

# Volume Table of Contents

2875 MAP VT0C-1

**Volume:** 10  
**Title:** VII MAPs F7B6-F7FF  
**Machine Type:** 4331-2/4331-11  
**Power Design Level:** 5  
**B/M Number 4331-2:** 5683208  
**B/M Number 4331-11:** 4687171

PAGE NUMBER	PART NO.
2 875	4687018
2 880	4008781
2 890	4008785
2 900	4008786
2 910	8488571
2 920	4008787
2 930	8488573
2 940	4008788
2 950	4008789
2 952	8488598
2 954	8488599
2 960	8488576
2 970	8488577
2 980	8488578
2 990	4008769
2 992	4008803
3 000	8488580
3 010	8488581
3 019	5683416
3 020	8488582
3 030	8488583
3 040	8488584
3 050	8488585
3 060	8488586
3 070	5684085
3 080	8488588
3 090	8488589
3 100	8488590
3 110	8488591
3 120	8488592
3 130	8488593

PAGE NUMBER	PART NO.
3 140	8488594
3 150	8488595
3 155	8488596
3 156	8488520
3 160	5684086
3 170	8488501
3 180	8488502
3 190	8488503
3 200	8488505



**POWER PROBLEM**

PAGE 1 OF 8

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	023	0200	A
7	048	0202	A
4	029	0204	A
8	057	0282	A
7	049	0287	A
6	037	0287	A

**001**

Symptom:

PS105 -8.5V on 01A-A1 out of tolerance, A38.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	-8.5V DC distribution.
3	load fault.
4	A38 sense wiring.
5	PS105.
6	TR105.
7	Line voltage distribution.

(Entry Point A)

Is PS105-CP05 tripped?

Y N

**002**

1. Press power-off key.
2. Switch to CE-mode at CE panel.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

8 5 2  
A B C

C  
1

**REF.CODE F7D51201**

**Power Problem**

PAGE 2 OF 8

**003**

Is reference code F7D51201 displayed?

Y N

**004**

Is any other reference code displayed?

Y N

**005**

Go to Page 3, Step 023, Entry Point Y.

**006**

Go to MAP for displayed reference code.

**007**

1. Press power-off key.
  2. Connect CE-meter (range 15VDC)  
-lead to 01A-A1H6-E02  
'-8.5V sense PS105 01A-A1 A38'  
(ALD-YC823)  
+lead to any D08 pin.
- The -lead of your meter must be connected without removing the connectors.
3. Press power-on switch and wait approximately one minute.

Was -8.5VDC at least momentarily present?

Y N

**008**

1. Press power-off key.
  2. Ensure that connector on 01A-A1B3-E14 is seated correctly.
  3. Connect CE-meter (range 15VDC)  
-lead to 01A-A1B3-E14  
'-8.5V PS105 to 01A-A1 CD ATT'  
(ALD-YC821)  
+lead to any D08 pin.
- The -lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute.

(Step 008 continues)

D

2880

MAP F7B6-2

(Step 008 continued)

Was -8.5VDC at least momentarily present?

Y N

**009**

Go to Page 6, Step 036, Entry Point G.

**010**

- Board wiring of -8.5V net is defective.
1. Press power-off key.
  2. Replace board 01A-A1.
- Go to Page 4, Step 029, Entry Point Z.

**011**

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)  
-lead to 01A-A2D2-U10  
'-1.5V sense -8.5V 01A-A1 A38'  
(ALD-YB643)  
+lead to any D08 pin.
3. Carefully observe your meter.
4. Press power-on switch and wait approximately one minute.

Was -1.5VDC at least momentarily present?

Y N

**012**

Was the voltage measured in previous step higher than 2.0VDC.?

Y N

**013**

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)  
-lead to paddle card connector exit 01A-A2A4-D13  
'-1.5V sense -8.5V 01A-A1 A38'  
(ALD-YB243)  
+lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

(Step 013 continues)

D

3  
E F

18JUL80 PN 4008781

EC 366387 PEC 366356

2880 MAP F7B6-2

## Power Problem

PAGE 3 OF 8

(Step 013 continued)

Was -1.5VDC at least momentarily present?

Y N

## 014

1. Press Power-off key.
2. Connect CE-meter (range ohm x1) to any D08 pin and to 01A-A2A4-D13  
'-1.5V sense -8.5V 01A-A1 A38'  
(ALD-YB243).
3. Remove PC-sense card from position 01A-A2C2.

Is the resistance below 200 ohm?

Y N

## 015

(Entry Point L)

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.
- Go to Page 4, Step 029, Entry Point Z.

## 016

Do not disconnect the CE-meter.

1. Remove paddle card from position 01A-A2A4.

Is the resistance below 200 ohm?

Y N

## 017

Go to Step 015, Entry Point L.

## 018

- There is a short circuit between the signal  
'-1.5V sense -8.5V 01A-A1 A38'  
(ALD-YB643)  
(ALD-YB243)  
and DC-GND.  
Check and repair board wiring or replace board 01A-A2.  
Go to Page 4, Step 029, Entry Point Z.

## 019

1. Press power-off key.
2. Repair sense wiring from 01A-A2D2-U10  
'-1.5V sense -8.5V 01A-A1 A38'  
(ALD-YB643)  
to 01A-A2A4-D13  
'-1.5V sense -8.5V 01A-A1 A38'  
(ALD-YB243)  
or replace board 01A-A2.  
Go to Page 4, Step 029, Entry Point Z.

## 020

1. Press power-off key.
  2. Replace paddle card with cable in position 01A-A2A4.
- Go to Page 4, Step 029, Entry Point Z.

## 021

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

## 022

(Entry Point H)

Is any reference code displayed?

Y N

## 023

(Entry Point Y)

Go To Map 0200, Entry Point A.

## 024

Is reference code F7D51201 displayed?

Y N

G

4 4 4  
H J K

18JUL80 PN 4008781  
EC 366387 PEC 366356  
2880 MAP F7B6-3

H J K  
3 3 3

REF.CODE F7D51201

2880

MAP F7B6-4

**Power Problem**

PAGE 4 OF 8

**025**

- 1.Press power-off key.
- 2.Replace PC sense card in position 01A-A2C2.

Go to Step 029, Entry Point Z.

**026**

Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D51201 is displayed again, Go to Page 7, Step 048, Entry Point X.

**027**

- 1.Press power-off key.
- 2.Replace PC sense card which is now in position 01A-A2C2.
- 3.Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

**028**

Go to Page 3, Step 022, Entry Point H.

**029**

(Entry Point Z)

Go To Map 0204, Entry Point A.

18JUL80 PN 4008781

EC 366387 PEC 366356

2880 MAP F7B6-4

B  
1

REF.CODE F7D51201

2880

MAP F7B6-5

**Power Problem**

PAGE 5 OF 8

030

(Entry Point E)

- 1. Run voltage measurement program.
- 2. Check the following voltages for out of tolerance

Addr	Bit	Voltage	Board	Sense No.	Go to MAP
85	5	+8.5V PS105	01A-A1	A02	F7B1
97	5	-5.1V PS105	01A-C2	A33	F7B4
95	5	-8.5V PS105	01A-C2	A62	F7B5
95	6	-8.5V PS105	01A-A1	A38	F7B6
97	4	+5.1V PS105	01A-A1	A03	F7BA
97	7	+8.5V PS105	01A-C2	A31	F7B3
85	7	+8.5V PS105	01A-B2	A23	F7BB
87	2	+5.1V PS105	01A-C2	A30	F7B8
85	0	+6.0V PS105	01A-A1	A52	F7B7
95	0	-8.5V PS105	01A-B2	A32	F7B9

Are all voltages below maximum limits?

