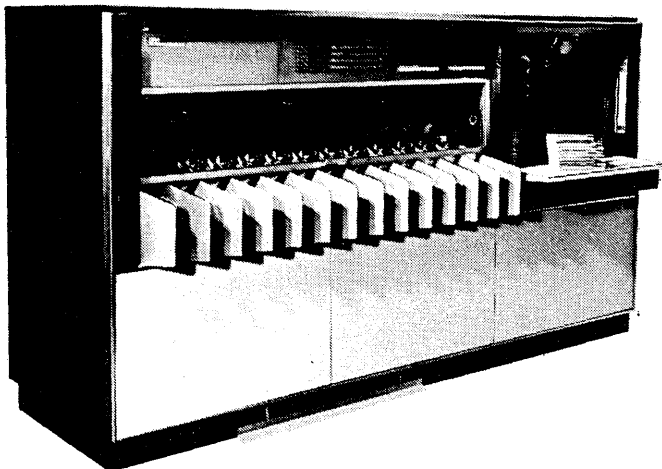
PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Frame	Weight	
	lb	kg
01	1,675	760
02***	1,075	490



Note: For cabling information, see 1419.5.



Accumulator (SF # 3610)

1419 MAGNETIC CHARACTER READER MODEL 1 (60 HZ)

Details for Power Requirements and Heat Output

Endorser Unit	Branch Circuit Requirements			Power Requirements*	Heat Output
	Voltage	Max Cont Load (A)	Phases	kVA	BTU/hr (kcal/hr)
With Endorser Unit	208	21.8	1	4.5	13,800 (3 500)
	230	20.8	1	4.7	14,400 (3 650)
Without Endorser Unit	195**	16.0	3	4.6	11,450 (2 900)
	208	18.0	1	3.7	11,350 (2 900)
	220**	14.3	3	4.6	11,450 (2 900)
	230	16.5	1	3.8	11,650 (2 950)
	235**	13.2	3	4.6	11,450 (2 900)
	380**	9.0	3	5.1	12,700 (3 250)
	408**	8.3	3	5.1	12,700 (3 250)
Plug R&S, FS3750 Connector R&S, FS3933 Receptacle R&S, FS3753 Power Cord Style D1					

SPECIFICATIONS

Dimensions:

	F	S	H
<i>Reader-Sorter***</i>			
Inches	112	41-1/2†	60-1/4
(cm)	(284)	(105†)	(153)

Accumulator

Inches	17	20-1/2	38-1/2
(cm)	(43)	(52)	(98)

Service Clearances:

	F	R	Rt	L
<i>Reader-Sorter</i>				
Inches	42	48	36	36
(cm)	(107)	(122)	(91)	(91)

Accumulator

None required, except provide for operator access at front.

Weight:

<i>Reader-Sorter</i>	Without Endorser Unit	With Endorser Unit
lb	2,675	2,750
(kg)	(1 250)	(1 250)

Accumulator

105 lb (48 kg)

Heat Output: See Details table.

Airflow:

cfm	400	510
(m ³ /min)	(12)	(15)

Power Requirements: See Details table.

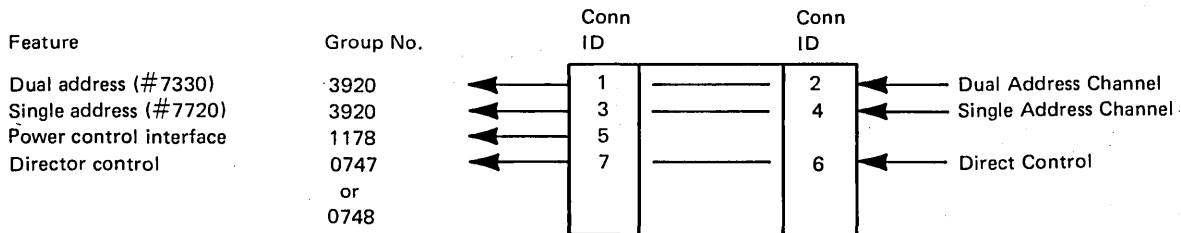
Environment, Operating:

Temperature	65°F-80°F (18°C-27°C)
Rel Humidity	20%-65%

Notes:

- * Accumulator is powered from 1419.
- ** Apply to 50-Hz machines.
- *** Machine is shipped in two sections.
- † Dimension includes 10-1/4 inches (26 cm) for reading board projection.

1419 MAGNETIC CHARACTER READER CABLING SCHEMATIC (ALL MODELS)



Cabling from 1419

Feature	Group No.	No. of Cables	Conn ID	Max Length		Model	Notes
				M	Ft		
7730	3920	2	1	61	200	All	1
7720	3920	2	3	61	200	All	1
Std	1178	1	5	45.7	150	All	
Std	0747	1	7	61	200	All	2,3,5
Std	0748	1	9	61	200	All	2,4,5

Connections for Cabling to 1419

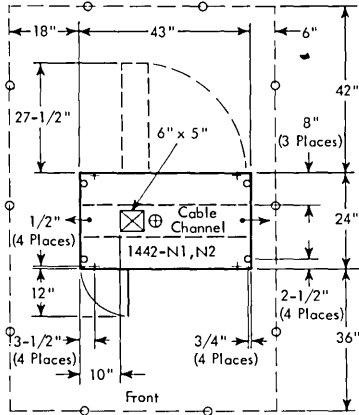
Conn ID	Model	Notes
2	All	1
4	All	1
6		4

Notes:

1. Internal cable allowance for single and dual address machines are significantly different. Ensure that the correct connector ID is specified.
2. To operate with DOS or BPS programs, direct control (#3895) is required on the processing unit.
3. Use cable group 0747 from 1419 to processor.
4. Use cable group 0748 from 1419 to 1419.
5. The sum of the lengths of cable groups 0747 and 0748 cannot exceed 61 m (200 ft).

**1442 CARD READ PUNCH MODEL N1
1442 CARD PUNCH MODEL N2**

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	43	24	49
(cm)	(109)	(61)	(124)

Service Clearances:

	F	R	Rt	L
Inches	36	42	6	18
(cm)	(91)	(107)	(15)	(46)

Weight: 575 lb (270 kg)

Heat Output: 2,200 BTU/hr (560 kcal/hr)

Airflow: 0 cfm (0 m³/min)

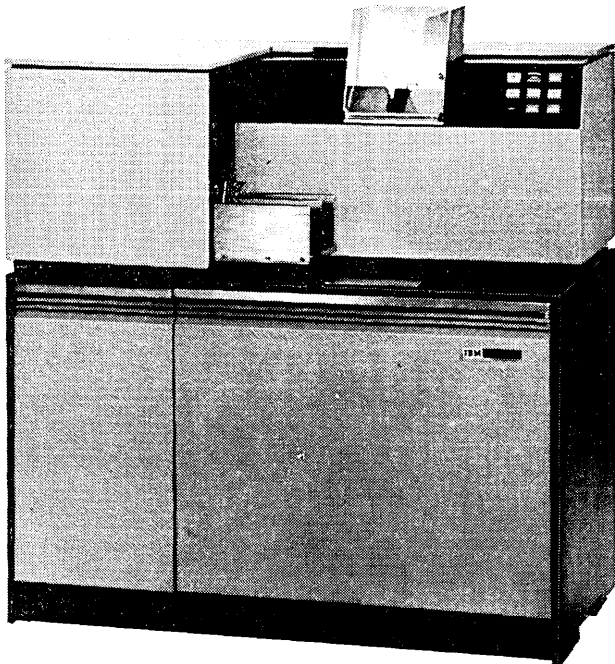
Power Requirements:

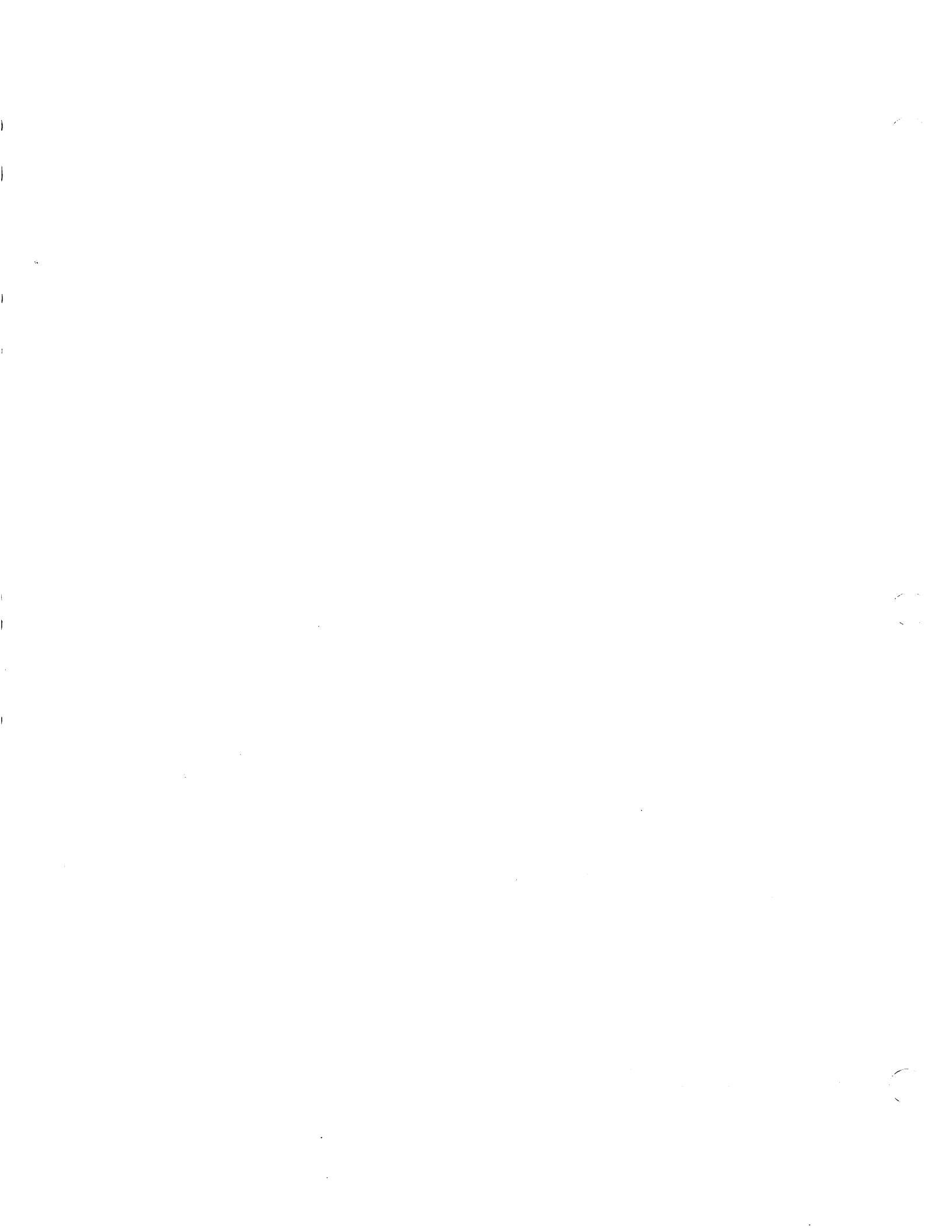
kVA	0.8
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

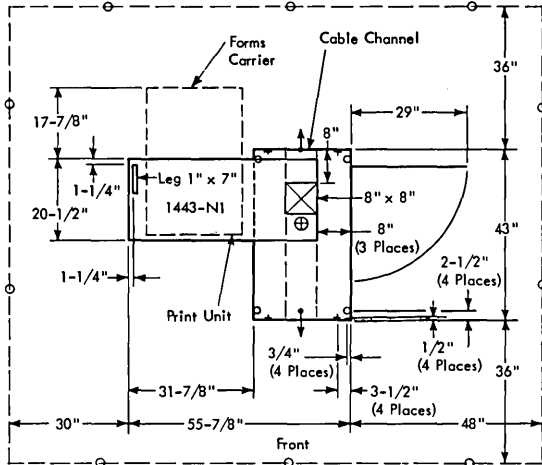
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	10%-80%



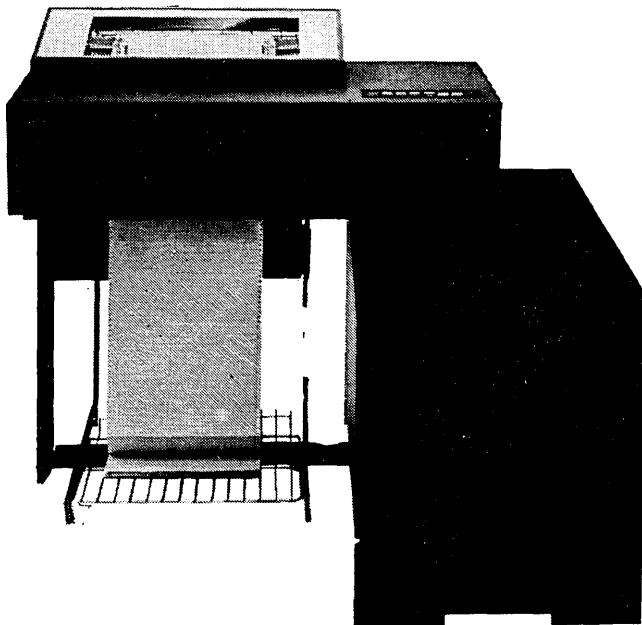


1443 PRINTER MODEL N1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:*

	F	S	H
Inches	55-7/8	43	46
(cm)	(142)	(109)	(117)

Service Clearances:

	F	R	Rt	L
Inches	36	36	48	30
(cm)	(91)	(91)	(122)	(76)

Weight: 800 lb (370 kg)

Heat Output: 3,200 BTU/hr (810 kcal/hr)

Airflow: 50 cfm (2 m³/min)

Power Requirements:

kVA	1.1
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	10%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

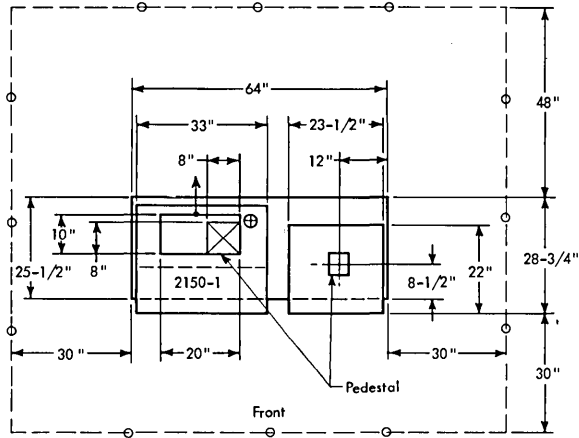
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Shipping dimensions are 49" x 25" x 50" (124 cm x 64 cm x 127 cm).

2150 CONSOLE MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	64	28-3/4	52-1/8
(cm)	(163)	(73)	(132)

Service Clearances:

	F	R	Rt	L
Inches	30	48	30	30
(cm)	(76)	(122)	(76)	(76)

Weight: 800 lb (370 kg)

Heat Output: 1,740 BTU/hr (440 kcal/hr)

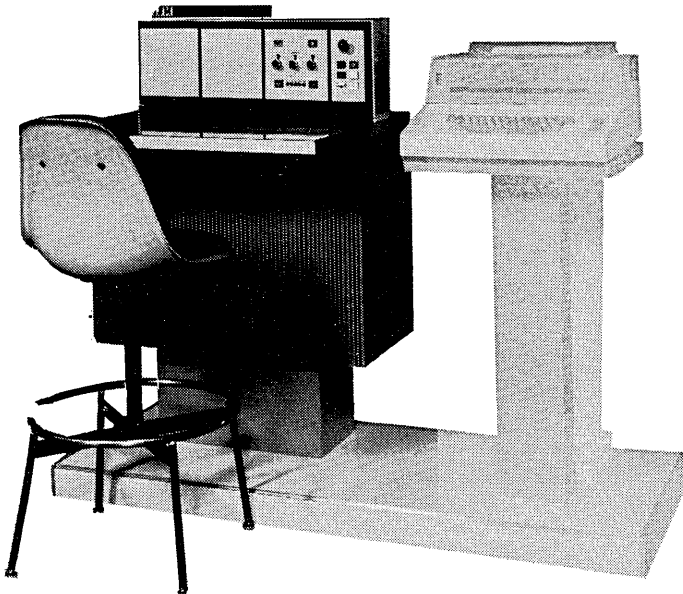
Airflow: 180 cfm (6 m³/min)

Power Requirements:

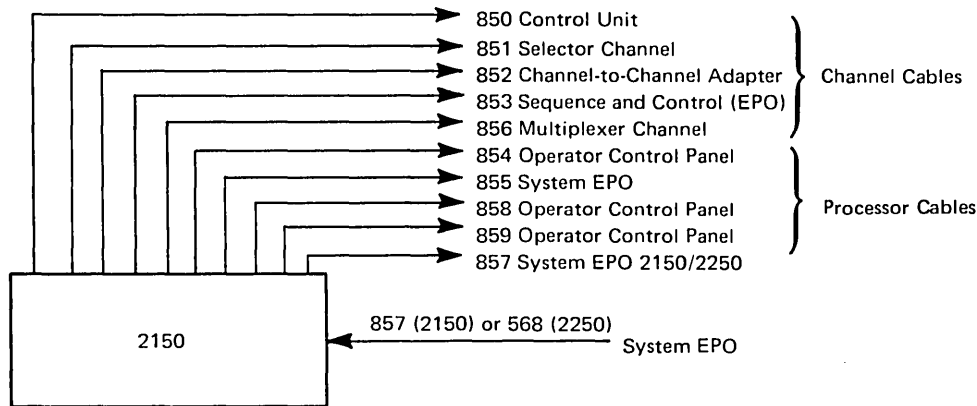
kVA	0.65
Phases	3
Plug	R&S, FS3730
Connector	R&S, FS3914
Receptacle	R&S, FS3744
Power Cord Style	B1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	10%-80%



2150 CONSOLE CABLING SCHEMATIC



Group No.	No. of Cables	From	To	Max Length (ft)	Notes
850	2	2150	Control Unit	—	1
851	2	2150	Selector Channel	—	1
852	2	2150	Channel-to-Channel Adapter	—	1, 4
853	1	2150	Channel	150	2
854	3	2150	System/360 Processor	70	3, 6
855	1	2150	System/360 or System/370 Processor	70	5, 6
856	2	2150	Multiplexer Channel	—	1
857	1	2150	Console (2150/2250)	70	5
858	2	2150	System/360 or System/370 Processor	70	3, 6
859	1	2150	System/360 or System/370 Processor	70	3, 6

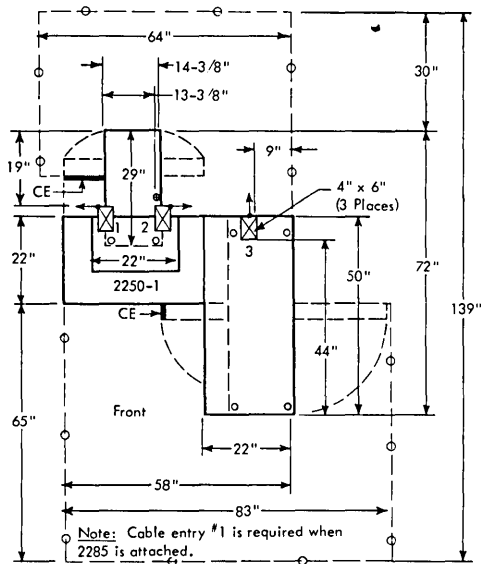
Notes:

- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units to a channel.
- Sequence and control (EPO).
- For SF #5475 and #5476. One cable group is required for each feature.
- To channel-to-channel adapter (SF #1850).
- Total length of all system EPO cables may not exceed 70 feet (sum of 855 plus 857 or 568 \leq 70 feet).
- Cabled to the host processor according to the following table:

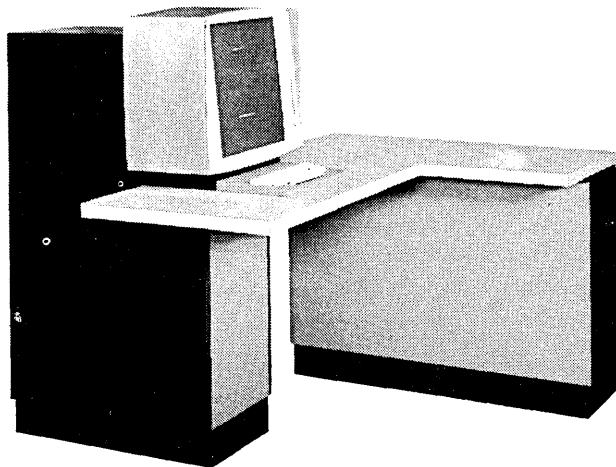
Cable Group No.	Processor	Frame No.	Frame No.—Hole No.
854	2050	—	03
	2065	—	02
	2075	—	03
	2085	—	05
855	2050	—	03
	2065	—	02
	2075	—	02
	2085	—	14
	3155/3158/3158-3	EPO—I/O Panel	—
	3165/3168/3168-3	15	—
	3195	09	—
858	3165/3168/3168-3	—	05
	3195	—	01 #1
859	3165/3168/3168-3	—	06
	3195	—	01 #2

2250 DISPLAY UNIT MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2840.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	*	*	50
(cm)	(*)	(*)	(127)

Service Clearances:

	F	R	Rt	L
Inches	*	*	*	*
(cm)	(*)	(*)	(*)	(*)

Weight:

	<i>Absolute Vectors</i>	
lb	890	890
(kg)	(410)	(410)

Heat Output:

BTU/hr	3,300	4,400
(kcal/hr)	(840)	(1 150)

Airflow:

cfm	620	620
(m ³ /min)	(18)	(18)

Power Requirements:

kVA	1.25	1.7
Phases	1	1
Plug	R&S, FS3720	
Connector	R&S, FS3913	
Receptacle	R&S, FS3743	
Power Cord Style	A2	

Environment, Operating:

Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-150°F (10°C-66°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

Cable Limitations:

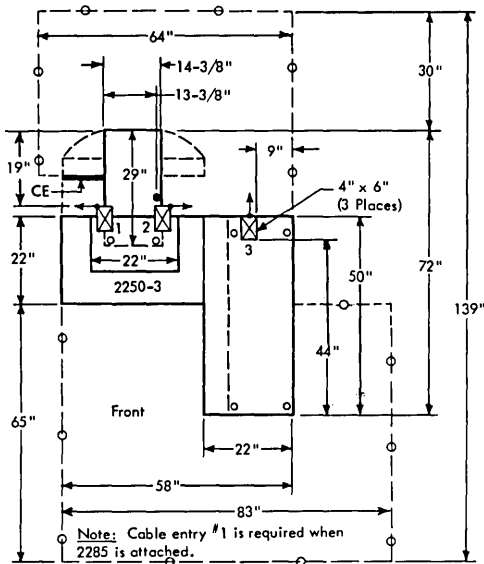
Same as for a control unit on the channel.

Notes:

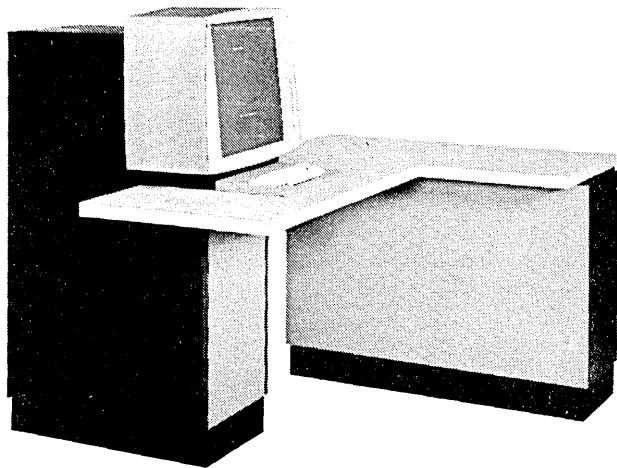
* See plan view. The right-hand frame is shipped separate from the console.

2250 DISPLAY UNIT MODEL 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2840.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	*	*	50
(cm)	(*)	(*)	(127)

Service Clearances:

	F	R	Rt	L
Inches	*	*	*	**
(cm)	(*)	(*)	(*)	(**)

Weight: 770 lb (350 kg)

Heat Output: 2,600 BTU/hr (660 kcal/hr)

Airflow: 380 cfm (11 m³/min)

Power Requirements:

kVA	1.5
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A2

Environment, Operating:

Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

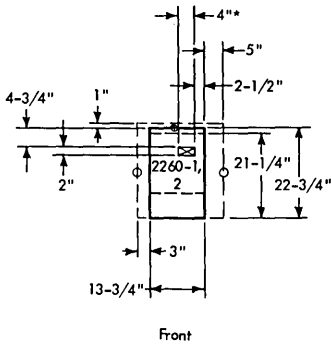
Temperature	50°F-150°F (10°C-66°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

Notes:

- * See plan view. The right-hand frame is shipped separate from the console.
- ** Devices may be abutted. There should be a 30-inch (76-cm) clearance between a 2250 Model 3 and any other device or structure, unless otherwise specified.

2260 DISPLAY STATION MODELS 1 AND 2—WITH KEYBOARD

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2848.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	13-3/4	22-3/4	17-3/8
(cm)	(35)	(58)	(44)

Operational Clearances:**

	F	R	Rt	L
Inches	0	1	5	3
(cm)	(0)	(3)	(13)	(8)

Weight: 56 lb (26 kg)

Heat Output:	50 Hz	60 Hz
BTU/hr	410	480
(kcal/hr)	(110)	(130)

Airflow: 35 cfm (1 m³/min)

Power Requirements:

kVA 0.22

Phases 1

Locking:	115 V
Plug	H4723
Connector	H4730
Receptacle	H4700 or 4710

Nonlocking:	115 V
Plug	H or P&S, 5266
Connector	H or P&S, 5269
Receptacle	H or P&S, 5261 or 5262
Power Cord Style	G1
Power Cord Length	8 feet (244 cm)

Environment, Operating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%

Environment, Nonoperating:

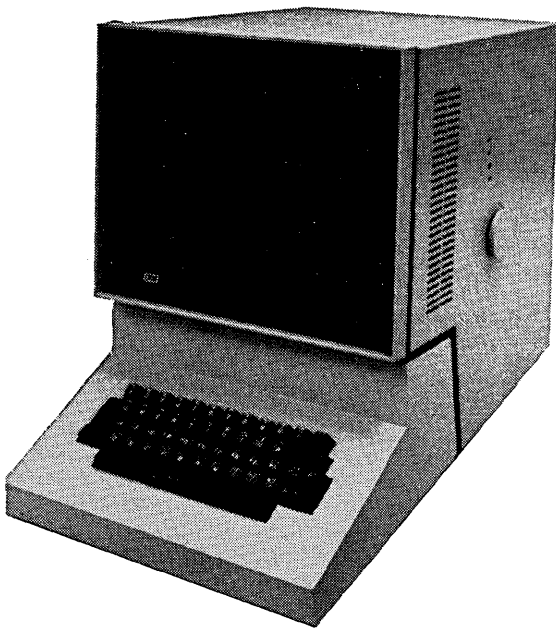
Temperature	50°F-150°F (10°C-66°C)
Rel Humidity	8%-80%

Notes:

High-intensity lighting levels (over 50 footcandles [540 lumens/m²]) should be avoided.

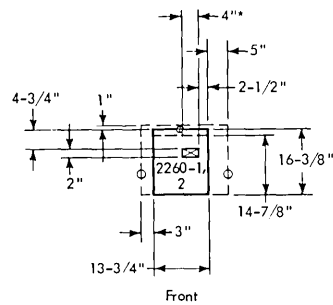
* If no cable cutout is desired, the signal cable will enter underneath the device at the rear of the cabinet.

** Dimensions are minimum requirements for functional operation of device. Knob extends from right side. Provide for sufficient operator clearance.

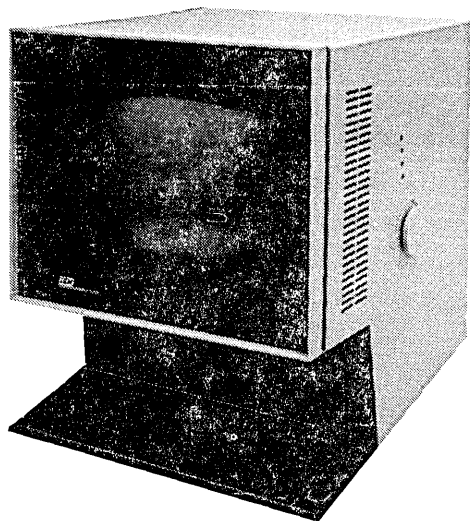


2260 DISPLAY STATION MODELS 1 AND 2—WITHOUT KEYBOARD

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2848.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	13-3/4	16-3/8	17-3/8
(cm)	(35)	(42)	(44)

Operational Clearances:**

	F	R	Rt	L
Inches	0	1	5	3
(cm)	(0)	(3)	(13)	(8)

Weight: 36 lb (17 kg)

Heat Output:	50 Hz	60 Hz
BTU/hr	410	480
(kcal/hr)	(110)	(130)

Airflow: 35 cfm (1 m³/min)

Power Requirements:

kVA 0.22

Phases 1

Locking:	115 V
Plug	H4723
Connector	H4730
Receptacle	H4700 or 4710

Nonlocking:	115 V
Plug	H or P&S, 5266
Connector	H or P&S, 5269
Receptacle	H or P&S, 5261 or 5262
Power Cord Style	G1
Power Cord Length	8 feet (244 cm)

Environment, Operating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%

Environment, Nonoperating:

Temperature	50°F-150°F (10°C-66°C)
Rel Humidity	8%-80%

Notes:

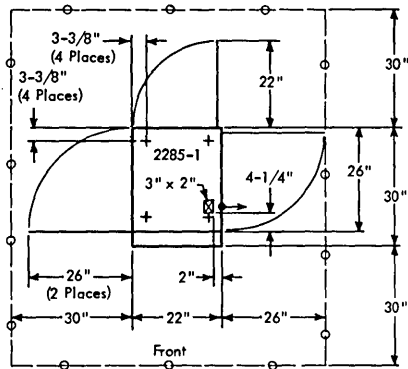
High-intensity lighting levels (over 50 footcandles [540 lumens/m²]) should be avoided.

* If no cable cutout is desired, the signal cable will enter underneath the device at the rear of the cabinet.

** Dimensions are minimum requirements for functional operation of machine. Knob extends from right side. Provide for sufficient operator clearance.

2285 DISPLAY COPIER MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	22	30	40
(cm)	(56)	(76)	(102)

Service Clearances:

	F	R	Rt	L
Inches	30	30	26	30
(cm)	(76)	(76)	(66)	(76)

Weight: 350 lb (160 kg)

Heat Output: 750 BTU/hr (190 kcal/hr)

Airflow: Negligible

Power Requirements:*

kVA 1.5

Environment, Operating:

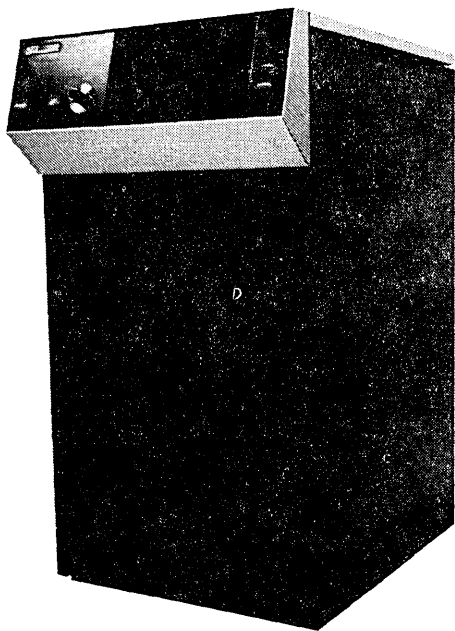
Maximum relative humidity is limited to 70% because of the characteristics of the photographic medium.

Cable Limitations:

Cable length is fixed at 5 feet "X" dimension.

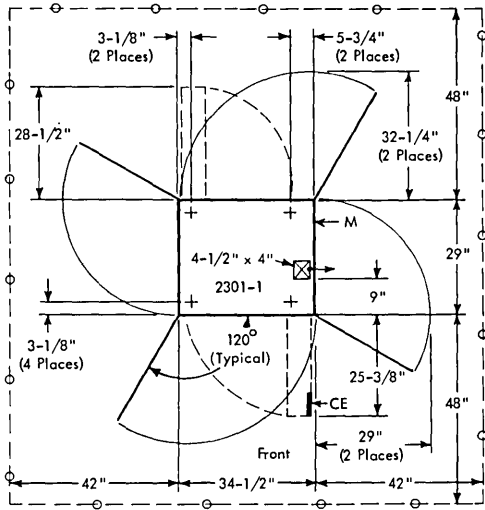
Notes:

* Powered from 2250.



2301 DRUM STORAGE MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2820.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	34-1/2	29	64
(cm)	(88)	(74)	(163)

Service Clearances:

	F	R	Rt	L
Inches	48	48	42	42
(cm)	(122)	(122)	(107)	(107)

Weight: 850 lb (390 kg)

Heat Output: 3,800 BTU/hr (960 kcal/hr)

Airflow: 320 cfm (10 m³/min)

Power Requirements:*	50 Hz	60 Hz
kVA	2.1	1.5
Phases	3	3

Environment, Operating:

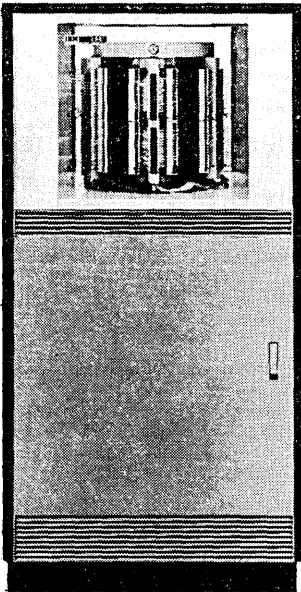
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

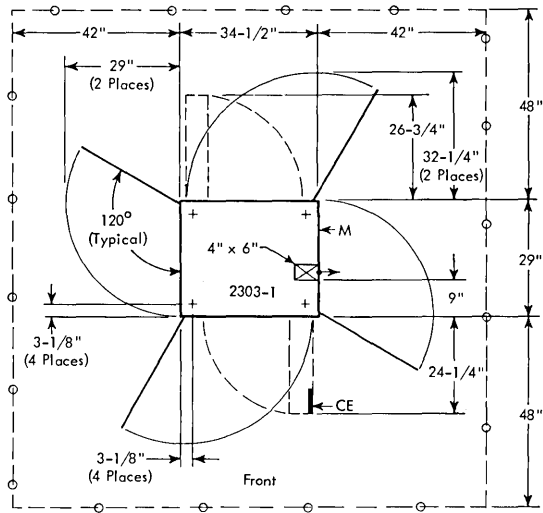
Notes:

* Powered from control unit.



2303 DRUM STORAGE MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2841.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	34-1/2	29	64
(cm)	(88)	(74)	(163)

Service Clearances:

	F	R	Rt	L
Inches	48	48	42	42
(cm)	(122)	(122)	(107)	(107)

Weight: 850 lb (390 kg)

Heat Output: 3,800 BTU/hr (960 kcal/hr)

Airflow: 250 cfm (8 m³/min)

Power Requirements:*	50 Hz	60 Hz
kVA	2.1	1.7
Phases	3	3

Environment, Operating:

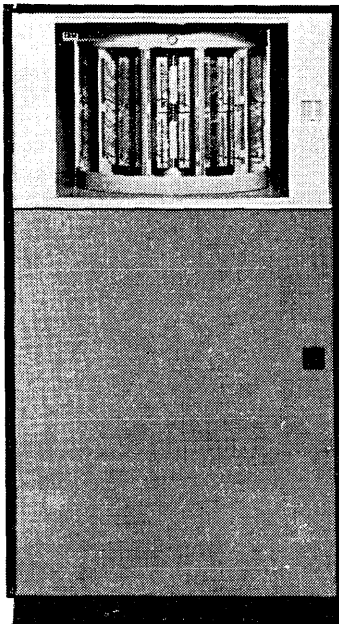
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

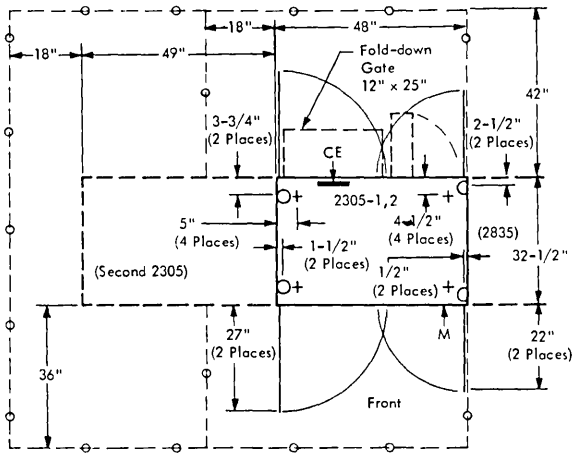
Notes:

* Powered from control unit.



2305 FIXED HEAD STORAGE MODELS 1 AND 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS*

Dimensions:

	F	S	H
Inches	48**	32-1/2	60
(cm)	(122**)	(83)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	42	***	18†
(cm)	(91)	(107)	(***)	(46†)

Weight: 1,150 lb (530 kg)

Heat Output: 11,000 BTU/hr (2 800 kcal/hr)

Airflow: 470 cfm (14 m³/min)

Power Requirements:††

kVA 3.5

Environment, Operating:

Temperature 60°F-90°F (16°C-32°C)
 Rel Humidity 20%-80%
 Max Wet Bulb 78°F (26°C)

Environment, Nonoperating:

Temperature 50°F-110°F (10°C-43°C)
 Rel Humidity 8%-80%
 Max Wet Bulb 80°F (27°C)

Notes:

* Machines shipped prior to August 5, 1972 have the following specifications:

	50 Hz	60 Hz
Serial Numbers:	50103	10134
	80169	30284

Weight:

lb	1,350	1,350
(kg)	(620)	(620)

Heat Output:

BTU/hr	15,400	15,000
(kcal/hr)	(3 900)	(3 800)

Airflow:†††

cfm	550	550
(m ³ /min)	(16)	(16)

Power Requirements:

kVA	5.0	4.8
-----	-----	-----

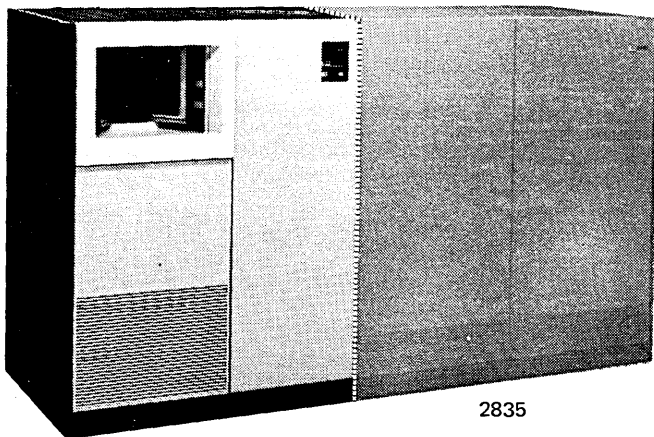
** Dimension is 49" (124 cm) for leftmost (or only) 2305 to allow for end cover.

*** The 2305 is bolted to the left side of the 2835 or first 2305.

† For the end 2305 device.

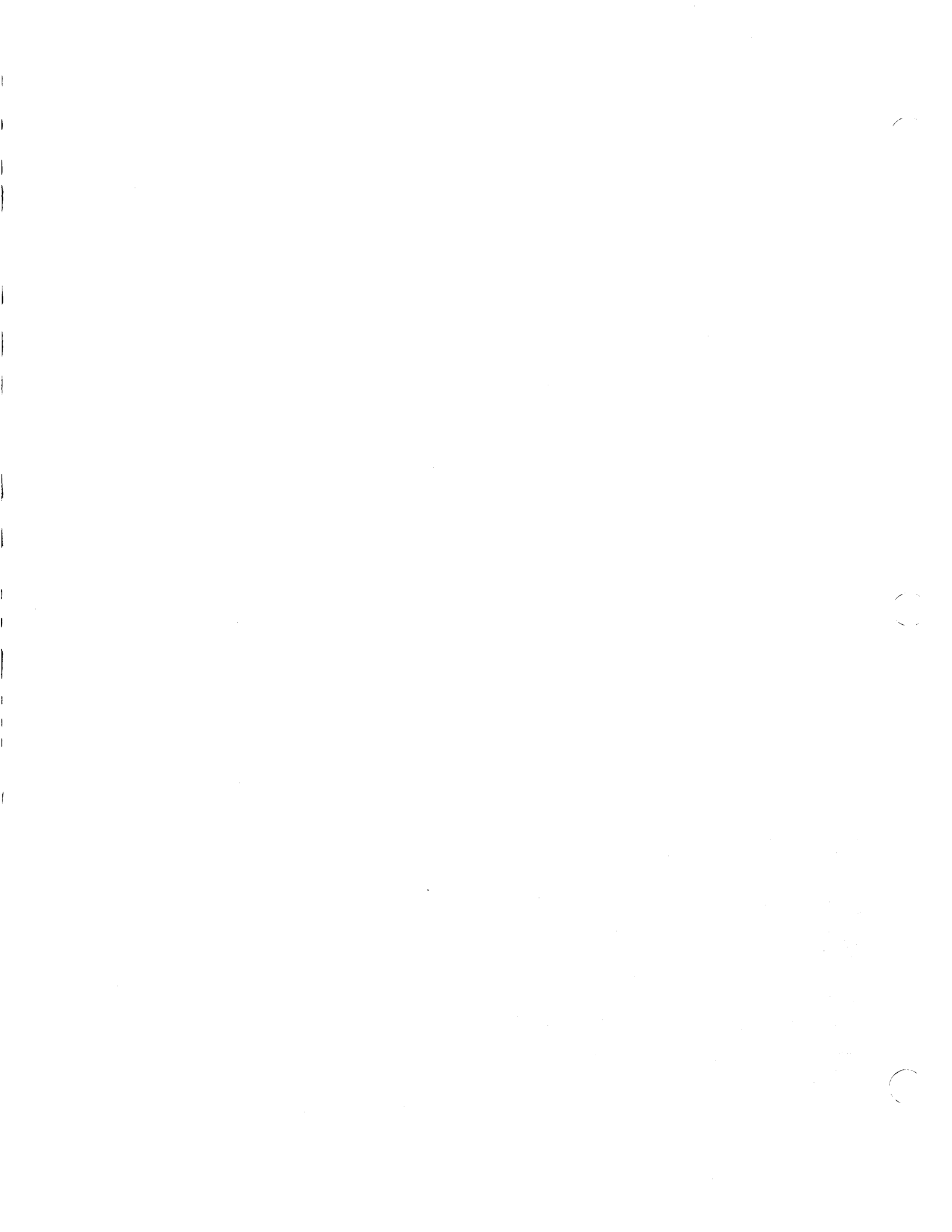
†† Powered from 2835.

††† Of this total, 450 cfm (13 m³/min) is horizontal airflow from the front to the back of the device. Exhaust is about 25°F (14°C) above the input air temperature.