Y N

031

Is more than one voltage out of tolerance?

Y N

032

(Entry Point K)

Is -8.5V PS105 on 01A-A1 out of tolerance (Address 95, bit 6)?

Y N

7 7 6 6  
L M N P

18JUL80 PN 4008781

EC 366387 PEC 366356

2880 MAP F7B6-5

N P  
5 5

REF.CODE F7D51201

R S

2880

MAP F7B6-6

**Power Problem**

PAGE 6 OF 8

**033**

Go to MAP for failing voltage shown in table after ENTRY POINT E.

Go to Page 5, Step 030, Entry Point E.

**034**

1. Connect CE-meter (range 15VDC)

-lead to 01A-A1H6-E02

'-8.5V sense PS105 01A-A1 A38'

(ALD-YC823)

+Lead to any D08 pin

'DC-GND'

Is -8.5VDC +/-1.0V present?

Y N

**035**

1. Connect CE-meter (range 15VDC)

-lead to 01A-A1B3-E14

'-8.5V PS105 to 01A-A1 CD ATT'

+lead to any D08 pin

'DC-GND'

(ALD-YC821)

Is -8.5VDC +/-1.0V present?

Y N

**036**

(Entry Point G)

1. Press power-off key.

2. Connect CE-meter (range 15VDC)

-lead to connector PS105-02-005

'-8.5V PS105 to 01A-A1 CD ATT'

+lead to connector PS105-02-009

'DC-GND'

(ALD-YA461).

3. Press power-on switch and wait approximately one minute.

Was -8.5VDC at least momentarily present?

Y N

**037**

Go To Map 0287, Entry Point A.

**038**

1. Press power-off key.

2. Repair or replace cable from connector PS105-02 to board 01A-A1.

(ALD-YA461)

(ALD-YC821)

Go to Page 4, Step 029, Entry Point Z.

**039**

1. Press power-off key.

2. Remove all cards from board 01A-A1.

3. Connect CE-meter (range 15VDC)

-lead to 01A-A1H6-E02

'-8.5V sense PS105 01A-A1 A38'

(ALD-YC823)

+lead to any D08 pin.

4. Press power-on switch and wait approximately one minute.

Is -8.5VDC +/- 1.0V present?

Y N

**040**

1. Press power-off key.

2. Suspect sense wiring error on board 01A-A1.

Repair board wiring or replace board 01A-A1.

3. Press power-on switch.

Go to Page 5, Step 030, Entry Point E.

**041**

Suspect an overload condition cause by a faulty card.

1. Press power-off key.

2. Replug cards step by step. After each step press the power on switch, observe your meter reading and wait approximately one minute.

Replace the defective card which caused an incorrect meter reading at the sense point.

3. Press power-on switch and wait approximately one minute.

Go to Page 5, Step 030, Entry Point E.

7  
Q R S

18JUL80 PN 4008781

EC 366387 PEC 366356

2880 MAP F7B6-6



Q  
6

REF.CODE F7D51201

Power Problem

PAGE 7 OF 8

042  
(Entry Point F)

1. Check the accuracy of your CE-meter according to \*Hints For Power MAP Usage\* in book MI POWER, Vol16.  
2. Check -1.5V voltage at sense card 1 entry: Connect CE-meter (range 5VDC)  
-lead to 01A-A2D2-U10  
'-1.5V sense -8.5V 01A-A1 A38'  
+lead to any D08 pin.  
'DC-GND'  
(ALD-YB643).

Is -1.5VDC +/-10% present?  
Y N

043  
Check -1.5V voltage at connector exit:  
1. Connect CE-meter (range 1.5VDC)  
-lead to 01A-A2A4-D13.  
'-1.5V sense -8.5V 01A-A1 A38'  
+lead to any D08 pin  
'DC-GND'  
(ALD-YB243).

2. Press power-on switch and wait approximately one minute.

Is -1.5VDC +/-10% present?  
Y N

044  
1. Press power-off key. 2. Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.  
Go to Page 4, Step 029, Entry Point Z.

045  
1. Press power-off key.  
2. Repair wiring or replace board 01A-A2.  
Go to Page 4, Step 029, Entry Point Z.

T

L M T  
5 5

2880

MAP F7B6-7

046  
1. Press power-off key.  
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.  
3. Press power-on switch and wait approximately one minute.  
4. Run voltage measurement program.

Is address 95 bit 6 out of tolerance?  
Y N

047  
1. Press power-off key.  
2. Replace PC sense card which is now in position 01A-A2C2.  
Go to Page 4, Step 029, Entry Point Z.

048  
(Entry Point X)

Go To Map 0202, Entry Point A.

049  
Go To Map 0287, Entry Point A.

050  
Are all voltages below call CE-limit?  
Y N

051  
Go to Map for failing voltage shown in table after ENTRY POINT E of this MAP.  
Go to Page 5, Step 030, Entry Point E.

052  
1. Press power-off key.  
2. Switch CE mode off.  
3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?  
Y N

053  
Go to Page 4, Step 029, Entry Point Z.

8  
U

18JUL80 PN 4008781

EC 366387 PEC 366356

2880 MAP F7B6-7

A U  
1 7

REF.CODE F7D51201

2880

MAP F7B6-8

**Power Problem**

PAGE 8 OF 8

**054**

Go to corresponding MAP.

**055**

- 1.Switch PS105-CP05 on.
- 2.Press power-on switch and wait approximately one minute.

**Is PS105-CP05 tripped?**

Y N

**056**

Go to Page 1, Step 001, Entry Point A.

**057**

Go To Map 0282, Entry Point A.

18JUL80 PN 4008781

EC 366387 PEC 366356

2880 MAP F7B6-8

## POWER PROBLEM

PAGE 1 OF 9

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001
0287	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	025	0200	A
9	056	0202	A
9	061	0204	A
9	065	0281	A
9	057	0287	A

001

Symptom:

PS105 +6.0V on 01A-A1 out of tolerance, A52.

-----  
 Suspected errors or FRU's  
 (including intermittent errors)  
 -----

- 1 | PC sense card 01A-A2D2.
- 2 | +6V distribution.
- 3 | A52 sense wiring.
- 4 | Control line C24 failing.
- 5 | BPC card 01A-A2B2.
- 6 | PS105.
- 7 | TR105.
- 8 | Line voltage distribution.

(Entry Point A)

Is PS105-CP03 tripped?

Y N

002

1. Press power-off key.
2. Switch to CE-mode at CE panel.
3. Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

9 5 2  
A B C

© Copyright IBM Corp. 1980

REF.CODE F7D51401

4331

18JUL80

EC 366387

2890

PN 4008785

PEC 366356

MAP F7B7-1

C  
1

REF.CODE F7D51401

Power Problem

PAGE 2 OF 9

003

Is reference code F7D51401 displayed?

Y N

004

Is any other reference code displayed?

Y N

005

Go to Page 4, Step 025, Entry Point Y.

006

Go to MAP for displayed reference code.

007

1.Press power-off key.  
2.Connect CE meter (range 15VDC)  
+lead to PS105-02-001  
'+6.0V PS105 to 01A-A1 CD-ATT'  
(ALD-YA461)  
-lead to PS105-02-008  
'DC-GND'  
3.Press power-on switch and wait  
approximately one minute.

Was +6VDC at least momentarily present?

Y N

008

Go to Page 6, Step 039, Entry Point L.

009

1.Press power-off key.  
2.Connect CE-meter (range 15VDC)  
+lead to 01A-A1G6-B04  
'+6.0V sense PS105 01A-A1 A52'  
(ALD-YC823)  
-lead to any D08 pin.  
The +lead of your meter must be connected  
without removing the connectors.  
3.Press power-on switch and wait  
approximately one minute.

Was +6.0VDC at least momentarily present?

Y N

D E

D E

2890

MAP F7B7-2

010

1.Press power-off key.  
2.Ensure that connectors on 01A-A1B4-E01  
and  
on 01A-A1W4-E01 are seated correctly.  
3.Connect CE-meter (range 15VDC)  
+lead to 01A-A1B4-E01 or 01A-A1W4-E01  
'+6.0V PS105 to 01A-A1 CD ATT'  
(ALD-YC821)  
-lead to any D08 pin.  
The +lead of your meter must be connected  
without removing the connectors.  
4.Press power-on switch and wait  
approximately one minute.

Was +6.0VDC at least momentarily  
present?

Y N

011

Go to Page 6, Step 038, Entry Point G.

012

Board wiring of +6.0V net defective.  
1.Press power-off key.  
2.Replace board 01A-A1.  
Go to Page 9, Step 061, Entry Point Z.

013

1.Press power-off key.  
2.Connect CE-meter (range 1.5VDC)  
+lead to 01A-A2D2-B07  
'+1.5V sense +6.0V 01A-A1 A52'  
(ALD-YB641)  
-lead to any D08 pin.  
3.Carefully observe your meter, press  
power-on switch and wait approximately one  
minute.

Was +1.5VDC at least momentarily present?

Y N

4 3  
F G

18JUL80 PN 4008785

EC 366387 PEC 366356

2890 MAP F7B7-2

G  
2

REF.CODE F7D51401

H J K

2890

MAP F7B7-3

Power Problem

PAGE 3 OF 9

014

Was the voltage measured in the previous step higher than 2.0VDC?

Y N

015

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC) +lead to paddle card connector exit 01A-A2A4-B05 '+1.5V sense +6.0V 01A-A1 A52' (ALD-YB243) -lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Was +1.5VDC at least momentarily present?

Y N

016

1. Press power-off key.
2. Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A4-B05 '+1.5V sense +6.0V 01A-A1 A52' (ALD-YB243)
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

017

(Entry Point C)

Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.

Go to Page 9, Step 061, Entry Point Z.

018

Do not disconnect the CE-meter. Remove paddle card from position 01A-A2A4.

Is the resistance below 200 ohm?

Y N

019

Go to Step 017, Entry Point C.

020

There is a short circuit between the signal '+1.5V sense +6.0V 01A-A1 A52' (ALD-YB243) (ALD-YB641) and DC-GND. Check and repair board wiring or replace board 01A-A2. Go to Page 9, Step 061, Entry Point Z.

021

1. Press power-off key.  
2. Repair sense wiring from 01A-A1D2-B07 '+1.5V sense +6.0V 01A-A1 A52' (ALD-YB641) to 01A-A2A4-B05 '+1.5V sense +6.0V 01A-A1 A52' (ALD-YB243) or replace board 01A-A2. Go to Page 9, Step 061, Entry Point Z.

022

1. Press power-off key.  
2. Replace paddle card with cable in position 01A-A2A4. Go to Page 9, Step 061, Entry Point Z.

H J K

18JUL80 PN 4008785  
EC 366387 PEC 366356  
2890 MAP F7B7-3

F  
2

REF.CODE F7D51401

Power Problem

PAGE 4 OF 9

023

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

024

(Entry Point H)

Is any reference code displayed?

Y N

025

(Entry Point Y)

Go To Map 0200, Entry Point A.

026

Is reference code F7D51401 displayed?

Y N

027

1. Press power-off key.
  2. Replace PC sense card in position 01A-A2C2.
- Go to Page 9, Step 061, Entry Point Z.

028

Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D51401 is displayed again, Go to Page 9, Step 056, Entry Point X.

L

2890

MAP F7B7-4

029

1. Press power-off key.
2. Replace PC sense card which is now in position 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

030

Go to Step 024, Entry Point H.

031

Go to Page 9, Step 061, Entry Point Z.

L

18JUL80

PN 4008785

EC 366387

PEC 366356

2890

MAP F7B7-4

B

REF.CODE F7D51401

2890

MAP F7B7-5

1

Power Problem

PAGE 5 OF 9

032

(Entry Point E)

-----

1. Run voltage measurement program.  
2. Check the following voltages for out of tolerance

-----

Addr	Bit	Voltage	Board	Sense No.	Go to MAP
85	5	+8.5V PS105	01A-A1	A02	F7B1
97	5	-5.1V PS105	01A-C2	A33	F7B4
95	5	-8.5V PS105	01A-C2	A62	F7B5
95	6	-8.5V PS105	01A-A1	A38	F7B6
97	4	+5.1V PS105	01A-A1	A03	F7BA
97	7	+8.5V PS105	01A-C2	A31	F7B3
85	7	+8.5V PS105	01A-B2	A23	F7BB
87	2	+5.1V PS105	01A-C2	A30	F7B8
85	0	+6.0V PS105	01A-A1	A52	F7B7
95	0	-8.5V PS105	01A-B2	A32	F7B9

-----

Are all voltages below maximum limit?

Y N

033

Is more than one voltage out of tolerance?

Y N

034

(Entry Point K)

Is +6.0V PS105 on 01A-A1 out of tolerance (Address 85, bit 0)?

Y N

9 9 6 6  
M N P Q

18JUL80 PN 4008785

EC 366387 PEC 366356

2890 MAP F7B7-5

P Q  
5 5

REF.CODE F7D51401

U

2890

MAP F7B7-6

**Power Problem**

PAGE 6 OF 9

**035**

Go to MAP for failing voltage shown in table after ENTRY POINT E.

Go to Page 5, Step 032, Entry Point E.

**036**

1.Connect CE-meter (range 15VDC)

+lead to 01A-A1G6-B04

'+6.0V sense PS105 01A-A1 A52'

(ALD-YC823)

-lead to any D08 pin

'DC-GND'

Is +6.0VDC +/-1.0V present?

Y N

**037**

Connect CE-meter (range 15VDC)

+lead to 01A-A1B4-E01

or 01A-A1W4-E01

'+6.0V PS105 to 01A-A1 CD ATT'

-lead to any D08 pin

'DC-GND'

(ALD-YC821)

Is +6.0VDC +/-1.0V present?

Y N

**038**

(Entry Point G)

1.Press power-off key.

2.Connect CE-meter (range 15VDC)

+lead to connector PS105-02-001

'+6.0V PS105 to 01A-A1 CD ATT'

-lead to connector PS105-02-008

'DC-GND'

(ALD-YA461).

3.Press power-on switch and wait approximately one minute.