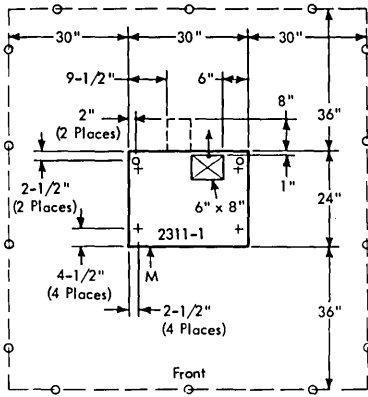
2305

2835



2311 DISK STORAGE DRIVE MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2841.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	24	38
(cm)	(76)	(61)	(97)

Service Clearances:

	F	R	Rt	L
Inches	36	36	30*	30*
(cm)	(91)	(91)	(76*)	(76*)

Weight: 280 lb (130 kg)

Heat Output: 2,000 BTU/hr (510 kcal/hr)

Airflow: 100 cfm (3 m³/min)

Power Requirements:**

kVA 0.75

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

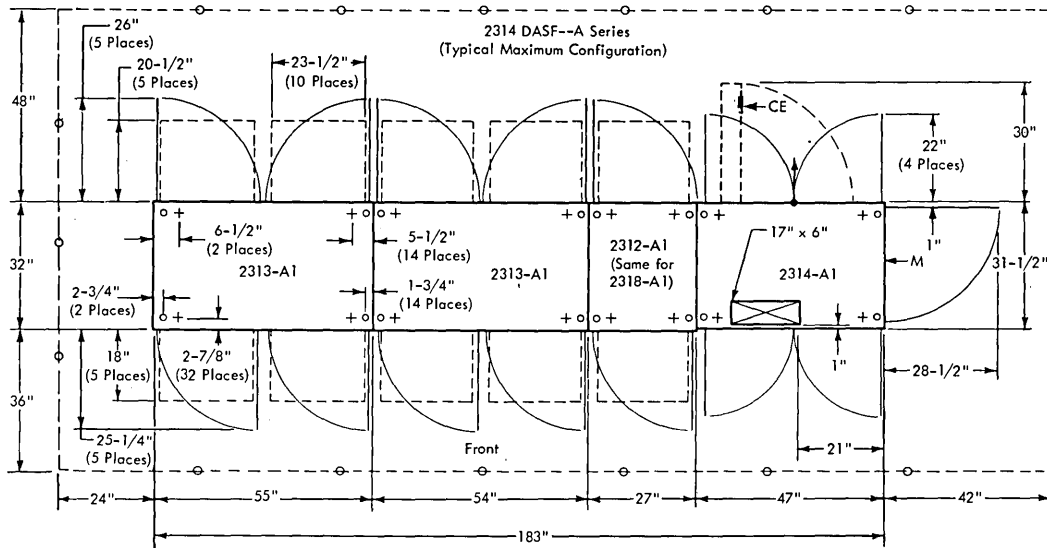
* When not abutted to devices of similar construction.

** Powered from control unit.



2314 DIRECT ACCESS STORAGE FACILITY—A SERIES

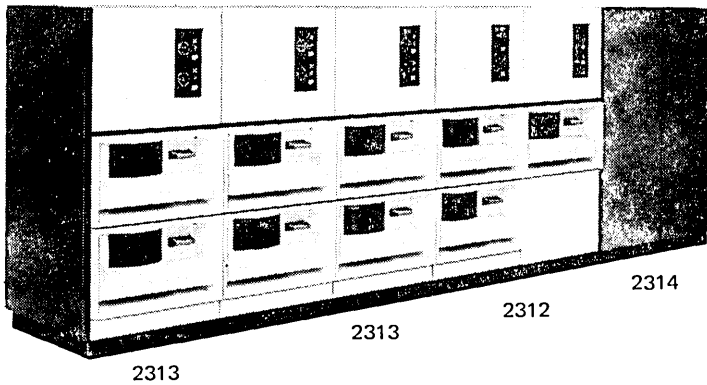
PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Notes:

1. The 2314 DASF--A Series is composed of a 2314 storage control and various combinations of 2312, 2313, and 2318 Disk Storage machines. Plan view shows typical maximum configuration. Left end clearance is required for any configuration.
2. For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

2314 DIRECT ACCESS STORAGE FACILITY—A SERIES



SPECIFICATIONS

Dimensions:*

	F	S	H
Inches	183	32	60
(cm)	(465)	(81)	(152)

Service Clearances: (For Any Configuration)

	F	R	Rt	L
Inches	36	48	42	24
(cm)	(91)	(122)	(107)	(61)

Weight: 4,200 lb* (1 950 kg*)

Heat Output: 20,400 BTU/hr* (5 150 kcal/hr*)

Airflow: 2,000 cfm* (57 m³/min*)

Power Requirements: 50 Hz 60 Hz

kVA	9.1*	7.4*
Phases	3	3
Plug	R&S, FS3760**	
Connector	R&S, FS3934**	
Receptacle	R&S, FS3754**	
Power Cord Style	D2**	

Notes:

* For maximum configuration (eight online disk storage modules and one spare).

** For facility with six or fewer disk storage modules (SF #9580 neither required nor installed). For facility with seven or more disk storage modules (SF #9580 required) or with SF #9580 specified in anticipation of expansion, plug is R&S, SC7328; connector is R&S, SC7428; receptacle is R&S, SC7324; and power cord style is E1.

*** Facility is shipped as individual devices.

† To allow for end cover, add 1 inch (3 cm) to front dimension for the leftmost device of the installed facility.

†† Powered from 2314.

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

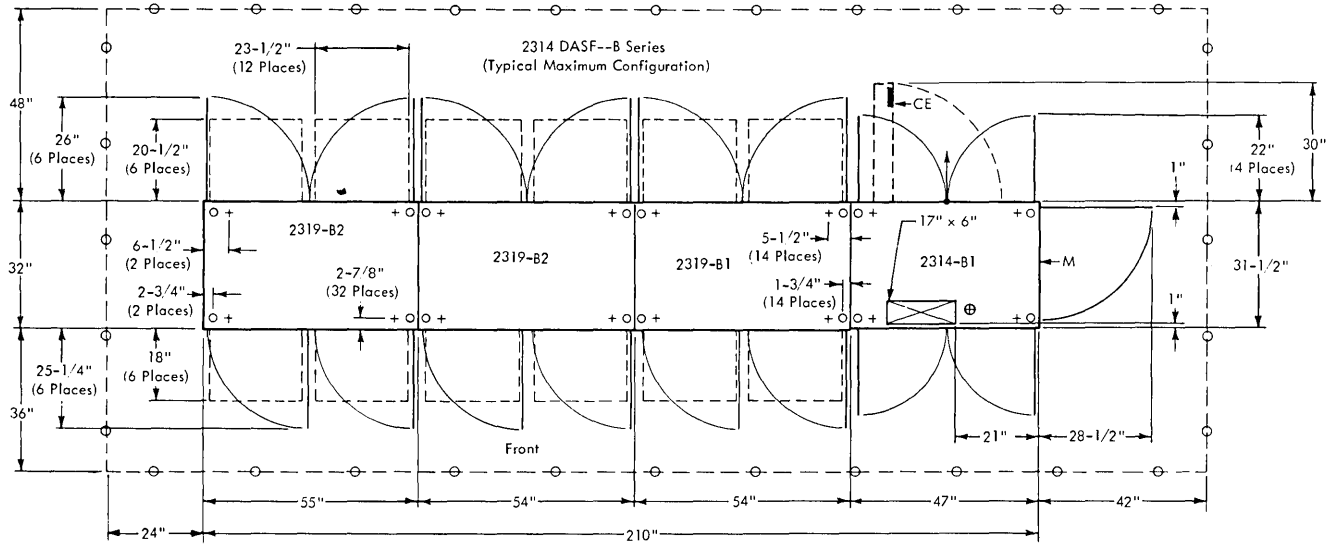
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Model A1 Machine***	Dimensions† F x S x H inches (cm)	Weight lb (kg)	Airflow cfm (m ³ /min)	Heat Output		kVA	
				BTU/hr	(kcal/hr)	50 Hz	60 Hz
				50 Hz	60 Hz	50 Hz	60 Hz
2312	27 x 32 x 60 (69 x 81 x 152)	500 (230)	200 (6)	1,700 (430)	1,900 (480)	0.8††	0.7††
2313	54 x 32 x 60 (137 x 81 x 152)	1,375 (630)	400 (12)	7,400 (1 900)	7,700 (1 950)	3.4††	2.8††
2314	47 x 31-1/2 x 60 (119 x 80 x 152)	950 (440)	1,000 (29)	3,300 (840)	3,100 (790)	1.6	1.1
2318	27 x 32 x 60 (69 x 81 x 152)	690 (320)	200 (6)	3,400 (860)	3,800 (960)	1.7††	1.4††

2314 DIRECT ACCESS STORAGE FACILITY—B SERIES

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

2314 DIRECT ACCESS STORAGE FACILITY—B SERIES

SPECIFICATIONS

Dimensions:*

	F	S	H
Inches	210	32	60
(cm)	(533)	(81)	(152)

Service Clearances: (For Any Configuration)

	F	R	Rt	L
Inches	36	48	42	24
(cm)	(91)	(122)	(107)	(61)

Weight: 4,250 lb* (1 950 kg*)

Heat Output: 19,600 BTU/hr* (4 950 kcal/hr*)

Airflow: 2,200 cfm* (63 m³/min*)

Power Requirements:

kVA	6.5*
Phases	3
Plug	R&S, FS3760**
Connector	R&S, FS3934**
Receptacle	R&S, FS3754**
Power Cord Style	D2**

Notes:

- * For maximum configuration (eight online disk storage modules and one spare).
- ** For facility with second 2319-B2 not installed (SF #9580 neither required nor installed). For facility with second 2319-B2 installed (SF #9580 required) or SF #9580 specified in anticipation of expansion, plug is R&S, SC7328; connector is R&S, SC7428; receptacle is R&S, SC7324; and power cord style is E2.
- *** Facility is shipped as individual devices.
- † To allow for end cover, add 1 inch (3 cm) to front dimension for the leftmost device of the installed facility.
- †† Powered from 2314.

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

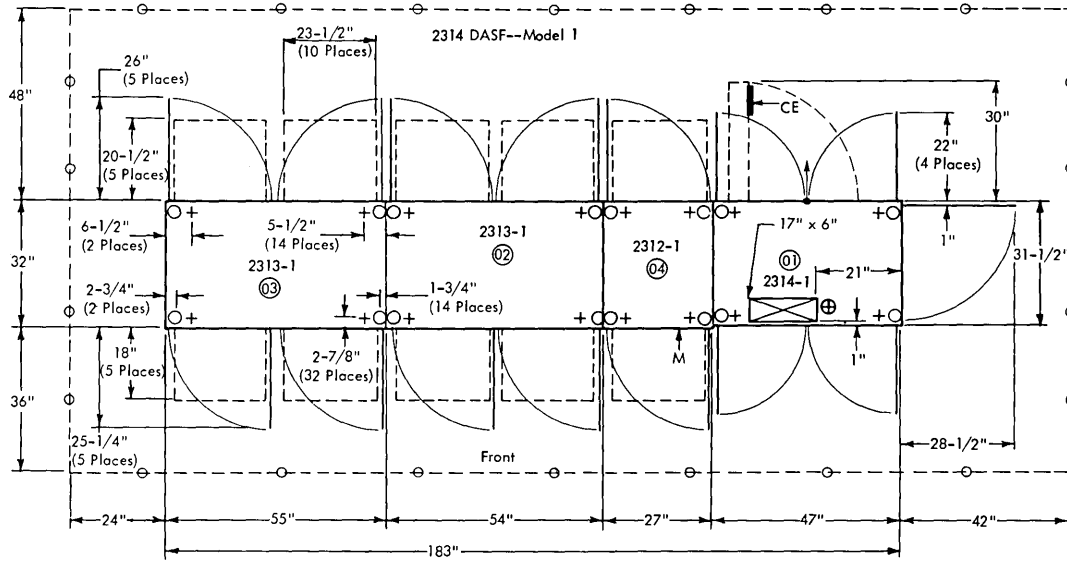
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Machine ***	Dimensions [†] F x S x H inches (cm)	Weight lb (kg)	Airflow cfm (m ³ /min)	Heat Output		kVA
				BTU/hr 50 Hz	(kcal/hr) 60 Hz	
2314-B1	47 x 31-1/2 x 60 (119 x 80 x 152)	950 (440)	1,000 (29)	3,300 (840)	3,100 (790)	1.1
2319-B1 2319-B2†	54 x 32 x 60 (137 x 81 x 152)	1,100 (500)	400 (12)	5,500 (1 400)	5,500 (1 400)	1.8††

2314 DIRECT ACCESS STORAGE FACILITY—MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

2314 DIRECT ACCESS STORAGE FACILITY—MODEL 1

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	183	32	60
(cm)	(465)	(81)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	48	42	24
(cm)	(91)	(122)	(107)	(61)

Weight: 4,200 lb (1 950 kg)

Heat Output: 20,400 BTU/hr (5 150 kcal/hr)

Airflow: 2,000 cfm (57 m³/min)

Power Requirements: 50 Hz 60 Hz

kVA	9.1	7.4
Phases	3	3
Plug	R&S, SC7328	
Connector	R&S, SC7428	
Receptacle	R&S, SC7324	
Power Cord Style	E1	

Environment, Operating:

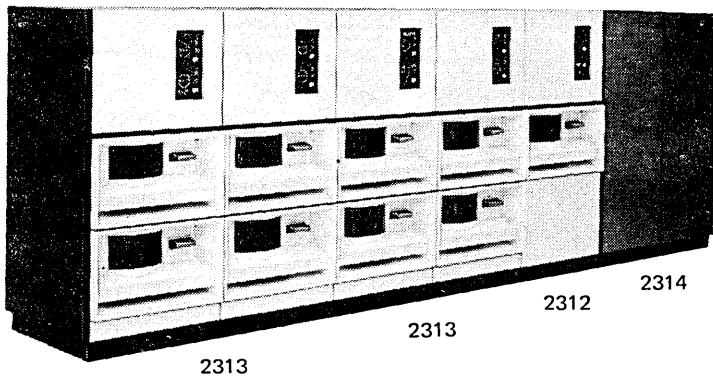
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

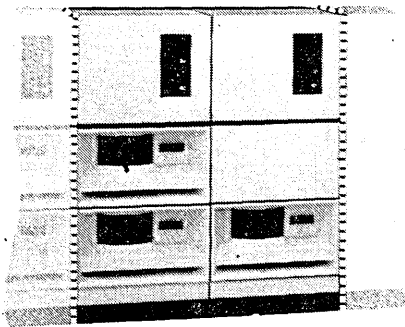
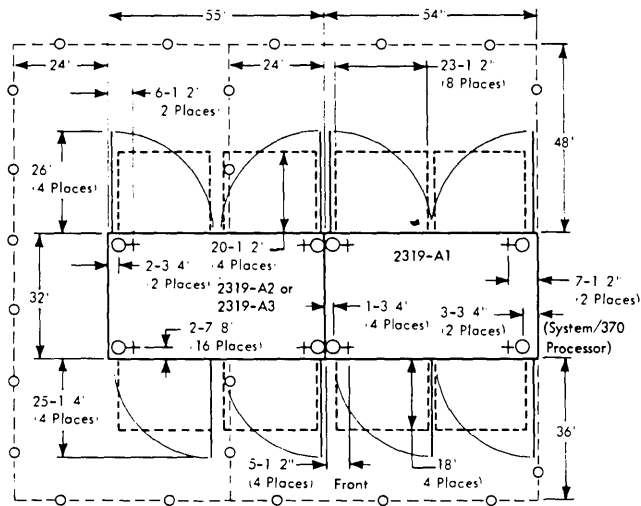
Machine is shipped in four sections:



<i>Frame</i>	<i>Front inches (cm)</i>	<i>Side inches (cm)</i>	<i>Weight lb (kg)</i>
01	47 (119)	31-1/2 (80)	950 (440)
02	54 (137)	32 (81)	1,375 (630)
03	55 (140)	32 (81)	1,375 (630)
04	27 (69)	32 (81)	500 (230)

2319 DISK STORAGE MODELS A1, A2, AND A3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



2319-A1

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	*	32	60
(cm)	(*)	(81)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	48	0**	24***
(cm)	(91)	(122)	(0**)	(61***)

Weight:	Model A1	Model A2	Model A3
lb	1,100	1,100	1,160
(kg)	(500)	(500)	(530)

Heat Output:

BTU/hr	5,500	5,500	6,000
(kcal/hr)	(1 400)	(1 400)	(1 550)

Airflow:

cfm	400	400	400
(m ³ /min)	(12)	(12)	(12)

Power Requirements:†

kVA	1.8	1.8	2.8 (50 Hz)
			2.2 (60 Hz)

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* 2319-A1: 54" (137 cm); add 2" (5 cm) for spacer to System/370 processor; add 1" (3 cm) for left end cover, where required.

2319-A2 or 2319-A3: 54" (137 cm); plan view shows 55" (140 cm) with 1" (3 cm) left end cover in place.

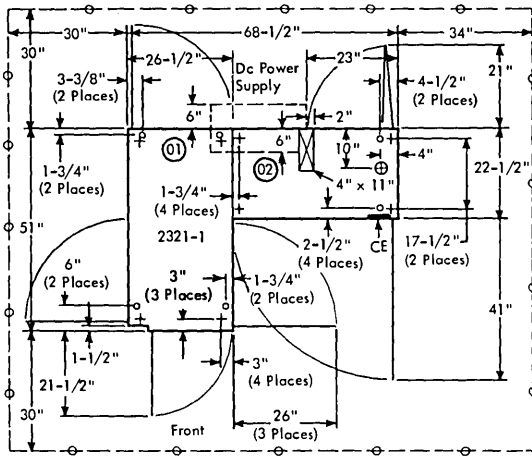
** Abuts System/370 processor.

*** Applies only to leftmost disk storage device.

† Powered from System/370 processor.

2321 DATA CELL DRIVE MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2841.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	68-1/2*	51*	60
(cm)	(174*)	(130*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	30	34**	30**
(cm)	(76)	(76)	(86**)	(76**)

Weight: 1,825 lb (830 kg)

Heat Output: 10,600 BTU/hr (2 700 kcal/hr)

Airflow: 850 cfm (25 m³/min)

Power Requirements:

- kVA 4.4
- Phases 3
- Plug R&S, FS3760
- Connector R&S, FS3934
- Receptacle R&S, FS3754
- Power Cord Style D2

Environment, Operating:

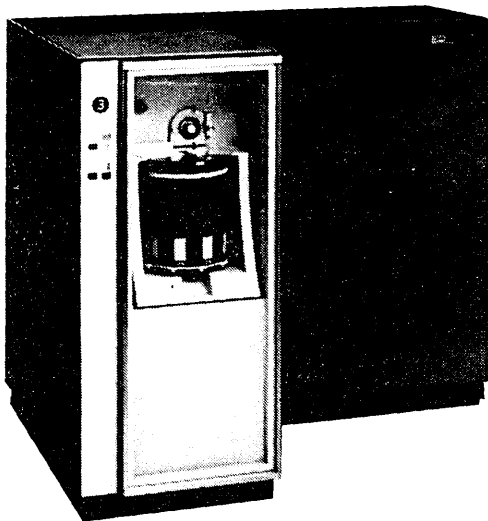
- Temperature 60°F-90°F (16°C-32°C)
- Rel Humidity 20%-80%
- Max Wet Bulb 78°F (26°C)

Environment, Nonoperating:

- Temperature 50°F-110°F (10°C-43°C)
- Rel Humidity 8%-80%
- Max Wet Bulb 80°F (27°C)

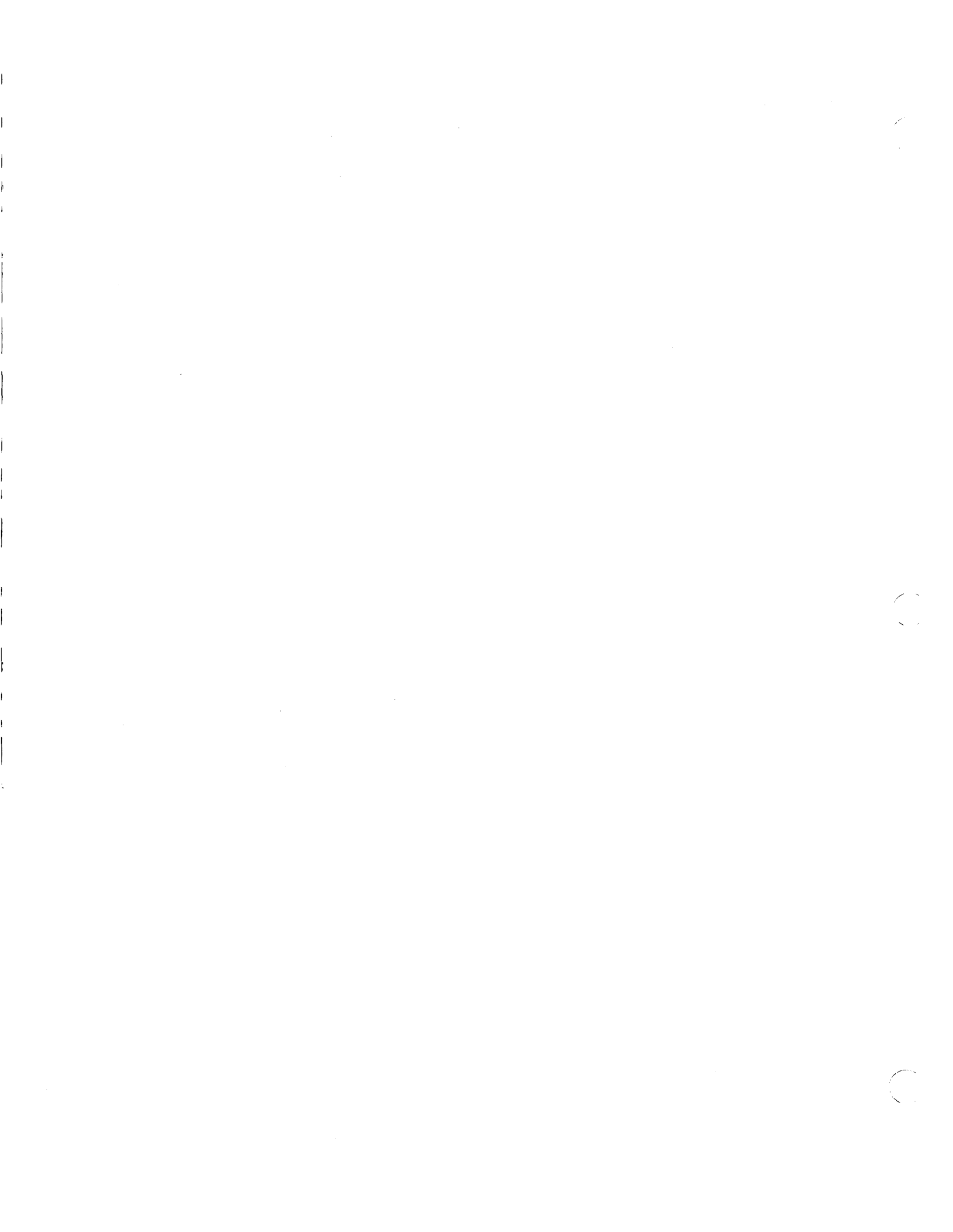
Notes:

* Machine is shipped in two sections:



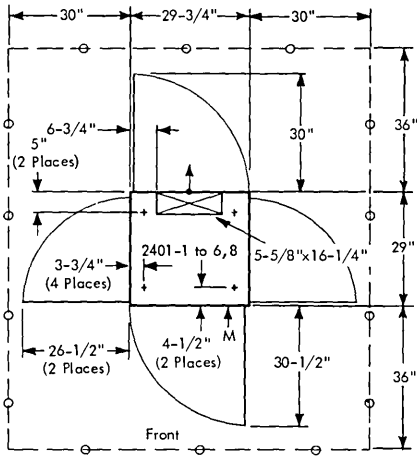
Frame	Front inches (cm)	Side inches (cm)	Weight lb (kg)
01	26-1/2 (67)	51 (130)	1,175 (540)
02	22-1/2 (57)	42 (107)	650 (300)

** When not abutted to another 2321.



2401 MAGNETIC TAPE UNIT MODELS 1 TO 6 AND 8

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2403.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	29-3/4	29	67
(cm)	(76)	(74)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	30*	30*
(cm)	(91)	(91)	(76*)	(76*)

Weight: 800 lb (370 kg)

Heat Output: 3,500 BTU/hr (890 kcal/hr)

Airflow: 500 cfm (15 m³/min)

Power Requirements: **

kVA 1.6

Environment, Operating:

Temperature 60°F-90°F (16°C-32°C)
 Rel Humidity 20%-80%
 Max Wet Bulb 78°F (26°C)

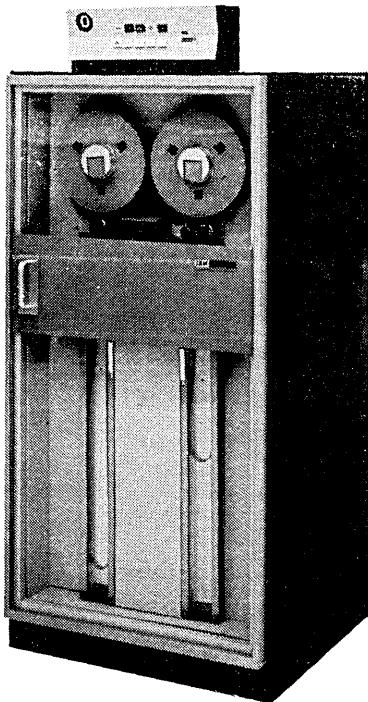
Environment, Nonoperating:

Temperature 50°F-110°F (10°C-43°C)
 Rel Humidity 8%-80%
 Max Wet Bulb 80°F (27°C)

Notes:

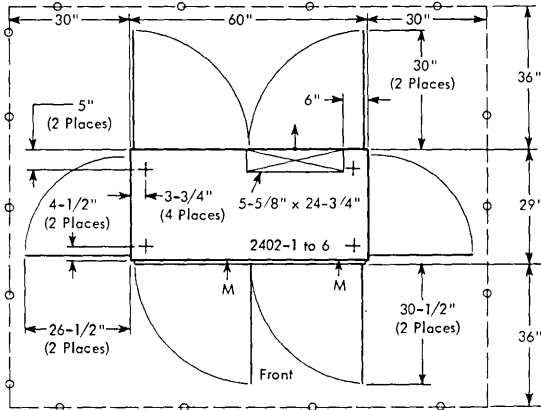
* When not abutted to another tape unit or tape control unit.

** Powered from control unit.



2402 MAGNETIC TAPE UNIT MODELS 1 TO 6

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2403.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	29	67
(cm)	(152)	(74)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	30*	30*
(cm)	(91)	(91)	(76*)	(76*)

Weight: 1,600 lb (730 kg)

Heat Output: 7,000 BTU/hr (1 800 kcal/hr)

Airflow: 1,000 cfm (29 m³/min)

Power Requirements:**

kVA 3.2

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

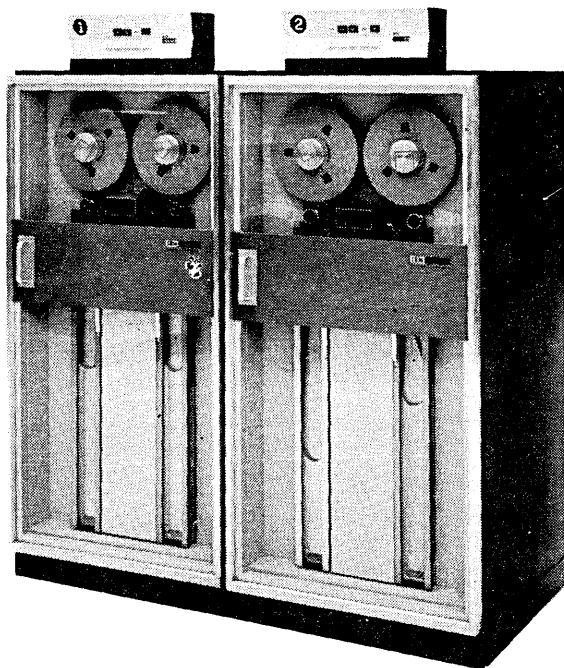
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

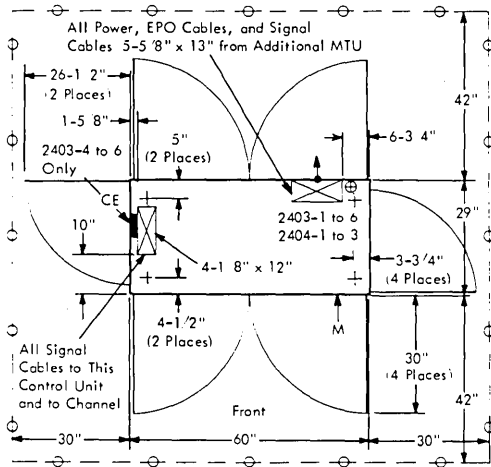
* When not abutted to another tape unit or tape control unit.

** Powered from control unit.



2403 MAGNETIC TAPE UNIT AND CONTROL MODELS 1 TO 6
2404 MAGNETIC TAPE UNIT AND CONTROL MODELS 1 TO 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	29	67
(cm)	(152)	(74)	(170)

Service Clearances:

	F	R	Rt	L
Inches	42	42	30*	30
(cm)	(107)	(107)	(76*)	(76)

Weight:

	2403	2404
lb	1,450	1,650
(kg)	(660)	(750)

Heat Output:

BTU/hr	5,500	6,300
(kcal/hr)	(1 400)	(1 600)

Airflow:

cfm	1,000	1,200
(m ³ /min)	(29)	(35)

Power Requirements:

kVA	2.1	2.4
Phases	3	3
Plug	R&S, SC7328	
Connector	R&S, SC7428	
Receptacle	R&S, SC7324	
Power Cord Style	E2	

Environment, Operating:

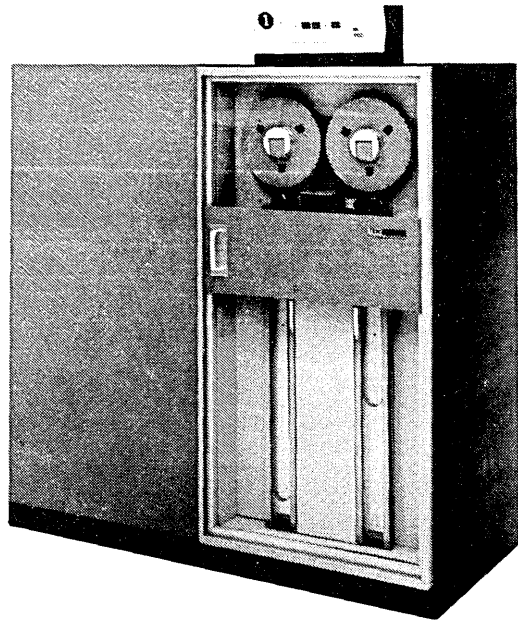
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

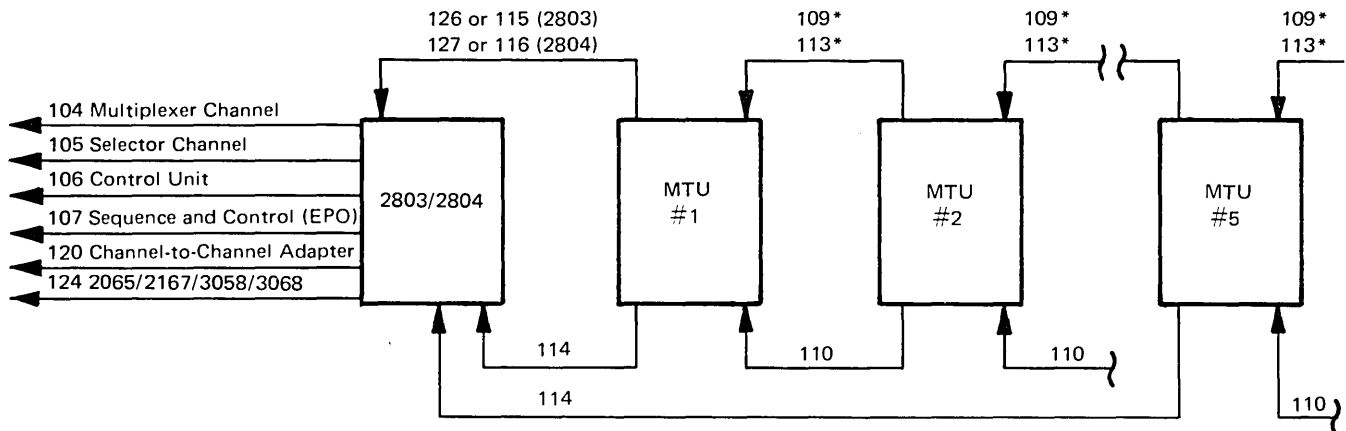
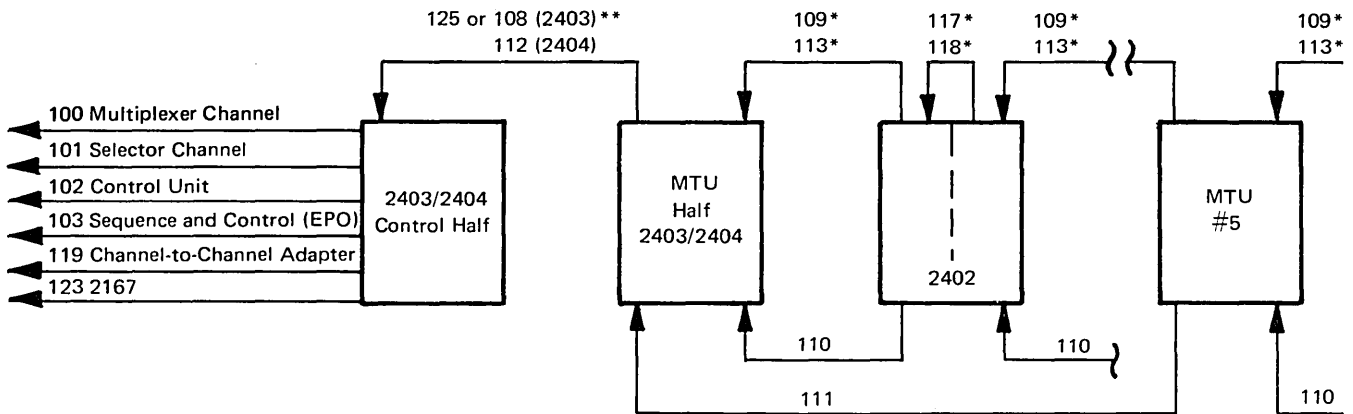
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* When not abutted to another tape unit or tape control unit.



2403, 2404, 2420, 2803, AND 2804 CABLING SCHEMATIC



- * Use upper number for MTUs (magnetic tape units) without SF #7160 or #7161. Use lower number for those with feature.
- ** These groups should be routed from address "0" unit.

2403, 2404, 2420, 2803, AND 2804 CABLING SCHEMATIC

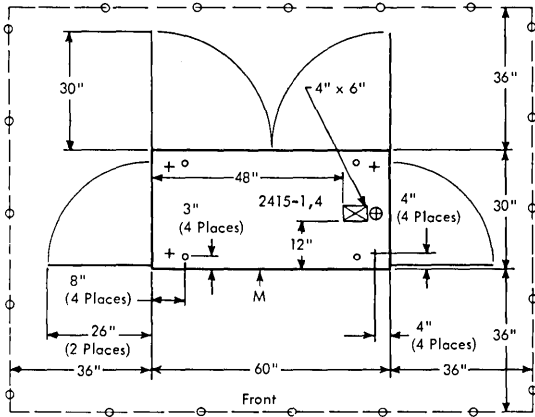
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
100	2	2403/2404	Multiplexer Channel	—	1,12
101	2	2403/2404	Selector Channel	—	1,12
102	2	2403/2404	Control Unit	—	1,12
103	1	2403/2404	Channel	150	2,12
104	2	2803/2804	Multiplexer Channel	—	1,12
105	2	2803/2804	Selector Channel	—	1,12
106	2	2803/2804	Control Unit	—	1,12
107	1	2803/2804	Channel	150	2,12
108	1	MTU #1	2403 Models 1-3	—	3,4,9
109	1	MTU	MTU	—	3,4
110	1	MTU	MTU	—	7,8
111	1	MTU	2403/2404	—	7
112	1	MTU #1	2404	—	3,5
113	1	MTU	MTU	—	3,5
114	1	MTU	2803/2804	—	7,8
115	1	MTU #1	2803 Models 1 and 3	—	3,4,9
116	1	MTU #1	2804 Models 1 and 3	—	3,5,9
117	1	1/2 2402	1/2 2402	(Fixed)	4,6
118	1	1/2 2402	1/2 2402	(Fixed)	5,6
119	2	2403/2404	Channel-to-Channel Adapter	—	1,10,12
120	2	2803/2804	Channel-to-Channel Adapter	—	1,10,12
123	1	2403 Models 1-3	2167	75	11
124	1	2803 Model 1	2065/2167/3058/3068	150	11
125	1	MTU #1	2403 Models 4-6	—	3,4,9
126	1	MTU #1	2803 Model 2	—	3,4,9
127	1	MTU #1	2804 Model 2	—	3,5,9

Notes:

- Total cable length of 200 feet is available to attach up to eight control units to a channel. For control units with 2401-6, 2402-6, or 2403-6 attached, total cable length of 100 feet is available to attach up to eight control units to a channel.
- Sequence and control (EPO).
- For eight drives (not units), the maximum total "X" dimension of the following cable groups should not exceed 100 feet: (125 or 126, 115 or 108) plus 109, (112 or 116 or 127) plus 113.
- For use with MTUs without SF #7160 or #7161, simultaneous read/write.
- For use with MTUs with SF #7160 or #7161, simultaneous read/write.
- Jumper signal cable for 2402 required when 2816 is not used. Indicate quantity required on cable order.
- For four drives (not units), the maximum total "X" dimension of the following cable groups should not exceed 100 feet: (114 or 111) plus 110.
- The total number of MTUs powered from any given control unit must not exceed eight (maximum of four drives per power cable string). For operation at 195 V, 50 Hz, the total number of 2420s powered from a 2803-2 must not exceed six (maximum of three drives per power cable string).
- The following pairs of cable groups use the same cable part but different terminators: 125 and 108, 126 and 115, and 127 and 116. To obtain only the replacement terminator required for a model change, order the cable group specified for the model on the cable order form or through the IBM Branch Office on an MES (Miscellaneous Equipment Specification) and state "Terminator Only."
- To channel-to-channel adapter (SF #1850).
- For use with SF #6148 (remote switch) only.
- One group required for each channel. Maximum length applies to each channel. Connection to two channels for 2404/2804 is standard. Special features may be ordered for connection to two channels for 2403-1, 2, 3 or 2803-1.

2415 MAGNETIC TAPE UNIT AND CONTROL MODELS 1 AND 4

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	30	67
(cm)	(152)	(76)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	36	36
(cm)	(91)	(91)	(91)	(91)

Weight:	50 Hz	60 Hz
lb	1,400	1,400
(kg)	(640)	(640)

Heat Output:

BTU/hr	10,000	4,500
(kcal/hr)	(2 550)	(1 150)

Airflow:

cfm	1,250	1,250
(m ³ /min)	(36)	(36)

Power Requirements:

kVA	4.2	2.2
Phases	3	3
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D1	

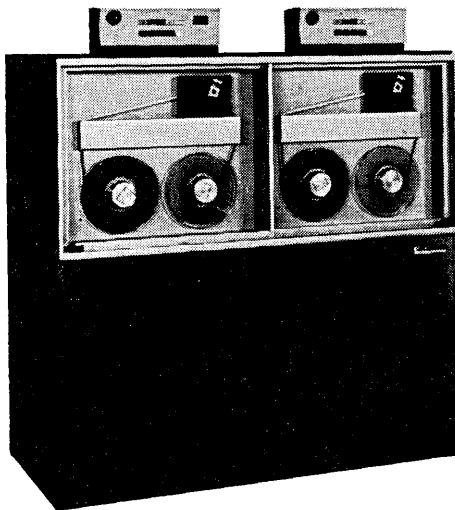
Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

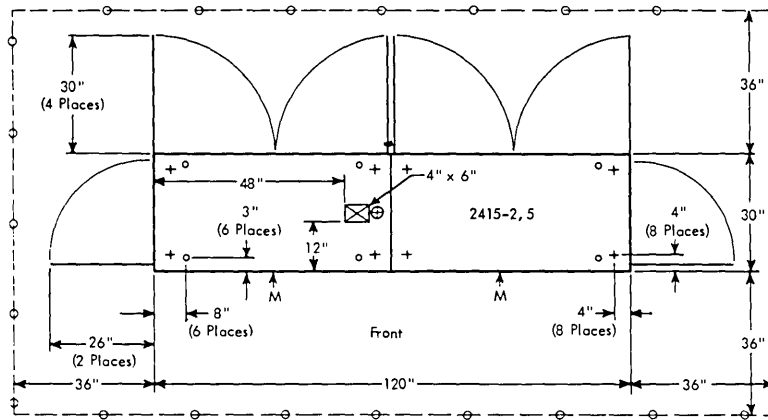
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2415 MAGNETIC TAPE UNIT AND CONTROL MODELS 2 AND 5

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	120	30	67
(cm)	(305)	(76)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	36	36
(cm)	(91)	(91)	(91)	(91)

Weight:

	50 Hz	60 Hz
lb	2,250	2,250
(kg)	(1 050)	(1 050)

Heat Output:

	50 Hz	60 Hz
BTU/hr	12,500	6,200
(kcal/hr)	(3 200)	(1 600)

Airflow:

	50 Hz	60 Hz
cfm	1,500	1,500
(m ³ /min)	(43)	(43)

Power Requirements:

kVA	5.3	3.0
Phases	3	3
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D1	

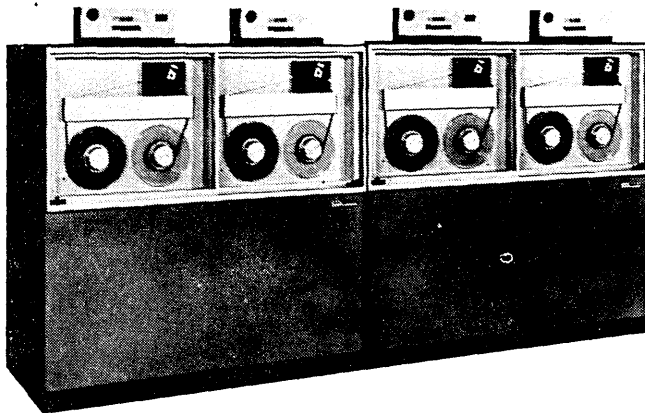
Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

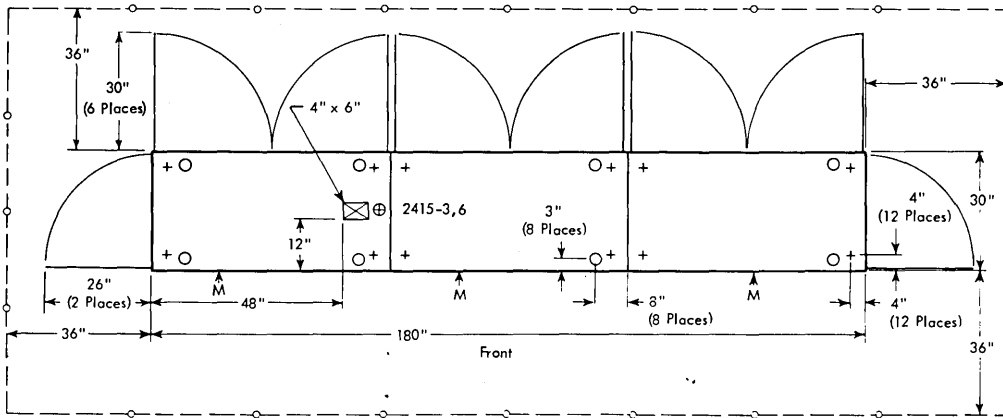
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2415 MAGNETIC TAPE UNIT AND CONTROL MODELS 3 AND 6

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2,
"Machines with Integral or Abutted Controls."