Was +6.0VDC at least momentarily present?

Y N

8 8 7  
R S T U

**039**

(Entry Point L)

1.Press power-off key.

2.Probe connector PS105-01-003

'-Pick PS105-K01 C24'

(ALD-YA461)

3.Observe probe indicators, press power-on switch and wait approximately one minute.

Was the \*down\* indicator of the probe at least momentarily on?

Y N

**040**

1.Press power-off key.

2.Probe 01A-A2E2-G03

'-Pick PS105-K01 C24'

(ALD-YB661)

3.Observe probe indicators, press power-on switch and wait approximately one minute.

Is the \*down\* indicator of the probe at least momentarily on?

Y N

**041**

1.Press power-off key.

2.Replace PC interface card in position

01A-A2E2.

Go to Page 9, Step 061, Entry Point Z.

**042**

1.Press power-off key.

2.Check and repair wiring for signal

'-Pick PS105-K01 C24'

from 01A-A2E2-G03

(ALD-YB661)

to connector PS105-01-003

(ALD-YA461)

Go to Page 9, Step 061, Entry Point Z.

7  
V

18JUL80

PN 4008785

EC 366387

PEC 366356

2890

MAP F7B7-6



T V  
6 6

REF.CODE F7D51401

2890

MAP F7B7-7

Power Problem

PAGE 7 OF 9

043

1. Press power-off key.
2. Connect CE-meter (range 15VAC) according to following table and check for correct AC-voltage from TR105.

Note: Do not disconnect connectors PS105-06 and PS105-7

lead 1	lead 2	voltage
PS105-07-004	PS105-07-010	6.3VAC
PS105-07-007	PS105-07-010	6.3VAC

3. Press power-on switch and wait approximately one minute.

Is 6.3VAC at least momentarily present within a limit of +20%/-10%?

Y N

044

Go to Page 9, Step 057, Entry Point B.

045

1. Press power-off key.
  2. Replace PS105.
- Go to Page 9, Step 061, Entry Point Z.

046

1. Press power-off key.
2. Repair or replace cable from connector PS105-02 to board 01A-A1.

(ALD-YA461)

(ALD-YC821)

Go to Page 9, Step 061, Entry Point Z.

18JUL80 PN 4008785

EC 366387 PEC 366356

2890 MAP F7B7-7

S  
6

REF.CODE F7D51401

Power Problem

PAGE 8 OF 9

047

1. Press power-off key.
2. Remove all cards from board 01A-A1.
3. Connect CE-meter (range 15VDC)  
+lead to 01A-A1G6-B04  
'+6.0V sense PS105 01A-A1 A52'  
(ALD-YC823)  
-lead to any D08 pin.
4. Press power-on switch and wait approximately one minute.

Is +6.0VDC +/- 1.0V present?

Y N

048

1. Press power-off key.
2. Suspect sense wiring error on board 01A-A1.  
Repair board wiring or replace board 01A-A1.
3. Press power-on switch.  
Go to Page 5, Step 032, Entry Point E.

049

- Suspect an overload condition caused by a faulty card.
1. Press power-off key.
  2. Replug cards step by step. After each step press the power on switch, observe your meter reading and wait approximately one minute. Replace the defective card which caused an incorrect meter reading at the sense point.
  3. Press power-on switch and wait approximately one minute.  
Go to Page 5, Step 032, Entry Point E.

R  
6

2890

MAP F7B7-8

050

(Entry Point F)

1. Check the accuracy of your CE-meter according to \*Hints For Power MAP Usage\* in book MI POWER Vol.16.
2. Check +1.5V voltage at sense card 1 entry:  
Connect CE-meter (range 5VDC)  
+lead to 01A-A2D2-B07  
'+1.5V sense +6.0V 01A-A1 A52'  
-lead to any D08 pin.  
'DC-GND'  
(ALD-YB641).

Is +1.5VDC +/-10% present?

Y N

051

- Check +1.5V voltage at connector exit:
1. Connect CE-meter (range 1.5VDC)  
+lead to 01A-A2A4-B05.  
'+1.5V sense +6.0V 01A-A1 A52'  
-lead to any D08 pin  
'DC-GND'  
(ALD-YB243).
  2. Press power-on switch and wait approximately one minute.

Is +1.5VDC +/-10% present?

Y N

052

1. Press power-off key.
2. Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.  
Go to Page 9, Step 061, Entry Point Z.

053

1. Press power-off key.
2. Repair wiring or replace board 01A-A2.  
Go to Page 9, Step 061, Entry Point Z.

9  
W

18JUL80

PN 4008785

EC 366387

PEC 366356

2890

MAP F7B7-8

M N W  
5 5 8

REF.CODE F7D51401

Power Problem

PAGE 9 OF 9

054

- 1.Press power-off key.
- 2.Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
- 3.Press power-on switch and wait approximately one minute.
- 4.Run voltage measurement program.

Is address 85 bit 0 out of tolerance?

Y N

055

- 1.Press power-off key.
- 2.Replace PC sense card which is now in position 01A-A2C2.

Go to Step 061, Entry Point Z.

056

(Entry Point X)

Go To Map 0202, Entry Point A.

057

(Entry Point B)

Go To Map 0287, Entry Point A.

058

Are all voltages below call CE-limit?

Y N

059

Go to MAP for failing voltage shown in table after ENTRY POINT E of this MAP,  
Go to Page 5, Step 032, Entry Point E.

060

- 1.Press power-off key.
- 2.Switch CE mode switch to normal.
- 3.Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

X Y

A X Y  
1

2890

MAP F7B7-9

061

Suspect intermittent error.

(Entry Point Z)

Go To Map 0204, Entry Point A.

062

Go to corresponding MAP.

063

- 1.Switch PS105-CP03 on.
- 2.Press power-on switch and wait approximately one minute.

Is PS105-CP03 tripped?

Y N

064

Go to Page 1, Step 001, Entry Point A.

065

Go To Map 0281, Entry Point A.

18JUL80 PN 4008785

EC 366387 PEC 366356

2890 MAP F7B7-9



POWER PROBLEM

PAGE 1 OF 8

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	025	0200	A
7	050	0202	A
4	031	0204	A
8	059	0282	A
2	008	0287	A

001

Symptom:

PS105 +5.1V on 01A-C2 out of tolerance, A30.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	+5.1VDC distribution.
3	Load fault.
4	A30 sense wiring.
5	PS105.
6	TR105.
7	Line Voltage Distribution.

(Entry Point A)

Is PS105-CP01 tripped?

Y N

002

1. Press power-off key.
2. Switch to CE-mode at CE panel.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

8 5 2  
A B C

Power Problem

PAGE 2 OF 8

003

Is reference code F7D51601 displayed?

Y N

004

Is any other reference code displayed?

Y N

005

Go to Page 4, Step 025, Entry Point Y.

006

Go to MAP for displayed reference code.

007

1. Press power-off key.
2. Connect CE-meter (range 15VDC)  
+lead to PS105-TB01-001/002  
'+5.1VDC PS105 to 01A-C2 K/W CA'  
(ALD-YA461)  
-lead to PS105-TB03-001/002
3. Press power-on switch and wait approximately one minute.

Was 5.1VDC at least momentarily present?

Y N

008

(Entry Point M)

Go To Map 0287, Entry Point A.