2415 MAGNETIC TAPE UNIT AND CONTROL MODELS 3 AND 6

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	180	30	67
(cm)	(457)	(76)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	36	36
(cm)	(91)	(91)	(91)	(91)

Weight:	50 Hz	60 Hz
lb	3,100	3,100
(kg)	(1 450)	(1 450)

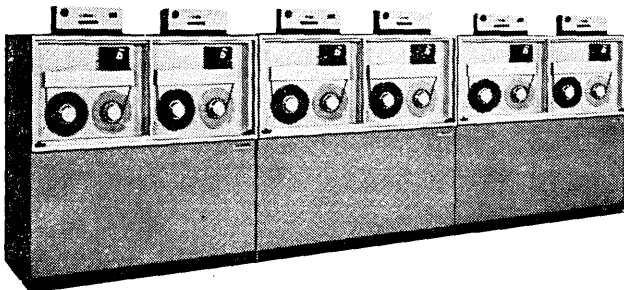
Heat Output:		
BTU/hr	15,000	7,800
(kcal/hr)	(3 800)	(2 000)

Airflow:		
cfm	1,750	1,750
(m ³ /min)	(50)	(50)

Power Requirements:

kVA	6.5	3.8
Phases	3	3
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D1	

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.



Environment, Operating:

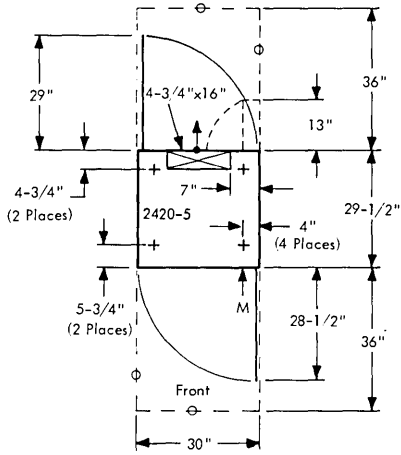
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

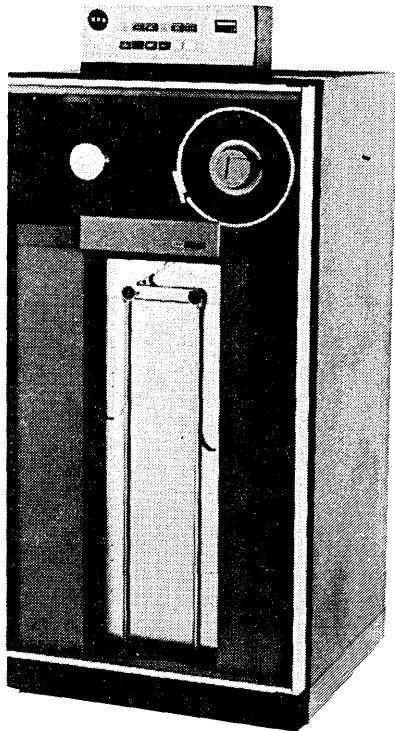
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

2420 MAGNETIC TAPE UNIT MODEL 5

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2403.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	29-1/2	67
(cm)	(76)	(75)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	0	0
(cm)	(91)	(91)	(0)	(0)

Weight: 800 lb (370 kg)

Heat Output: 4,000 BTU/hr (1 050 kcal/hr)

Airflow: 360 cfm (11 m³/min)

Power Requirements:*

kVA 1.8 (Operating)
1.4 (Ready)

Environment, Operating:

Temperature 60°F-90°F (16°C-32°C)
Rel Humidity 20%-80%
Max Wet Bulb 78°F (26°C)

Environment, Nonoperating:

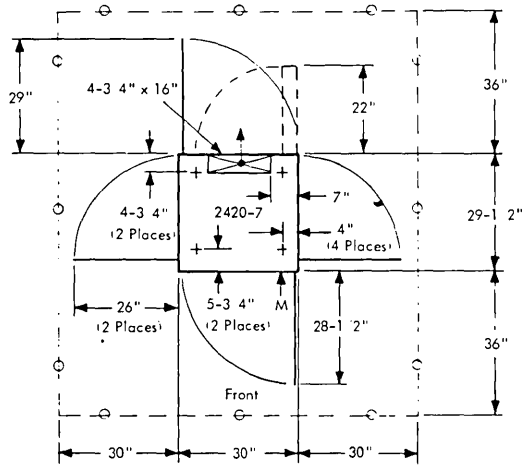
Temperature 50°F-110°F (10°C-43°C)
Rel Humidity 8%-80%
Max Wet Bulb 80°F (27°C)

Notes:

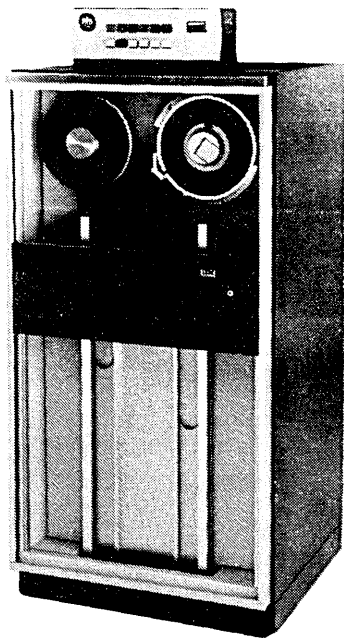
* Powered from control unit.

2420 MAGNETIC TAPE UNIT MODEL 7

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2403.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	29-1/2	67
(cm)	(76)	(75)	(170)

Service Clearances:*

	F	R	Rt	L
Inches	36	36	30	30
(cm)	(91)	(91)	(76)	(76)

Weight: 930 lb (430 kg)

Heat Output: 5,000 BTU/hr (1 300 kcal/hr)

Airflow: 1,000 cfm (29 m³/min)

Power Requirements:**

kVA	2.0 (Operating)
	1.5 (Ready)

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

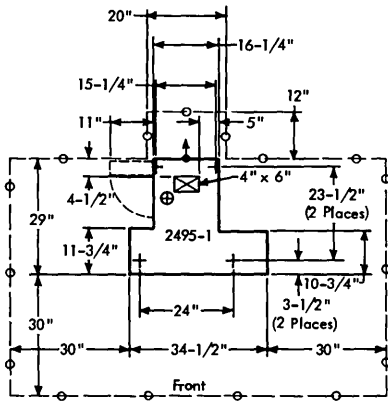
Notes:

* If more than three machines are abutted, additional front or rear clearance may have to be provided to meet floor loading capacity.

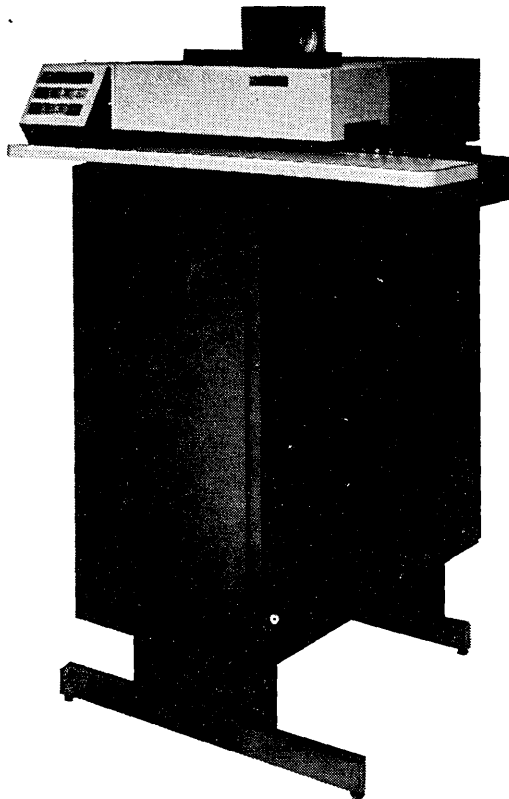
** Powered from control unit.

2495 TAPE CARTRIDGE READER MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	34-1/2	29	45-9/16
(cm)	(88)	(74)	(116)

Service Clearances:

	F	R	Rt	L
Inches	30	12	30	30
(cm)	(76)	(30)	(76)	(76)

Weight: 330 lb (150 kg)

Heat Output: 890 BTU/hr (230 kcal/hr)

Airflow: 0 cfm (0 m³/min)

Power Requirements:

kVA	0.287
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A-

Environment, Operating:

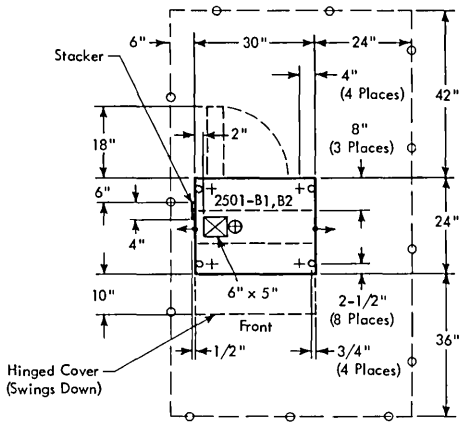
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

2501 CARD READER MODELS B1 AND B2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	24	45*
(cm)	(76)	(61)	(114*)

Service Clearances:

	F	R	Rt	L
Inches	36	42	24	6**
(cm)	(91)	(107)	(61)	(15**)

Weight: 440 lb (200 kg)

Heat Output: 1,200 BTU/hr (310 kcal/hr)

Airflow: 0 cfm (0 m³/min)

Power Requirements:

kVA	0.5
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

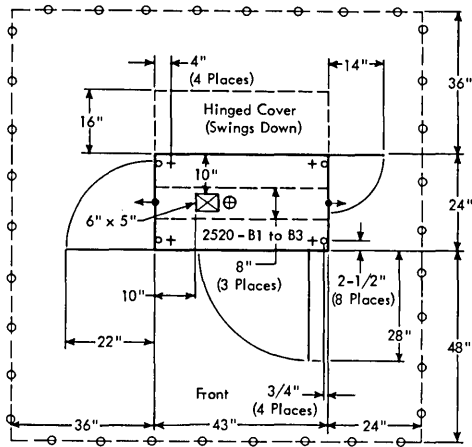
Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	10%-80%
Max Wet Bulb	78°F (26°C)

Notes:

- * To top of stacker.
- ** Can be abutted to top of base only.

**2520 CARD READ PUNCH MODEL B1
2520 CARD PUNCH MODELS B2 AND B3**

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	43	24	50
(cm)	(109)	(61)	(127)

Service Clearances:

	F	R	Rt	L
Inches	48	36	24	36
(cm)	(122)	(91)	(61)	(91)

Weight: 770 lb (350 kg)

Heat Output: 4,000 BTU/hr (1 050 kcal/hr)

Airflow: 100 cfm (3 m³/min)

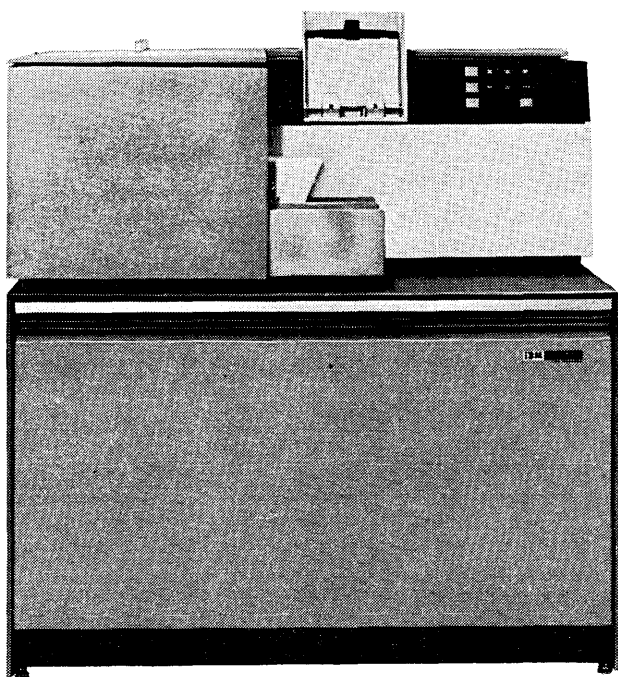
Power Requirements:

kVA	1.6
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

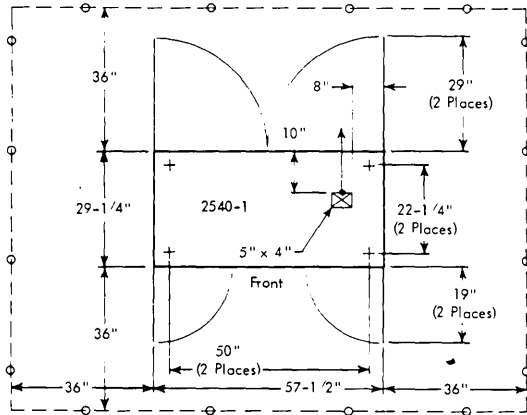
Environment, Operating:

Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	10%-80%
Max Wet Bulb	78°F (26°C)



2540 CARD READ PUNCH MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 2821.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	57-1/2	29-1/4	45-1/4*
(cm)	(146)	(74)	(115*)

Service Clearances:

	F	R	Rt	L
Inches	36	36	36	36
(cm)	(91)	(91)	(91)	(91)

Weight: 1,050 lb (480 kg)

Heat Output: 3,000 BTU/hr (760 kcal/hr)

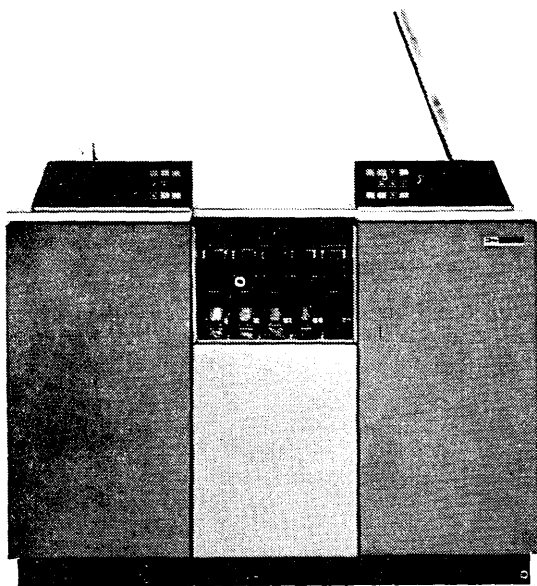
Airflow: 50 cfm (2 m³/min)

Power Requirements:**

kVA 1.2

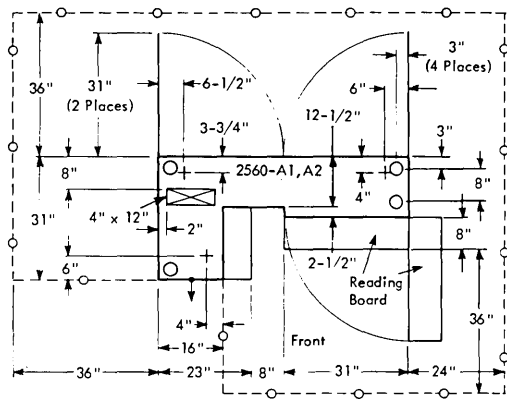
Notes:

- * Add 20-1/4" (51 cm) to the dimension for read file feed.
- ** Powered from 2821, or from 2025 when SF =4595 is installed.



2560 MULTI-FUNCTION CARD MACHINE MODELS A1 AND A2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 3115-0, 3115-2, 3125-0, or 3125-2.

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	62	31	44
(cm)	(157)	(79)	(112)

Service Clearances:

	F	R	Rt	L
Inches	36	36	24	36
(cm)	(91)	(91)	(61)	(91)

Weight: 875 lb (400 kg)

Heat Output: 3,600 BTU/hr (910 kcal/hr)

Airflow: 100 cfm (3 m³/min)

Power Requirements:*

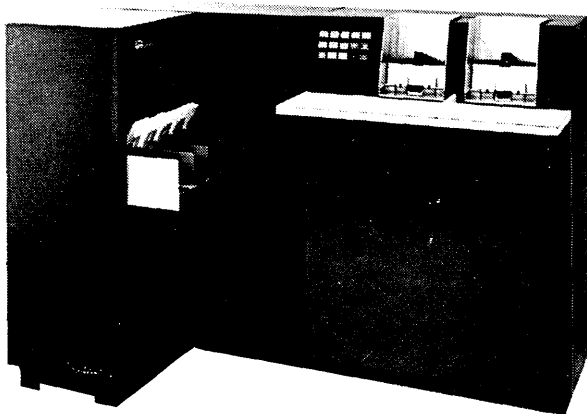
kVA 1.3

Environment, Operating:

Temperature 50°F-90°F (10°C-32°C)
 Rel Humidity 20%-80%
 Max Wet Bulb 78°F (26°C)

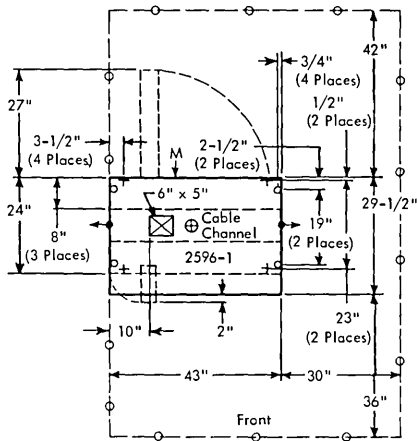
Notes:

*Powered from 2025; or from 3115-0, 3115-2, 3125-0, or 3125-2 when SF #4670 is installed.



2596 CARD READ PUNCH MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	43	29-1/2	55
(cm)	(109)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	36	42	30	0
(cm)	(91)	(107)	(76)	(0)

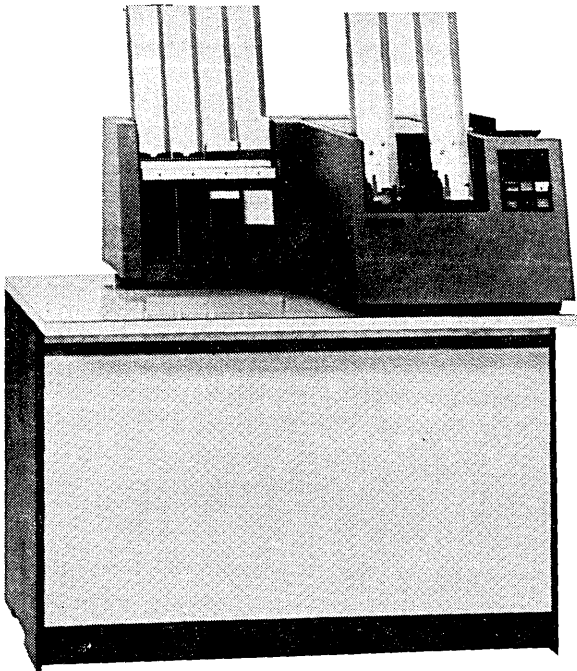
Weight: 575 lb (270 kg)

Heat Output: 3,350 BTU/hr (850 kcal/hr)

Airflow: 200 cfm (6 m³/min)

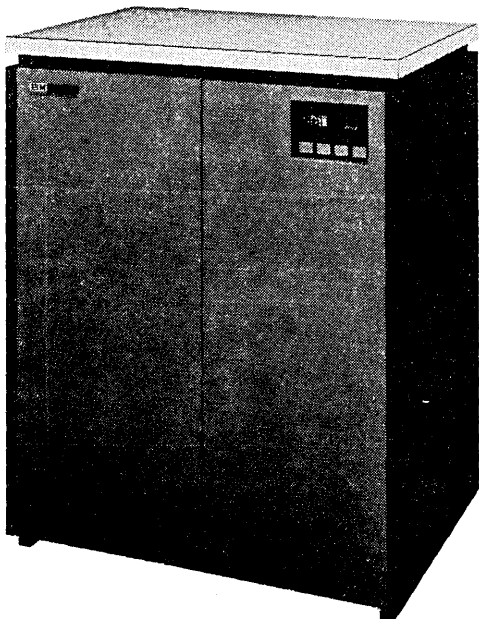
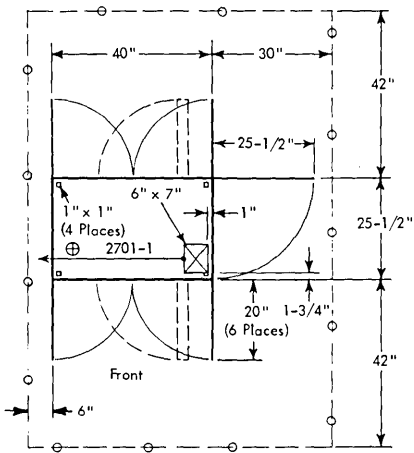
Power Requirements:

kVA	1.4
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A1



2701 DATA ADAPTER UNIT MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	40	25-1/2	40
(cm)	(102)	(65)	(102)

Service Clearances:

	F	R	Rt	L
Inches	42	42	30	6
(cm)	(107)	(107)	(76)	(15)

Weight: 600 lb (280 kg)

Heat Output: 3,000 BTU/hr (760 kcal/hr)

Airflow: 120 cfm (4 m³/min)

Power Requirements:

kVA	1.0
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A3

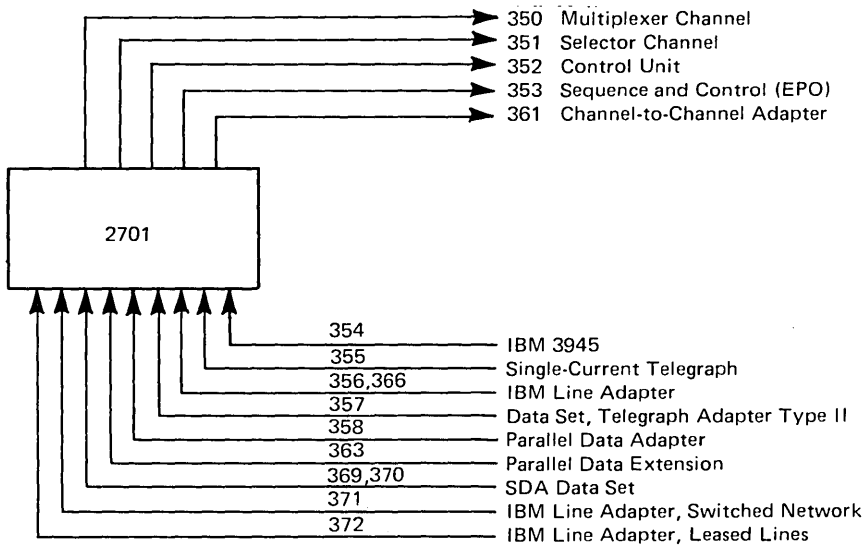
Environment, Operating:

Temperature	50°F-90°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

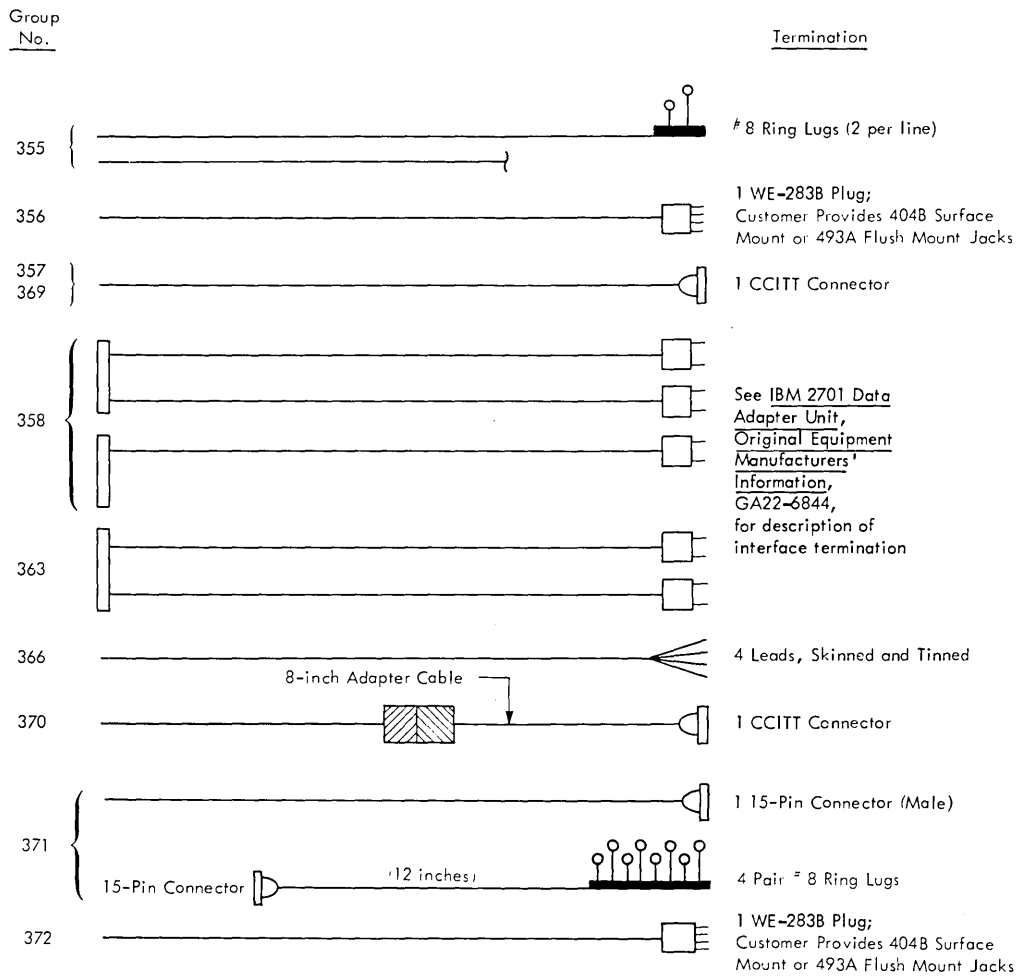
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

2701 DATA ADAPTER UNIT CABLING SCHEMATIC (50 HZ)



Cables for IBM and Non-IBM Devices



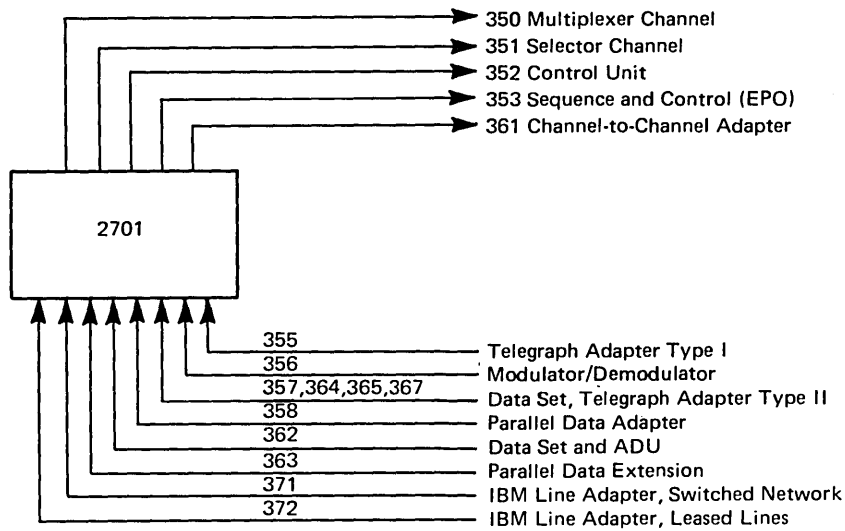
2701 DATA ADAPTER UNIT CABLING SCHEMATIC (50 HZ)

Group No.	No. of Cables	From	To	Max Length (ft)	Notes
350	2	2701	Multiplexer Channel	—	1
351	2	2701	Selector Channel	—	1
352	2	2701	Control Unit	—	1
353	1	2701	Channel	150	2
354	—	IBM 3945	2701	40	5
355	1	Single-Current Telegraph	2701	40	9, 14
356	1	Customer-Owned Communication Lines	2701	40	4, 9
357	—	Data Set	2701	40	6, 9
358	3	Parallel Data Adapter (SF #5500)	2701	40	3, 9, 12
361	2	2701	Channel-to-Channel Adapter	—	1, 7
363	2	Parallel Data Extension (SF #5505)	2701	40	8, 9, 13
366	—	Customer-Owned Communication Lines	2701	40	4, 9
369	1	SDA Type II (GH-2011) or SDA Type II (Datel I)	2701	40	9, 11
370	1	SDA Type I and SDA Type II	2701	40	9, 10
371	1	IBM LA, Switched Network	2701	40	9, 15
372	1	IBM LA, Leased Lines	2701	40	9, 16

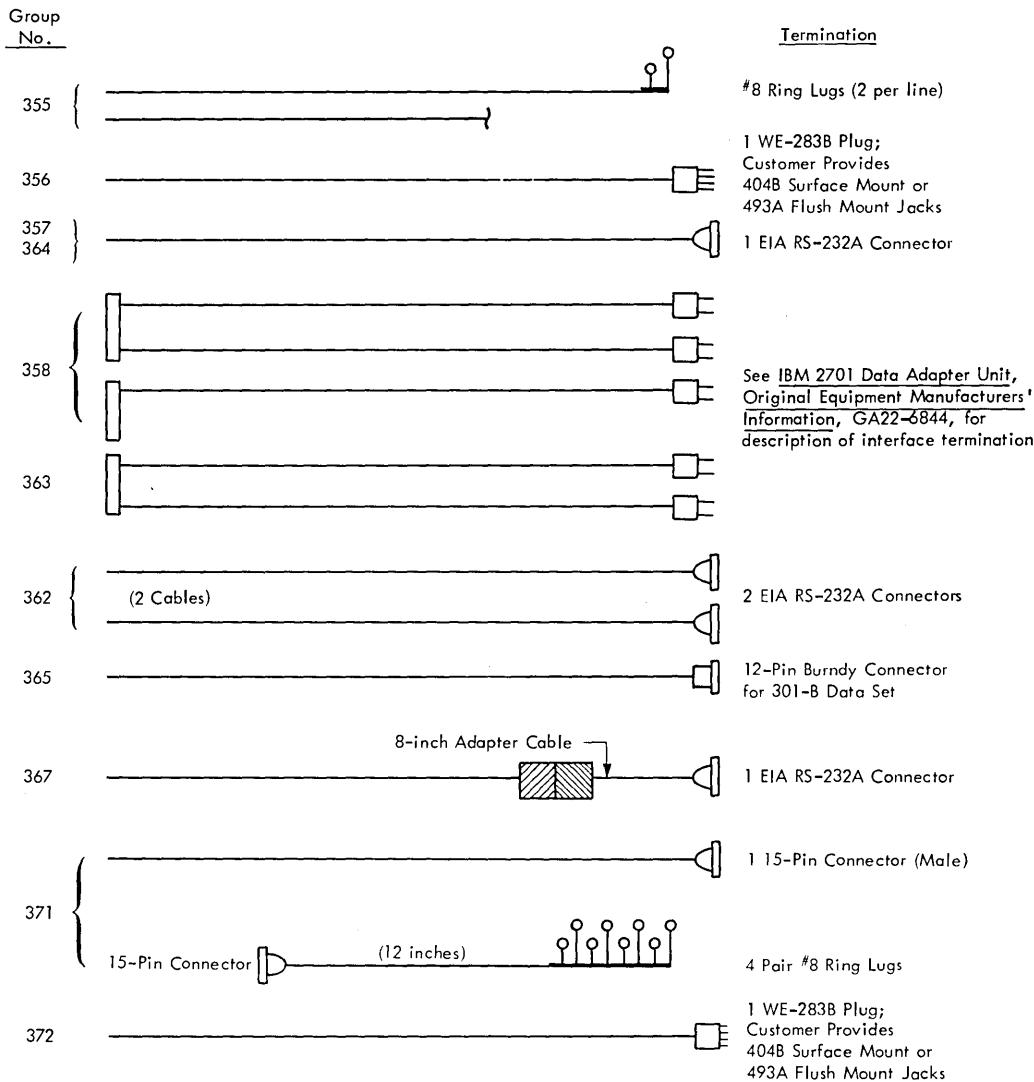
Notes:

- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units to a channel.
- Sequence and control (EPO).
- Order group 358 for SF #5500 (maximum of four).
- Customer-owned communication lines (SF #4636 and #4637). Group 356 is terminated at the customer end with a telephone type, four-prong plug (type 283B). Group 366 is terminated with wires fanned out and leads skinned and tinned for attachment to locally acceptable plug or terminal strip.
- World Trade Telegraph Adapter (SF #2794).
- Use for SF #4656. Use for SF #4640 and #4648 if neither #4636 nor #4637 is used.
- To channel-to-channel adapter (SF #1850).
- Required for first and third extensions only of SF #5505 (maximum of four).
- See "Cables for IBM and Non-IBM Devices" for cable specifications.
- For use with binary synchronous devices such as IBM 3976 Modem, IBM 3977 Modem, Swedish GH-2002B, and other CCITT Version 24 Interface Data Sets and German GH-2011 Model 5, except United Kingdom Datel I Model 5 (see group 369 for these interfaces) SF #2899, #2901, #2970, #2971, #2972, #3462, and #7696 (including attachment from the IBM 4872 Modem).
- For connection with one United Kingdom Datel I Model 5 Interface Data Set or with one German GH-2011 Model 5 Interface Data Set.
- Group 358 is two assemblies with a total of three cables to common-carrier facility.
- Group 363 is one assembly with two cables to common-carrier facility.
- Group 355 is used for SF #2829.
- For use with IBM Line Adapter at 1,200 bps and with Type CBS-DAA to switched network (SF #4782).
- For use with IBM Line Adapter at 1,200 bps to leased lines (SF #4781).

2701 DATA ADAPTER UNIT CABLING SCHEMATIC (60 HZ)



Cables for IBM and Non-IBM Devices

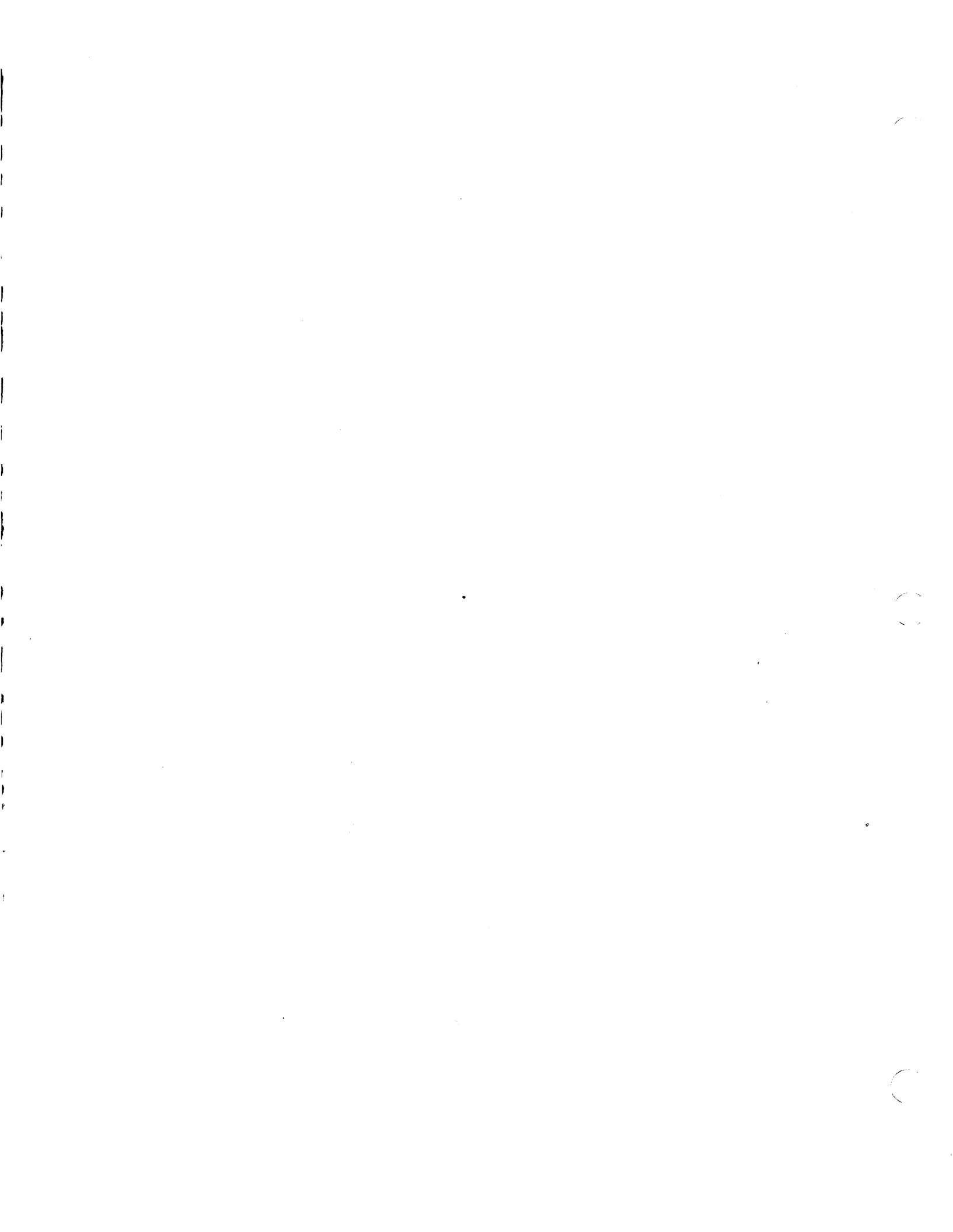


2701 DATA ADAPTER UNIT CABLING SCHEMATIC (60 HZ)

<i>Group No.</i>	<i>No. of Cables</i>	<i>From</i>	<i>To</i>	<i>Max Length (ft)</i>	<i>Notes</i>
350	2	2701	Multiplexer Channel	—	1
351	2	2701	Selector Channel	—	1
352	2	2701	Control Unit	—	1
353	1	2701	Channel	150	2
355	1	Terminal Board	2701	40	5,12
356	1	Customer-Owned Communication Lines	2701	40	4,12
357	1	Data Set	2701	40	6,12
358	3	Parallel Data Adapter (SF # 5500)	2701	40	3,12,13
361	2	2701	Channel-to-Channel Adapter	—	1,7
362	2	Data Set and ADU	2701	40	8,12
363	2	Parallel Data Extension (SF # 5505)	2701	40	9,12,15
364	1	ADU (SDA)	2701	40	10,12
365	1	SDA Type I and SDA Type II	2701	40	11,12
367	1	SDA Type I and SDA Type II	2701	40	12, 14
371	1	IBM LA, Switched Network	2701	40	12, 16
372	1	IBM LA, Leased Lines	2701	40	12, 17

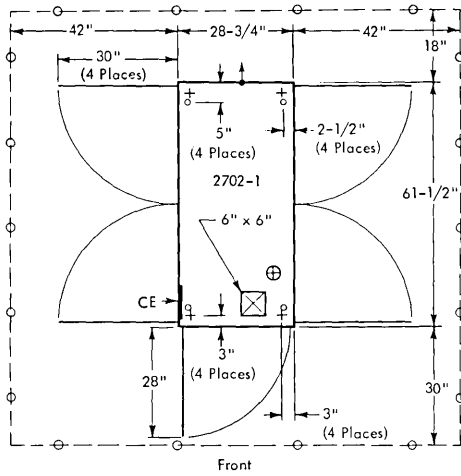
Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units to a channel.
2. Sequence and control (EPO).
3. Order group 358 for SF # 5500 (maximum of four).
4. Customer-owned communication lines (SF #4636 and #4637).
5. Use for Telegraph Adapter Type I (SF # 4633, # 7860, # 7861, and # 7862).
6. Use for SF # 4656 and # 4657. Use for SF # 4640, # 4645, # 4646, # 4648, and # 7885 if neither SF # 1302, # 4636, nor # 4637 is used.
7. To channel-to-channel adapter (SF # 1850).
8. Use when both data set and ADU are required (SF # 4640, # 4645, or # 7885 with SF # 1302), one for each line.
9. Required for first and third extensions only of SF # 5505 (maximum of four).
10. For Synchronous Data Adapter (SF # 1303 and # 1314).
11. For Synchronous Data Adapter (SF # 3461, # 3463, # 7695, and # 7697).
12. See "Cables for IBM and Non-IBM Devices" for cable specifications.
13. Group 358 is two assemblies with a total of three cables to common-carrier facility.
14. For connection to one RS-232, RS-232A, or RS-232B interface data set with SF # 3462, # 3464, # 7696 (including attachment from the IBM 4872 Modem), # 7698, or # 7699.
15. Group 363 is one assembly with two cables to common-carrier facility.
16. For use with IBM Line Adapter at 1,200 bps and with Type CBS-DAA to switched network (SF # 4782).
17. For use with IBM Line Adapter at 1,200 bps to leased lines (SF # 4781).