009

1. Press power-off key.
2. Connect CE-meter (range 15VDC)  
+lead to 01A-C2W2-E14  
'+5.1V sense PS1045 01A-C2 A30'  
(ALD-YC871)  
-lead to any D08 pin.  
The +lead of your meter must be connected without removing the connectors.
3. Press power-on switch and wait approximately one minute.

(Step 009 continues)

(Step 009 continued)

Was +5.1VDC at least momentarily present?

Y N

010

1. Press power-off key.
2. Ensure that connectors on 01A-C2W2-E14 and on 01A-C2YF are seated correctly.
3. Connect CE-meter (range 15VDC)  
+lead to 01A-C2YF  
'+5.1V PS1045 to 01A-C2 K/W CA'  
(ALD-YC871)  
-lead to any D08 pin.  
The +lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute.

Was +5.1VDC at least momentarily present?

Y N

011

Go to Page 6, Step 038, Entry Point G.

012

1. Press power-off key.
  2. Replace board 01A-C2.
- Go to Page 4, Step 031, Entry Point Z.

013

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)  
+lead to 01A-A2D2-B11  
'+1.5V sense +5.1V 01A-C2 A30'  
(ALD-YB641)  
-lead to any D08 pin.
3. Carefully observe your meter, press power-on switch and wait approximately one minute.

Was +1.5VDC at least momentarily present?

Y N

18JUL80 PN 4008786

EC 366387 PEC 366356

2900 MAP F7B8-2

4 3  
D E

## Power Problem

PAGE 3 OF 8

014

Was the voltage measured in the previous step higher than 2.0VDC?

Y N

015

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC) +lead to paddle card connector exit 01A-A2A3-B11 '+1.5V sense +5.1V 01A-C2 A30' (ALD-YB241) -lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Was +1.5VDC at least momentarily present?

Y N

016

1. Press power-off key.
2. Connect CE-meter (range ohm x1) to any D08 pin and to 01A-A2A3-B11. '+1.5V sense +5.1V 01A-C2 A30' (ALD-YB241).
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

017

(Entry Point L)

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-C2 to 01A-A2A3.
- Go to Page 4, Step 031, Entry Point Z.

018

Do not disconnect the CE-meter.  
1. Remove paddle card from position 01A-A2A3.

Is the resistance below 200 ohm?

Y N

019

Go to Step 017, Entry Point L.

020

There is a short circuit between the signal '+1.5V sense +5.1V 01A-C2 A30' (ALD-YB641) (ALD-YB241) and DC-GND.  
Check and repair board wiring or replace board 01A-A2.  
Go to Page 4, Step 031, Entry Point Z.

021

1. Press power-off key.
2. Repair sense wiring from 01A-A2D2-D11 '+1.5V sense +5.1V 01A-C2 A30' (ALD-YB641) to 01A-A2A3-B11 '+1.5V sense +5.1V 01A-C2 A30' (ALD-YB241) or replace board 01A-A2.  
Go to Page 4, Step 031, Entry Point Z.

022

1. Press power-off key.
  2. Replace paddle card with cable in position 01A-A2A3. (ALD-YB241)
- Go to Page 4, Step 031, Entry Point Z.

D  
2

REF.CODE F7D51601

Power Problem

PAGE 4 OF 8

023

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximatley one minute.

Is the \*power complete\* indicator on?

Y N

024

(Entry Point H)

Is any reference code displayed?

Y N

025

(Entry Point Y)

Go To Map 0200, Entry Point A.

026

Is reference code F7D51601 displayed?

Y N

027

1. Press power-off key.
  2. Replace PC sense card in position 01A-A2C2.
- Go to Step 031, Entry Point Z.

028

Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D51601 is displayed again, Go to Page 7, Step 050, Entry Point X.

J

2900

MAP F7B8-4

029

1. Press power-off key.
2. Replace PC sense card which is now in position 01A-A2C2.
3. Press power-on switch and wait approximatley one minute.

Is the \*power complete\* indicator on?

Y N

030

Go to Step 024, Entry Point H.

031

(Entry Point Z)

Go To Map 0204, Entry Point A.

J

18JUL80

PN 4008786

EC 366387

PEC 366356

2900

MAP F7B8-4



B  
1

REF.CODE F7D51601

2900

MAP F7B8-5

**Power Problem**

PAGE 5 OF 8

032

(Entry Point E)

1. Run voltage measurement program.						
2. Check the following voltages for out of tolerance						
Addr	Bit	Voltage	Board	Sense No.	Go to MAP	
85	5	+8.5V PS105	01A-A1	A02	F7B1	
97	5	-5.1V PS105	01A-C2	A33	F7B4	
95	5	-8.5V PS105	01A-C2	A62	F7B5	
95	6	-8.5V PS105	01A-A1	A38	F7B6	
97	4	+5.1V PS105	01A-A1	A03	F7BA	
97	7	+8.5V PS105	01A-C2	A31	F7B3	
85	7	+8.5V PS105	01A-B2	A23	F7BB	
87	2	+5.1V PS105	01A-C2	A30	F7B8	
85	0	+6.0V PS105	01A-A1	A52	F7B7	
95	0	-8.5V PS105	01A-B2	A32	F7B9	

Are all voltages below maximum limit?

Y N

033

Is more than one voltage out of tolerance?

Y N

034

(Entry Point K)

Was +5.1VDC PS105 on 01A-C2 out of tolerance (Address A87, bit 2)?

Y N

7 7 6 6  
K L M N

18JUL80 PN 4008786

EC 366387 PEC 366356

2900 MAP F7B8-5

M N  
5 5

REF.CODE F7D51601

Q R

2900

MAP F7B8-6

Power Problem

PAGE 6 OF 8

035

Go to MAP for failing voltage shown in table after entry point E.

Go to Page 5, Step 032, Entry Point E.

036

1.Connect CE-meter (range 15VDC)

+lead to 01A-C2W2-E14

'+5.1V sense PS1045 01A-C2 A30'

(ALD-YC871)

-Lead to any D08 pin

'DC-GND'

Was +5.1VDC +/-1.0V present?

Y N

037

1.Connect CE-meter (range 15VDC)

+lead to 01A-C2YF

'+5.1V PS105 to 01A-C2 K/W CA'

-lead to any D08 pin

'DC-GND'

(ALD-YC871)

Is +5.1VDC +/-1.0V present?

Y N

038

(Entry Point G)

1.Press power-off key.

2.Connect CE-meter (range 15VDC)

+lead to PS105-TB02

'+5.1V PS105 to 01A-C2 K/W CA'

-lead to PS105-TB03

'DC-GND'

(ALD-YA461).

3.Press power-on switch and wait approximately one minute.

Was +5.1VDC at least momentarily present?

Y N

039

Go to Page 2, Step 008, Entry Point M.

040

1.Press power-off key.

2.Repair or replace cable from PS105-TB02 to board 01A-C2.

(ALD-YA461)

(ALD-YC871)

Go to Page 4, Step 031, Entry Point Z.

041

1.Press power-off key.

2.Remove all cards from board 01A-C2 column K thru W.

3.Connect CE-meter (range 15VDC)

+lead to 01A-C2W2-E14

'+5.1V sense PS1045 01A-C2 A30'

(ALD-YC871)

-lead to any D08 pin.

4.Press power-on switch and wait approximately one minute.

Was +5.1VDC +/- 1.0V present?