2702 TRANSMISSION CONTROL MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	28-3/4	61-1/2	60
(cm)	(73)	(156)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	18	42	42
(cm)	(76)	(46)	(107)	(107)

Weight: 900 lb (410 kg)

Heat Output: 5,600 BTU/hr (1 450 kcal/hr)

Airflow: 800 cfm (23 m³/min)

Power Requirements:

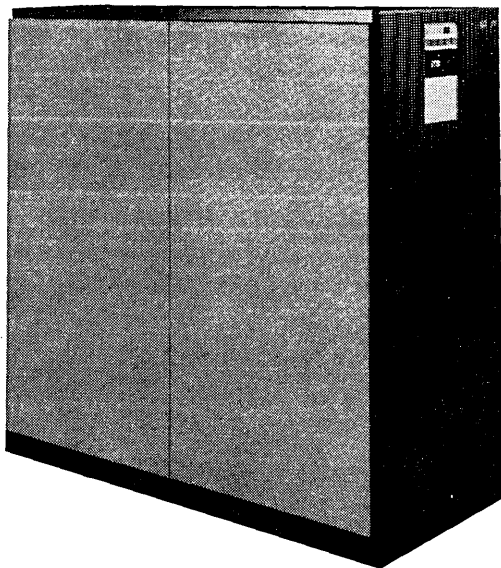
kVA	1.8
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A3

Environment, Operating:

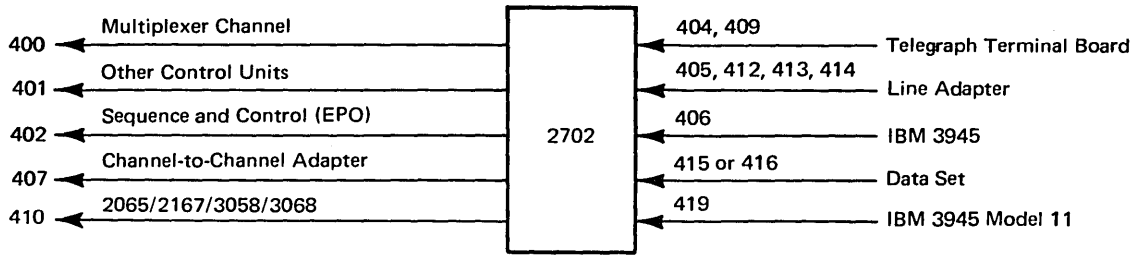
Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

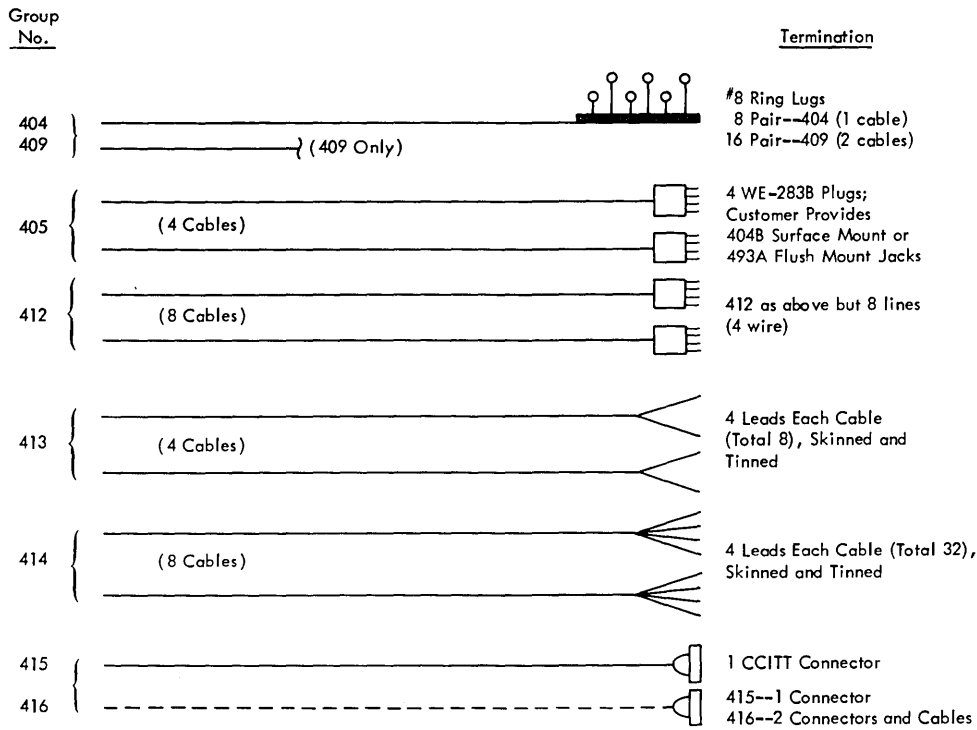
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2702 TRANSMISSION CONTROL CABLING SCHEMATIC (50 HZ)



Cables for IBM and Non-IBM Devices



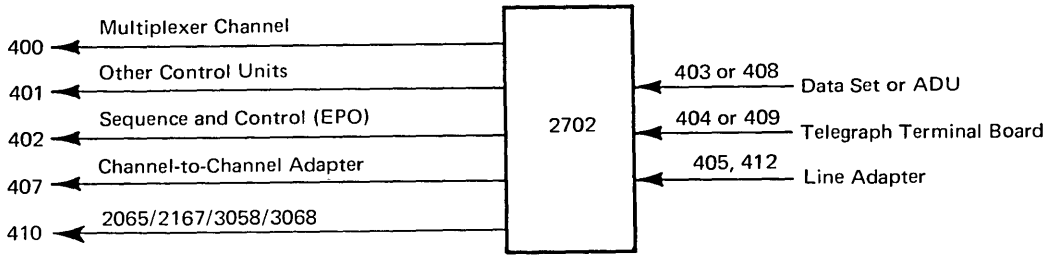
2702 TRANSMISSION CONTROL CABLING SCHEMATIC (50 HZ)

Group No.	No. of Cables	From	To	Max Length (ft)	Notes
400	2	2702	Multiplexer Channel	—	1
401	2	2702	Control Unit	—	1
402	1	2702	Channel	150	2
404	1	Telegraph Terminal Board	2702	40	7, 9, 10
405	4	Customer-Owned Communication Lines	2702	40	4, 7, 11
406	1	IBM 3945	2702	40	12, 17
407	2	2702	Channel-to-Channel Adapter		1, 15
409	2	Telegraph Terminal Board	2702	40	7, 12
410	1	2702	2065/2167/3058/3068	150	16
412	8	Customer-Owned Communication Lines	2702	40	7, 8, 11
413	4	Customer-Owned Communication Lines	2702	40	4, 7, 11
414	8	Customer-Owned Communication Lines	2702	40	7, 8, 11
415	1	Data Set	2702	37	3, 5, 7
416	2	Data Set	2702	37	3, 6, 7
419	1	IBM 3945 Model 11	2702	40	14, 17

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. Use for connection to CCITT interface data sets. Used with SF # 3233.
4. Use for connection to customer-owned communication lines. Used with SF #4612 and #4613. One cable for each four lines.
5. Use for attachment of the last data set if the total number of data sets is odd.
6. One group is used for connection to two data sets. If the total number of data sets is odd, use cable group 415 for connection to the last device.
7. See "Cables for IBM and Non-IBM Devices" for cable specifications.
8. For SF #4634 and #4635 (one group per eight lines).
9. Use for connection to common-carrier telegraph terminal board. Used with SF # 2829.
10. One group is used if the total number of single-current telegraph adapters is less than 8, or 16 or more and less than 24.
11. Groups 405 and 412 are terminated at the customer end with a telephone-type, four-prong plug (type 283B). Groups 413 and 414 are terminated with wires fanned out and leads skinned and tinned for attachment to locally acceptable plug or terminal strip.
12. For SF # 2799 (one group for every four telegraph lines, single or double current).
13. One group is used if the total number of single-current telegraph adapters is 8 or more and less than 16. A second group is used if the total number of telegraph lines is more than 23.
14. For SF # 2831 (one group for every two double-current telegraph lines).
15. To channel-to-channel adapter (SF # 1850).
16. For use with SF #6148 only.
17. Includes a ground jumper assembly that must be attached to the cable and that must be secured to the 2702 frame and to the IBM 3945 ground terminal. The ground jumper is 2 feet (61 cm) longer than its accompanying cable.

2702 TRANSMISSION CONTROL CABLING SCHEMATIC (60 HZ)

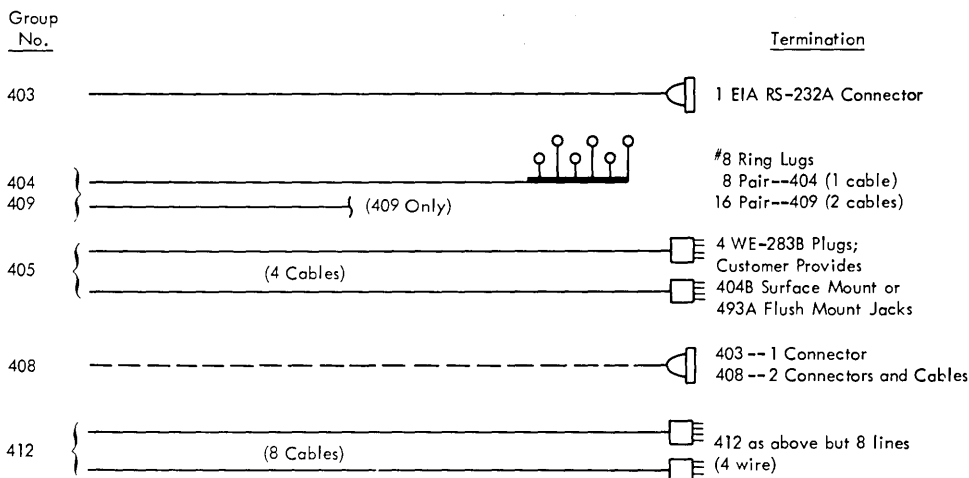


Group No.	No. of Cables	From	To	Max Length (ft)	Notes
400	2	2702	Multiplexer Channel	-	1
401	2	2702	Control Unit	-	1
402	1	2702	Channel	150	2
403	1	Data Set or ADU	2702	37	3, 6, 10
404	1	Telegraph Terminal Board	2702	40	4, 7, 10
405	4	Customer-Owned Communication Lines	2702	40	5, 10
407	2	2702	Channel-to-Channel Adapter	-	1, 12
408	2	Data Set or ADU	2702	37	3, 8, 10
409	2	Telegraph Terminal Board	2702	40	4, 9, 10
410	1	2702	2065/2167/3058/3068	150	13
412	8	Customer-Owned Communication Lines	2702	40	10, 11

Notes:

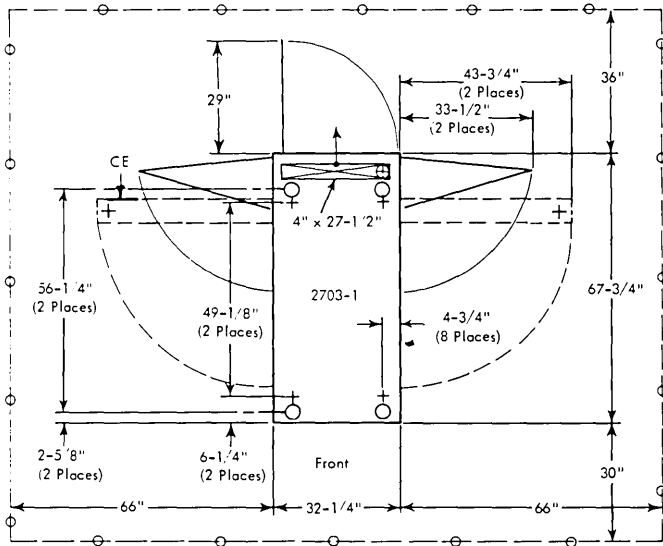
- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
- Sequence and control (EPO).
- Use for connection to EIA RS-232A interface data sets or automatic dialing devices. Used with SF # 1290, # 1311, # 3233, # 7912, # 8045, # 8046, # 8050, and # 8051.
- Use for connection to common-carrier telegraph terminal board. Used with SF # 7895 and # 7911.
- Use for connection to customer-owned communication lines. Used with SF # 4612 and # 4613. One cable for each four lines.
- Use for attachment of the last data set or automatic dialing device if the total number of data sets or automatic dialing devices is odd.
- One group is used if the total number of domestic telegraph lines is less than 8, or 16 or more and less than 24.
- One group is used for connection to two data sets or two automatic dialing devices. If the total number of data sets or automatic dialing devices is odd, use cable group 403 for connection to the last device.
- One group is used if the total number of domestic telegraph lines is 8 or more and less than 16. A second group is used if the total number of telegraphic lines is more than 23.
- See "Cables for IBM and Non-IBM Devices" for cable specifications.
- For SF # 4634 and # 4635 (one group per eight lines).
- To channel-to-channel adapter (SF # 1850).
- For use with SF # 6148 only.

Cables for IBM and Non-IBM Devices



2703 TRANSMISSION CONTROL MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	32-1/4	67-3/4	70-3/4
(cm)	(82)	(172)	(180)

Service Clearances:

	F	R	Rt	L
Inches	30	36	66	66
(cm)	(76)	(91)	(168)	(168)

Weight: 2,200 lb (1 000 kg)

Heat Output: 11,750 BTU/hr (3 000 kcal/hr)

Airflow: 2,000 cfm (57 m³/min)

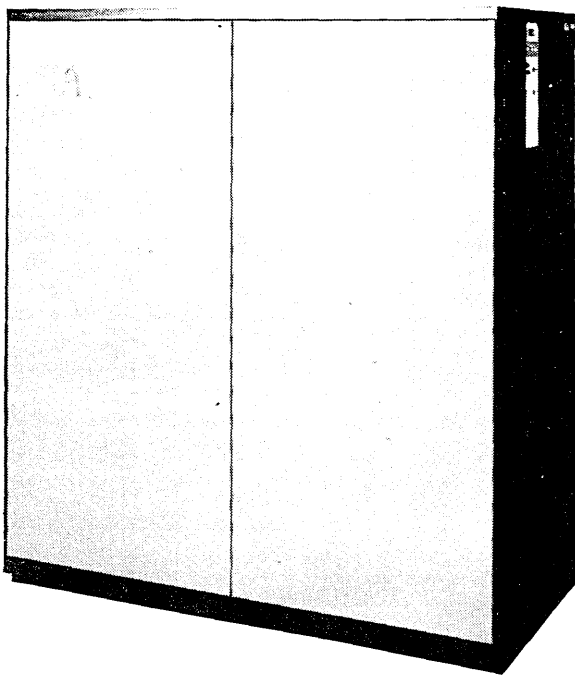
Power Requirements:	50 Hz	60 Hz
kVA	4.6	4.3
Phases	3	3
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D2	

Environment, Operating:

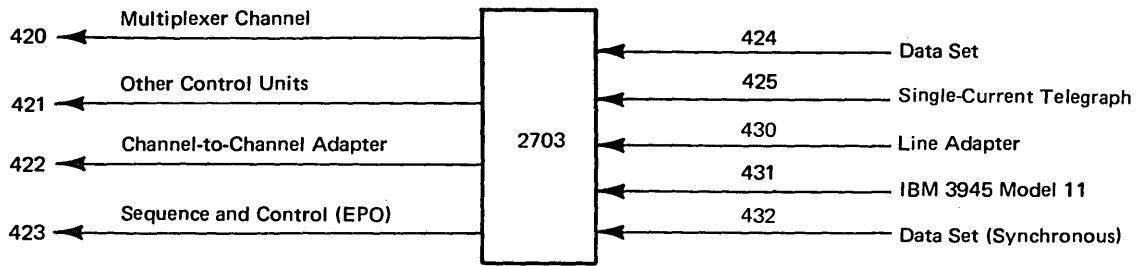
Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

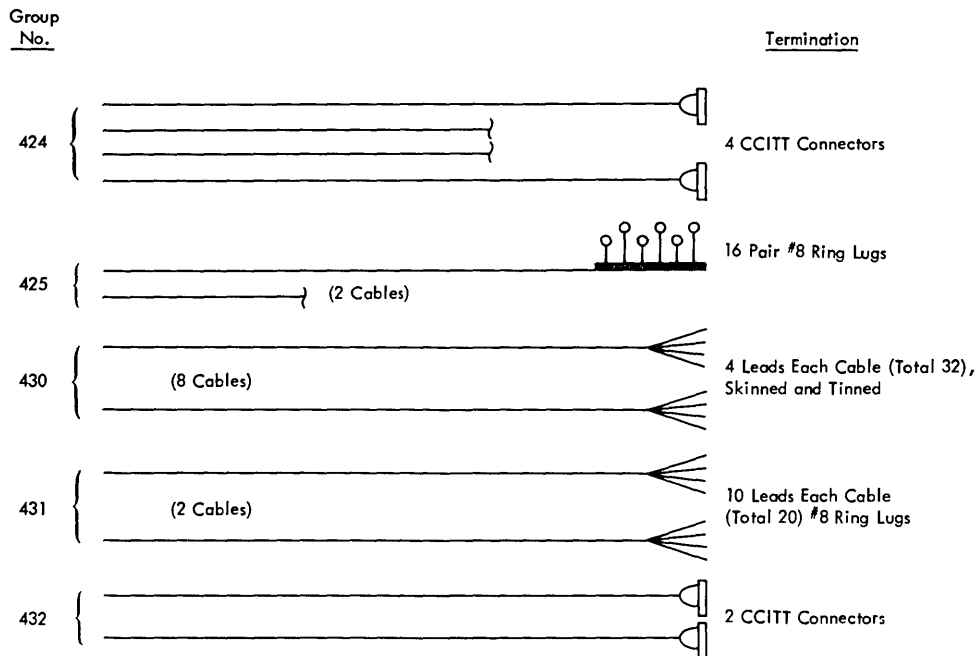
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2703 TRANSMISSION CONTROL CABLING SCHEMATIC (50 HZ)



Cables for IBM and Non-IBM Devices



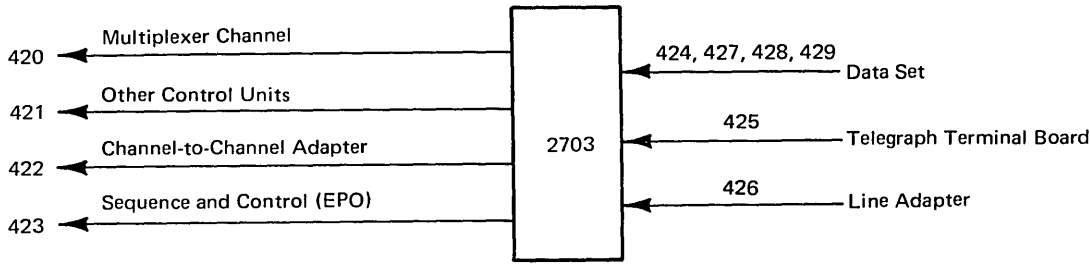
2703 TRANSMISSION CONTROL CABLING SCHEMATIC (50 HZ)

<i>Group No.</i>	<i>No. of Cables</i>	<i>From</i>	<i>To</i>	<i>Max Length (ft)</i>	<i>Notes</i>
420	2	2703	Multiplexer Channel	—	1
421	2	2703	Control Unit	—	1
422	2	2703	Channel-to-Channel Adapter	—	1, 11
423	1	2703	Channel	150	2
424	4	Data Set	2703	40	3, 4
425	2	Single-Current Telegraph Line Set	2703	40	4, 10
430	8	Customer-Owned Communication Lines	2703	40	4, 5, 6
431	2	IBM 3945 Model 11 Telegraph, Double-Current Line Set	2703	40	4, 7
432	2	Data Set (Synchronous)	2703	40	4, 8, 9

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. Use with data line set (SF #3205 and #3206). Use one for each group of four data sets. Line termination may be via IBM 3976 Model 1, 2, or 3 or IBM 3977 Model 1 or 2.
4. See "Cables for IBM and Non-IBM Devices" for cable specifications.
5. For SF #4686, #4687, and #4688.
6. Group 430 is terminated with wires fanned out and leads skinned and tinned for attachment to locally acceptable plug or terminal strip. Each group contains eight lines.
7. For SF #2831 and #2832. Each group contains four lines.
8. For SF #2902 and #2974. Each group contains two data sets.
9. Line termination may be via IBM 3976 Model 3 or IBM 3977 Model 1 or 2.
10. For SF #2829 (one group provides for one each of SF #2829 and #2830). Each group contains 16 lines.
11. To channel-to-channel adapter (SF #1850).

2703 TRANSMISSION CONTROL CABLING SCHEMATIC (60 HZ)

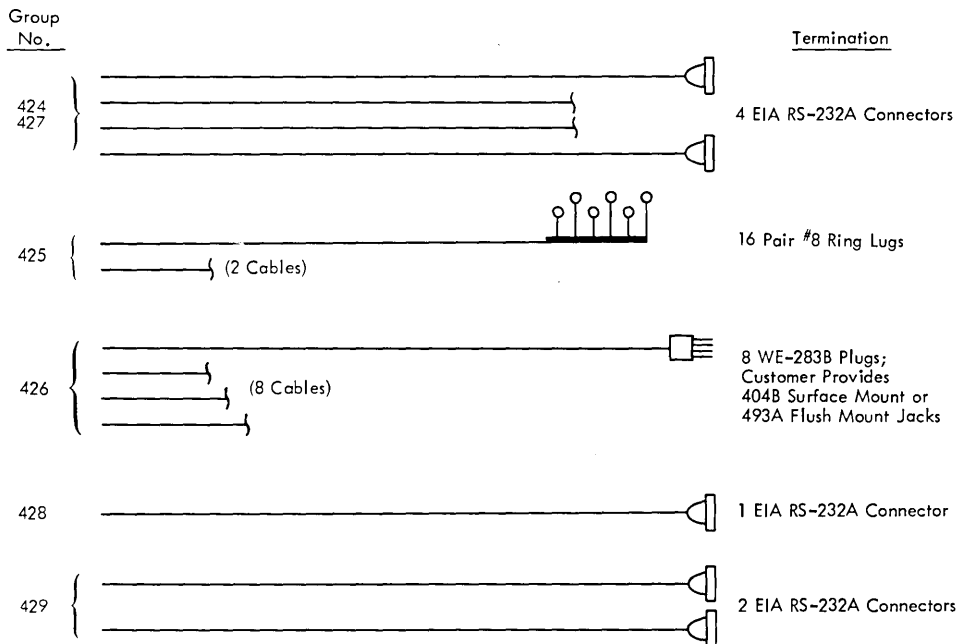


Group No.	No. of Cables	From	To	Max Length (ft)	Notes
420	2	2703	Multiplexer Channel	-	1
421	2	2703	Control Unit	-	1
422	2	2703	Channel-to-Channel Adapter	-	1,9
423	1	2703	Channel	150	2
424	4	Data Set	2703	40	3,4
425	2	Telegraph Terminal Board	2703	40	4,8
426	8	Customer-Owned Communication Lines	2703	40	4,10
427	4	Data Set (Autocall)	2703	40	4,6
428	1	Data Set (To 2712)	2703	40	4,5
429	2	Data Set (Synchronous)	2703	40	4,7

Notes:

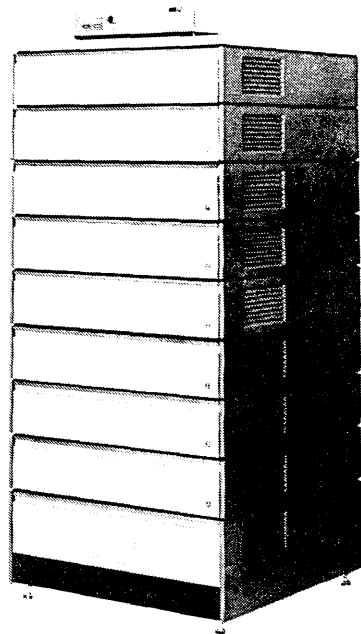
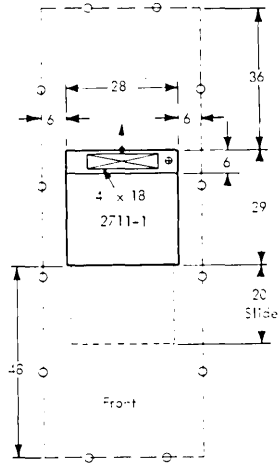
- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
- Sequence and control (EPO).
- Use with data line set (SF # 3205 and # 3206). Use one for each group of four data sets.
- See "Cables for IBM and Non-IBM Devices" for cable specifications.
- For SF # 8047 and # 8057 (one group provides for each of SF # 8047 and # 8048, or one each of SF # 8057 and # 8058).
- For SF # 1340 and # 1341. Use one for each group of data sets.
- For SF # 7710, including attachment from the IBM 4872 Modem. Use one for each group of data sets.
- For SF # 7897 (one group provides for one each of SF # 7897 and # 7898). Each group contain 16 lines.
- To channel-to-channel adapter (SF # 1850).
- For SF # 4686, # 4687, and # 4688. Each group contains eight lines.

Cables for IBM and Non-IBM Devices



2711 LINE ADAPTER UNIT MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	28	29	64*
(cm)	(71)	(74)	(163*)

Service Clearances:

	F	R	Rt	L
Inches	48	36	6	6
(cm)	(122)	(91)	(15)	(15)

Weight: 727 lb* (330 kg*)

Heat Output: 1,600 BTU/hr (410 kcal/hr)

Airflow: 100 cfm (3 m³/min)

Power Requirements:

kVA	0.5
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A5

Environment, Operating:

Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

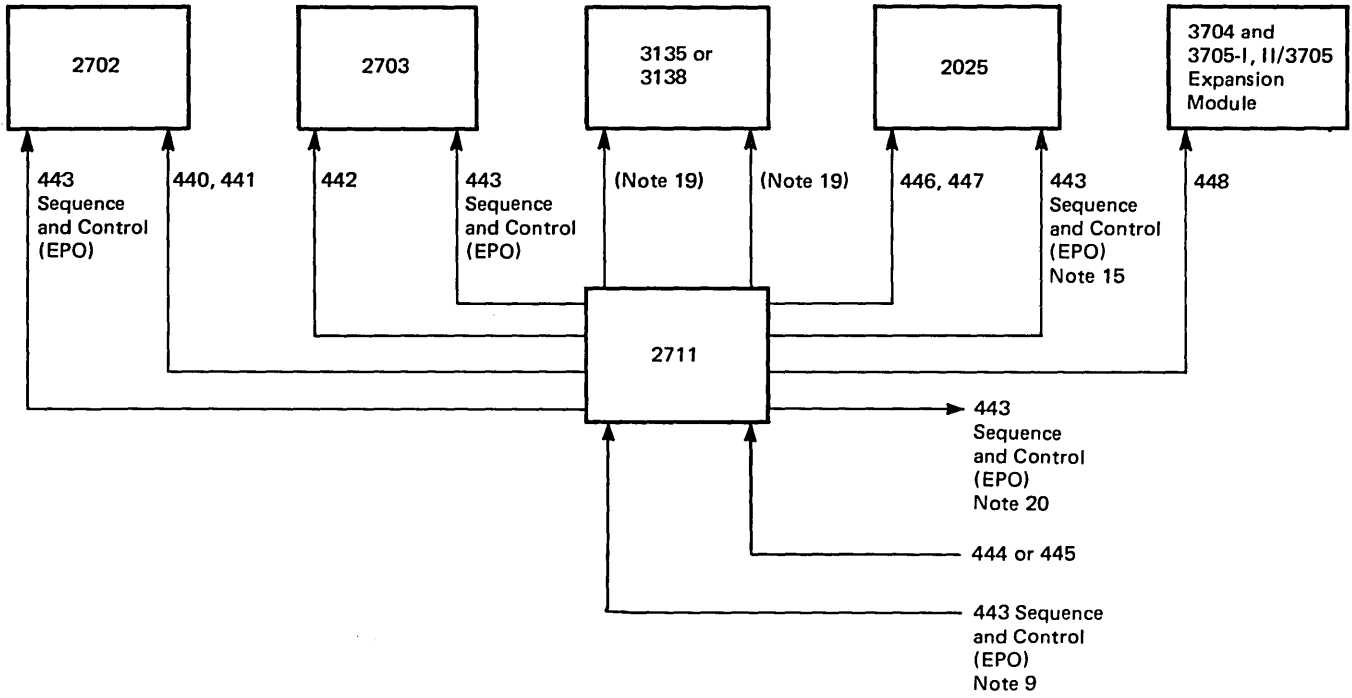
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

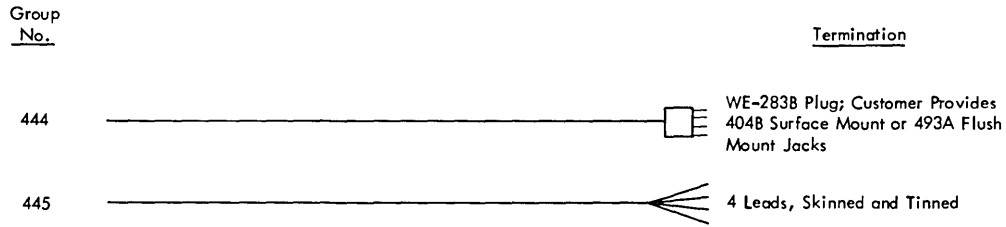
* Figure represents 2711 maximum configuration. The basic unit (Power Supply Module, "A" Line Adapter Module, and Control Module) is 22" (56 cm) high and weighs a maximum of 251 lb (120 kg). Add 6" (15 cm) and a maximum of 68 lb (31 kg) for each additional Line Adapter Module (maximum of seven additional Line Adapter Modules). Weight varies depending on type of line adapters installed.

If only one or two Line Adapter Modules are used, consideration should be given to placing the unit on a stand or table. (This will avoid a possible safety hazard of having a low unit in the middle of the floor.)

2711 LINE ADAPTER UNIT CABLING SCHEMATIC (50 HZ)



Cables for IBM and Non-IBM Devices



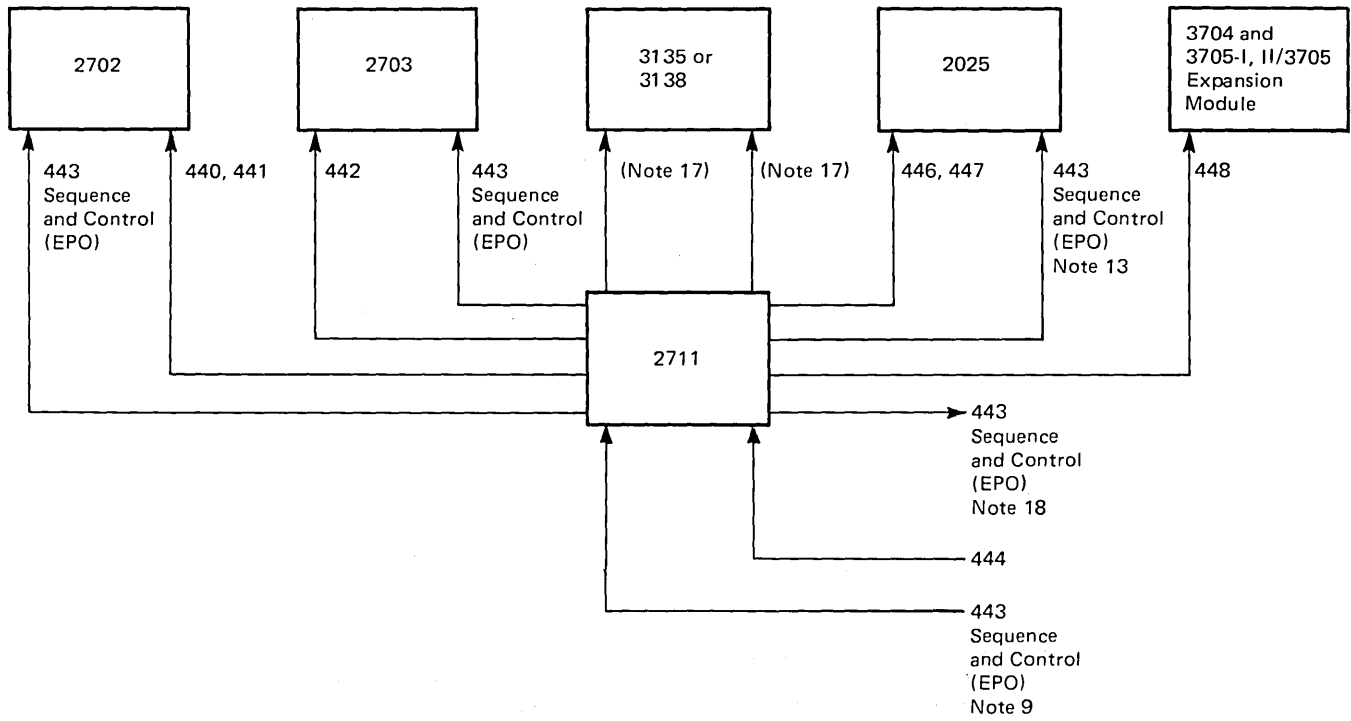
2711 LINE ADAPTER UNIT CABLING SCHEMATIC (50 HZ)

Group No.	No. of Cables	From	To	Max Length (ft) (Note 10)	Notes
440	1	2711	2702	40	1, 5
441	2	2711	2702	37	1, 6
442	4	2711	2703	40	2, 7
443	1	2711	2025 (Power Entry)/2702/2703/ 2711/3705-I, II	40	3, 9, 15, 20
444	1	Common-Carrier Facility	2711	40	4, 8, 11, 12, 13
445	1	Common-Carrier Facility	2711	40	4, 8, 11, 12
446	4	2711	2025 (Signal Entry)	40	14, 15, 16
447	2	2711	2025 (Signal Entry)	40	14, 15, 16
448	2	2711	3704, 3705-I, II/3705 Expansion Module	45	17, 18

Notes:

1. Cable from data set to 2702 may be used, if long enough.
2. Cable from data set to 2703 may be used, if long enough.
3. Sequence and control (EPO); one group only for each 2711.
4. One group for each line adapter feature.
5. One group for each single or odd multiple 2702 data set lines being converted (maximum of one per 2702).
6. One group for each pair of 2702 data set lines being converted.
7. One group for each group of four 2703 data set lines being converted.
8. See "Cables for IBM and Non-IBM Devices" for cable specifications.
9. When more than one 2711 is used in the same system, the sequence and control (EPO) for each additional 2711 is routed to the next 2711; that is, 2711 #3 to 2711 #2, 2711 #2 to 2711 #1, and 2711 #1 to 2025/2702/2703/3705-I, II.
10. If 2711 with one or two line adapter modules is placed on a stand or table, the distance from the floor to the bottom of the 2711 must be added to the "X" length.
11. Group 444 is terminated at the customer end with a telephone-type, four-prong plug (type 283B). Group 445 is terminated with wires fanned out and leads skinned and tinned for attachment to locally acceptable plug or terminal strip.
12. See *Planning and Installation of a Data Communications System Using IBM Line Adapters*, GA24-3435, for options to connect IBM Shared Line Adapters to common-carrier facility.
13. For 60-Hz machines, see *Planning and Installation of a Data Communications System Using IBM Line Adapters*, GA24-3435, for options to connect IBM Shared Line Adapters (SF #4641 through #4644 and/or #4691 through #4694) to common-carrier facility. Consideration must be given to the use of IBM 4/1 Terminator (SF #6350) or the installation of multiple type 404B jacks (one for each subchannel plus termination plug).
14. Cable from data sets to 2025 may be used, if long enough. See "System/360 Model 25 Cabling Schematic," GC19-0001, for cable group numbers.
15. See "System/360 Model 25, 2025 Processing Unit" specifications page, GC19-0001, for proper cable entry location.
16. SF #7401 on 2025 group 447; SF #7401 and #7402 on 2025 group 446; SF #7401, #7402, and #7403 on 2025 groups 446 and 447. Maximum of four of each group (446 and 447).
17. Cable from data set to 3704 or 3705-I, II/3705 Expansion Module may be used, if long enough.
18. One group is required for each pair or for each single 3704 or 3705-I, II/3705 Expansion Module data set line(s) being converted.
19. See "System/370 Model 135 Cabling Schematic" or "System/370 Model 138 Cabling Schematic" for cable group numbers.
20. Sequence and control (EPO); group 443 routed to next device when 2711 is used with 3704.

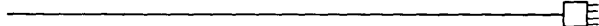
2711 LINE ADAPTER UNIT CABLING SCHEMATIC (60 HZ)



Cables for IBM and Non-IBM Devices

Group
No.

444



Termination

WE-283B Plug; Customer Provides
404B Surface Mount or 493A
Flush Mount Jacks

2711 LINE ADAPTER UNIT CABLING SCHEMATIC (60 HZ)

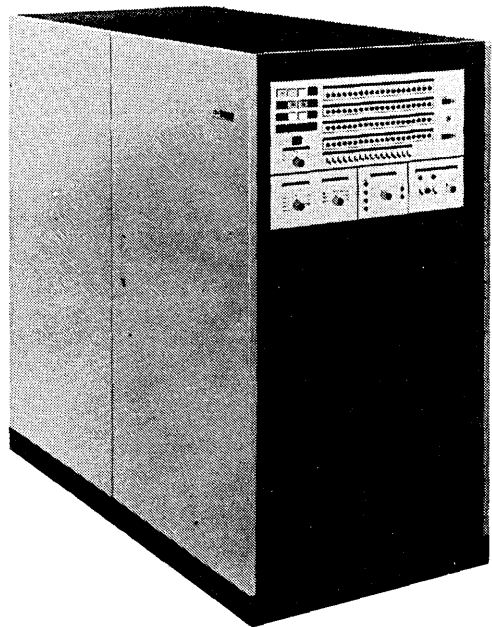
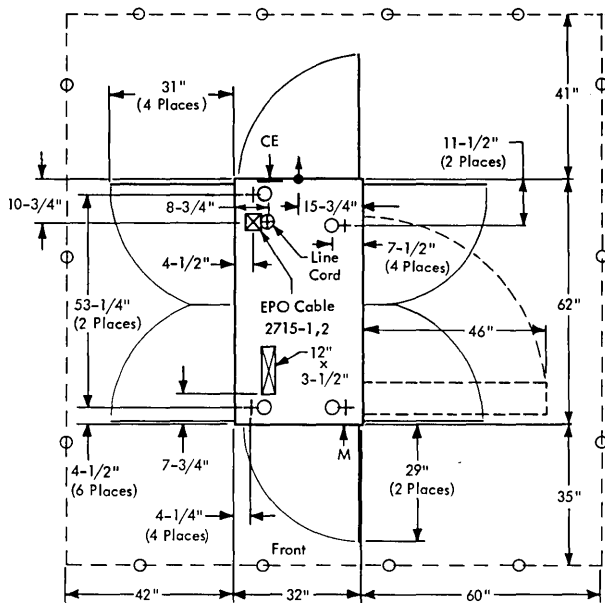
Group No.	No. of Cables	From	To	Max Length (ft) (Note 10)	Notes
440	1	2711	2702	40	1, 5
441	2	2711	2702	37	1, 6
442	4	2711	2703	40	2, 7
443	1	2711	2025 (Power Entry)/2702/2703/ 2711/3705-I, II	40	3, 9, 13, 18
444	1	Common-Carrier Facility	2711	40	4, 8, 11
446	4	2711	2025 (Signal Entry)	40	12, 13, 14
447	2	2711	2025 (Signal Entry)	40	12, 13, 14
448	2	2711	3704, 3705-I, II/3705 Expansion Module	45	15, 16

Notes:

1. Cable from data set to 2702 may be used, if long enough.
2. Cable from data set to 2703 may be used, if long enough.
3. Sequence and control (EPO); one group for each 2711.
4. One group for each line adapter feature.
5. One group for each single or odd multiple 2702 data set lines being converted (maximum of one per 2702).
6. One group for each pair of 2702 data set lines being converted.
7. One group for each group of four 2703 data set lines being converted.
8. See "Cables for IBM and Non-IBM Devices" for cable specifications.
9. When more than one 2711 is used in the same system, the sequence and control (EPO) for each additional 2711 is routed to the next 2711; that is, 2711 #3 to 2711 #2, 2711 #2 to 2711 #1, and 2711 #1 to 2025/2702/2703/3705-I, II.
10. If 2711 with one or two line adapter modules is placed on a stand or table, the distance from the floor to the bottom of the 2711 must be added to the "X" length.
11. See *Planning and Installation of a Data Communications System Using IBM Line Adapters, GA24-3435*, for options to connect IBM Shared Line Adapters (SF #4641 through #4644 and/or #4691 through #4694) to common-carrier facility. Consideration must be given to the use of the IBM 4/1 Terminator (SF #6350) or the installation of multiple type 404B jacks (one for each subchannel plus termination plug).
12. Cable from data sets to 2025 may be used, if long enough. See "System/360 Model 25 Cabling Schematic," GC22-6820, for cable group numbers.
13. See "System/360 Model 25, 2025 Processing Unit" specifications page, GC22-6820, for proper cable entry location.
14. SF #7401 on 2025 group 447; SF #7401 and #7402 on 2025 group 446; SF #7401, #7402, and #7403 on 2025 groups 446 and 447. Maximum of four of each group (446 and 447).
15. Cable from data set to 3704 or 3705-I, II/3705 Expansion Module may be used, if long enough.
16. One group is required for each pair or for each single 3704 or 3705-I, II/3705 Expansion Module data set line(s) being converted.
17. See "System/370 Model 135 Cabling Schematic" or "System/370 Model 138 Cabling Schematic" for cable group numbers.
18. Sequence and control (EPO); group 443 routed to next device when 2711 is used with 3704.

2715 TRANSMISSION CONTROL UNIT MODELS 1 AND 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	32	62	60*
(cm)	(81)	(157)	(152*)

Service Clearances:

	F	R	Rt	L
Inches	35	41	60	42
(cm)	(89)	(104)	(152)	(107)

Weight: 1,350 lb (620 kg)

Heat Output: 9,600 BTU/hr (2 450 kcal/hr)

Airflow: 240 cfm (7 m³/min)

Power Requirements:

kVA	3.5
Phases	3
Plug	R&S, FS3730
Connector	R&S, FS3914
Receptacle	R&S, FS3744
Power Cord Style	D2

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

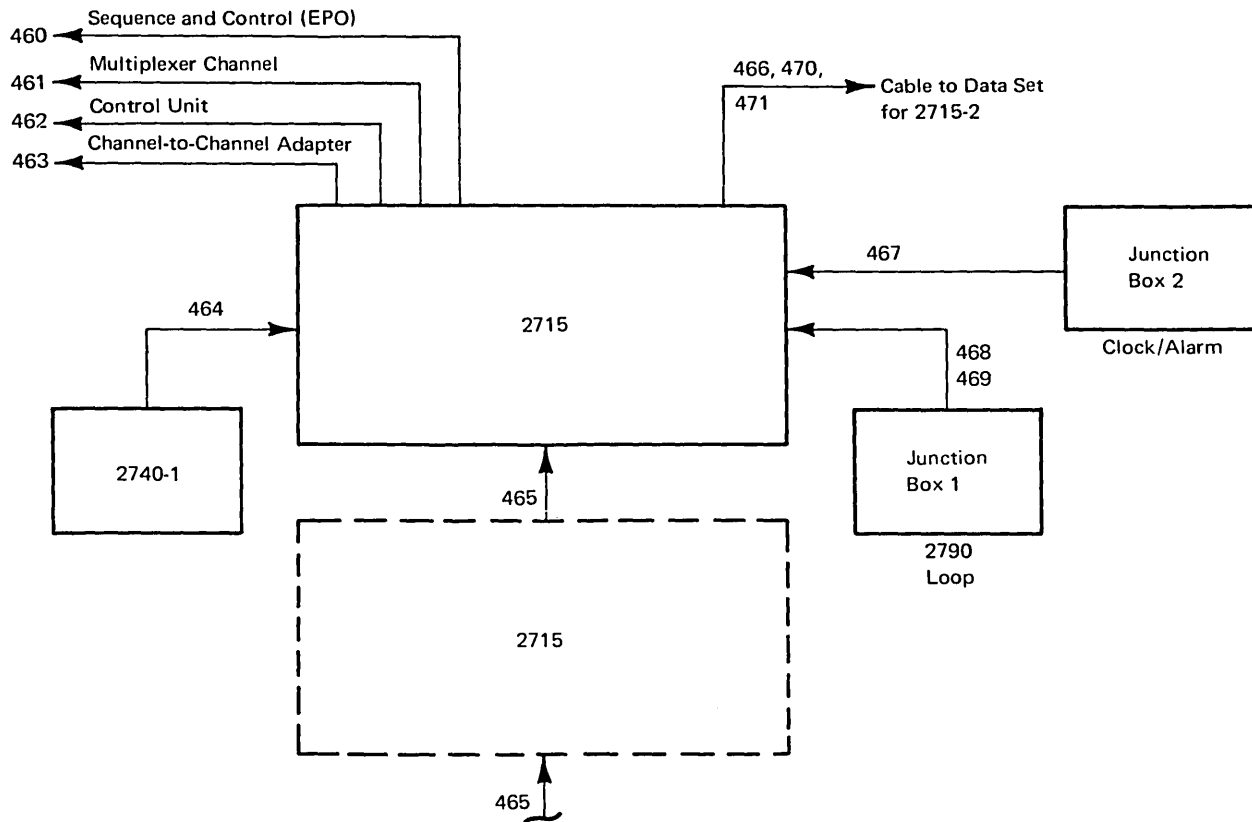
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Add 4" (10 cm) to this dimension for shipping height.

2715 TRANSMISSION CONTROL UNIT CABLING SCHEMATIC (50 HZ)

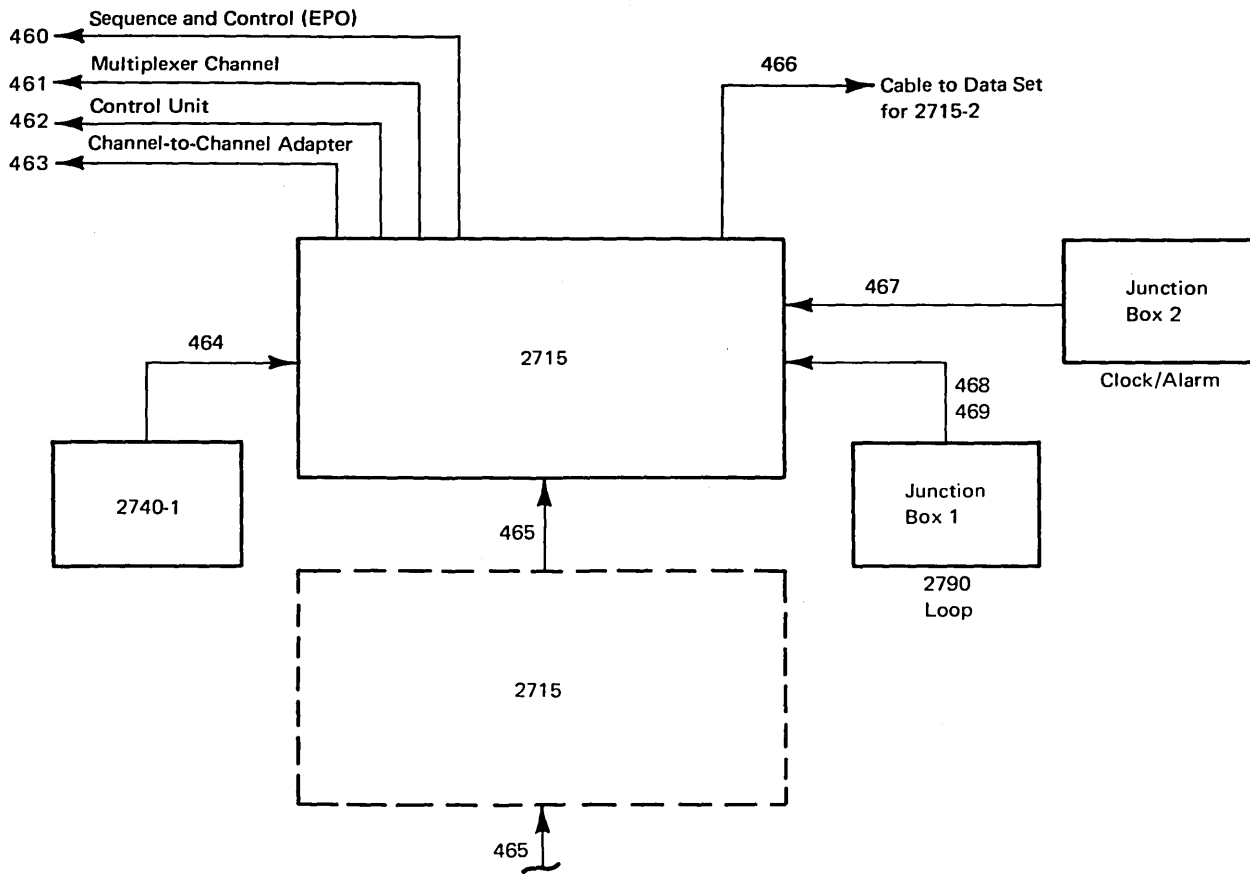


Group No.	No. of Cables	From	To	Max Length (ft)	Notes
460	1	2715	Channel	150	2
461	2	2715	Multiplexer Channel	—	1
462	2	2715	Control Unit	—	1
463	2	2715	Channel-to-Channel Adapter	—	1
464	1	2740-1	2715	40	—
465	1	2715	2715	50	3
466	1	2715	Data Set	40	4
467	1	Junction Box 2	2715	40	5
468	1	Junction Box 1	2715	40	6
469	1	Junction Box 1	2715	40	6
470	1	2715	United Kingdom Data Set	—	7
471	2	2715	All Data Sets, Except United Kingdom	—	—

Notes:

- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
- Sequence and control (EPO).
- When two 2715s are cabled together for backup by group 465 in an IBM 2790 Data Communication System loop circuit, each 2715 requires its own cabling to its associated multiplexer channel, data set, 2740, and clock or alarm device. When three 2715s are cabled together, the center 2715 cannot be attached to the loop circuit. It is backup for the other two 2715s. Each of the three 2715s requires cabling to its associated devices.
- For 2715 Model 2 only.
- For clock or alarm circuits.
- For connection to IBM 2790 Data Communication System loop circuits. Group 468 is for installation using telephone type WE-283B plugs (Western Electric plug). Group 469 is for installation using terminal box.
- An isolation box may be required for attachment to GPO modem. Group 470 is then connected between 2715 and isolation box.

2715 TRANSMISSION CONTROL UNIT CABLING SCHEMATIC (60 HZ)



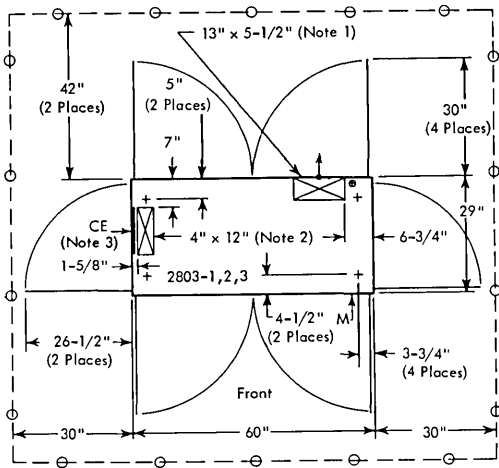
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
460	1	2715	Channel	150	2
461	2	2715	Multiplexer Channel	-	1
462	2	2715	Control Unit	-	1
463	2	2715	Channel-to-Channel Adapter	-	1
464	1	2740-1	2715	40	-
465	1	2715	2715	50	3
466	1	2715	Data Set	40	4
467	1	Junction Box 2	2715	40	5
468	1	Junction Box 1	2715	40	6
469	1	Junction Box 1	2715	40	6

Notes:

- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
- Sequence and control (EPO).
- When two 2715s are cabled together for backup by group 465 in an IBM 2790 Data Communication System loop circuit, each 2715 requires its own cabling to its associated multiplexer channel, data set, 2740, and clock or alarm device. When three 2715s are cabled together, the center 2715 cannot be attached to the loop circuit. It is backup for the other two 2715s. Each of the three 2715s requires cabling to its associated devices.
- For 2715 Model 2 only.
- For clock or alarm circuits.
- For connection to IBM 2790 Data Communication System loop circuits. Group 468 for installation using telephone type WE-283B plugs (Western Electric plug). Group 469 is for installation using terminal box.

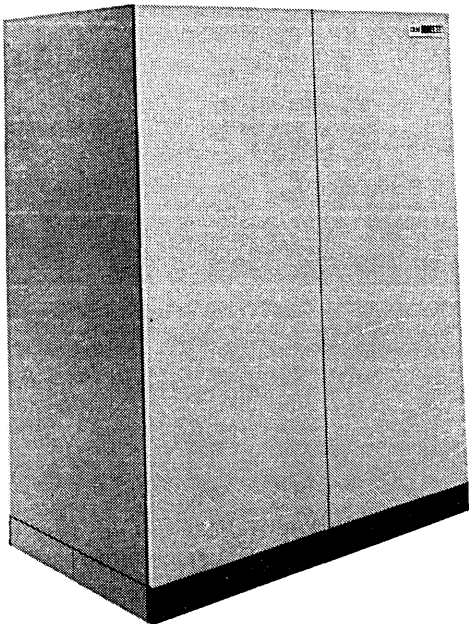
2803 TAPE CONTROL MODELS 1, 2, AND 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Notes:

1. All power and tape unit signal cables.
2. All signal cables for channel.
3. Model 2 serial numbers 5X,XXX only.
4. For cabling information, see 2403.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	29	60
(cm)	(152)	(74)	(152)

Service Clearances:

	F	R	Rt	L
Inches	42	42	30*	30
(cm)	(107)	(107)	(76*)	(76)

Weight:	Models 1 and 3	Model 2
lb	1,050	1,250
(kg)	(480)	(570)

Heat Output:

BTU/hr	4,500	7,700
(kcal/hr)	(1 150)	(1 950)

Airflow:

cfm	500	700
(m ³ /min)	(15)	(20)

Power Requirements:**

kVA	1.7	2.4
Phases	3	3
Plug	R&S, SC7328	
Connector	R&S, SC7428	
Receptacle	R&S, SC7324	
Power Cord Style	E2	

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

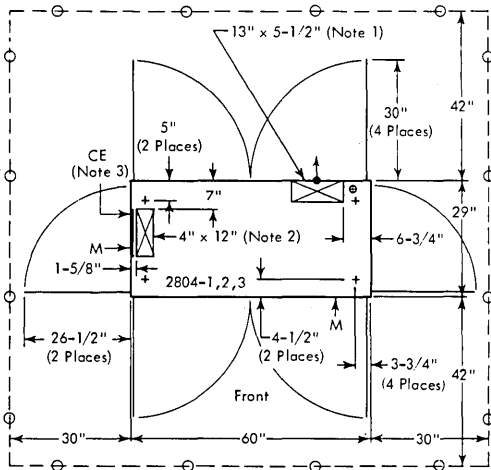
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

- * When not abutted to another tape unit or tape control unit.
- ** Supplies power to tape units. For planning purposes, maximum continuous operating current with eight tape units attached will not exceed 40 A per phase.

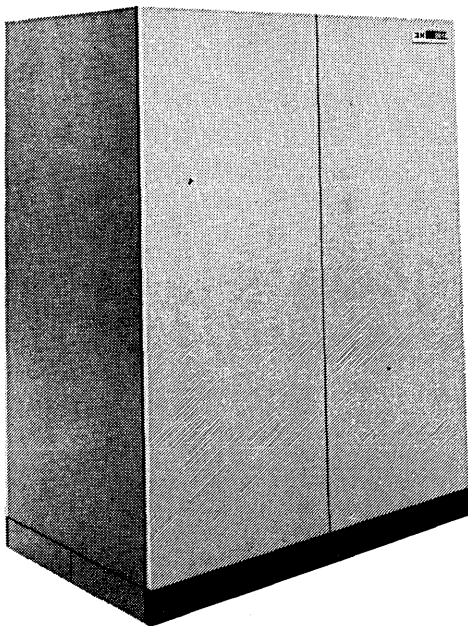
2804 TAPE CONTROL MODELS 1, 2, AND 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Notes:

1. All power and tape unit signal cables.
2. All signal cables for channel.
3. Model 2 only.
4. For cabling information, see 2403.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	29	60
(cm)	(152)	(74)	(152)

Service Clearances:

	F	R	Rt	L
Inches	42	42	30*	30
(cm)	(107)	(107)	(76*)	(76)

Weight:	Models 1 and 3	Model 2
lb	1,200	1,550
(kg)	(550)	(710)

Heat Output:

BTU/hr	6,800	10,500
(kcal/hr)	(1 750)	(2 650)

Airflow:

cfm	700	900
(m ³ /min)	(20)	(26)

Power Requirements:**

kVA	2.2	3.4
Phases	3	3
Plug	R&S, SC7328	
Connector	R&S, SC7428	
Receptacle	R&S, SC7324	
Power Cord Style	E2	

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

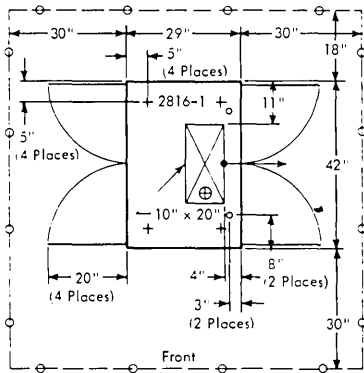
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

- * When not abutted to another tape unit or tape control unit.
- ** Supplies power to tape units. For planning purposes, maximum continuous operating current with eight tape units attached will not exceed 40 A per phase.

2816 SWITCHING UNIT MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	29	42	60
(cm)	(74)	(107)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	18	30	30
(cm)	(76)	(46)	(76)	(76)

Weight: 500 lb (230 kg)

Heat Output: 1,500 BTU/hr (380 kcal/hr)

Airflow: 280 cfm (8 m³/min)

Power Requirements:

kVA	1.2
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A8

Environment, Operating:

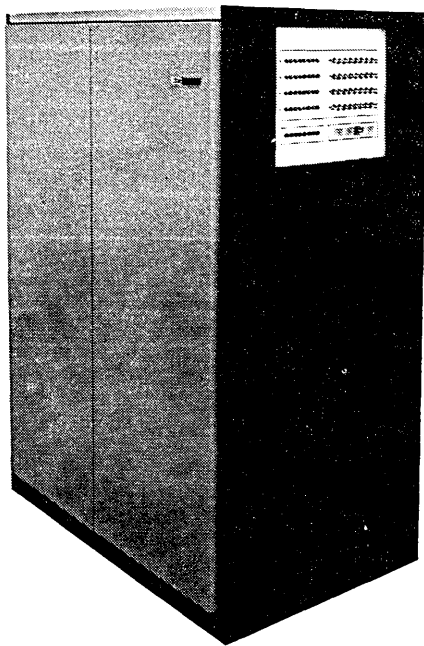
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

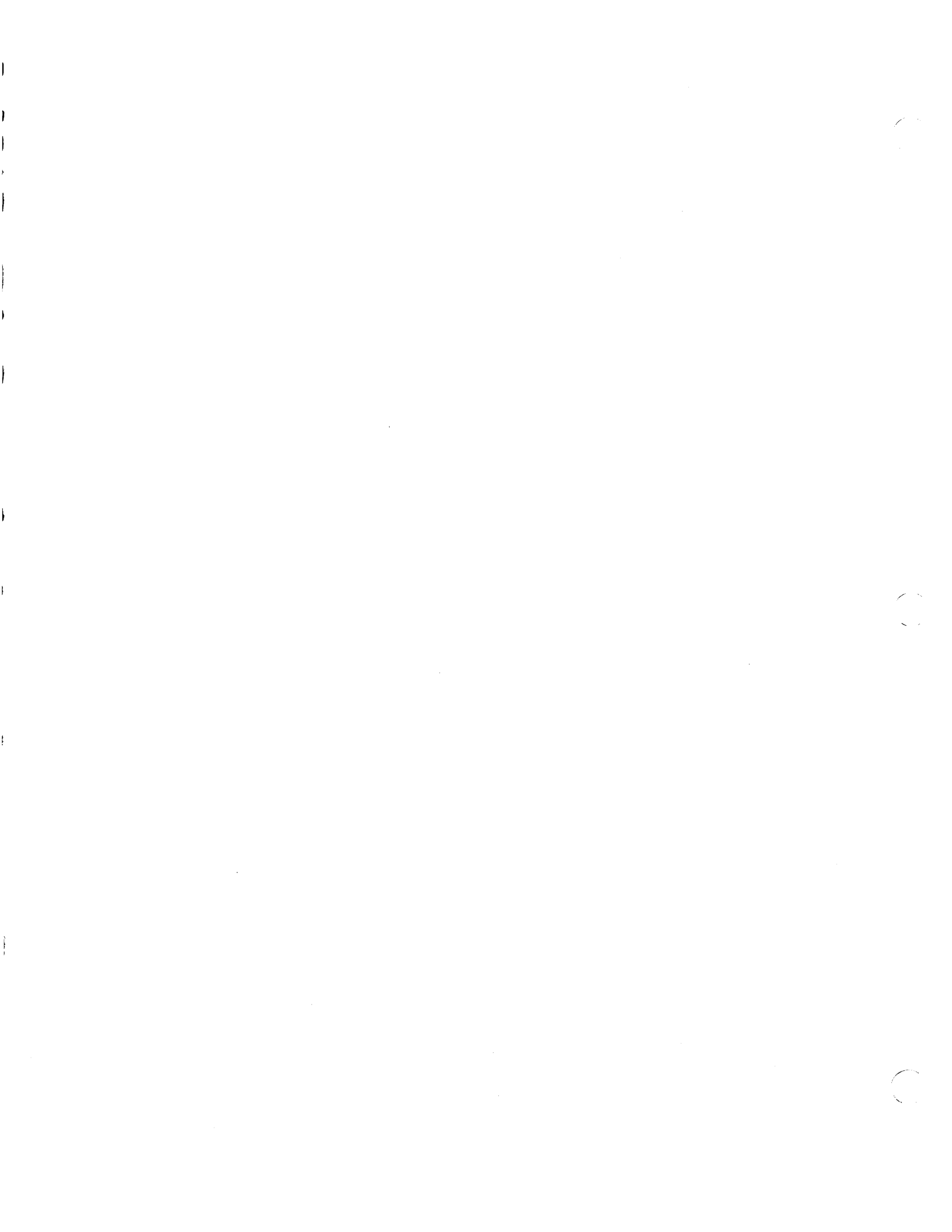
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

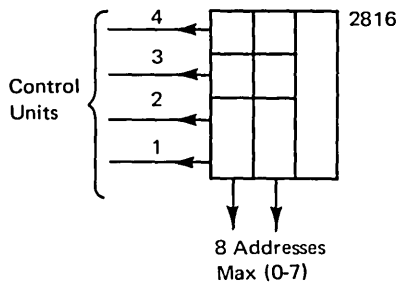
Notes:

Switch and display panel should be visible from and accessible to operator's position.

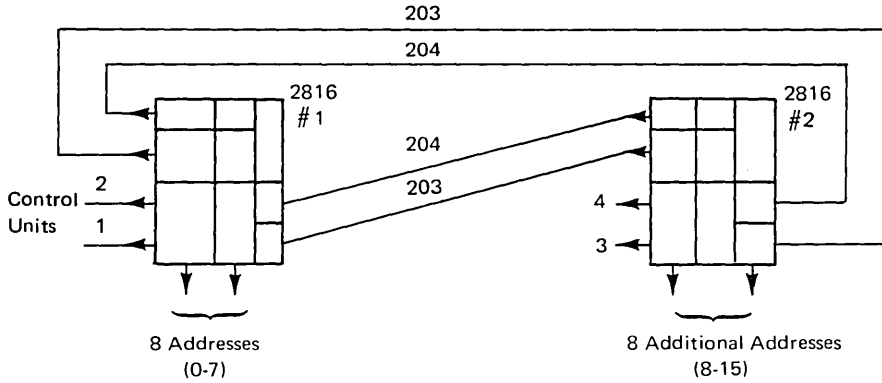




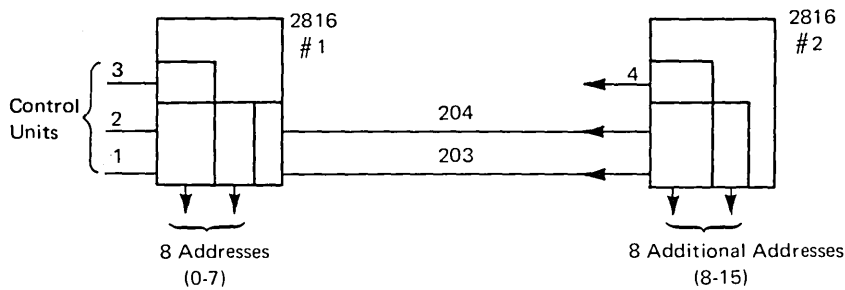
SWITCHING UNIT CABLING



Single Unit
4 x 8 Switch



Two Units
4 x 16 Switch



Two Units
2 - 1 x 4 Switches
1 - 2 x 16 Switch

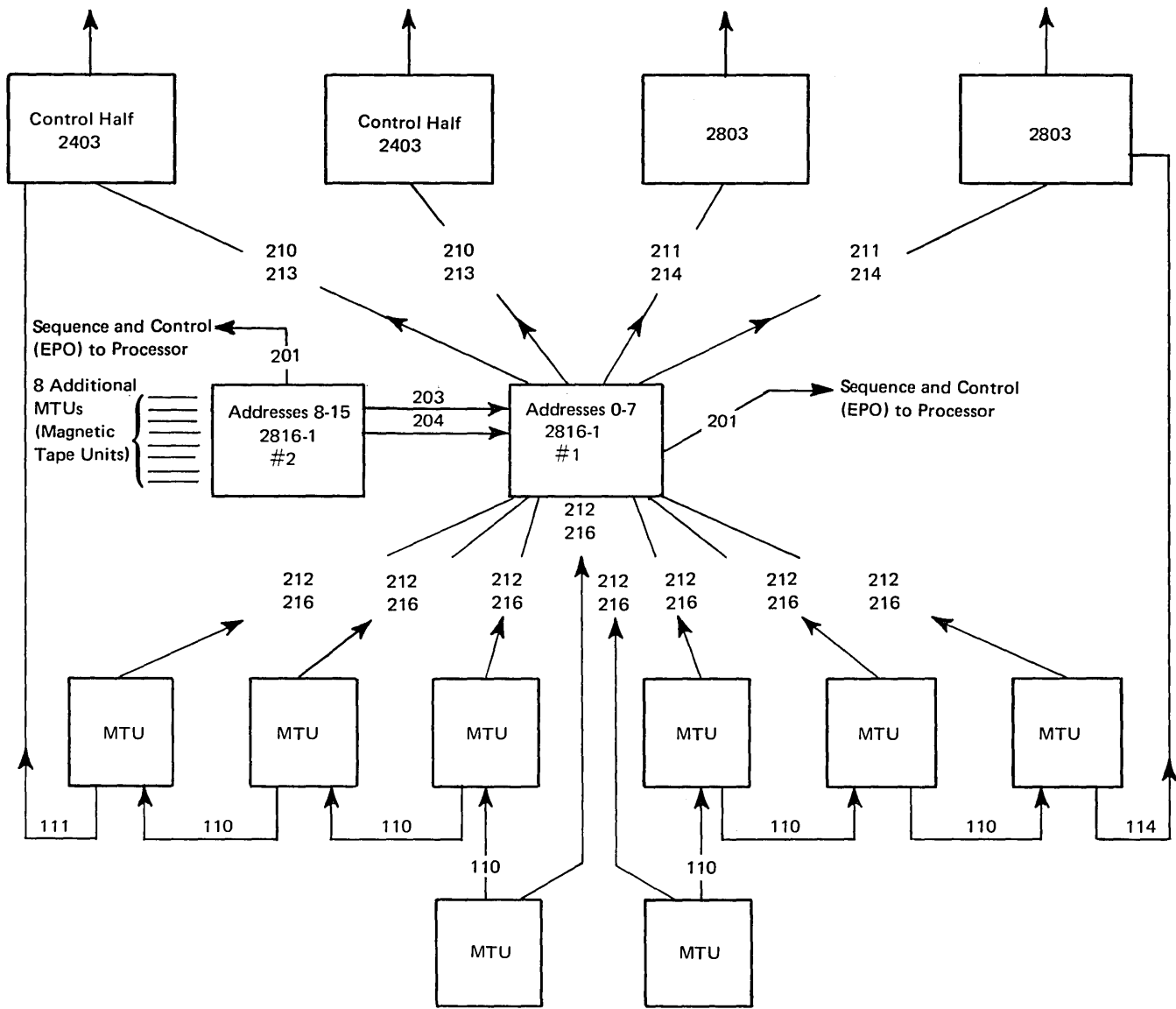
Feature Description
for Preceding Block Diagrams

2286	1052	
2285	1051	
	1050	(SF #6393)
		(SF #6392)

Cables from the 2816s to the control units should be routed from the 2816 containing the lowest address that the control unit is to address.

Exception: For third and fourth control units addressing over eight addresses, the cables should route from the 2816 containing address 8 (as shown above).

2816 SWITCHING UNIT CABLING SCHEMATIC



2816 SWITCHING UNIT CABLING SCHEMATIC

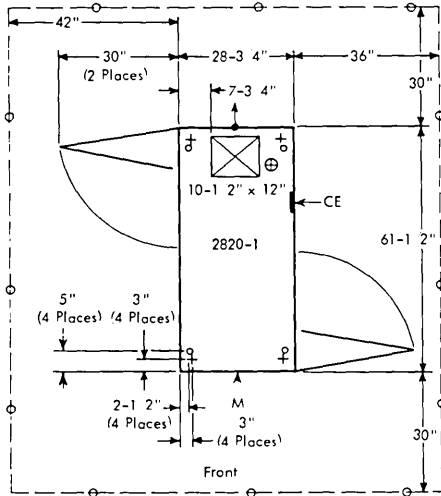
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
110	1	MTU	MTU	—	3,7
111	1	MTU	2403	—	3
114	1	MTU	2803	—	3,7
201	1	2816	System/360 or System/370 Processor	150	4
203	4	2816-1 #2	2816-1 #1	20	2
204	4	2816-1 #2	2816-1 #1	20	2
210	3	2816-1 #1	2403	—	1
211	3	2816-1 #1	2803	—	1
212	1	MTU (Models 1-3)	2816	—	1,6,8
213	1	2816-1 #1	2403	—	5
214	1	2816-1 #1	2803	—	5
216	1	MTU (Models 4-6)	2816	—	1,6,8

Notes:

1. Longest group number 210 or 211 plus longest group number 212 or 216 may not exceed 100 feet. (Group 203 must also be added when used.)
2. Group number 203 for control 1, 2816-1 #2; group number 204 for control 2 (for SF #6392 and #6393).
3. Power cables.
4. Sequence and control (EPO); one per system for each 2816.
5. Required for sixteen address feature (SF #7185) in addition to basic cable group.
6. Use group 212 when control units attach 800-bpi drives; use group 216 when control units attach 1,600-bpi drives.
7. Total number of MTUs powered from any given control unit must not exceed eight (maximum of four drives per power cable string). For operation at 195 V, 50 Hz, the total number of 2420s powered from a 2803 must not exceed six (maximum of three drives per power cable string).
8. Cable groups 212 and 216 use the same cable number but different terminators. To obtain the replacement terminator required for a model change, order the cable group specified for the model on the cable order form or through the IBM Branch Office on an MES (Miscellaneous Equipment Specification) and state "Terminator Only."

2820 STORAGE CONTROL MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	28-3/4	61-1/2	60
(cm)	(73)	(156)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	30	36	42
(cm)	(76)	(76)	(91)	(107)

Weight: 750 lb (350 kg)

Heat Output: 3,300 BTU/hr (840 kcal/hr)

Airflow: 550 cfm (16 m³/min)

Power Requirements:

kVA	1.25
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D2

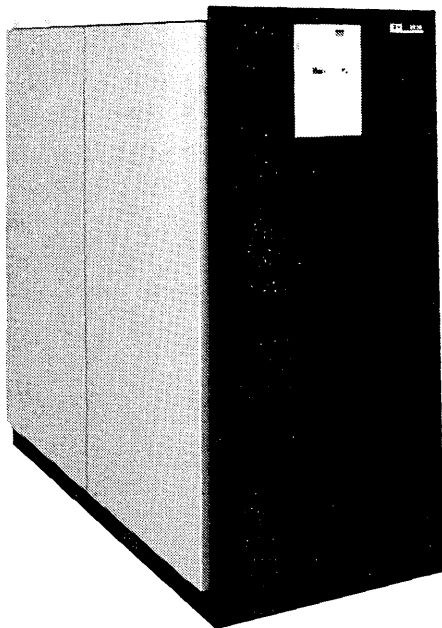
Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

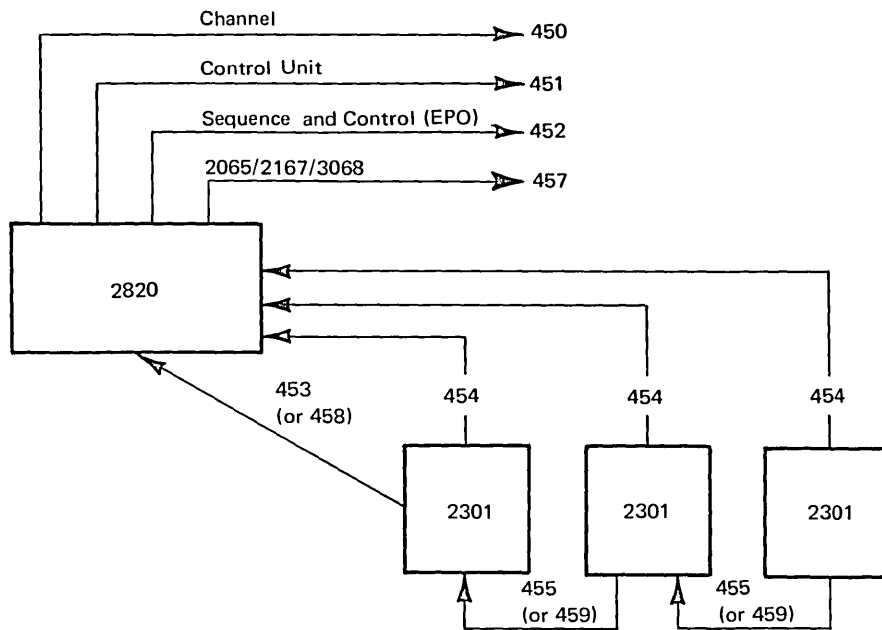
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2820 AND 2301 CABLING SCHEMATIC



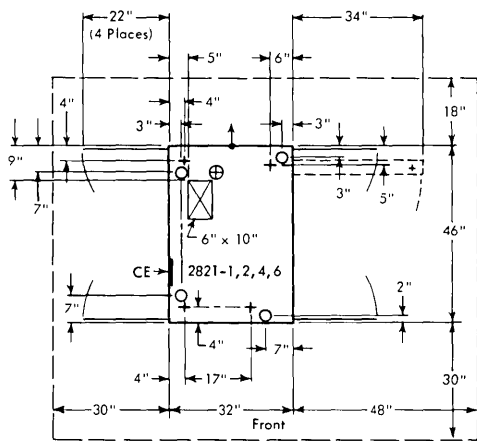
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
450	2	2820	Channel	—	1, 4, 6
451	2	2820	Control Unit	—	1, 4, 6
452	1	2820	Channel	150	2, 6
453 (or 458)	3	2301	2820	—	3
454	1	2301	2820	130	—
455 (or 459)	3	2301	2301	—	3
457	1	2820	2065/2167/3068	150	5

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units; maximum of 20 feet to 2820. The 2820 should be first on the channel.
2. Sequence and control (EPO).
3. Length of group 453 (or 458) plus 455 (or 459) may not exceed 130 feet. For 50-Hz machines, use group number in parentheses.
4. Length of group 451 plus 450 may not exceed 20 feet for two 2820s.
5. For SF #6148 only.
6. One group required for each channel when SF #8170 is installed. Maximum length applies to each channel.

2821 CONTROL UNIT MODELS 1, 2, 4*, AND 6

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS*

Dimensions:

	F	S	H
Inches	32	46	60
(cm)	(81)	(117)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	18	48	30
(cm)	(76)	(46)	(122)	(76)

Weight:	Model 1	Model 2	Model 4	Model 6
lb	1,250	1,250	1,250	1,150
(kg)	(570)	(570)	(570)	(530)

Heat Output:

BTU/hr	3,850	3,000	3,850	3,300
(kcal/hr)	(980)	(760)	(980)	(840)

Airflow:

cfm	500	400	500	400
(m ³ /min)	(15)	(12)	(15)	(12)

Power Requirements:

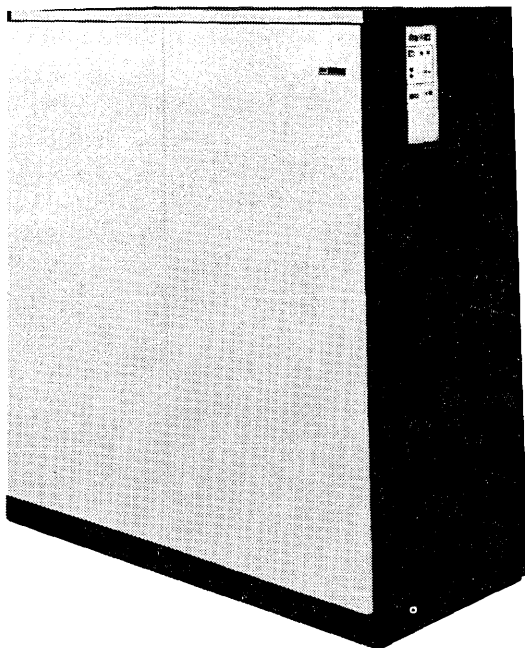
kVA	1.4	1.1	1.4	1.2
Phases	3	3	3	3
Plug	R&S, FS3760			
Connector	R&S, FS3934			
Receptacle	R&S, FS3754			
Power Cord Style	D1			

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

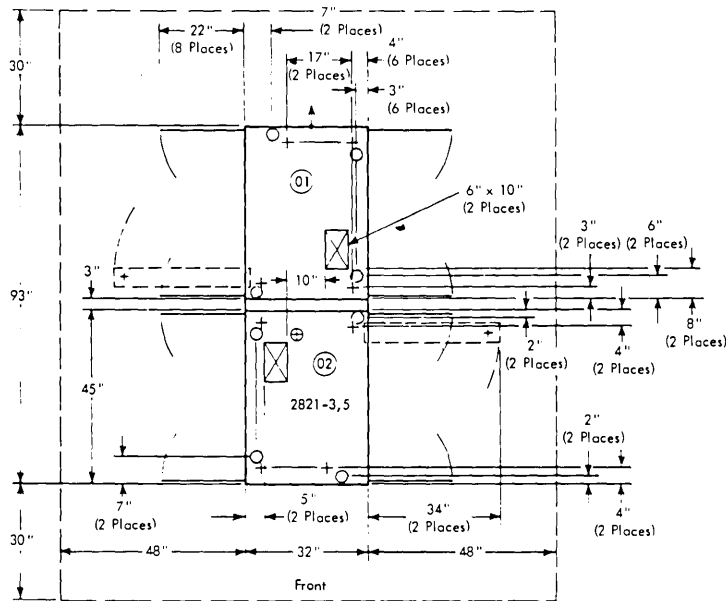
Notes:

* 2821 Model 4 used on System/360 only.



2821 CONTROL UNIT MODELS 3 AND 5

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Model	Frame	Weight lb (kg)
3	01	1,250 (570)
	02	925 (420)
5	01	1,000 (460)
	02	1,175 (540)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	32	93	60
(cm)	(81)	(236)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	30	48	48
(cm)	(76)	(76)	(122)	(122)

Weight	Model 3	Model 5
lb	2,175	2,175
(kg)	(990)	(990)

Heat Output:

BTU/hr	5,200	6,000
(kcal/hr)	(1 350)	(1 550)

Airflow:

cfm	900	1,000
(m ³ /min)	(26)	(29)

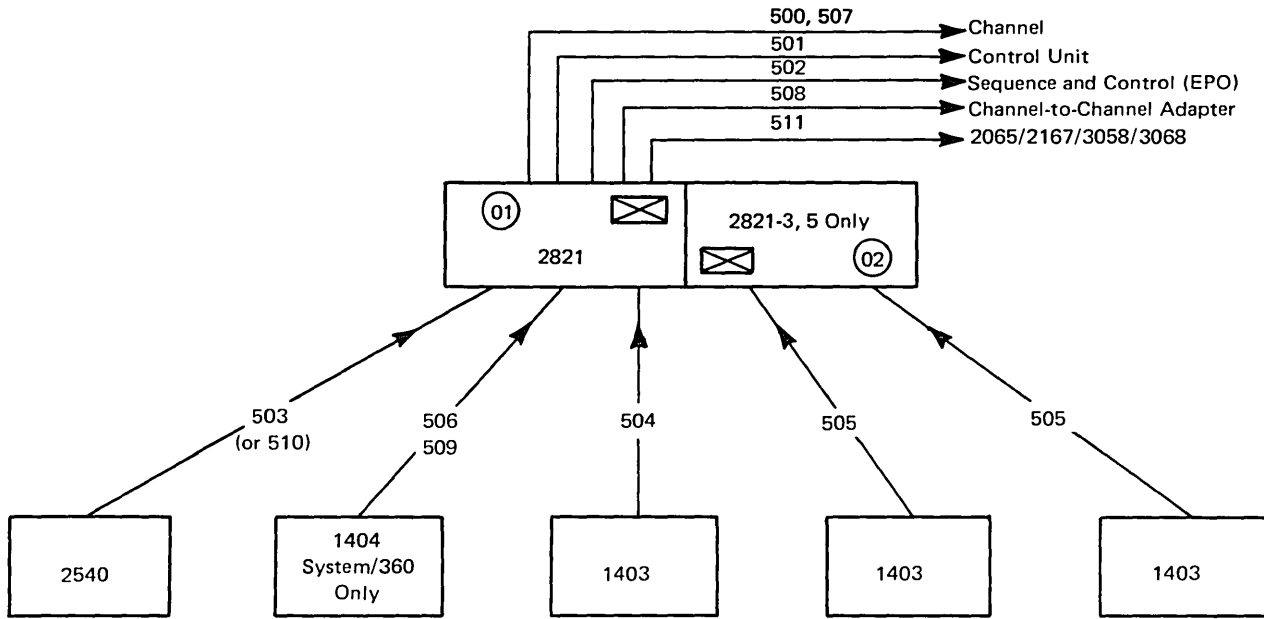
Power Requirements:

kVA	1.9	2.2
Phases	3	3
Plug	R&S, SC7328	
Connector	R&S, SC7428	
Receptacle	R&S, SC7324	
Power Cord Style	E3	

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

2821 CONTROL UNIT CABLING SCHEMATIC



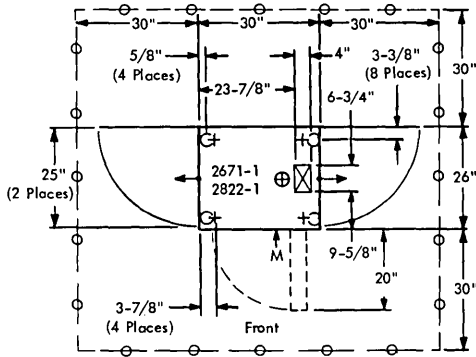
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
500	2	2821 Fr 01	Multiplexer Channel	-	1,10
501	2	2821 Fr 01	Control Unit	-	1,10
502	1	2821 Fr 01	Channel	150	2,10
503 (or 510)	2	2540	2821 Fr 01	25	5,9,11
504	3	1403	2821 Fr 01	25	5,7,8,12
505	3	1403	2821 Fr 02	25	5,7,12
506	1	1404	2821 Fr 01	25	3,13
507	2	2821 Fr 01	Selector Channel	-	1,10
508	2	2821 Fr 01	Channel-to-Channel Adapter	-	1,4,10
509	4	1404	2821 Fr 01	25	13
511	1	2821 Fr 01	2065/2167/3058/3068	150	6,10

Notes:

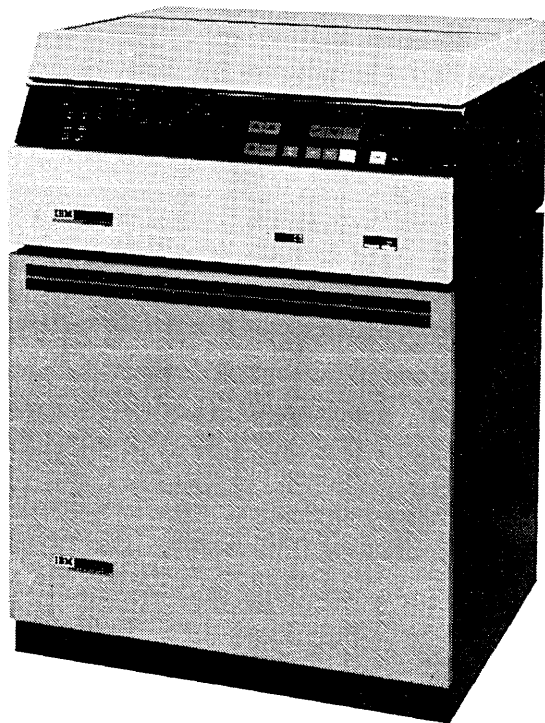
- Total cable length of 200 feet available to attach up to eight control units. (See general control-to-channel cabling schematic for additional limitations.)
- Sequence and control (EPO).
- For read-compare feature only (SF # 5990).
- To channel-to-channel adapter (SF # 1850).
- Contains one power cable.
- For use with SF # 6148 only.
- Cables from a 1403 to a 2020 are *not* interchangeable with cables used to connect a 1403 to a 2821.
- Not attachable to 2821 Model 6.
- For 50-Hz machines, use group number in parentheses.
- The 2821 Model 4 is used only on System/360.
- The 2540 can only be attached to 2821 Models 1, 4, 5, and 6.
- The 1403 can only be attached to 2821 Models 1, 2, 3, and 5.
- The 1404 can only be attached to 2821 Model 4.