Y N

042

1.Press power-off key.

2.Suspect sense wiring error on board 01A-C2.

Repair board wiring or replace board 01A-C2.

3.Press power-on switch and wait approximately one minute.

Go to Page 5, Step 032, Entry Point E.

043

Suspect an overload condition caused by a faulty card.

1.Press power-off key.

2.Replug cards step by step. After each step press the power on switch, observe your meter reading and wait approximately one minute.

Replace the defective card which caused an incorrect meter reading at the sense point.

3.Press power-on switch and wait approximately one minute.

Go to Page 5, Step 032, Entry Point E.

18JUL80 PN 4008786

EC 366387 PEC 366356

2900 MAP F7B8-6

7  
P Q R

P  
6

REF.CODE F7D51601

Power Problem

PAGE 7 OF 8

044

(Entry Point F)

1. Check the accuracy of your CE-meter according to \*Hints For Power MAP Usage\* in book MI POWER, Vol.16.

2. Check +1.5V voltage at sense card 2 entry: Connect CE-meter (range 5VDC)

+lead to 01A-A2D2-B11

'+1.5V sense +5.1V 01A-C2 A30'

-lead to any D08 pin.

'DC-GND'

(ALD-YB641).

Is +1.5VDC +/-10% present?

Y N

045

Check +1.5V voltage at connector exit:

1. Connect CE-meter

(range 1.5VDC)

+lead to 01A-A2A3-B11.

'+1.5V sense +5.1V 01A-C2 A30'

-lead to any D08 pin

'DC-GND'

(ALD-YB241).

2. Press power-on switch and wait approximately one minute.

Is +1.5VDC +/-10% present?

Y N

046

1. Press power-off key.

2. Repair or replace cable with paddle card from board 01A-C2 to 01A-A2A3.

Go to Page 4, Step 031, Entry Point Z.

047

1. Press power-off key.

2. Repair wiring or replace board 01A-A2.

Go to Page 4, Step 031, Entry Point Z.

K L S  
5 5

2900

MAP F7B8-7

048

1. Press power-off key.

2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.

3. Press power-on switch and wait approximately one minute.

4. Run voltage measurement program.

Is address 87 bit 2 out of tolerance?

Y N

049

1. Press power-off key.

2. Replace PC sense card which is now in position 01A-A2C2.

Go to Page 4, Step 031, Entry Point Z.

050

(Entry Point X)

Go To Map 0202, Entry Point A.

051

Go to Page 2, Step 008, Entry Point M.

052

Are all voltages below call CE-limit?

Y N

053

Go to MAP for failing voltage shown in table after ENTRY POINT E of this MAP.

Go to Page 5, Step 032, Entry Point E.

054

1. Press power-off key.

2. Switch CE-mode off.

3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

055

Go to Page 4, Step 031, Entry Point Z.

S

8  
T

18JUL80 PN 4008786

EC 366387 PEC 366356

2900 MAP F7B8-7

A T  
1 7

REF.CODE F7D51601

2900

MAP F7B8-8

Power Problem

PAGE 8 OF 8

056

Go to corresponding MAP.

057

- 1.Switch PS105-CP01 on
- 2.Press power-on switch and wait approximatley one minute.

Is PS105-CP01 tripped?

Y N

058

Go to Page 1, Step 001, Entry Point A.

059

Go To Map 0282, Entry Point A.

18JUL80 PN 4008786

EC 366387 PEC 366356

2900 MAP F7B8-8

**POWER PROBLEM**

PAGE 1 OF 4

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	0200	A
4	027	0202	A
4	030	0204	A

**001**

Symptom:

PS105 -8.5V on 01A-B2 out of tolerance, A32.

Note:

-8.5V on 01A-C2 are ok!

```

-----
Suspected errors or FRU's
(including intermittent errors)
-----
1 | PC sense card 01A-A2D2.
2 | DC distribution from 01A-C2 to
  | 01A-B2.
3 | A32 sense wiring.
-----
    
```

**(Entry Point A)**

1. Press power-off key.
2. Switch to CE-mode at CE panel.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

|

**002**

Is reference code F7A51801 displayed?

Y N

|

**003**

Is any reference code displayed?

Y N

|

4 2 2 2  
A B C D

© Copyright IBM Corp. 1981

REF.CODE F7A51801

4331

23JAN81

EC 366388

2910

PN 8488571

PEC 366407

MAP F7B9-1

B C D  
1 1 1

REF.CODE F7A51801

F G

2910

MAP F7B9-2

**Power Problem**

PAGE 2 OF 4

**004**

(Entry Point Y)

Go To Map 0200, Entry Point A.

**005**

Go to MAP for displayed reference code.

**006**

1. Press power-off key.
2. Connect CE-meter (range 15VDC)  
-lead to 01A-B2B3-E01  
'-X.XV sense PS1045 01A-B2 A32'  
(ALD-YC851)  
+lead to any D08 pin.  
The -lead of your meter must be connected without removing the connectors.
3. Press power-on switch and wait approximately one minute.

**Was -8.5VDC +/- 10% at least momentarily present?**

Y N

**007**

1. Press power-off key.
2. Ensure that connectors on 01A-B2B3-E01 and on 01A-B2W5-E01 are seated correctly.
3. Connect CE-meter (range 15VDC)  
-lead to 01A-B2W5-E01  
'-X.XV PS1045 to 01A-B2 ACA'  
(ALD-YC851)  
+lead to any D08 pin.  
NOTE: The -lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute.

**Was -8.5VDC +/- 10% at least momentarily present?**

Y N

3  
E F G

**008**

1. Press power-off key
2. Connect CE-meter (range 15VDC)  
-lead to 01A-C2B5-E01  
'-X.XV PS1045 to 01A-B2 ACA'  
(ALD-YC871)  
+lead to any D08 pin
3. Press power-on switch and wait approximately one minute.

**Was -8.5VDC +/- 10% at least momentarily present?**

Y N

**009**

1. Press power-off switch.
2. Check and repair -8.5V wiring on board 01A-C2  
(ALD-YC871)  
or replace board 01A-C2.  
Go to Page 4, Step 030, Entry Point Z.

**010**

1. Press power-off switch.
2. Check and repair or replace cable for -8.5V from board 01A-C2B5-E01  
'-X.XV PS105 to 01A-B2 ACA'  
(ALD-YC871)  
to board 01A-B2W5-E01  
(ALD-YC851)  
Go to Page 4, Step 030, Entry Point Z.

**011**

- Board wiring of -8.5V net is defective.
1. Press power-off key.
  2. Check and repair -8.5V board wiring or replace board 01A-B2.  
Go to Page 4, Step 030, Entry Point Z.

23JAN81 PN 8488571

EC 366388 PEC 366407

2910 MAP F7B9-2

E  
2

REF.CODE F7A51801

Power Problem

PAGE 3 OF 4

012

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - lead to 01A-A2D2-U06
  - '-1.5V sense -8.5V 01A-B2 A32'
  - (ALD-YB643)
  - +lead to any D08 pin.
3. Observe your meter, press power-on switch and wait approximately one minute.

Was -1.5VDC +/- 10% at least momentarily present?

Y N

013

Was the voltage measured in previous step higher than 2.0VDC.