**2822 PAPER TAPE READER CONTROL MODEL 1
WITH 2671 PAPER TAPE READER MODEL 1**

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	26	45
(cm)	(76)	(66)	(114)

Service Clearances:

	F	R	Rt	L
Inches	30	30	30	30
(cm)	(76)	(76)	(76)	(76)

Weight: 495 lb (230 kg)

Heat Output: 2,200 BTU/hr (560 kcal/hr)

Airflow: 150 cfm (5 m³/min)

Power Requirements:

kVA	1.05
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A5

Environment, Operating:

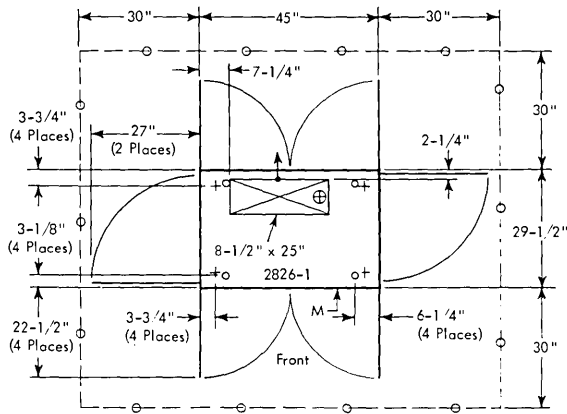
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	10%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	10%-80%
Max Wet Bulb	80°F (27°C)

2826 PAPER TAPE CONTROL MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	45	29-1/2	60
(cm)	(114)	(75)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	30	30	30
(cm)	(76)	(76)	(76)	(76)

Weight: 690 lb (320 kg)

Heat Output: 3,760 BTU/hr (950 kcal/hr)

Airflow: 280 cfm (8 m³/min)

Power Requirements:

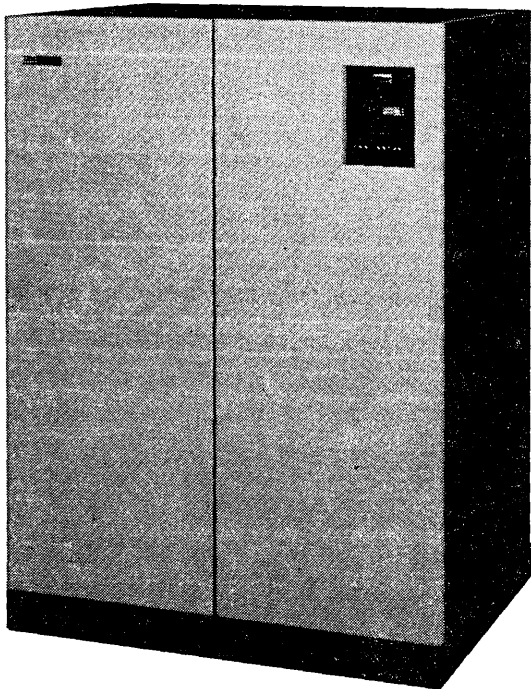
kVA	1.1
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A4

Environment, Operating:

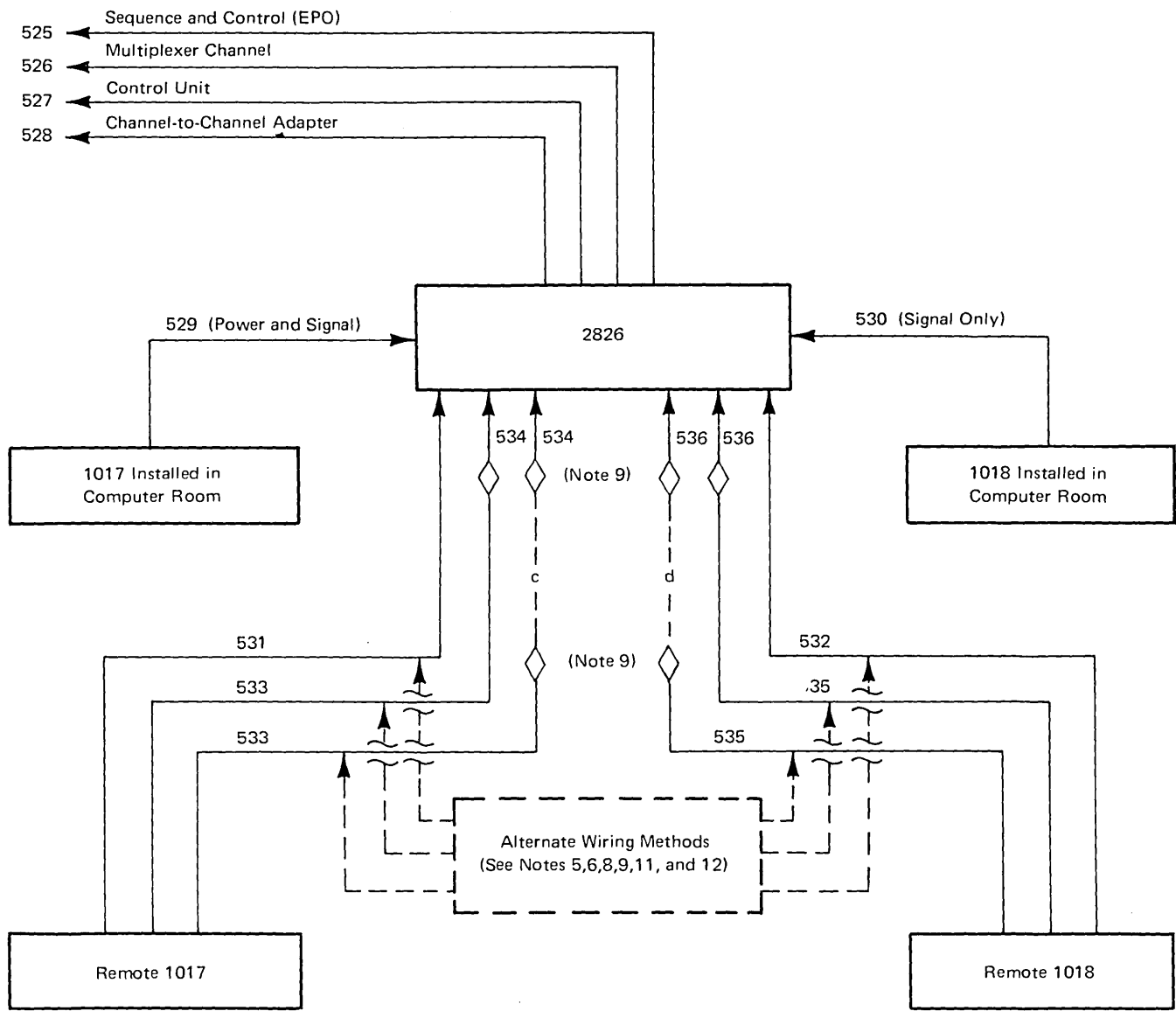
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2826, 1017, AND 1018 CABLING SCHEMATIC



2826, 1017, AND 1018 CABLING SCHEMATIC

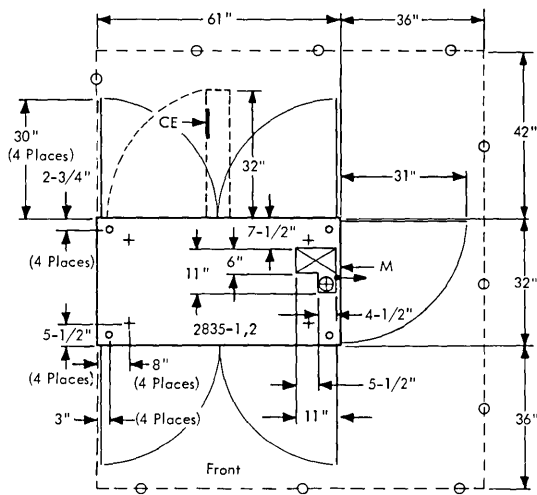
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
c	1	Terminal Box	Terminal Box	—	8
d	1	Terminal Box	Terminal Box	—	8
525	1	2826	Channel	150	2
526	2	2826	Multiplexer Channel	—	1
527	2	2826	Control Unit	—	1
528	2	2826	Channel-to-Channel Adapter	—	1, 3
529	2	1017	2826	25	4,10,13
530	1	1018	2826	25	7,10,13
531	1	1017	2826	350	5,10,11,13
532	1	1018	2826	350	5,10,12,13,14
533	1	1017	Terminal Box	—	5,6,10
534	1	Terminal Box	2826	—	5,6,14
535	1	1018	Terminal Box	—	5,6,10,14
536	1	Terminal Box	2826	—	5,6,14

Notes:

1. Total cable length of 200 feet available to attach up to eight control units. (See general control-to-channel cabling schematic for additional limitations.)
2. Sequence and control (EPO).
3. To channel-to-channel adapter (SF #1850).
4. Signal and power cables for use when the 1017 is installed in the computer room.
5. 1017 (group 533), 1018 (group 535), or 2826 (group 534 or 536) to customer-supplied terminal box. Cable at customer end is fanned out.
6. Total length of (533 plus c plus 534) or (535 plus d plus 536) or (531) or (532) cannot exceed 350 feet. If the error correction feature (SF #3800) is installed on the 1018, maximum cable length between the 1018 and the 2826 is restricted to 25 feet. IBM will provide as much as 25 feet for each 1017 or 1018 at no extra charge. Additional cable may be purchased from IBM. Consult your IBM sales representative for cost. The customer is responsible for the installation and maintenance of these cables. Three methods of installation are available:
 - a. A single cable assembly may be ordered—group 531 for the 1017 or group 532 for the 1018. Because these cables have plug connectors on each end, the customer must determine that enough space is available to install the cables.
 - b. One terminal box is installed either at the remote location or in the computer room.
 - c. Two terminal boxes are required. Group 533 (1017) or group 535 (1018) terminates at the remote location in a customer-provided terminal box. Group 534 (1017) or group 536 (1018) terminates in the computer room in a customer-provided terminal box. Customer-provided cable is used between the two terminal boxes. See Appendix B for cable specifications.
7. Signal cable for use when the 1018 is installed in the computer room.
8. See Appendix B for specifications of customer-supplied cable.
9. Terminal boxes supplied by customer. IBM cables are fanned out for a length of 4 inches. Customer may use any commercially available terminal box. Each 1017 cable has 32 twisted pairs of wire (64 wires). Fifty-four wires are used and ten are spares. Each 1018 cable has 40 twisted pairs of wire (80 wires). Seventy-one wires are used and nine are spares.
10. For cables to the 1017 and 1018, the distance from the floor to the top of the table must be included in the "X" length. Provide at least 1 foot of slack in the cable length to the 1017 and/or 1018 to allow the units to be turned or moved during servicing.
11. Signal cable for use when the 1017 is installed at a remote location. This is a complete cable assembly with connectors attached at both ends. See Note 6 for restrictions.
12. Signal cable for use when the 1018 is installed at a remote location. This is a complete cable assembly with connectors attached at both ends. See Note 6 for restrictions.
13. Maximum of two 1017s and two 1018s can be attached to one 2826.
14. If the punch checking feature (SF #5820) is installed on the 2826, the 1018 cannot be remotely located; maximum cable length from the 2826 to the 1018 is reduced to 25 feet.

2835 STORAGE CONTROL MODELS 1 AND 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	61	32	60
(cm)	(155)	(81)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	42	36	0*
(cm)	(91)	(107)	(91)	(0*)

Weight: 1,525 lb (700 kg)

Heat Output: 10,500 BTU/hr (2 650 kcal/hr)

Airflow: 800 cfm (23 m³/min)

Power Requirements:

kVA	3.4
Phases	3
Plug	R&S, SC7328
Connector	R&S, SC7428
Receptacle	R&S, SC7324
Power Cord Style	E7

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

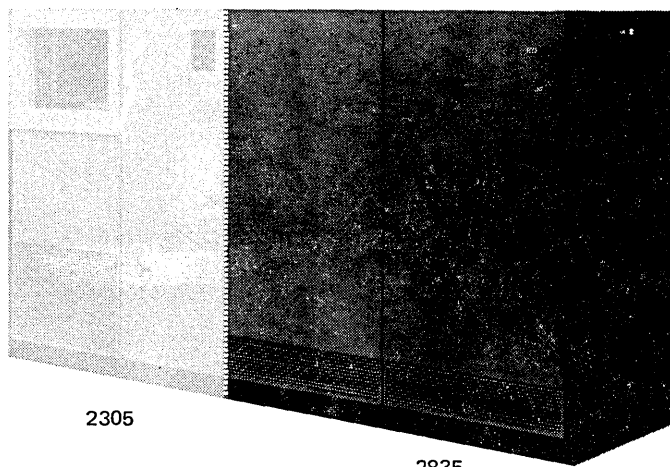
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* The 2835 is installed abutted to the right side of a 2305.

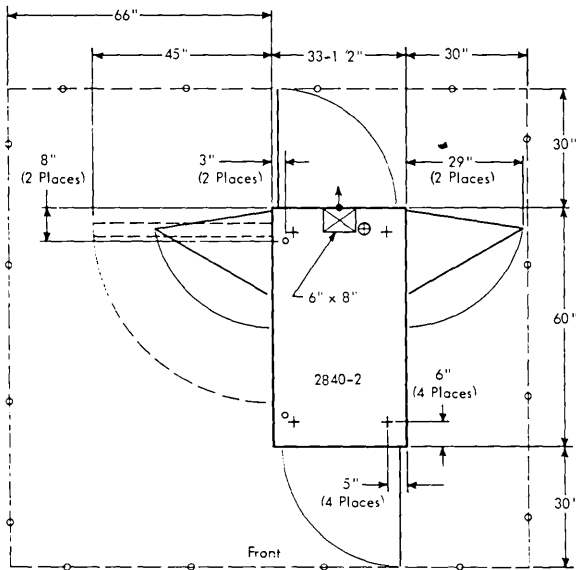


2305

2835

2840 DISPLAY CONTROL MODEL 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	33-1/2	60	72-1/2
(cm)	(85)	(152)	(184)

Service Clearances:

	F	R	Rt	L
Inches	30	30	30	66
(cm)	(76)	(76)	(76)	(168)

Weight: 800 lb (370 kg)

Heat Output: 6,500 BTU/hr (1 650 kcal/hr)

Airflow: 800 cfm (23 m³/min)

Power Requirements:

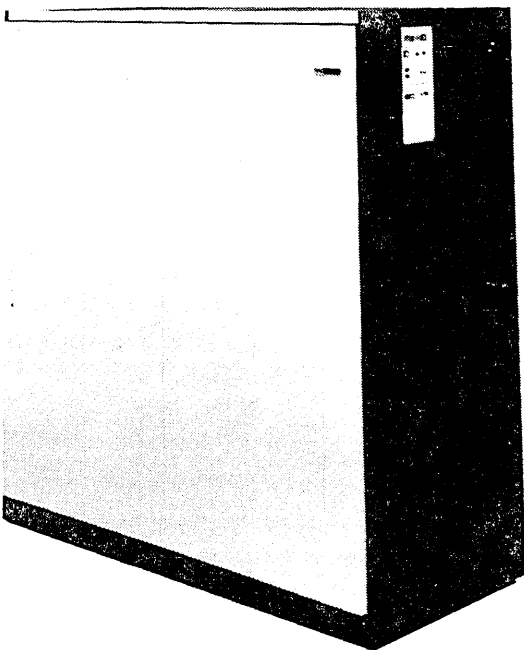
kVA	2.4
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D3

Environment, Operating:

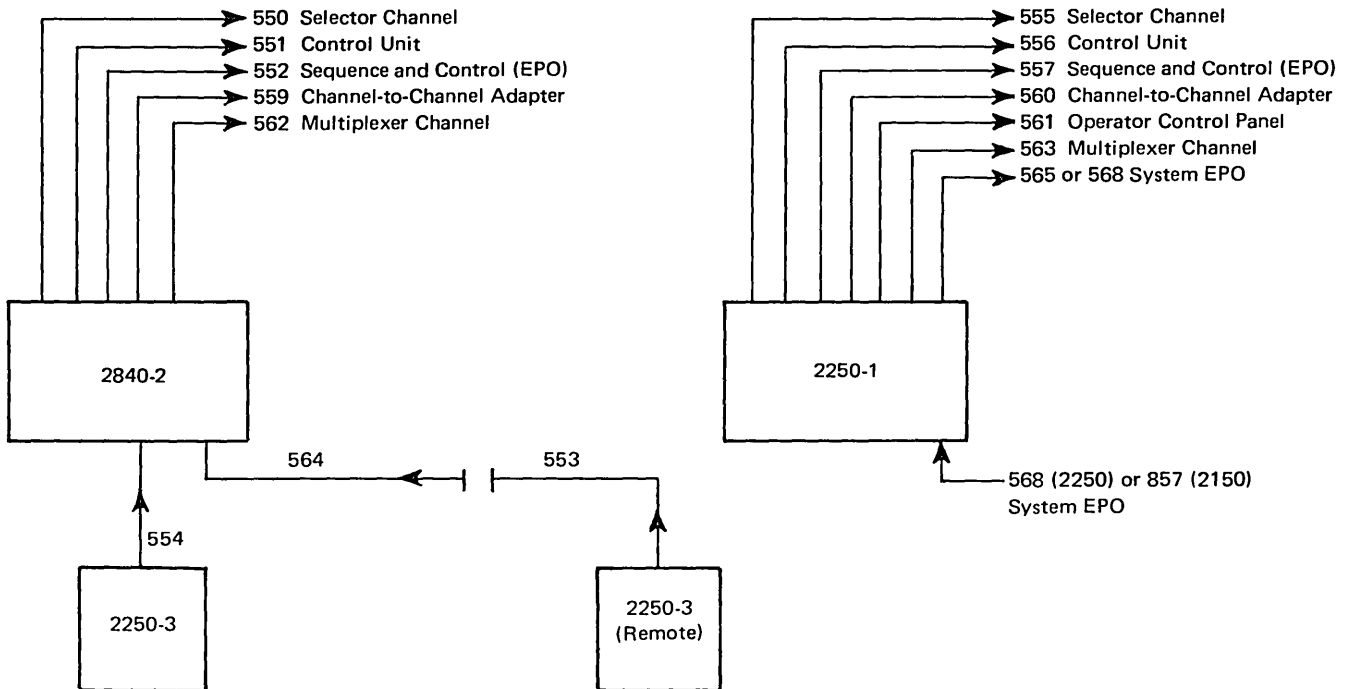
Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-150°F (10°C-66°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)



2840 AND 2250 CABLING SCHEMATIC



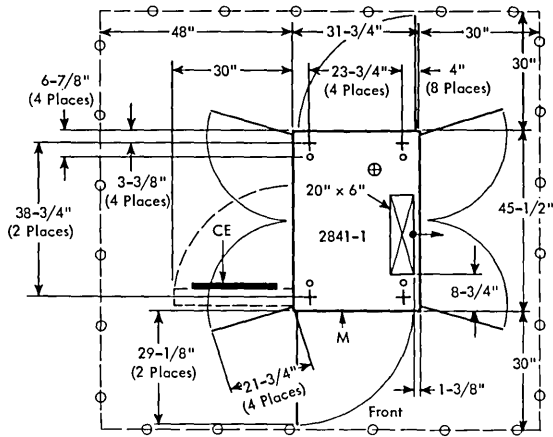
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
550	2	2840-2	Selector Channel	—	1
551	2	2840-2	Control Unit	—	1
552	1	2840-2	Channel	150	2
553	1	2250-3	Connector	20	3,9
554	2	2250-3	2840-2	40	9
555	2	2250-1	Selector Channel	—	1,7
556	2	2250-1	Control Unit	—	1,7
557	1	2250-1	Channel	150	2,8
559	2	2840-2	Channel-to-Channel Adapter	—	1,5
560	2	2250-1	Channel-to-Channel Adapter	—	1,5,7
561	3	2250-1	System/360 or System/370 Processor	70	4,8
562	2	2840-2	Multiplexer Channel	—	1
563	2	2250-1	Multiplexer Channel	—	1,7
564	1	Connector	2840-2	40	3
565	1	2250-1	System/360 or System/370 Processor	—	6,8,10
568	1	2250-1	2150/2250-1	—	6,8,10

Notes:

- Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units to a channel.
- Sequence and control (EPO).
- A remote 2250-3 may be up to 2,000 feet from the 2840. Cable in excess of that specified for group number 553 plus group number 564 must be supplied by the customer. Connectors mate so that more than one cable may be used to make a run. See Appendix B for cable specifications.
- For operator control panel attachment (one operator control panel per host processor).
- To channel-to-channel adapter (SF #1850).
- Sum of lengths of system EPO cables \leq 70 feet (EPO switches).
- These cable groups route from cable hole #3 on 2250 plan view.
- These cable groups route from either cable hole #1 or #2 on 2250 plan view.
- These cable groups route from cable hole #3 for 2250 Model 3 units.
- Required for first operator control panel feature (SF #5475) and second operator control panel feature (SF #5476).

2841 STORAGE CONTROL MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	31-3/4	45-1/2	60
(cm)	(81)	(116)	(152)

Service Clearances:

	F	R	Rt	L
Inches	30	30	30	48
(cm)	(76)	(76)	(76)	(122)

Weight: 750 lb (350 kg)

Heat Output: 3,100 BTU/hr (790 kcal/hr)

Airflow: 1,000 cfm (29 m³/min)

Power Requirements:

kVA	1.1
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D2

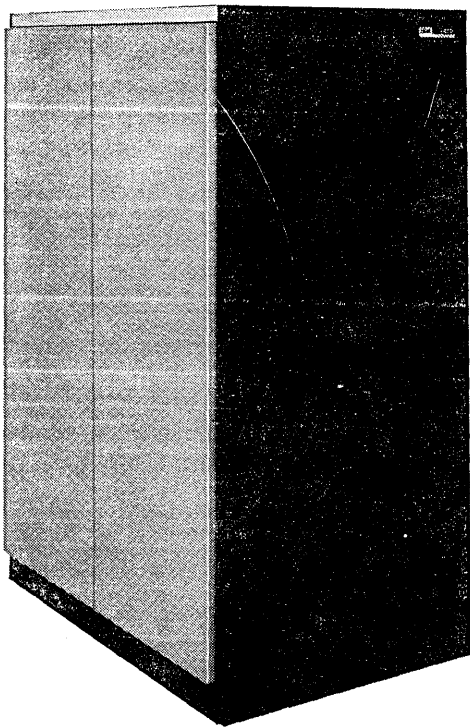
Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

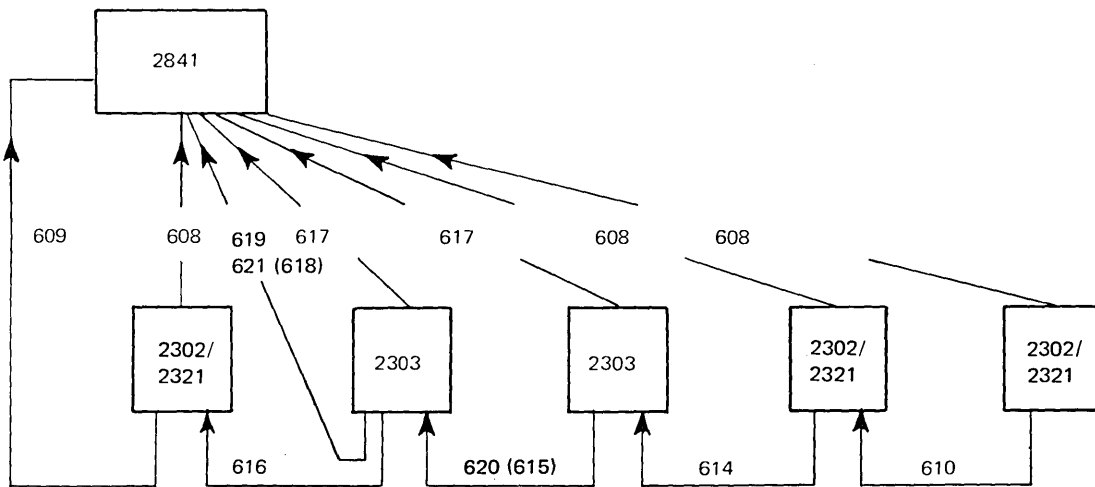
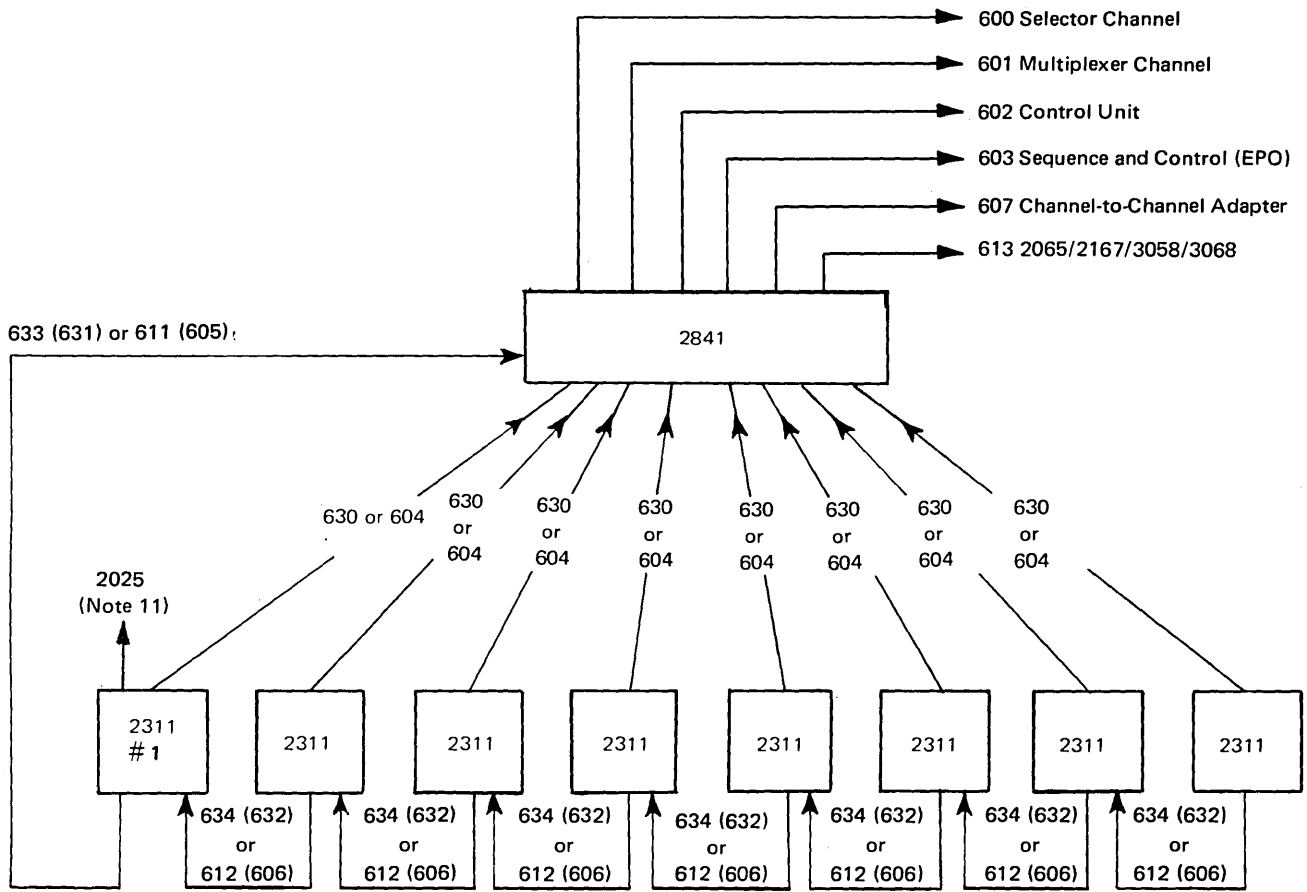
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)



2841 STORAGE CONTROL CABLING SCHEMATIC (50 HZ)



For cable groups (terminators) 624 and 625, see note 9.

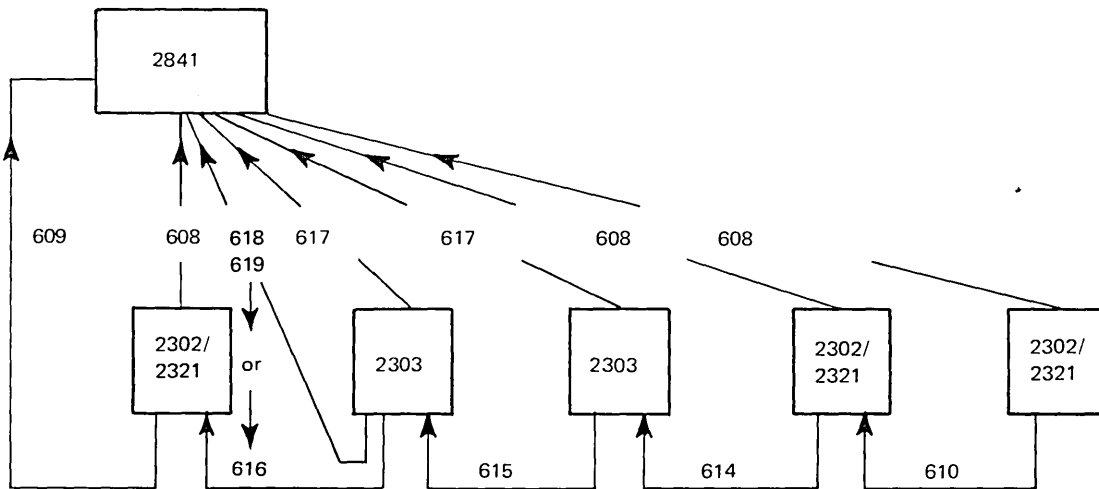
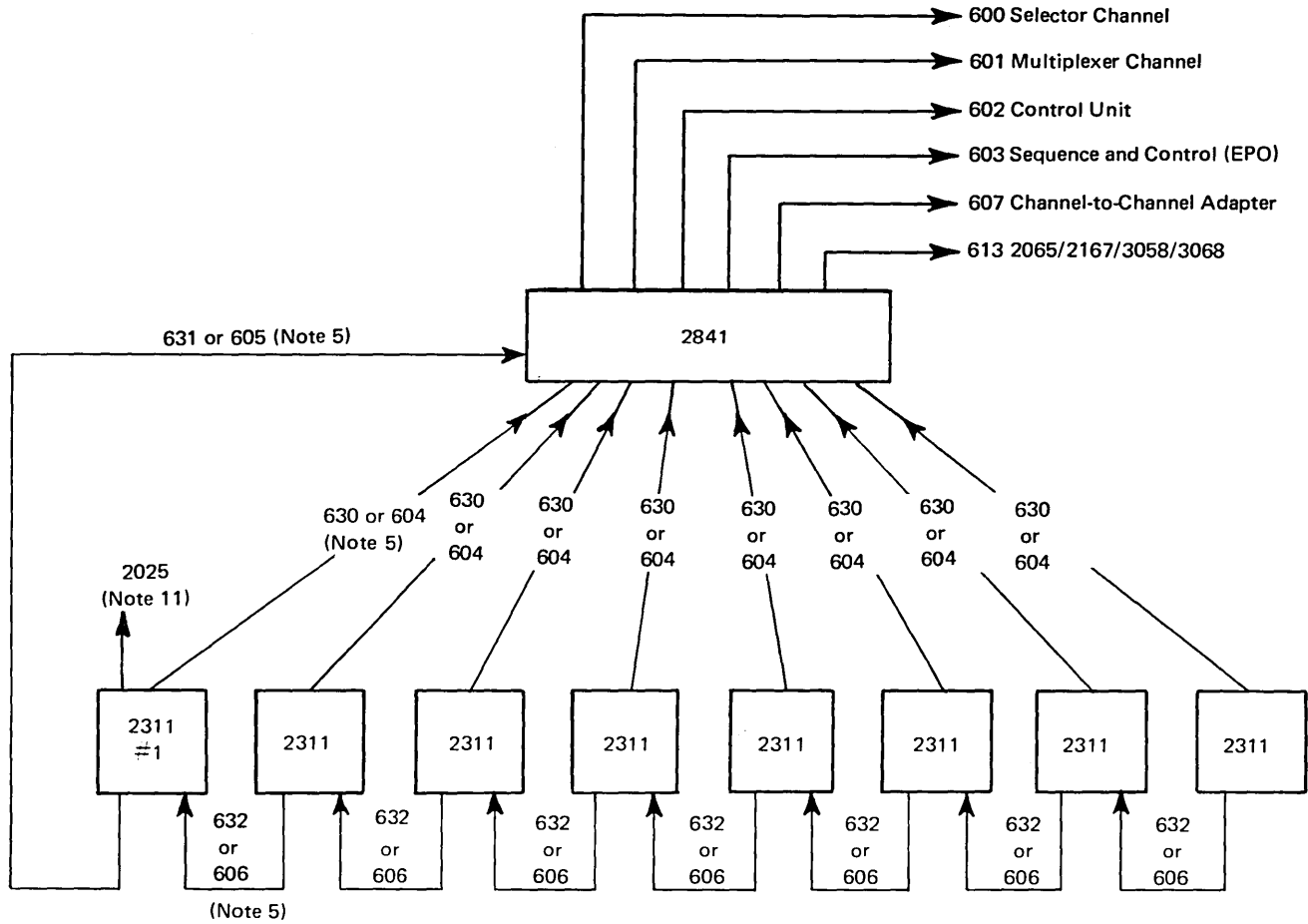
2841 STORAGE CONTROL CABLING SCHEMATIC (50 HZ)

Group No.	No. of Cables	From	To	Max Length (ft)	Notes
600	2	2841	Selector Channel	—	1,12
601	2	2841	Multiplexer Channel	—	1,12
602	2	2841	Control Unit	—	1,12
603	1	2841	Channel	150	2,12
604	1	2311	2841	55	5,11
607	2	2841	Channel-to-Channel Adapter	—	1,4,12
608	1	Storage	2841	100	—
609	4	Storage	2841	—	3
610	4	Storage	Storage	—	3
611 (605)	2	2311 #1	2841	—	3,5,11,13
612 (606)	2	2311	2311	—	3,5,11,13
613	1	2841	2065/2167/3058/3068	150	10
614	4	2321	2303	—	3
616	4	2303	2321	—	3,8
617	1	2303	2841	90	6
619	4	2303 #1	2841	90	8
620 (615)	5	2303	2303	—	3,13
621 (618)	1	2303 #1	2841	90	7,13
624	—	2303 Terminator	—	—	9
625	—	2302 Terminator	—	—	9
630	1	2311	2841	55	5
633 (631)	2	2311 #1	2841	—	5,13
634 (632)	2	2311	2311	—	5,13

Notes:

1. Last 2841 must be within 100 feet (75 feet on System/360 Model 40 when 2303 is attached).
2. Sequence and control (EPO).
3. The total length of each of the following groups should not exceed 100 feet: (611 plus 612s), (621 plus 620 plus 614 plus 610), (619 plus 620 plus 614 plus 610), (609 plus 616 plus 620 plus 614 plus 610), and (633 plus 634).
4. To connect to channel-to-channel adapter (SF # 1850).
5. Specify cable groups 630, 633, and/or 634 for all new cable orders. Cable groups 604, 611, and/or 612 need not be replaced in existing installations, unless SF #9160 is installed on 2841.
6. One per 2303.
7. One per 2303 adapter.
8. Use cable group 616 to attach 2303 to 2321 or 2302. Use cable group 619 to attach 2303 to 2841. Order cable group 619 or 616, *not both*.
9. End-of-line terminator required must be specified on cable order form, unless 2321 is last device on line.
10. For SF #6148 only.
11. The 2311 cable used in conjunction with 2841 cannot be used with direct 2025 attachment. See "System/360 Model 25 Cabling Schematic," GC19-0001, for cables required.
12. One group required for each channel when SF #8100 is installed. Maximum length applies to each channel.
13. For 60-Hz machines, use group number in parentheses. See cable listing under "2841 Storage Control Cabling Schematic (60 Hz)" for details.

2841 STORAGE CONTROL CABLING SCHEMATIC (60 HZ)



For cable groups (terminators) 624 and 625, see note 9.

2841 STORAGE CONTROL CABLING SCHEMATIC (60 HZ)

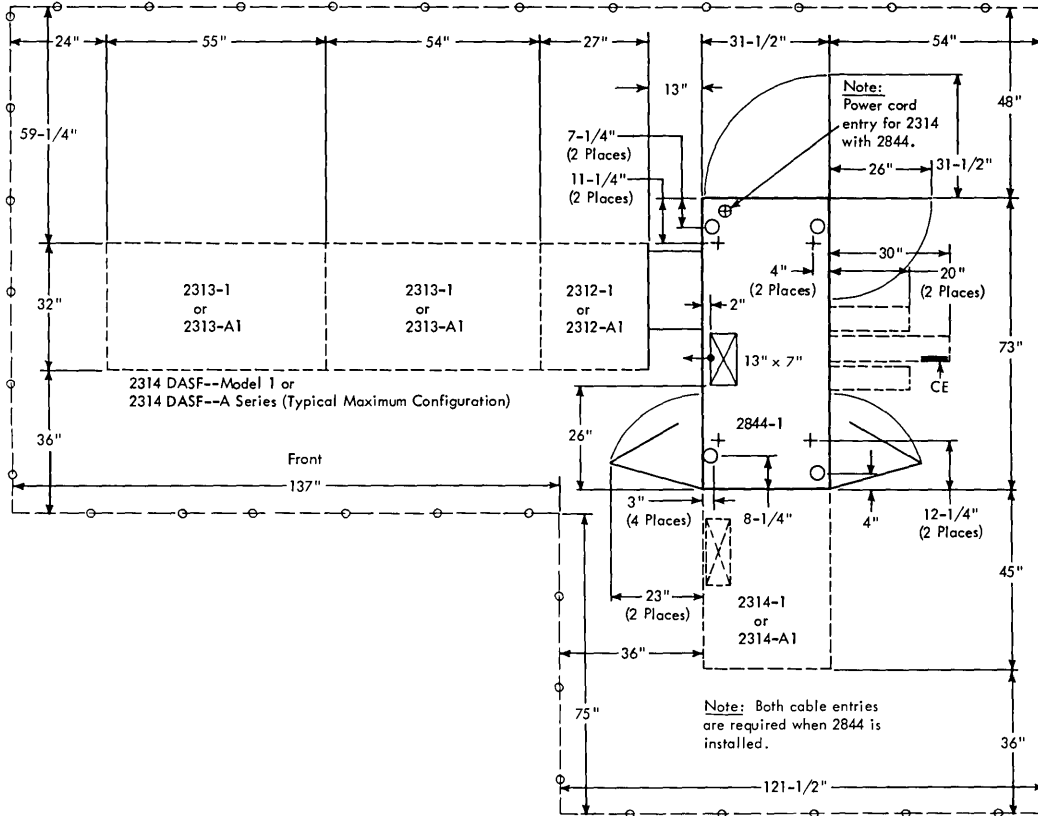
Group No.	No. of Cables	From	To	Max Length (ft)	Notes
600	2	2841	Selector Channel	—	1, 12
601	2	2841	Multiplexer Channel	—	1, 12
602	2	2841	Control Unit	—	1, 12
603	1	2841	Channel	150	2, 12
604	1	2311	2841	55	5, 11
605	2	2311 #1	2841	—	3, 5, 11
606	2	2311	2311	—	3, 5, 11
607	2	2841	Channel-to-Channel Adapter	—	1, 4, 12
608	1	Storage	2841	100	—
609	4	Storage	2841	—	3
610	4	Storage	Storage	—	3
613	1	2841	2065/2167/3058/3068	150	10
614	4	2321	2303	—	3
615	5	2303	2303	—	3
616	4	2303	2321	—	3, 8
617	1	2303	2841	90	6
618	1	2303 #1	2841	—	3, 7
619	4	2303 #1	2841	—	3, 7, 8
624	—	2303 Terminator	—	—	9
625	—	2302 Terminator	—	—	9
630	1	2311	2841	55	5
631	2	2311 #1	2841	—	5
632	2	2311	2311	—	5

Notes:

1. Last 2841 must be within 100 feet (75 feet on System/360 Model 40 when 2303 is attached).
2. Sequence and control (EPO).
3. The total length of each of the following groups should not exceed 100 feet: (605 plus 606s), (631 plus 632s), (618 plus 615 plus 614 plus 610), (619 plus 615 plus 614 plus 610), and (609 plus 616 plus 615 plus 614 plus 610).
4. To connect to channel-to-channel adapter (SF #1850).
5. Specify cable groups 630, 631, and/or 632 for all new cable orders. Cable groups 604, 605, and/or 606 need not be replaced in existing installations, unless SF #9160 is installed in 2841.
6. One per 2303.
7. One per 2303 adapter.
8. Use cable group 616 to attach 2303 to 2321 or 2302. Use cable group 619 to attach 2303 to 2841. Order cable group 619 or 616, *not both*.
9. End-of-line terminator required must be specified on cable order form, unless 2321 is last unit on line.
10. For SF #6148 only.
11. The 2311 cable used in conjunction with 2841 cannot be used with direct 2025 attachment. See "System/360 Model 25 Cabling Schematic," GC22-6820, for cables required.
12. One group required for each channel when SF #8100 is installed. Maximum length applies to each channel.

**2844 AUXILIARY STORAGE CONTROL MODEL 1
FOR 2314 DIRECT ACCESS STORAGE FACILITY**

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

**2844 AUXILIARY STORAGE CONTROL MODEL 1
FOR 2314 DIRECT ACCESS STORAGE FACILITY**

SPECIFICATIONS

Dimensions: (2844)

	F	S	H
Inches	*	*	60
(cm)	(*)	(*)	(152)

Service Clearances:

	F	R	Rt	L
Inches	*	*	*	*
(cm)	(*)	(*)	(*)	(*)

Weight: 1,300 lb** (590 kg**)

Heat Output: 3,200 BTU/hr** (810 kcal/hr**)

Airflow: 1,000 cfm** (29 m³/min**)

Power Requirements:**

kVA	1.3	
Phases	3	
Plug	R&S, SC7328	} 2314 With 2844
Connector	R&S, SC7428	
Receptacle	R&S, SC7324	
Power Cord Style	E1	

Note: This machine has radio interference control circuits and requires that the total resistance of the grounding conductor measured between the power receptacle and building ground not exceed 3 ohms.

Environment, Operating:

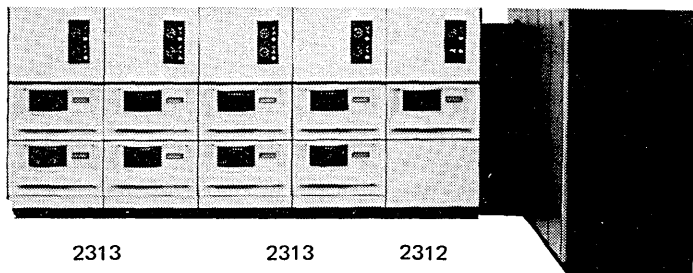
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

- * See plan view.
- ** Refer to 2314 machine specification pages for individual machine specifications. Add 2314 requirements to 2844 to obtain total requirements for heat output, weight, airflow, and power for the facility.



2313

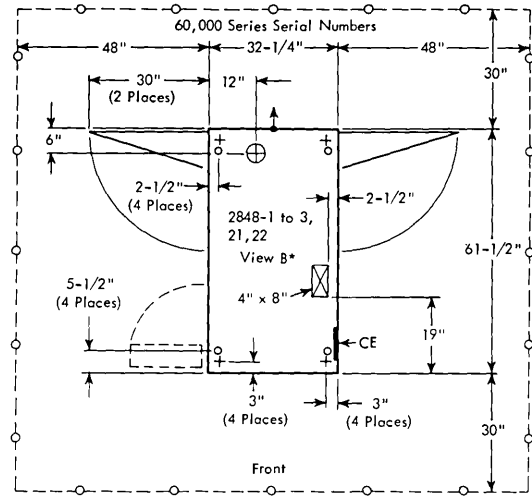
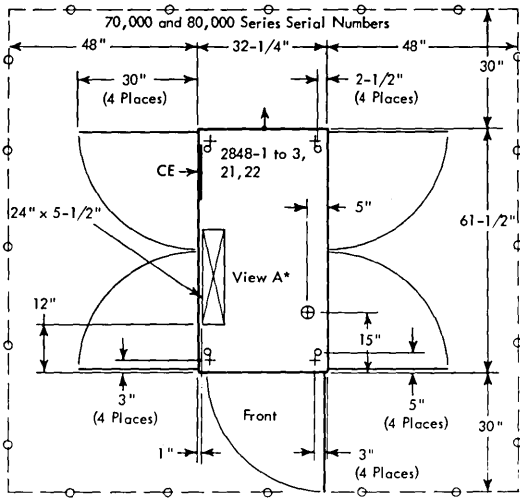
2313

2312

2844

2848 DISPLAY CONTROL MODELS 1 TO 3, 21, AND 22

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



* Machines may be provided in either configuration (no choice).
Cable opening in raised floor should be placed between the two possible cable exit holes.

2848 DISPLAY CONTROL MODELS 1 TO 3, 21, AND 22

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	32-1/4	61-1/2	70-3/4
(cm)	(82)	(156)	(180)

Service Clearances:

	F	R	Rt	L
Inches	30	30	48	48
(cm)	(76)	(76)	(122)	(122)

Weight: 1,150 lb (530 kg)

Heat Output:* 6,100 BTU/hr (1 550 kcal/hr)

Airflow: 400 cfm (12 m³/min)

Power Requirements:	50 Hz	60 Hz
kVA	2.0	2.0
Phases	3	1
Plug	R&S, FS3750	
Connector	R&S, FS3933	
Receptacle	R&S, FS3753	
Power Cord Style	D1	A3

Environment, Operating:**

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

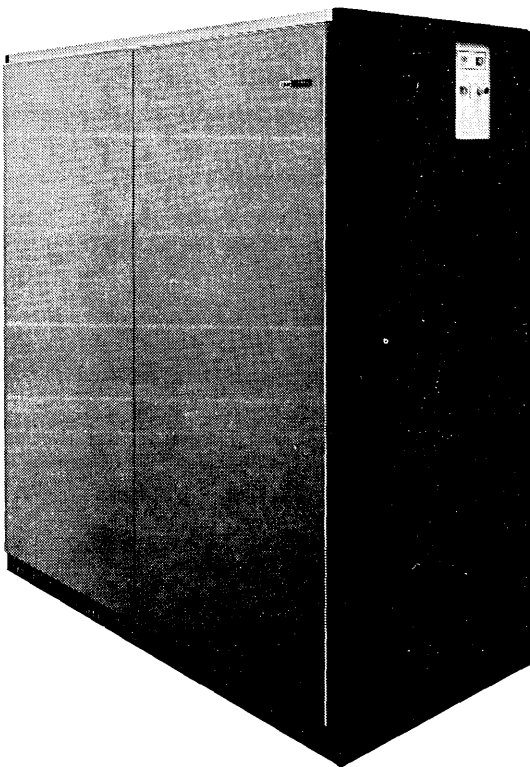
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

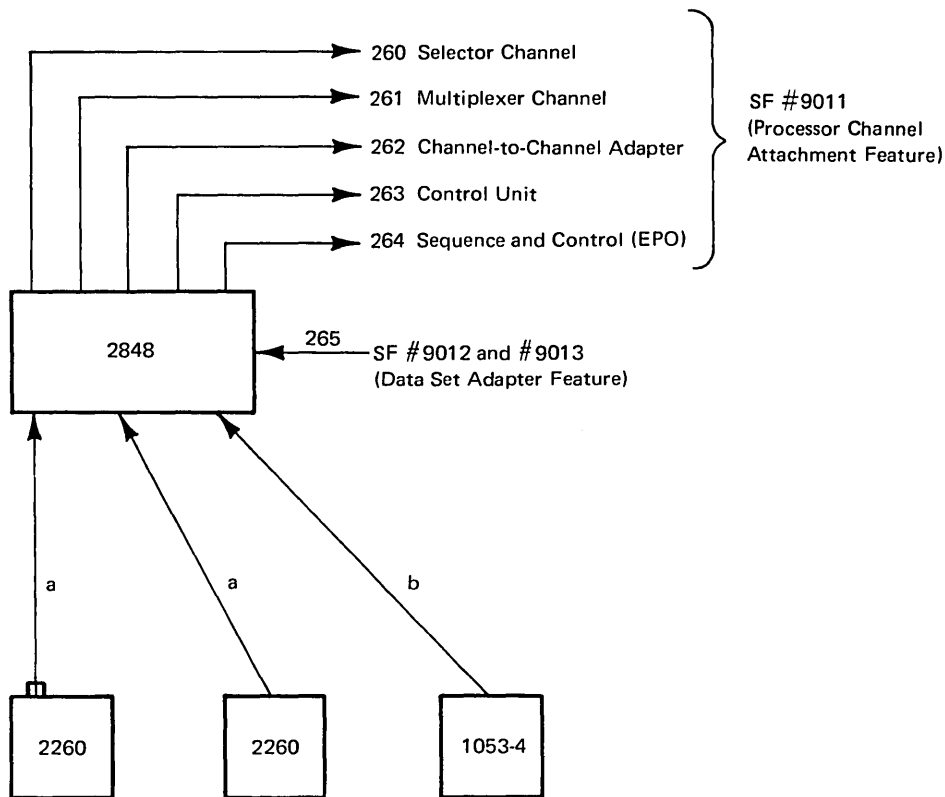
Notes:

* Heat output with device off, but plugged in, is 1,100 BTU/hr (280 kcal/hr) because of delay line heaters.

** These conditions must exist and power must be on for at least two hours prior to start of operation.



2848, 2260, AND 1053 CABLING SCHEMATIC



Group No.	No. of Cables	From	To	Max Length (ft)	Notes
a	1	2260	2848	2,000	4
b	1	1053-4	2848	2,000	4
260	2	2848	Selector Channel	-	1
261	2	2848	Multiplexer Channel	-	1
262	2	2848	Channel-to-Channel Adapter	-	1,3
263	2	2848	Control Unit	-	1
264	1	2848	Channel	150	2
265	1	Data Set	2848	40	5

Notes:

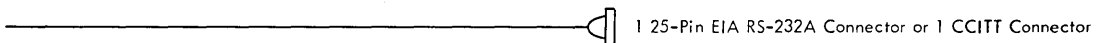
1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. To channel-to-channel adapter (SF #1850).
4. IBM-supplied connectors; customer-supplied cable. See Appendix B for cable specifications.
5. For use with SF #9012 and #9013. See "Cables for IBM and Non-IBM Devices" for cable specifications.

Cables for IBM and Non-IBM Devices

Group
No.

Termination

265



CABLE INSTALLATION PRACTICE FOR 2260/2848 AND 1053/2848

Customer-Assembled Cables

The customer may elect to construct his own 2260/2848 or 1053/2848 cables. When ordering bulk cable from IBM or other sources, the customer should indicate the continuous machine-to-machine cable lengths to the cable suppliers so that unplanned splicing may be avoided. If splicing is required, it should be accomplished as shown in the following sections. See Appendix B for part numbers or cable descriptions.

The connector groups for the cables listed previously are to be ordered from IBM without charge. The package will contain a connector group and step-by-step instructions for assembling connectors to each end of one cable. It is recommended that personnel skilled in termination of coaxial cables and in the use of termination crimping tools handle the assembling of connectors. The customer must provide the required tools for assembling the connectors. (See "Special Tools Required" in Appendix B.)

Cable Runs

The cabling between the 2260 and 2848 should be separated from the electrical wiring of the building's lampholders, outlets, and power lines by at least 3 inches (76.2 mm). The cables should not run close to unshielded high-power or high-frequency energy sources. A malfunction of the 2260/2848 may occur if these requirements are not met because of induced electrical noise in the video cable. When using two runs of 323291 (RG62A/U), it is recommended that an identification tag be attached to one run (both ends). This identification will be required for terminating cable-to-connector groups.

Vertical cabling runs of the 2260/2848 and 1053/2848 cables must be supported, either individually or in a tight bundle, every 10 feet (3 m).

Cabling to be used outdoors, aerial or buried, must be approved for that use.

To facilitate pulling preassembled cables through enclosed conduits or raceways, it may be desirable to remove the connector from the 2848 end of 2260/2848 cables and from the 1053 end of 1053/2848 cables. To remove and reinstall the connector:

1. Remove the connector hood and the insulator strip or strain relief from the cable.

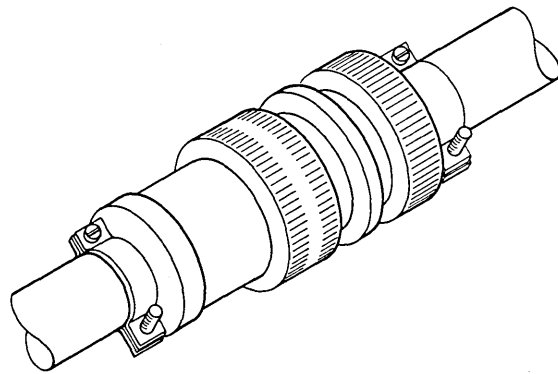
2. For 2848/2260 cables, remove the wires from the connector by gripping the terminal (not wire) with needle-nose pliers.

For 2848/1053 cables, remove the wires from the connector by using the extraction tool (AMP 305183/IBM 2108398). Push the terminal from the face of the connector and out the wiring side.

3. Tape loose wires back to the cable jacket. Ensure that a cable puller or other equipment will put the strain on the main cable body and not on the loose wires.
4. Reassemble the wires per the applicable chart after the cable has been installed into a conduit or raceway.
5. Reinstall the insulator strip and the connector hood or strain relief.

Cable Splice Using Quick-Disconnect Connector

The customer may elect to splice or install a quick-disconnect connector (see accompanying illustration) to the 2260/2848 cables or the 1053/2848 cables. The connector has complete environmental sealing and may be potted with resilient silicone rubber for waterproof applications. A maximum of four splices are allowed per cable. The customer can purchase the IBM kit or the commercial parts as indicated in the following chart. The IBM kit will contain parts for one splice and step-by-step installation instructions. When using commercial parts, it is recommended that the IBM installation procedure be used for installing the connector. Copies of the procedure may be ordered through IBM Branch Offices. A 10- to 15-watt soldering iron and heat gun are required for installing the connector.



Note: Connector assembly is used for splicing 2848 external cables and it is also used as a quick disconnect.

Cable Assembly	IBM Kit Number	IBM Procedure	Part Description	Commercial Parts Quantity	Commercial Source
2260/2848	5727379	5727381	Plug 67-5076	1	Amphenol Corporation
			Receptacle 67-5077	1	Amphenol Corporation
			1/4" (6.4 mm) Shrink Sleeving	6"	Electrical Supplier
			Clamp Boot	(152.4 mm) *	Electrical Supplier
1053/2848	5727380	5727382	Plug 67-01C22-67P (104)	1	Amphenol Corporation
			Receptacle 67-06	1	Amphenol Corporation
			C22-67S (104) Clamp Boot	**	Electrical Supplier

* One each of MS39056-3, MS39056-4, and MS39056-5.

** One each of MS39056-5, MS39056-6, and MS39056-7.

Cable Splice (Alternate Method) for 2260/2848 and 1053/2848 Cables

The customer may select an alternate method of splicing by procuring the following IBM splicing kits or commercial parts. This splice is not recommended for environmental applications. For applications where exposures to the elements of weather exist, it is recommended that the cable

connector specified in "Cable Splice Using Quick-Disconnect Connector" be used. A maximum of three splices are allowed per cable. The IBM kits will contain step-by-step installation instructions. The special tools that the customer must provide to make a splice are a Burndy Corporation Y9M hand crimp tool and Raychem Minigun CV-5300 or equivalent.

Cable Assembly	Bulk Cable	IBM Kit Number	Description and Commercial Part Numbers	Quantity	Commercial Source
Display Only					
5727685 or 5728291*	2 runs of 323921* RG62A/U	5727719	BNC Connector Plug UG-260 B/U	2	Electrical Supplier
			BNC Connector Plug UG-261 3/4" (19.0 mm) Shrink Sleeving	2 10" (254.0 mm)	Electrical Supplier Electrical Supplier
Keyboard Attachment					
5727686 or 5728293	5213866	5727720	Butt Connector YSV-18 1/8" (3.2 mm) Shrink Sleeving	12 16" (406.4 mm)	Burndy Corporation Electrical Supplier
			3/4" (19.0 mm) Shrink Sleeving	16" (406.4 mm)	Electrical Supplier
Combined Keyboard Display					
5727687** or 5728292	5214887 or 5213814	5727721	BNC Connector Plug UG-260 B/U	2	Electrical Supplier
			BNC Connector Plug UG-261 B/U	2	Electrical Supplier
			Butt Connector YSV-18 1/8" (3.2 mm) Shrink Sleeving	16 20" (508.0 mm)	Burndy Corporation Electrical Supplier
			1/4" (6.4 mm) Shrink Sleeving 3/4" (19.0 mm) Shrink Sleeving	20" (508.0 mm) 20" (508.0 mm)	Electrical Supplier Electrical Supplier
1053 Attachment					
5728298	5213821	5727722	Butt Connector YSV-18 1/8" (3.2 mm) Shrink Sleeving 3/4" (19.0 mm) Shrink Sleeving	24 24" (609.6 mm) 16" (406.4 mm)	Burndy Corporation Electrical Supplier Electrical Supplier

* When one run of cable is bulk cable (IBM 532029), BNC connectors UG-1033/U and UG-1056/U should be used (included in kit).

** Formerly cable assembly 5729793. If splicing is required for this cable, order kits or parts for cable assemblies 5728291 and 5728293.

When the customer elects to procure the commercial parts, the following recommended procedures should be used:

1. The multiple conductor cable splice should be covered with a 3/4-inch (19.0-mm) shrink sleeving or high-quality electrical tape. Be sure to slide the sleeving onto cable body before making the first splice.
2. When splicing the coaxial wire or shielded wire (part 532029), the appropriate BNC connector as specified in the preceding chart must be used so that reflections and attenuations will be minimized. The BNC connector must be insulated with 3/4-inch (19.0-mm) diameter shrink sleeving after the two halves have been mated. Refer to the manufacturer's procedures in Amphenol Catalog CC-7, or an equivalent manufacturer's catalog, for installation instructions.
3. Splicing of the shielded wire within the multiple wire jacket cable may be accomplished by using a Burndy Corporation YSV-18 butt connector or an equivalent butt connector. Be sure the butt connector of the inner wire is insulated with 1/8-inch (3.2-mm) shrink tubing before butt-connecting the shield.
4. Splice all nonshielded conductors (AWG #18, #20, and #22 wires), using a Burndy Corporation YSV-18 butt connector or an equivalent butt connector; all splices should be staggered, soldered after crimping, and insulated with 1-inch (25.4-mm) long shrink sleeving. Be sure to slide sleeving onto wire leads before crimping butt connector.

Terminations of 2260/2848 Cables at 2848 End and 1053/2848 Cables at 1053 End

5727686		
Wire Number		Connector Position
1	Blk #18 AWG	C
2	Blk #18 AWG	E
3	Blk #22 AWG	R
4	Wh #22 AWG	Q
5	Red #22 AWG	P
6	Blu #22 AWG	N
7	Gra #22 AWG	M
8	Org #22 AWG	L
9	Aqu #22 AWG	K
10	Vio #22 AWG	J
11	Yel #22 AWG	F
12	Brn #22 AWG	G

5727687		
Wire Number		Connector Position
1	Coax Yel	A
1	Blk (Shield)	B
2	Blk #18 AWG	B
3	Wh #18 AWG	C
4	Blk #22 AWG	R
5	Wh #22 AWG	Q
6	Red #22 AWG	P
7	Blu #22 AWG	N
8	Gra #22 AWG	M
9	Org #22 AWG	L
10	Aqu #22 AWG	K
11	Vio #22 AWG	J
12	Yel #22 AWG	F
13	Brn #22 AWG	G
14	Coax Wh/Blk	D
14	Blk (Shield)	C
15	Wh/Red #22 AWG	E
16	Wh/Blu #22 AWG	H

5728291 and 5727685		
Wire Number		Connector Position
1	Yel	A
1	Blk (Shield)	B
2	Wh	D
2	Blk (Shield)	B

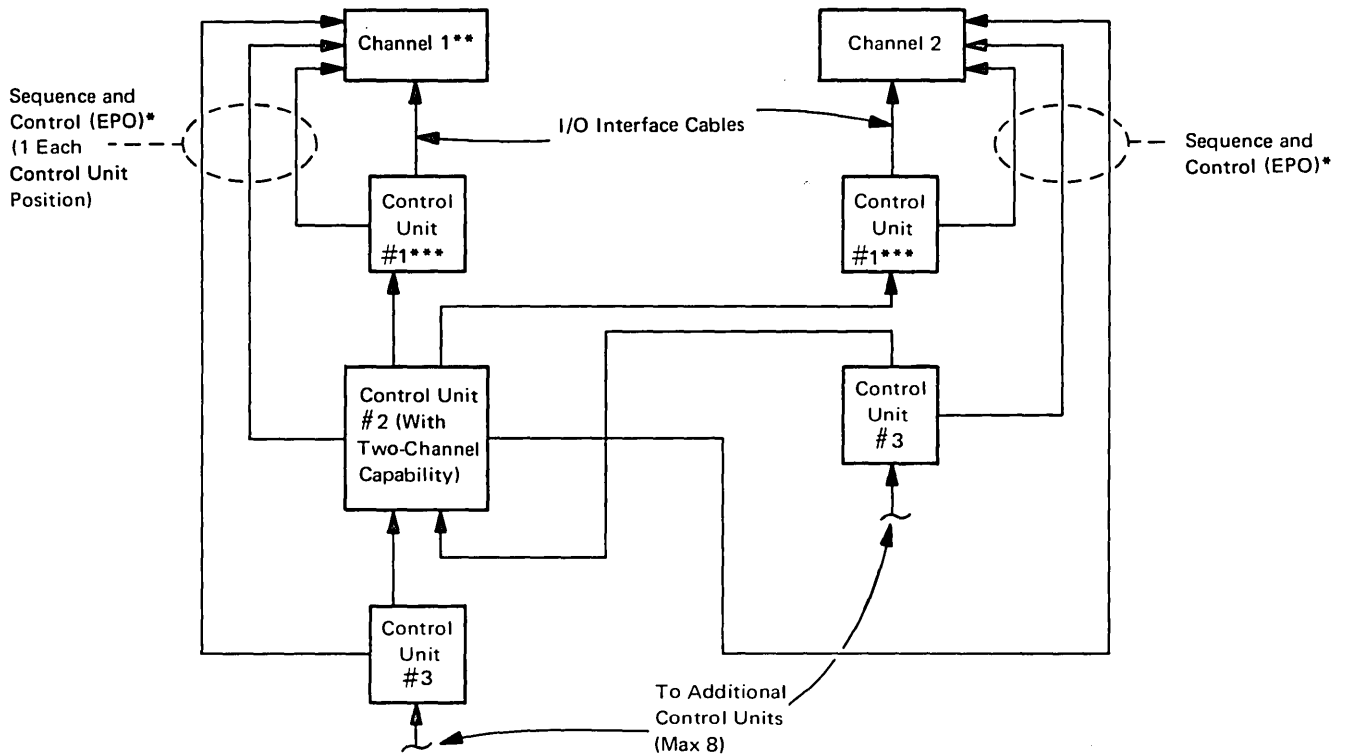
5728292		
Wire Number		Connector Position
1	Bare Coax	A
1	Blk (Shield)	B
2	Blk #18 AWG	F
3	Wh #18 AWG	G
4	Blk #22 AWG	R
5	Wh #22 AWG	Q
6	Red #22 AWG	P
7	Blu #22 AWG	N
8	Gra #22 AWG	M
9	Org #22 AWG	L
10	Aqu #22 AWG	K
11	Vio #22 AWG	J
12	Yel #22 AWG	H
13	Brn #22 AWG	C
14	Wh/Blk #22 AWG	D
14	Blk (Shield)	B

5728293		
Wire Number		Connector Position
1	Blk #18 AWG	F
2	Wh # 18 AWG	G
3	Blk #22 AWG	R
4	Wh #22 AWG	Q
5	Red #22 AWG	P
6	Blu #22 AWG	N
7	Gra #22 AWG	M
8	Org #22 AWG	L
9	Aqu #22 AWG	K
10	Vio #22 AWG	J
11	Yel #22 AWG	H
12	Brn # 22 AWG	C

5728298		
Wire Number		Connector Position
1	Blk #18 AWG	K
2	Wh #18 AWG	J
3	Red #18 AWG	P
4	Yel #18 AWG	M
5	Org #18 AWG	L
6	Blu #18 AWG	N
7	Brn #18 AWG	BB
8	Vio #18 AWG	FF
9	Aqu #18 AWG	NN
10	Gra #18 AWG	R
11	Wh/Red #18 AWG	V
12	Wh/Yel #18 AWG	T
13	Grn/Yel #18 AWG	Z
14	Blk #20 AWG	H
15	Wh #20 AWG	D
16	Red #20 AWG	F
17	Yel #20 AWG	MM
18	Org #20 AWG	S
19	Blu #20 AWG	CC
20	Brn #20 AWG	W
21	Vio #20 AWG	AA
22	Aqu #20 AWG	KK
23	Gra #20 AWG	E
24	Wh/Red #20 AWG	C

GENERAL CONTROL-TO-CHANNEL CABLING

Generally, the cable available to connect up to eight control units to a channel is limited to 200 feet. Exceptions to this are noted on the cabling schematics for the individual control units. (See also "System/370 Model 145 Cabling Schematic.") All control units are connected to the channels serially. All channels exceeding 100 feet must be reviewed and approved by the Installation Planning representative.



* On IBM 3032 and 3033 Processor Complexes, the sequence and control cables (no EPO) go to the PDU. On the IBM 3031 Processor Complex, the sequence and control cables (no EPO) go to the 3031 Processor (frame 02).

** The channel may be a separate machine (such as the IBM 2860) or integral to the system processor.

*** Machines with two-byte interface must be installed first on the channel.

CHANNEL-TO-CHANNEL ADAPTER CABLING

The channel-to-channel adapter (CTCA), SF #1850, is considered as if it were a control unit on each of the channels affected, except when the Model 145 is the host system. The adapter then requires two control unit positions on both X- (host) and Y- (guest) interfaces. The adapter requires external cables to both the host and guest channels, except the IBM 2860 Selector Channel.

The channel-to-channel adapter can be installed as follows:

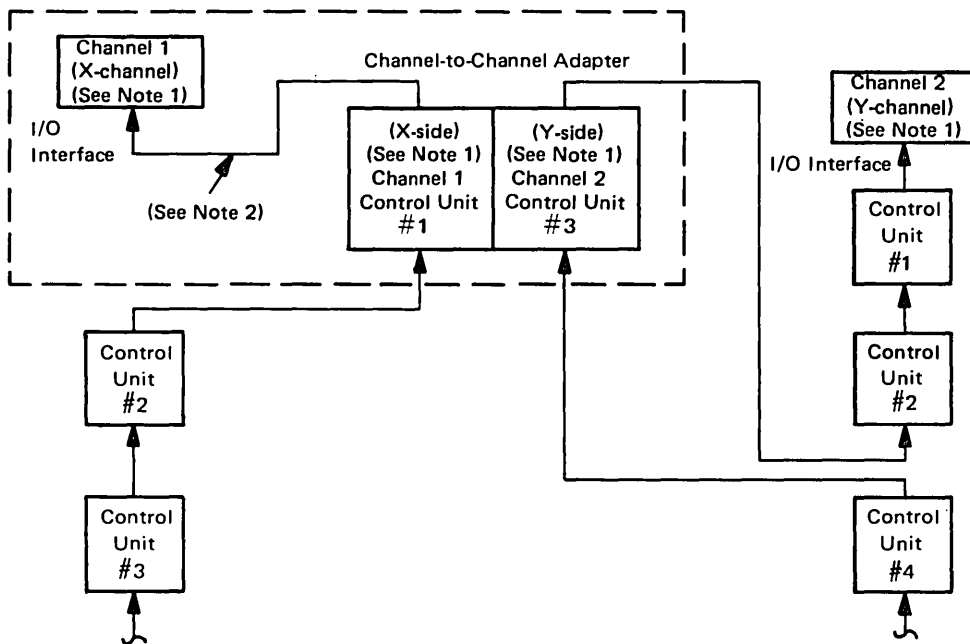
1. *IBM 2860 Selector Channel:* The host side is physically wired internally, first on the channel and then to the select out line (highest priority). The guest side may be cabled in any control unit physical position and any priority position on the select out or select in line.
2. *IBM System/370 Models 145, 155, 158, and IBM 3031 and 3032 Processors (with Director 1):* The CTCA is in

the same frame as the channel connectors and may be assigned to any control unit position or any priority on the host or guest channel. When the CTCA is physically the first control unit on the host channel, specify 4 feet of cable to connect the CTCA to channel connectors.

3. *IBM 3032 Processor (with Director 2) and IBM 3033 Processor:* The CTCA is in a different frame than the channels and can be assigned any control unit position or priority on the host or guest channel. When the CTCA is physically the first control unit on the host channel, specify 10 feet of cable for the 3032 and 6 feet of cable for the 3033.

In each of the preceding steps, the guest-side (Y) cabling should be specified as required.

Channel-to-Channel Adapter in First Control Unit Position

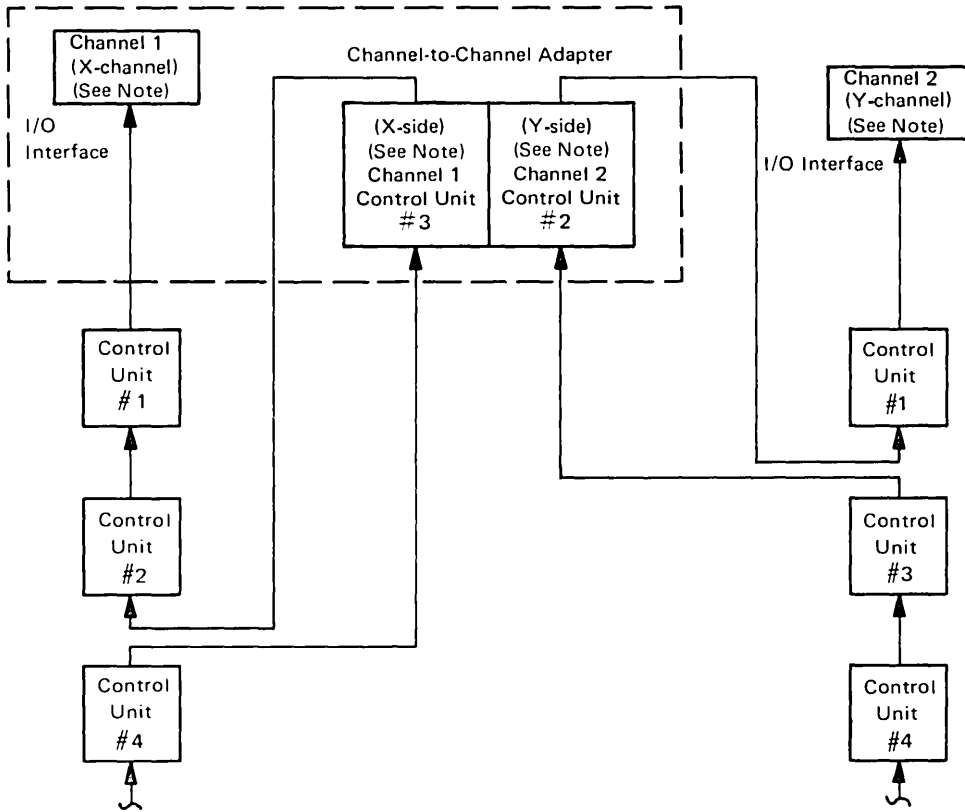


Notes:

1. X refers to the host channel; Y refers to the guest channel.
2. X-side; internal machine wiring (IBM 2860 Selector Channel).

CHANNEL-TO-CHANNEL ADAPTER CABLING

Channel-to-Channel Adapter in Any Control Unit Position

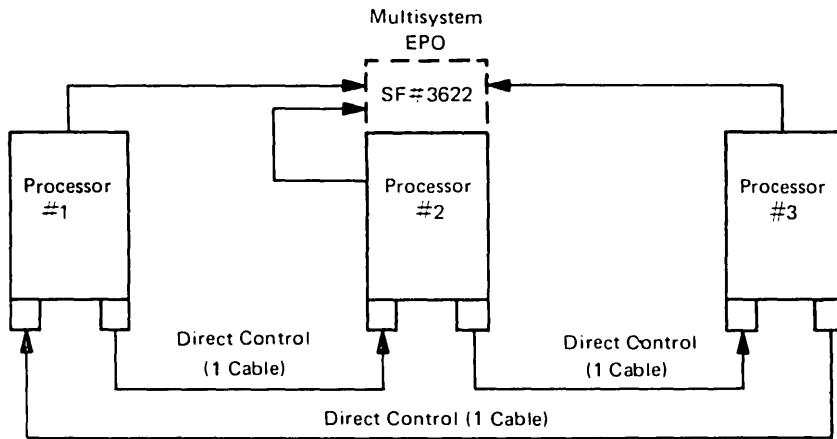


Note: X refers to the host channel; Y refers to the guest channel.

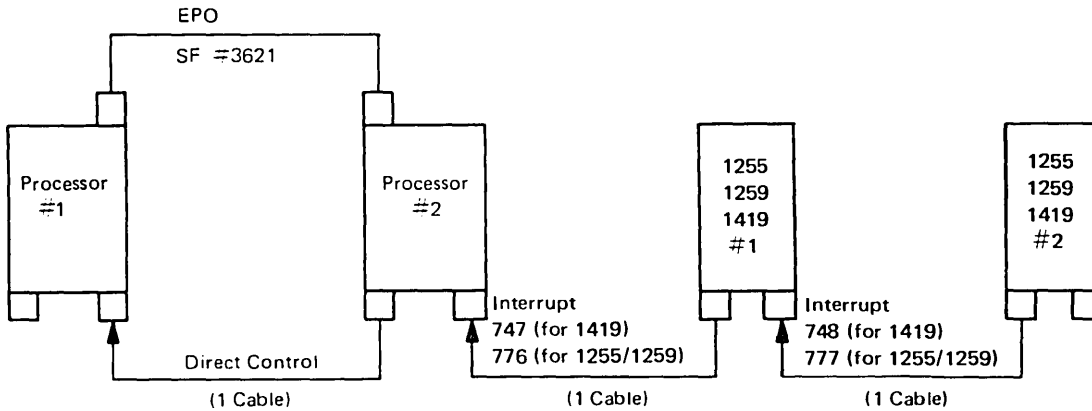


DIRECT CONTROL CABLING

Multiple Processors (Notes 1 and 2)



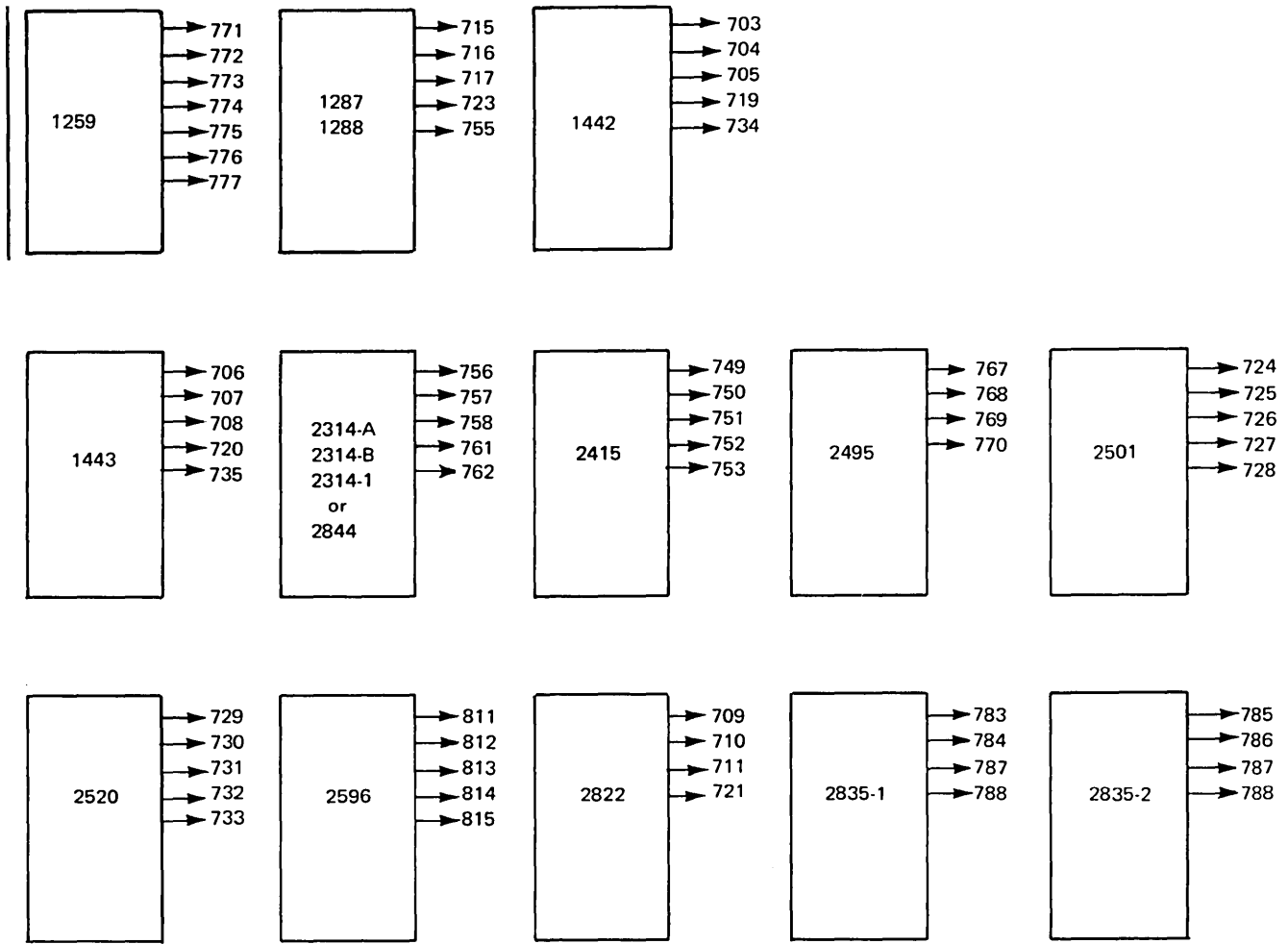
Two Processors With External Devices (Notes 1, 2, and 3)



Notes:

1. Cabling shown above is in addition to basic channel requirements.
2. Processor may be System/360 or System/370.
3. The total length of 747 or 776 plus 748 or 777 must not exceed 200 feet.

MACHINES WITH INTEGRAL OR ABUTTED CONTROLS



MACHINES WITH INTEGRAL OR ABUTTED CONTROLS

<i>Group No.</i>	<i>No. of Cables</i>	<i>From</i>	<i>To</i>	<i>Max Length (ft)</i>	<i>Notes</i>
703	2	1442	Selector Channel	—	1
704	2	1442	Control Unit	—	1
705	1	1442	Channel	150	2
706	2	1443	Selector Channel	—	1
707	2	1443	Control Unit	—	1
708	1	1443	Channel	150	2
709	2	2822	Multiplexer Channel	—	1
710	2	2822	Control Unit	—	1
711	1	2822	Channel	150	2
715	2	1287, 1288	Multiplexer Channel	—	1
716	2	1287, 1288	Control Unit	—	1
717	1	1287, 1288	Channel	150	2
719	2	1442	Channel-to-Channel Adapter	—	1,3
720	2	1443	Channel-to-Channel Adapter	—	1,3
721	2	2822	Channel-to-Channel Adapter	—	1,3
723	2	1287, 1288	Channel-to-Channel Adapter	—	1,3
724	2	2501	Selector Channel	—	1
725	2	2501	Multiplexer Channel	—	1
726	2	2501	Channel-to-Channel Adapter	—	1,3
727	2	2501	Control Unit	—	1
728	1	2501	Channel	150	2
729	2	2520	Selector Channel	—	1
730	2	2520	Multiplexer Channel	—	1
731	2	2520	Channel-to-Channel Adapter	—	1,3
732	2	2520	Control Unit	—	1
733	1	2520	Channel	150	2
734	2	1442	Multiplexer Channel	—	1
735	2	1443	Multiplexer Channel	—	1
749	2	2415	Selector Channel	—	1
750	2	2415	Multiplexer Channel	—	1
751	2	2415	Channel-to-Channel Adapter	—	1, 3
752	2	2415	Control Unit	—	1
753	1	2415	Channel	150	2
755	2	1287, 1288	Selector or Block Multiplexer Channel	—	1
756	2	2314, 2844	Channel	—	1,5,10,12
757	2	2314, 2844	Channel-to-Channel Adapter	—	1,3,5,10,12
758	2	2314, 2844	Control Unit	—	1,5,10,12
761	1	2314, 2844	Channel	150	2,10,12

MACHINES WITH INTEGRAL OR ABUTTED CONTROLS

<i>Group No.</i>	<i>No. of Cables</i>	<i>From</i>	<i>To</i>	<i>Max Length (ft)</i>	<i>Notes</i>
762	1	2314, 2844	2065, 2167, 3058, 3068	150	12,13,14
767	2	2495	Multiplexer Channel	-	1
768	2	2495	Control Unit	-	1
769	2	2495	Channel-to-Channel Adapter	-	1,3
770	1	2495	Channel	150	2
771	2	1259	Multiplexer Channel	-	1
772	2	1259	Control Unit	-	1
773	1	1259	Channel	150	2
774	2	1259	Channel-to-Channel Adapter	-	1,3
775	2	1259	Selector Channel	-	1,11
776	1	1259	System/360 or System/370 Processor	-	4,9
777	1	1259	Reader Device	-	4,9
783	3	2835-1	Channel	-	6,7,8
784	3	2835-1	2835-1	-	6,7,8,10
785	2	2835-2	Channel	-	6,7,8,10
786	2	2835-2	Control Unit	-	6,7,8,10
787	1	2835-1,2	Channel	150	2
788	1	2835-1	3058	150	13
		2835-2	3058, 3068	150	13
811	2	2596	Selector Channel	-	1
812	2	2596	Control Unit	-	1
813	1	2596	Channel	150	2
814	2	2596	Channel-to-Channel Adapter	-	1,3
815	2	2596	Multiplexer Channel	-	1

MACHINES WITH INTEGRAL OR ABUTTED CONTROLS

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. To channel-to-channel adapter (SF #1850).
4. For SF #3898 on System/370 Models 115, 125, and 4331; or for SF #3895 or SF #3274 on System/360 or other System/370 processors.
5. Last 2314 or 2844 must be within 75 feet of 2030 and 2040; must be within 100 feet on other systems.
6. Available cable length depends on (a) the number of control units connected between the last 2835 and the channel and (b) the type of channel to which the 2835 is attached. Available cable length can be computed as follows:
 - a. For connection of one 2835 Model 1 or 2 to a 2880, maximum length is 84 feet.
 - b. For connection of one 2835 Model 2 to a 3145, 3148, or 4341, maximum length is 76 feet.
 - c. For connection of one 2835 Model 2 to a 3155 or 3158, maximum length is 50 feet.
 - d. For connection of one 2835 Model 1 or 2 to a 3032 or 3033, maximum length is 70 feet.
 - e. For connection of one 2835 Model 2 to a 3031 or 3082, maximum length is 70 feet.These maximum lengths must be reduced as follows for each control unit connected between the last 2835 Model 1 or 2 and the channel:
 - (1) For each 2835 Model 1, subtract 9-1/2 feet.
 - (2) For each 2835 Model 2, subtract 13-1/2 feet.
 - (3) For each other control unit, subtract 14 feet.
7. If 2835-1 and other machines are attached to the same channel, the 2835-1 must be first.
8. a. The 2835-1 machines should attach to the first 2880.
 - b. The 2835-1 can attach only to the first block multiplexer channel in a channel group of the 3032 or 3033.
 - c. The 2835-2 may attach to the first, second, and/or third block multiplexer channel in a channel group of the 3031, 3032, or 3033.
9. 200 feet (unless modified by direct control cabling schematic) total length of the 747 (or 776) plus 748 (or 777).
10. For channel switching, one set of cable groups is required for each channel. Special features may be ordered for connecting more than one channel. Maximum cable length limit applies to each channel.
11. For 1259 only.
12. The 2314 DASF-B Series does not attach the 2844. Note also that when a 2050 is installed with SF #4478 and a 2314 or 2844, the IBM representative must be consulted for any special limitations.
13. Required for SF #6148 or #6149.
14. Required for SF #6150 on the 2844.

Appendix A. Power Cord Style Specifications and Plug Installation (World Trade Reference)

CABLE SPECIFICATIONS

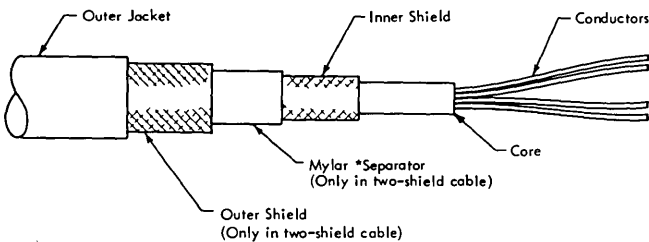
Power Cord Style	Cable Nominal OD inches (mm)	Number of Shields	Conductors		
			Quantity	Nominal OD* inches (mm)	AWG No.
A1	0.520 (13.2)	1	3	0.064 (1.6)	14
A2	0.510 (13.0)	1	3	0.081 (2.1)	12
A3	0.570 (14.5)	1	3	0.102 (2.6)	10
A4	0.375 (9.5)	1	3	0.051 (1.3)	16
A5	0.390 (9.9)	0	3	0.051 (1.3)	16
A6	0.560 (14.2)	0	3	0.064 (1.6)	14
A8	0.390 (9.9)	0	3	0.064 (1.6)	14
A9	0.374 (9.5)	0	3	0.040 (1.0)	18
B1	0.713 (18.1)	0	5	0.102 (2.6)	10
B2	0.693 (17.6)	1	5	0.064 (1.6)	14
D1	0.792 (20.1)	2	5	0.102 (2.6)	10
D2	0.750 (19.0)	1	5	0.102 (2.6)	10
D3	0.642 (16.3)	2	5	0.064 (1.6)	14
D4	0.914 (23.2)	2	4	0.102 (2.6)	10
E1	1.024 (26.0)	1	5	0.129 (3.3)	8
E2	1.400 (35.6)	0	5	0.232 (5.9)	4
E3	1.200 (30.5)	2	5	0.184 (4.7)	6
E4	1.200 (30.5)	0	5	0.184 (4.7)	6
E5	1.200 (30.5)	1	5	0.184 (4.7)	6
E6	1.240 (31.5)	2	4	0.184 (4.7)	6
E7	1.440 (36.6)	1	5	0.232 (5.9)	4
E8	0.974 (24.7)	0	5	0.129 (3.3)	8
E9	0.949 (24.1)	1	4	0.184 (4.7)	6
E10	1.340 (34.0)	1	4	0.232 (5.9)	4
F1	1.400 (35.6)	0	5	0.292 (7.4)	2
F2	1.646 (41.8)	1	5	0.292 (7.4)	2
F3	1.646 (41.8)	0	5	0.292 (7.4)	2
F4	1.293 (32.8)	1	4	0.292 (7.4)	2
G1			3	0.040 (1.0)	18
G2					
G3	0.360 (9.1)	0	—	0.051 (1.3)	16
G4	0.365 (9.3)	1	—	0.040 (1.0)	18

* This diameter refers to solid, bare wire.

HOW TO INSTALL A POWER PLUG ON SHIELDED CABLE

To make power cable shielding effective, the shield or shields must be properly terminated at the plug end of the cable. Because different plugs are used in different countries, slight changes to the following instructions may be needed.