Y N

014

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - lead to paddle card connector exit 01A-A2A2-D02
  - '-1.5V sense -8.5V 01A-B2 A32'
  - (ALD-YB241)
  - +lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Was -1.5VDC +/- 10% at least momentarily present?

Y N

015

1. Press power-off key.
2. Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A2-D02
  - '-1.5V sense -8.5V 01A-B2 A32'
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

4  
H J K L M

J K L M

2910

MAP F7B9-3

016

(Entry Point L)

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.
- Go to Page 4, Step 030, Entry Point Z.

017

Do not disconnect the CE-meter.  
1. Remove paddle card from position 01A-A2A2.

Is the resistance below 200 ohm?

Y N

018

Go to Page 4, Step 030, Entry Point Z.

019

There is a short circuit between the signal '-1.5V sense -8.5V 01A-B2 A32' (ALD-YB643) (ALD-YB241) and DC-GND. Check and repair board wiring or replace board 01A-A2.  
Go to Page 4, Step 030, Entry Point Z.

020

1. Press power-off key.
  2. Repair sense wiring from 01A-A2D2-U06
    - '-1.5V sense -8.5V 01A-B2 A32'
    - (ALD-YB643)
    - to 01A-A2A2-D02
    - '-1.5V sense -8.5V 01A-B2 A32'
    - (ALD-YB241)
- or replace board 01A-A2.  
Go to Page 4, Step 030, Entry Point Z.

021

1. Press power-off key.
  2. Replace paddle card with cable in position 01A-A2A2.
- Go to Page 4, Step 030, Entry Point Z.

23JAN81 PN 8488571

EC 366388 PEC 366407

2910 MAP F7B9-3

H  
3

REF.CODE F7A51801

Power Problem

PAGE 4 OF 4

022

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

023

(Entry Point H)

Is any reference code displayed?

Y N

024

1. Press power-off key
  2. Replace PC sense card which is now plugged in position 01A-A2C2.
- Go to Step 030, Entry Point Z.

025

Is reference code F7A51801 displayed?

Y N

026

1. Press power-off key.
  2. Replace PC sense card in position 01A-A2C2.
- Go to Step 030, Entry Point Z.

027

Suspect power program error. Retry power on with the diagnostic diskette. If reference code F7A51801 is displayed again,  
Go To Map 0202, Entry Point A.

A N

2910

MAP F7B9-4

028

1. Press power-off key.
2. Replace PC sense card which is now in position 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

029

Go to Step 023, Entry Point H.

030

(Entry Point Z)

Go To Map 0204, Entry Point A.

031

1. Press power-off key.
  2. Suspect faulty paddle card in position 01A-A2A2.  
Replace cable with paddle card.
- Go to Step 030, Entry Point Z.

N

23JAN81 PN 8488571

EC 366388 PEC 366407

2910 MAP F7B9-4



POWER PROBLEM

PAGE 1 OF 8

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	025	0200	A
7	050	0202	A
4	031	0204	A
8	059	0282	A
2	008	0287	A

001

Symptom:

PS105 + 5.1V on 01A-A1 out of tolerance, A03.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	+5.1VDC distribution.
3	Load fault.
4	A03 sense wiring.
5	PS105.
6	TR105.
7	Line voltage distribution.

(Entry Point A)

Is PS105-CP02 tripped?

Y N

002

1. Press power-off key.
2. Switch to CE-mode at CE-panel.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

8 5 2  
A B C

Power Problem

PAGE 2 OF 8

003

Is reference code F7D52001 displayed?

Y N

004

Is any other reference code displayed?

Y N

005

Go to Page 4, Step 025, Entry Point Y.

006

Go to MAP for displayed reference code.

007

1. Press power-off key.
2. Connect CE meter (range 15VDC)  
+lead to PS105-TB02-001/002  
'+5.1V PS105 to 01A-A1 CD ATT'  
(ALD-YA461)  
-lead to PS105-TB03-001/002
3. Press power-on switch and wait approximately one minute.

Was +5.1VDC at least momentarily present?

Y N

008

(Entry Point P)

Go To Map 0287, Entry Point A.

009

1. Press power-off key.
2. Connect CE-meter (range 15VDC)  
+lead to 01A-A1H6-C02  
'+5.1V sense PS105 01A-A1 A03'  
(ALD-YC823)  
-lead to any D08 pin.  
The +lead of your meter must be connected without removing the connectors.
3. Press power-on switch and wait approximately one minute.

(Step 009 continues)

(Step 009 continued)

Was +5.1VDC at least momentarily present?

Y N

010

1. Press power-off key.
2. Ensure that connectors on 01A-A1YF and on 01A-A1ZD are seated correctly.
3. Connect CE-meter (range 15VDC)  
+lead to 01A-A1YF  
'+5.1V PS105 to 01A-A1 CD ATT'  
(ALD-YC821)  
-lead to any D08 pin.  
The +lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute.

Was +5.1VDC at least momentarily present?

Y N

011

Go to Page 6, Step 038, Entry Point G.

012

1. Press power-off key.
  2. Replace board 01A-A1.
- Go to Page 4, Step 031, Entry Point Z.

013

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)  
+lead to 01A-A2D2-S06  
'+1.5V sense +5.1V 01A-A1 A03'  
(ALD-YB643)  
-lead to any D08 pin.
3. Carefully watch your meter, press power-on switch and wait approximately one minute.

Was +1.5VDC +/-10% at least momentarily present?

Y N

18JUL80 PN 4008787

EC 366387 PEC 366356

2920 MAP F7BA-2

## Power Problem

PAGE 3 OF 8

014

Was the voltage measured in the previous step higher than 2.0VDC.

Y N

015

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - +lead to paddle card connector exit 01A-A2A4-D11
  - '+1.5V sense +5.1V 01A-A1 A03' (ALD-YB243)
  - lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Was +1.5VDC at least momentarily present?

Y N

016

1. Press power-off key.
2. Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A4-D11
  - '+1.5V sense +5.1V 01A-A1 A03' (ALD-YB243)
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

017

(Entry Point L)

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.
- Go to Page 4, Step 031, Entry Point Z.

018

- Do not disconnect the CE-meter.
1. Remove paddle card from position 01A-A2A4.

Is the resistance below 200 ohm?

Y N

019

Go to Page 4, Step 031, Entry Point Z.

020

- There is a short circuit between the signal '+1.5V sense +5.1V 01A-A2 A03' (ALD-YB643) (ALD-YB243) and DC-GND. Check and repair board wiring or replace board 01A-A2.
- Go to Page 4, Step 031, Entry Point Z.

021

1. Press power-off key.
  2. Repair sense wiring from 01A-A2D2-S06
    - '+1.5V sense +5.1V 01A-A1 A03' (ALD-YB643)
    - to 01A-A2A4-D11
    - '+1.5V sense +5.1V 01A-A1 A03' (ALD-YB243)
- or replace board 01A-A2.
- Go to Page 4, Step 031, Entry Point Z.

022

1. Press power-off key.
  2. Replace paddle card with cable in position 01A-A2A4.
- Go to Page 4, Step 031, Entry Point Z.

18JUL80 PN 4008787

EC 366387 PEC 366356

2920 MAP F7BA-3

D  
2

REF.CODE F7D52001

J

2920

MAP F7BA-4

**Power Problem**

PAGE 4 OF 8

**023**

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

**024**

(Entry Point H)

Is any reference code displayed?