Names of Bulk Cable Components



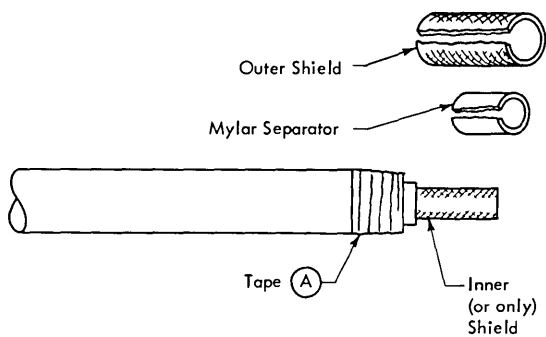
* Trademark of E.I. du Pont de Nemours & Co. (Inc.)

Preparing Bulk Cable End for the Plug

Dimensions given are for reference only. Use your own discretion to assure proper assembly of the cable and plug.

Step 1: Remove the outer jacket for 1-1/2 inches (38 mm) from the end for 15 A-30 A cables or 2-3/4 inches (70 mm) from the end for 45 A-60 A cables. If this is a one-shield cable, go to step 4.

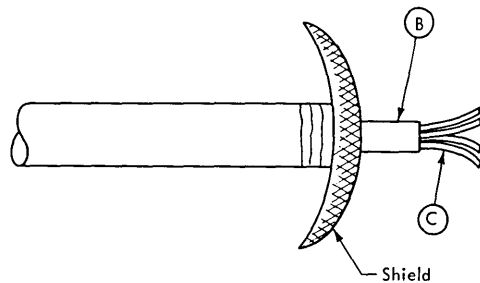
Step 2: (For two-shield cables only.) Remove the outer shield as far back as the outer jacket. The Mylar separator is exposed. Wrap one full turn of electrical tape over the separator and another full turn of tape over the cut end of the outer shield; overlap onto the outer jacket. This tape is used to assure complete electrical isolation between the inner and the outer shields. (See (A).)



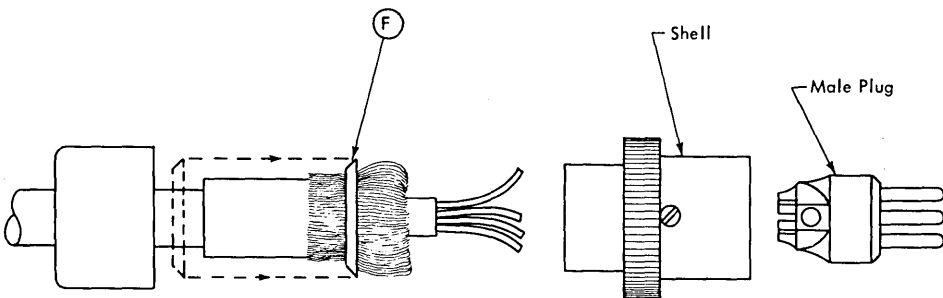
Step 3: (For two-shielded cables only). Remove the Mylar separator for 1 inch (25 mm) from the end for 15 A-30 A cables or 2-1/4 inches (57 mm) from the end for 45 A-60 A cables. Do not cut the inner shield.

Step 4: Do not cut the inner (or only) shield. Unbraid and carefully comb out the shield for 1 inch (25 mm) from the end for 15 A-30 A cables or 2-1/4 inches (57 mm) from the end for 45 A-60 A cables. The core is exposed. (See (B).)

Step 5: Remove the cable core for a minimum of 3/4 inch (19 mm) from the end; the conductors are exposed. (See (C).)



Step 6: Carefully lay the shield back over the cable outer jacket; wrap tape around the shield for temporary protec-

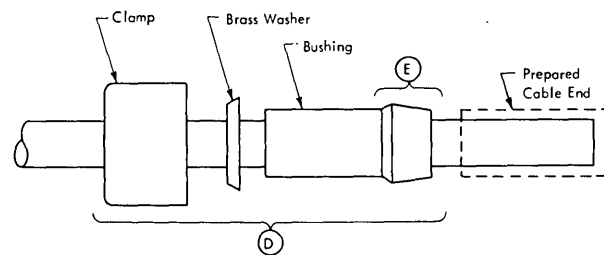


tion. Note that on two-shield cables, the outer shield must be insulated from the plug cap, equipment ground (earth) wire, and conduit; the outer shield is grounded at the machine end only. The inner (or only) shield should be grounded through the shell of the plug to the branch circuit conduit. Three-hundred-sixty-degree grounding of the shield to the plug shell is desirable; that is, contact should be between the shield and the shell at all points around the edge, not just at one point.

Installing the Plug

These steps show the attachment of one type of plug; modifications will be needed to allow for the different physical designs of plugs used in various countries.

Install the clamp, brass washer, and bushing over the prepared cable end as shown at (D). Take the protective tape off the shield and slide the bushing over against the shield. Carefully lay the shield back over (E) of the bushing; be sure to spread the strands of the shield evenly over the bushing surface.



Slide the brass washer over the shield and up against the mating surface of the bushing at (F). Wrap tape around the shield for one full turn and trim off the remaining shield strands. Install the clamp and be sure that the mating surface is tightly against the brass washer.

Install the proper terminals and put the rest of the plug assembly together.

Appendix B. Customer-Supplied Cables

CABLES BY MACHINE

Unit	Model	Cable Group Number	IBM Preassembled Cable Assembly	Customer-assembled Cables		Connector Installation Tools (Note 3)	Cable Description
				Bulk IBM Part No.	Connector Group		
1017/2826	2826	c					Used between customer-provided terminal boxes when 1017 is remote from 2826 (350-foot max). See Specification A for cable description. (Note 5)
1018/2826	2826	d					Used between customer-provided terminal boxes when 1018 is remote from 2826 (350-foot max). See Specification B for cable description. (Note 5)
1053/2848	All	b	5728298	5213821	5729797	7,8	1053 attachment (2,000-foot maximum cable length). (Note 4)
2250/2840	2250 Model 3	Group 564 to 553	5724309	5213924		9,9A	Used to connect group 553 to 564. Connectors mate so that more than one cable may be used to make a run.
2260/2848	All	a	5728291	323921	5729794	2,3,5	Used for display only (less than 1,000-foot cable length). (Notes 4, 6)
2260/2848	All	a	5727685	323921	5729794	2,3,5	Used for display only (1,000-foot to 2,000-foot cable length). (Notes 4, 6)
2260/2848	All	a	5728293	5213866	5729796	4,5	Used to add keyboard (less than 1,000-foot cable length). (Note 4)
2260/2848	All	a	5727686	5213866	5729796	4,5	Used to add keyboard (1,000-foot to 2,000-foot cable length). (Note 4)
2260/2848	All	a	5728292	5213814	5729795	1,2,3,4,5	Combined keyboard display (less than 1,000-foot cable length). (Notes 4, 6)
2260/2848	All	a	5727687 (Note 2)	5214887	5727385	1,2,3,4,5,6	Combined keyboard display (1,000-foot to 2,000-foot cable length). (Notes 4, 6)

Notes:

1. One run was formerly bulk IBM 532029. Requires tools 1 and 5 on tool listing for attaching connectors.
2. Formerly 5729793, consisted of IBM bulk parts 323921, 532029, and 5213866 (one run each); and connector group 5729798.
3. Installation tools for customer-assembled cables must be supplied by the customer. See "Special Tools Required."
4. Before ordering parts or cables, see "Cable Installation Practice for 2260/2848 and 1053/2848" in Section 1.
5. Installation tools are determined by the type of terminal box provided by the customer and these tools must be supplied by the customer.
6. Can be reworked for 3270 Information Display System application. IBM 3270 Information Display System External Coax Cable Installation, S229-7020, should be requested for instructions and procedures.

SPECIAL TOOLS REQUIRED

Tool Code Number	Commercial Tool Number	Component Name	Component IBM Part Number	Component Commercial Part Number*
1	Burndy MR8EC-2	Uniring	523171	Burndy YEC130
2	Burndy MR8EC-3	Uniring	2109464	Burndy YEC90
3	AMP69454	Uniring	2152868	Burndy YEC160
4	Berg HT13-1618	Connector	321051	AMP320559
5	Berg HT15-20	Terminal	591047	Berg 3960
6	Raychem Minigun CV-5300	Terminal	596255	Berg B-T4036-1
7	AMP90067 and Extraction Tool AMP305183	Shrink Tubing	631810	Raychem 0,75" (19.05 mm)
	AMP90067 and Extraction Tool AMP305183	Contact	2122259	AMP66104-1
	AMP90165-1	Contact	2122261	AMP66100-1
8	AMP90165-1	Terminal	1127037	AMP41274
9	Burndy M8ND	Female	595980	---
	Burndy N22RVT-1	Pin	595985	---
	Burndy RX4-1	Inner Socket	595987	---
9A**	Buchanan	Female	595980	---
	Hand Tool 11220-3	Pin	595985	---
		Inner Socket	595987	---

* Or approved equivalent part.

** Replaces Burndy equipment.

CABLE DESCRIPTIONS

Part 532029—If larger size is not objectionable, use part 323921

<i>Conductor</i>	<i>AWG Size</i>	<i>OD</i> <i>Inches (mm)</i>	<i>UL Rating</i>	<i>Insulation Type</i>	<i>Cover</i>
Copperweld Solid	#26	0.143 (3.6)	300 V*	Flame-Retardant Polyethylene	PVC Color Gray Shield Copper Braid

Source: IBM or customer-selected source.

* Shield to ground.

Specification A—IBM 1017 to 2826 (Customer Supplied)

<i>Conductor</i>	<i>AWG Size*</i>	<i>OD*</i> <i>Inches (mm)</i>	<i>UL Rating</i>	<i>NFPA</i> <i>Application Type</i>	<i>Insulation Type</i>	<i>Cover</i>
Copper 7 x 30 Stranding, Tinned	#22	0.640 to 0.690 (16.3 to 17.5)	300 V 80°C	Class 2 Low-Energy Circuit Under 30 V	Flame-Retardant PVC (or equivalent)	PVC (or equivalent)

Thirty-two twisted pairs. Pairs twisted one turn per 1.50 ± 0.25 inches (38.1 ± 6.3 mm).

One conductor of each pair is black; the other conductor is color-coded to agree with American EIA standard GEN 101.

* May be larger if resulting cable size is not objectionable.

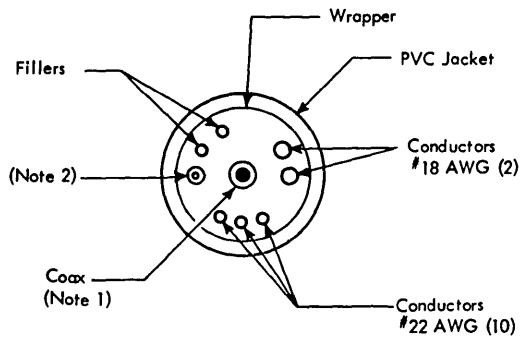
Specification B—IBM 1018 to 2826 (Customer Supplied)

<i>Conductor</i>	<i>AWG Size*</i>	<i>OD*</i> <i>Inches (mm)</i>	<i>UL Rating</i>	<i>NFPA</i> <i>Application Type</i>	<i>Insulation Type</i>	<i>Cover</i>
Copper 7 x 28 Stranding, Tinned	#20	1.048 to 1.148 (26.7 to 29.2)	300 V 80°C	Class 2 Low-Energy Circuit Under 30 V	Flame-Retardant PVC (or equivalent)	PVC (or equivalent)

Forty twisted pairs. Pairs twisted one turn per 1.00 ± 0.12 inch (25.4 ± 3.0 mm).

* May be larger if resulting cable size is not objectionable.

Part 5213814



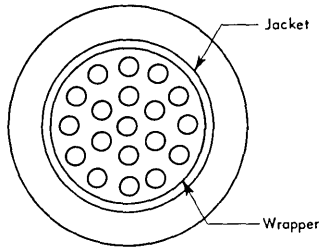
Cable Specifications									
No. of Cond	Shield	Cable OD Inches (mm)	Filler	Wrapper or Separator Inches (mm)	Jacket				Remarks
					Material	Nominal Thickness Inches (mm)	Color	Finish	
14	-	0.462 ± 0.025 (11.7 ± 0.6)	PVC (Note 3)	0.001 Mylar (0.03)	PVC	0.063 (1.6)	IBM 823 Gray	Smooth	See Note 4

Specifications for Individual Conductors														
Wire No.	Conductor				Insulation					UL Rating				
	AWG Size	Nominal OD Inches (mm)		Material	Stranding	Material	Wall Thickness Average Inches (mm)		Body Color	Tracer	Volts	Temp °C		
1	22	0.025	(0.6)	CW	Solid	(Note 1)				-	300	80		
2	18	0.040	(1.0)	Tinned Cu	16/30	PVC	0.009	(0.2)	Blk	-	↓	↓		
3	18	0.040	(1.0)		7/30				Wh	-				
4	22	0.025	(0.6)						Blk	-				
5									Wh	-				
6									Red	-				
7									Blu	-				
8									Gra	-				
9									Org	-				
10									Aqu	-				
11									Vio	-				
12									Yel	-				
13									Brn	-				
14	22	0.025	(0.6)	Tinned Cu (Note 2)	7/30	PVC	0.009	(0.2)	Wh	Blk			300	80

Notes:

1. Conductor to be coax-93 ohms, 13.5 pf/ft (44 pf/m), without outer PVC jacket.
2. A #22 AWG (nominal OD 0.025 inch [0.6 mm]) conductor shielded; a #36 AWG (nominal OD 0.005 inch [0.13 mm]) conductor tinned copper, 90% minimum coverage with black PVC jacket.
3. Fillers required to effect circular cross section.
4. Completed cable shall be capable of withstanding one complete turn around a 3-inch (76.2-mm) radius mandrel at room temperature without damage to wires or cover.

Part 5213821



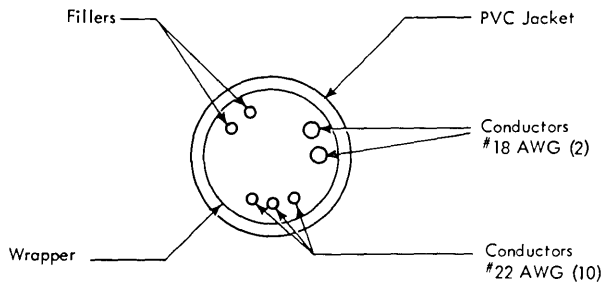
Cable Specifications									
No. of Cond	Shield	Cable OD Inches (mm)	Filler	Wrapper or Separator Inches (mm)	Jacket				Remarks
					Material	Nominal Thickness Inches (mm)	Color	Finish	
24	-	0.470 ± 0.025 (11.9 ± 0.6)	PVC (Note 2)	0.001 Mylar (0.03)	PVC (Note 1)	0.063 (1.6)	IBM 823 Gray	Smooth	See Notes 4 and 5

Specifications for Individual Conductors												
Wire No.	Conductor				Insulation				UL Rating			
	AWG Size	Nominal OD Inches (mm)		Material	Stranding	Material	Wall Thickness Average Inches (mm)		Body Color	Tracer	Volts	Temp °C
1	18	0.040	(1.0)	Tinned Cu	16/30	PVC	0.016	(0.4)	Blk	-	300	80
2	↓	↓	↓	↓	↓	↓	↓	↓	Wh	-	↓	↓
3	↓	↓	↓	↓	↓	↓	↓	↓	Red	-	↓	↓
4	↓	↓	↓	↓	↓	↓	↓	↓	Yel	-	↓	↓
5	↓	↓	↓	↓	↓	↓	↓	↓	Org	-	↓	↓
6	↓	↓	↓	↓	↓	↓	↓	↓	Blu	-	↓	↓
7	↓	↓	↓	↓	↓	↓	↓	↓	Brn	-	↓	↓
8	↓	↓	↓	↓	↓	↓	↓	↓	Vio	-	↓	↓
9	↓	↓	↓	↓	↓	↓	↓	↓	Aqu	-	↓	↓
10	↓	↓	↓	↓	↓	↓	↓	↓	Gra	-	↓	↓
11	↓	↓	↓	↓	↓	↓	↓	↓	Wh	Red	↓	↓
12	↓	↓	↓	↓	↓	↓	↓	↓	Wh	Yel	↓	↓
13	18	0.040	(1.0)	↓	16/30	↓	↓	↓	Grn (Note 3)	Yel	↓	↓
14	20	0.032	(0.8)	↓	10/30	↓	↓	↓	Blk	-	↓	↓
15	↓	↓	↓	↓	↓	↓	↓	↓	Wh	-	↓	↓
16	↓	↓	↓	↓	↓	↓	↓	↓	Red	-	↓	↓
17	↓	↓	↓	↓	↓	↓	↓	↓	Yel	-	↓	↓
18	↓	↓	↓	↓	↓	↓	↓	↓	Org	-	↓	↓
19	↓	↓	↓	↓	↓	↓	↓	↓	Blu	-	↓	↓
20	↓	↓	↓	↓	↓	↓	↓	↓	Brn	-	↓	↓
21	↓	↓	↓	↓	↓	↓	↓	↓	Vio	-	↓	↓
22	↓	↓	↓	↓	↓	↓	↓	↓	Aqu	-	↓	↓
23	↓	↓	↓	↓	↓	↓	↓	↓	Gra	-	↓	↓
24	20	0.032	(0.8)	Tinned Cu	10/30	PVC	0.016	(0.4)	Wh	Red	300	80

Notes:

1. Jacket material: elongation—200% minimum; tensile—1,800 psi minimum; hardness—shore A 80 ± 5.
2. Fillers optional to effect a circular cross section.
3. Grounding wire is to be colored green (60 to 70%) with yellow (40 to 30%) helix.
4. Completed cable shall be capable of withstanding one complete turn around a 3-inch (76.2-mm) radius mandrel at room temperature without damage to wires or cover.
5. For 1053-to-1801/1802 cables, see *IBM Data Acquisition and Control System/1800 Installation Manual—Physical Planning, GA26-5922*.

Part 5213866



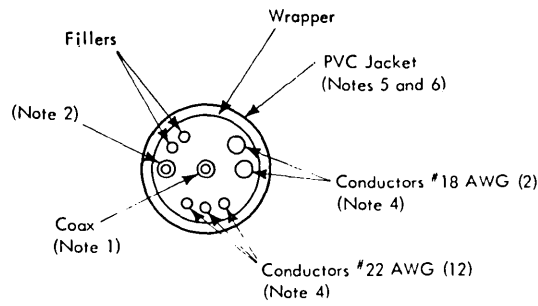
Cable Specifications									
No. of Cond	Shield	Cable OD Inches (mm)	Filler	Wrapper or Separator Inches (mm)	Jacket				Remarks
					Material	Nominal Thickness Inches (mm)	Color	Finish	
12	-	0.376 ± 0.015 (9.6 ± 0.4)	PVC	0.001 Mylar (0.03)	PVC	0.063 (1.6)	IBM 823 Gray	Smooth	See Note

Specifications for Individual Conductors											
Wire No.	Conductor				Insulation				UL Rating		
	AWG Size	Nominal OD Inches (mm)	Material	Stranding	Material	Wall Thickness Average Inches (mm)	Body Color	Tracer	Volts	Temp °C	
1	18	0.040 (1.0)	Tinned Cu	16/30	PVC	0.009 (0.2)	Blk	-	300	80	
2	18	0.040 (1.0)	↓	16/30	↓	↓	Wh	-	↓	↓	
3	22	0.025 (0.6)	↓	7/30	↓	↓	Blk	-	↓	↓	
4	↓	↓	↓	↓	↓	↓	Wh	-	↓	↓	
5	↓	↓	↓	↓	↓	↓	Red	-	↓	↓	
6	↓	↓	↓	↓	↓	↓	Blu	-	↓	↓	
7	↓	↓	↓	↓	↓	↓	Gra	-	↓	↓	
8	↓	↓	↓	↓	↓	↓	Org	-	↓	↓	
9	↓	↓	↓	↓	↓	↓	Aqu	-	↓	↓	
10	↓	↓	↓	↓	↓	↓	Vio	-	↓	↓	
11	↓	↓	↓	↓	↓	↓	Yel	-	↓	↓	
12	22	0.025 (0.6)	Tinned Cu	7/30	PVC	0.009 (0.2)	Brn	-	300	80	

Note:

Completed cable shall be capable of withstanding one complete turn around a 3-inch (76.2-mm) radius mandrel at room temperature without damage to wires or cover.

Part 5214887



Cable Specifications								
No. of Cond	Shield	Cable OD Inches (mm)	Filler	Wrapper or Separator Inches (mm)	Jacket			
					Material	Nominal Thickness Inches (mm)	Color	Finish
16	-	0.497 ± 0.025 (12.6 ± 0.6)	PVC (Note 3)	0.001 Mylar (0.03)	PVC (Notes 5 and 6)	0.063 (1.6)	Black	Smooth

Specifications for Individual Conductors											
Wire No.	Conductor				Insulation				UL Rating		
	AWG Size	Nominal OD Inches (mm)	Material	Stranding	Material	Wall Thickness Average Inches (mm)	Body Color	Tracer	Volts	Temp °C	
1	22	0.025 (0.6)	CW	Solid	(Note 1)						
2	18	0.040 (1.0)	Tinned Cu	16/30	SR PVC	0.009 (0.2)	Blk	-	300	80	
3	18	0.040 (1.0)	(Note 4)	16/30			Wh	-			
4	22	0.025 (0.6)		7/30			Blk	-			
5							Wh	-			
6							Red	-			
7							Blu	-			
8							Gra	-			
9							Org	-			
10							Aqu	-			
11							Vio	-			
12							Yel	-			
13			Tinned Cu				Brn	-			
14			(Note 2)				Wh	Blk			
15			Tinned Cu				Wh	Red			
16	22	0.025 (0.6)	Tinned Cu	7/30	SR PVC	0.009 (0.2)	Wh	Blu	300	80	

Notes:

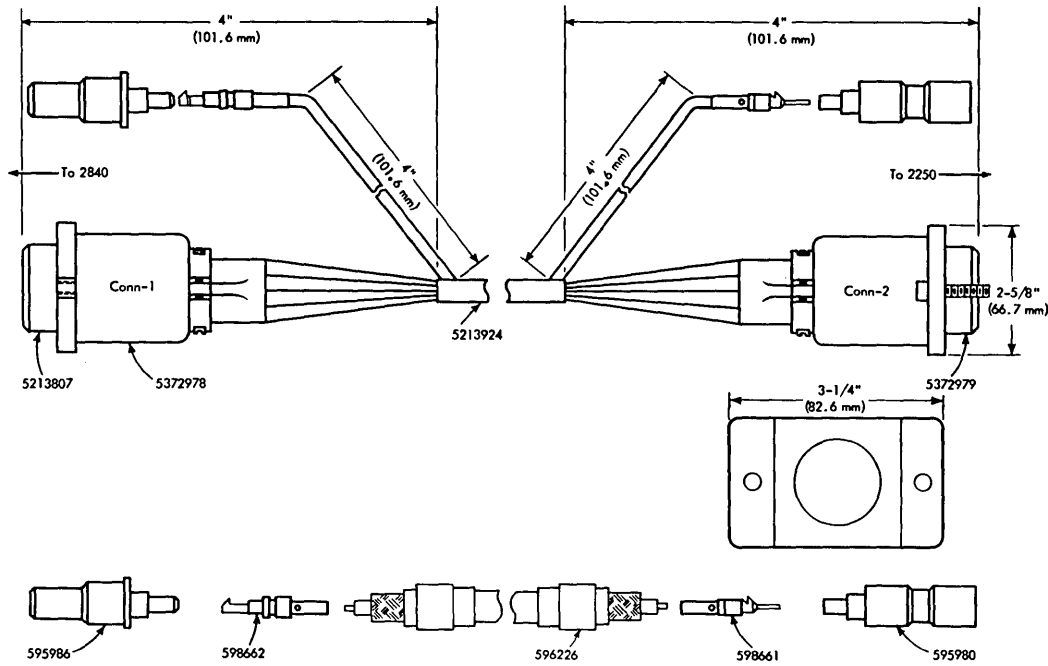
- Conductor to be coax-93 ohm, 13.5 pf/ft (44 pf/m), without outer PVC jacket.
- A #22 AWG (nominal OD 0.025 inch [0.6 mm]) conductor shielded; #36 AWG (nominal OD 0.005 inch [0.13 mm]) conductor tinned copper, 90% minimum coverage with black PVC jacket; 0.015 inch (0.4 mm) nominal wall.
- Fillers required to effect circular cross section.
- Conductors to be UL style 1061.
- Jacket material must meet the requirements of IPCEA S-61-402 outdoor use; color is black.
- Jacket material hardness-shore A 85 ± 5.

Part 5724309

Quantity	IBM Part Number	Burdny Corporation Part Number *	Description
1	5213807	ME23XR-1	Receptacle 23 Contact
2	5372978	MEH23X-1	Hood
21	598662	RC26W-1F45	Inner Socket
21	595986	RMX109-1F45	Outer Male Body
40	596226	YOE112-L	Outer Hyring
1	5372979	ME23XP-1T	Plug
21	595980	RCX109-1F45	Outer Female Body
21	598661	RM26W-1F45	Inner Pin

Note: Assemble to Specification No. 890130 and 895441; specifications available from IBM upon request.

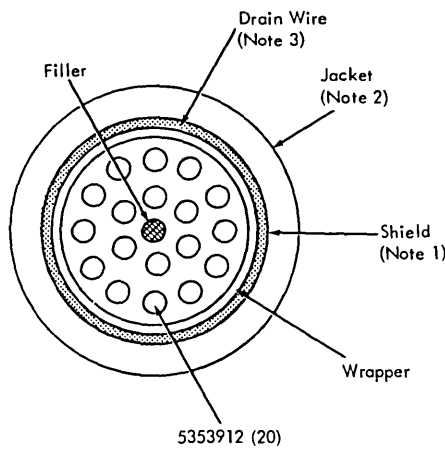
* Or approved equivalent part.



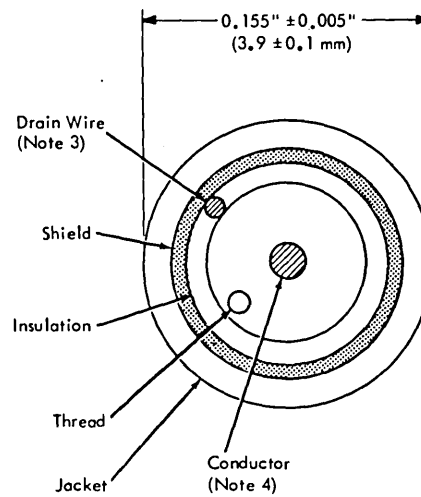
From	To
Conn-1 Pin	Conn-2 Pin
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11

From	To
Conn-1 Pin	Conn-2 Pin
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23

Part 5213924



Part 5353912



Cable Specifications (Part 5213924)								
No. of Cond	Shield	Cable OD Inches (mm)	Filler	Wrapper or Separator Inches (mm)	Jacket			
					Material	Nominal Thickness Inches (mm)	Color	Finish
20	(Note 1)	1.005 ± 0.040 (25.5 ± 1.0)	PVC	0.001 Mylar (0.03)	PVC (Note 2)	0.063 (1.6)	IBM 823 Gray	Smooth

Specifications for Individual Conductors (Part 5353912)										
Wire No.	Conductor		Insulation	Jacket			Shield	UL Rating		Drain Wire
	AWG Size	Material	Material (Insulation and Thread)	Material	Nominal Thickness Inches (mm)	Color	Material and Coverage	Volts	Temp °C	
1-20	#26 Solid	Silver-Plated Copper Alloy (Note 4)	Flame-Retardant Polyethylene	PVC	0.015 (0.4)	Gray	#38 (nominal OD 0.004 inch [0.10 mm]) AWG Tinned Copper 90% Min Coverage	90	80	Silver-Plated Copper Alloy (Note 5)

Notes:

- Shield to be #34 AWG (nominal OD 0.006 inch [0.15 mm]) tinned copper, 90% minimum coverage.
- Tensile strength-1,800 psi (1.3 kg f/mm²) minimum; elongation-200% minimum; hardness-shore A 85 ± 5.
- Drain wire is under shield. A #26 AWG (nominal OD 0.016 inch [0.4 mm]) solid copper alloy spiral lay.
- Dc resistance-52 ohms maximum per 1,000 feet; break force-12.5 lb (5.7 kg) minimum (conductor).
- A #29 AWG (nominal OD 0.110 inch [0.3 mm]) solid copper alloy spiral lay; dc resistance-100 ohms maximum per 1,000 feet; break force-5.6 lb (2.6 kg) minimum; elongation-6% minimum (drain wire).

Appendix C. Template Index










Legend:
 T = World Trade Template
 K = World Trade Adhesive Template








Type	Model	Order (Form) Number (Scale 1:48)	Order (Form) Number* (Scale 1:50)	Type	Model	Order (Form) Number (Scale 1:48)	Order (Form) Number* (Scale 1:50)
360 and 370	Field Engineering Furniture and Test Equipment	GX22-6925-1	--	2401	1-6, 8	GX22-7037-0	T 57 259 K 57 179
1017	1, 2	GX22-6834-8	T 57 413 K 57 407	2402	1-6	GX22-6855-9	T 57 260 K 57 180
1018	1	GX22-6834-8	T 57 413 K 57 407	2403	1-6	GX22-6855-9	T 57 261 K 57 181
1052	7	GX22-6856-1 GX22-6859-5 GX22-6894-4 GX22-6905-1 GX22-6914-1 GX22-6924-0	-- -- -- -- -- --	2404	1-3	GX22-6855-9	T 56 261 W 57 181
1052	System 1050	--	T 57 318 K 57 417	2415	1-6	GX22-7038-0	T 57 410 K 57 409
1053		--	T 57 318 K 57 417	2420	5	GX22-7039-0	T 57 099 K 57 093
1053	4	GX22-6859-5	--	2420	7	GX22-7039-0	T 57 425 K 57 447
1255	1-3	GX22-6860-6	--	2495	1	GX22-7041-0	T 57 309 K 57 421
1259	2	GX22-6860-6	T 57 411 K 57 405	2501	B1, B2	GX22-6834-8	T 57 090 K 57 095
1259	33, 34	--	T 57 411 K 57 405	2520	B1-B3	GX22-6834-8	T 57 091 K 57 096
1275	2,4	--	T 57 411 K 57 405	2540	1	GX22-6834-8	T 57 244 K 57 160
1287	1-5	GX22-6860-6	T 57 238 K 57 155	2560	A1, A2	GX22-6834-8	T 57 214 K 57 208
1288	1	GX22-6860-6	T 57 249 K 57 166	2596	1	GX22-6834-8	T 57 522 K 57 523
1403	2, 3, 7	GX22-6834-8	T 57 215 K 57 352	2701	1	GX22-6857-8	T 57 263 K 57 183
1403	N1	GX22-6834-8	T 57 216 K 57 161	2702	1	GX22-6857-8	T 57 264 K 57 184
1419	1	GX22-6860-6	T 57 248 K 57 165	2703	1	GX22-6857-8	T 57 437 K 57 436
1419	31, 32	--	T 57 248 K 57 165	2711	1	GX22-6857-8	T 57 444 K 57 443
1442	N1, N2	GX22-6834-8	T 57 219 K 57 167	2715	1, 2	GX22-6857-8	T 57 329 K 57 397
1443	N1	GX22-6834-8	T 57 250 K 57 170	2803	1-3	GX22-7042-0	T 57 266 K 57 186
2150	1	GX22-6859-5	T 57 252 K 57 172	2804	1-3	GX22-7043-0	T 57 266 K 57 186
2250	1, 3	GX22-6859-5	T 57 253 K 57 173	2816	1	GX22-7044-0	T 57 268 K 57 188
2260	1, 2	GX22-6859-5	T 57 092 K 57 097	2820	1	GX22-6858-7	T 57 269 K 57 189
2285	1	GX22-6859-5	T 57 253 K 57 173	2821	1, 2, 4, 6	GX22-6834-8	T 57 270 K 57 190
2301	1	GX22-6858-7	T 57 255 K 57 175	2821	3, 5	GX22-6834-8	T 57 271 K 57 191
2303	1	GX22-6858-7	T 57 346 K 57 349	2822	1	GX22-6834-8	T 57 272 K 57 192
2305	1, 2	GX22-6858-7	T 57 502 K 57 506	2826	1	GX22-6834-8	T 57 413 K 57 407
2311	1	GX22-6858-7	T 57 256 K 57 176	2835	1, 2	GX22-6858-7	T 57 502 K 57 506
2314	A Series	GX22-6858-7	T 57 400 K 57 401	2840	2	GX22-6859-5	T 57 273 K 57 193
2314	B Series	GX22-6858-7	T 57 510 K 57 511	2841	1	GX22-6858-7	T 57 274 K 57 194
2314	1	GX22-6858-7	T 57 430 K 57 434	2844	1	GX22-6858-7	T 57 445 K 57 446
2319	A1-A3	GX22-6858-7	T 57 301 K 57 395	2848	1-3, 21, 22	GX22-6859-5	T 57 092 K 57 097
2321	1	GX22-6858-7	T 57 257 K 57 177				

*WT templates are available from:

IBM Deutschland
 CE Information Dept. 7902
 Pascalstrasse 100
 7000 Stuttgart 80
 West Germany

Appendix D. Plugs and Receptacles

60-Hz Power Receptacles and Plugs									400-Hz Power Receptacles and Plugs
Plug Type	A ⁴	A1 ⁴	A2 ⁴	B ⁴	C ⁴	D ⁴	E ⁴	F ⁴	G ⁴
Plug ^{1,2}	(R&S) 3720	(R&S) 3720U-1	(R&S) 3720U-2	(R&S) 3730	(R&S) 3750	(R&S) 3760	(R&S) 7328	(R&S)J JPS-1034H	(R&S) JPS-1534LK
Receptacle: NEMA or ² R&S	(R&S) 3743	(R&S) 3743U-1	(R&S) 3743U-2	(R&S) 3744	(R&S) 3753	(R&S) 3754	(R&S) 7324	(R&S) JRSR-1034H (R&S) JRSA-1034H ⁸	(R&S) JRSR-1534LK (R&S) JRSA-1534LK ⁸
	Inline ⁷ (R&S) 3913	(R&S) 3913U-1	(R&S) 3913U-2	(R&S) 3914	(R&S) 3933	(R&S) 3934	(R&S) 7428	(R&S) JCS-1034H	Inline ⁷ (R&S) JCS-1534LK
Schematic: Face of Receptacle									
Service Rating: Amperes Nominal Voltage	20 208/240	20 120	15 208/240	15 208/240	30 208/240	30 208/240	60 208/240	100 208/240	150 208/240
Phases	1	1	1	3	1	3	3	3	3
Wires ³	3	3	3	4	3	4	4	4	4

60-Hz Power Receptacles and Plugs						
H	J ⁶	K	L ⁶	M	N ⁶	R
NEMA 5-15P	NEMA L5-15P	NEMA 6-15P	NEMA L6-15P	NEMA 5-20P	NEMA L5-20P	NEMA 5-30P
NEMA 5-15R	NEMA L5-15R	NEMA 6-15R	NEMA L6-15R	NEMA 5-20R	NEMA L5-20R	NEMA 5-30R
NEMA 5-15R	NEMA L5-15R	NEMA 6-15R	NEMA L6-15R	NEMA 5-20R	NEMA L5-20R	NEMA 5-30R
						
15 120	15 120	15 208/240	15 208/240	20 120	20 120	30 120
1	1	1	1	1	1	1
3	3	3	3	3	3	3

¹ These plug types (or equivalent) are supplied with the machines. Customer provides matching receptacles.

² For U.S. and Canada, NEMA = National Electrical Manufacturer's Association; R&S = Russell & Stoll.

³ Number of wires includes one insulated equipment grounding conductor green or green and yellow.

⁴ Plug types A, B, C, D, E, F, and G are watertight.

⁵ The 3-phase receptacle must be wired for correct phase rotation; looking at the face of the receptacle and a clockwise direction from the ground pin, the sequence will be phase 1, phase 2, and phase 3.

⁶ Plug types J, L, and N are locking style.

⁷ When an R&S inline connector is used with flexible metal conduit or liquid tight flexible metal conduit, an R&S FSA or JPA adapter is required.

⁸ Includes angular adapter.

Appendix E. Inch-to-Centimeter Conversion Table

in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm
1/8	0,318	48	122	98	249	148	376	198	503	248	630	298	757
1/4	0,635	48-1/2	123	98-1/2	250	148-1/2	377	198-1/2	504	248-1/2	631	298-1/2	758
3/8	0,953	49	124	99	251	149	378	199	505	249	632	299	759
1/2	1,270	49-1/2	126	99-1/2	253	149-1/2	380	199-1/2	507	249-1/2	634	299-1/2	761
5/8	1,588	50	127	100	254	150	381	200	508	250	635	300	762
3/4	1,905	50-1/2	128	100-1/2	255	150-1/2	382	200-1/2	509	250-1/2	636	300-1/2	763
7/8	2,223	51	130	101	257	151	384	201	511	251	638	301	765
1	2,540	51-1/2	131	101-1/2	258	151-1/2	385	201-1/2	512	251-1/2	639	301-1/2	766
1-1/2	4	52	132	102	259	152	386	202	513	252	640	302	767
2	5	52-1/2	133	102-1/2	260	152-1/2	387	202-1/2	514	252-1/2	641	302-1/2	768
2-1/2	6	53	135	103	262	153	389	203	516	253	643	303	770
3	8	53-1/2	136	103-1/2	263	153-1/2	390	203-1/2	517	253-1/2	644	303-1/2	771
3-1/2	9	54	137	104	264	154	391	204	518	254	645	304	772
4	10	54-1/2	138	104-1/2	265	154-1/2	392	204-1/2	519	254-1/2	646	304-1/2	773
4-1/2	11	55	140	105	267	155	394	205	521	255	648	305	775
5	13	55-1/2	141	105-1/2	268	155-1/2	395	205-1/2	522	255-1/2	649	305-1/2	776
5-1/2	14	56	142	106	269	156	396	206	523	256	650	306	777
6	15	56-1/2	144	106-1/2	271	156-1/2	398	206-1/2	525	256-1/2	652	306-1/2	779
6-1/2	17	57	145	107	272	157	399	207	526	257	653	307	780
7	18	57-1/2	146	107-1/2	273	157-1/2	400	207-1/2	527	257-1/2	654	307-1/2	781
7-1/2	19	58	147	108	274	158	401	208	528	258	655	308	782
8	20	58-1/2	149	108-1/2	276	158-1/2	403	208-1/2	530	258-1/2	657	308-1/2	784
8-1/2	22	59	150	109	277	159	404	209	531	259	658	309	785
9	23	59-1/2	151	109-1/2	278	159-1/2	405	209-1/2	532	259-1/2	659	309-1/2	786
9-1/2	24	60	152	110	279	160	406	210	533	260	660	310	787
10	25	60-1/2	154	110-1/2	281	160-1/2	408	210-1/2	535	260-1/2	662	310-1/2	789
10-1/2	27	61	155	111	282	161	409	211	536	261	663	311	790
11	28	61-1/2	156	111-1/2	283	161-1/2	410	211-1/2	537	261-1/2	664	311-1/2	791
11-1/2	29	62	157	112	284	162	411	212	538	262	665	312	792
12	30	62-1/2	159	112-1/2	286	162-1/2	413	212-1/2	540	262-1/2	667	312-1/2	794
12-1/2	32	63	160	113	287	163	414	213	541	263	668	313	795
13	33	63-1/2	161	113-1/2	288	163-1/2	415	213-1/2	542	263-1/2	669	313-1/2	796
13-1/2	34	64	163	114	290	164	417	214	544	264	671	314	798
14	36	64-1/2	164	114-1/2	291	164-1/2	418	214-1/2	545	264-1/2	672	314-1/2	799
14-1/2	37	65	165	115	292	165	419	215	546	265	673	315	800
15	38	65-1/2	166	115-1/2	293	165-1/2	420	215-1/2	547	265-1/2	674	315-1/2	801
15-1/2	39	66	168	116	295	166	422	216	549	266	676	316	803
16	41	66-1/2	169	116-1/2	296	166-1/2	423	216-1/2	550	266-1/2	677	316-1/2	804
16-1/2	42	67	170	117	297	167	424	217	551	267	678	317	805
17	43	67-1/2	171	117-1/2	298	167-1/2	425	217-1/2	552	267-1/2	679	317-1/2	806
17-1/2	44	68	173	118	300	168	427	218	554	268	681	318	808
18	46	68-1/2	174	118-1/2	301	168-1/2	428	218-1/2	555	268-1/2	682	318-1/2	809
18-1/2	47	69	175	119	302	169	429	219	556	269	683	319	810
19	48	69-1/2	177	119-1/2	304	169-1/2	431	219-1/2	558	269-1/2	685	319-1/2	812
19-1/2	50	70	178	120	305	170	432	220	559	270	686	320	813
20	51	70-1/2	179	120-1/2	306	170-1/2	433	220-1/2	560	270-1/2	687	320-1/2	814
20-1/2	52	71	180	121	307	171	434	221	561	271	688	321	815
21	53	71-1/2	182	121-1/2	309	171-1/2	436	221-1/2	563	271-1/2	690	321-1/2	817
21-1/2	55	72	183	122	310	172	437	222	564	272	691	322	818
22	56	72-1/2	184	122-1/2	311	172-1/2	438	222-1/2	565	272-1/2	692	322-1/2	819
22-1/2	57	73	185	123	312	173	439	223	566	273	693	323	820
23	58	73-1/2	187	123-1/2	314	173-1/2	441	223-1/2	568	273-1/2	695	323-1/2	822
23-1/2	60	74	188	124	315	174	442	224	569	274	696	324	823
24	61	74-1/2	189	124-1/2	316	174-1/2	443	224-1/2	570	274-1/2	697	324-1/2	824
24-1/2	62	75	191	125	318	175	444	225	572	275	699	325	826
25	64	75-1/2	192	125-1/2	319	175-1/2	446	225-1/2	573	275-1/2	700	325-1/2	827
25-1/2	65	76	193	126	320	176	447	226	574	276	701	326	828
26	66	76-1/2	194	126-1/2	321	176-1/2	448	226-1/2	575	276-1/2	702	326-1/2	829
26-1/2	67	77	196	127	323	177	450	227	577	277	704	327	831
27	69	77-1/2	197	127-1/2	324	177-1/2	451	227-1/2	578	277-1/2	705	327-1/2	832
27-1/2	70	78	198	128	325	178	452	228	579	278	706	328	833
28	71	78-1/2	199	128-1/2	326	178-1/2	453	228-1/2	580	278-1/2	707	328-1/2	834
28-1/2	72	79	201	129	328	179	455	229	582	279	709	329	836
29	74	79-1/2	202	129-1/2	329	179-1/2	456	229-1/2	583	279-1/2	710	329-1/2	837
29-1/2	75	80	203	130	330	180	457	230	584	280	711	330	838
30	76	80-1/2	204	130-1/2	331	180-1/2	458	230-1/2	585	280-1/2	712	330-1/2	839
30-1/2	77	81	206	131	333	181	460	231	587	281	714	331	841
31	79	81-1/2	207	131-1/2	334	181-1/2	461	231-1/2	588	281-1/2	715	331-1/2	842
31-1/2	80	82	208	132	335	182	462	232	589	282	716	332	843
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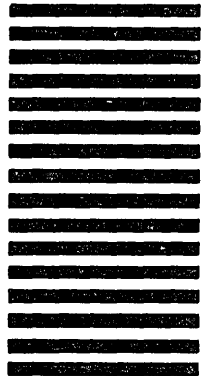
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