Y N

**025**

(Entry Point Y)

Go To Map 0200, Entry Point A.

**026**

Is reference code F7D52001 displayed?

Y N

**027**

1. Press power-off key.
  2. Replace PC sense card in position 01A-A2C2.
- Go to Step 031, Entry Point Z.

**028**

Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D52001 is displayed again, Go to Page 7, Step 050, Entry Point B.

**029**

1. Press power-off key.
2. Replace PC sense card which is now in position 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

**030**

Go to Step 024, Entry Point H.

**031**

(Entry Point Z)

Go To Map 0204, Entry Point A.

J

18JUL80 PN 4008787

EC 366387 PEC 366356

2920 MAP F7BA-4

B  
1

REF.CODE F7D52001

2920

MAP F7BA-5

Power Problem

PAGE 5 OF 8

032

(Entry Point E)

1. Run voltage measurement program.						
2. Check the following voltages for out of tolerance						
Addr	Bit	Voltage	Board	Sense No.	Go to MAP	
85	5	+8.5V PS105	01A-A1	A02	F7B1	
97	5	-5.1V PS105	01A-C2	A33	F7B4	
95	5	-8.5V PS105	01A-C2	A62	F7B5	
95	6	-8.5V PS105	01A-A1	A38	F7B6	
97	4	+5.1V PS105	01A-A1	A03	F7BA	
97	7	+8.5V PS105	01A-C2	A31	F7B3	
85	7	+8.5V PS105	01A-B2	A23	F7BB	
87	2	+5.1V PS105	01A-C2	A30	F7B8	
85	0	+6.0V PS105	01A-A1	A52	F7B7	
95	0	-8.5V PS105	01A-B2	A32	F7B9	

Are all voltages below maximum limit?

Y N

033

is more than one voltage out of tolerance?

Y N

034

(Entry Point K)

Is +5.1V PS105 on 01A-A1 out of tolerance (Address 97, bit 4)?

Y N

7 7 6 6  
K L M N

18JUL80 PN 4008787

EC 366387 PEC 366356

2920 MAP F7BA-5

M N  
5 5

REF.CODE F7D52001

Q R S

2920

MAP F7BA-6

**Power Problem**

PAGE 6 OF 8

**035**

Go to MAP for failing voltage shown in table after ENTRY POINT E.

Go to Page 5, Step 032, Entry Point E.

**036**

1.Connect CE-meter (range 15VDC)

+lead to 01A-A1H6-C02

'+5.1V sense PS105 01A-A1 A03'

(ALD-YC823)

-lead to any D08 pin

'DC-GND'

Is +5.1VDC +/-1.0V present?

Y N

**037**

1.Connect CE-meter (range 15VDC)

+lead to 01A-A1YF

or 01A-A1ZC

'+5.1V PS105 to 01A-A1 CD ATT'

-lead to any D08 pin

'DC-GND'

(ALD-YC821)

Is +5.1VDC +/-1.0V present?

Y N

**038**

(Entry Point G)

1.Press power-off key.

2.Connect CE-meter (range 15VDC)

+lead to PS105-TB02-001/002

'+5.1V PS105 to 01A-A1 CD ATT'

-lead to PS105-TB03-001/002

'DC-GND'

(ALD-YA461).

3.Press power-on switch and wait approximately one minute.

Was +5.1VDC at least momentarily present?

Y N

**039**

Go to Page 2, Step 008, Entry Point P.

**040**

1.Press power-off key.

2.Repair or replace cable from connector PS105-02 to board 01A-A1.

(ALD-YA461)

(ALD-YC821)

Go to Page 4, Step 031, Entry Point Z.

**041**

1.Press power-off key.

2.Remove all cards from board 01A-A1.

3.Connect CE-meter (range 15VDC)

+lead to 01A-A1H6-C02

'+5.1V sense PS105 01A-A1 A03'

(ALD-YC823)

-lead to any D08 pin.

4.Press power-on switch and wait approximately one minute.

Is +5.1VDC +/- 1.0V present?

Y N

**042**

1.Press power-off key.

2.Suspect sense wiring error on board 01A-A1.

Repair board wiring or replace board 01A-A1.

3.Press power-on key.

Go to Page 5, Step 032, Entry Point E.

**043**

Suspect an overload condition caused by a faulty card.

1.Press power-off key.

2.Replug cards step by step. After each step press the power on key, observe your meter reading and wait approximately one minute.

Replace the defective card which caused an incorrect meter reading at the sense point.

3.Press power-on switch and wait approximately one minute.

Go to Page 5, Step 032, Entry Point E.

18JUL80 PN 4008787

EC 366387 PEC 366356

2920 MAP F7BA-6

7  
P Q R S

044

(Entry Point F)

1. Check the accuracy of your CE-meter according to "Hints For Power MAP Usage" in book MI POWER, Vol.16.
2. Check +1.5V voltage at sense card 1 entry: Connect CE-meter (range 5VDC)  
+lead to 01A-A2H2-S06  
'+1.5V sense +5.1V 01A-A1 A03'  
-lead to any D08 pin.  
'DC-GND'  
(ALD-YB643).

Is +1.5VDC +/-10% present?

Y N

045

Check +1.5V voltage at connector exit:

1. Connect CE-meter (range 1.5VDC)  
+lead to 01A-A2A4-D11.  
'+1.5V sense +5.1V 01A-A1 A03'  
-lead to any D08 pin  
'DC-GND'  
(ALD-YB243).

2. Press power-on switch and wait approximately one minute.

Is +1.5VDC +/-10% present?

Y N

046

1. Press power-off key.
2. Repair or replace cable with paddle card from board 01A-A1H6-C02 to 01A-A2A4-D11.  
Go to Page 4, Step 031, Entry Point Z.

047

1. Press power-off key.
2. Repair wiring or replace board 01A-A2.  
Go to Page 4, Step 031, Entry Point Z.

048

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.
4. Run voltage measurement program.

Is address 97 bit 4 out of tolerance?

Y N

049

1. Press power-off key.
2. Replace PC sense card which is now in position 01A-A2C2.  
Go to Page 4, Step 031, Entry Point Z.

050

(Entry Point B)

Go To Map 0202, Entry Point A.

051

Go to Page 2, Step 008, Entry Point P.

052

Are all voltages below call CE-limit?

Y N

053

Go to MAP for failing voltage shown in table after ENTRY POINT E of this MAP.  
Go to Page 5, Step 032, Entry Point E.

054

1. Press power-off key.
2. Switch CE mode off.
3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

055

Go to Page 4, Step 031, Entry Point Z.

A U  
1 7

REF.CODE F7D52001

2920

MAP F7BA-8

Power Problem

PAGE 8 OF 8

056

Go to corresponding MAP.

057

1. Switch PS105-CP02 on.
2. Press power-on switch and wait approximately one minute.

Is PS105-CP02 tripped?

Y N

058

Go to Page 1, Step 001, Entry Point A.

059

Go To Map 0282, Entry Point A.

18JUL80 PN 4008787

EC 366387 PEC 366356

2920 MAP F7BA-8



**POWER PROBLEM**

PAGE 1 OF 4

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	0200	A
4	027	0202	A
4	030	0204	A

**001**

Symptom:

PS105 + 8.5V on 01A-B2 out of tolerance A23.

Note:

+8.5V on 01A-C2 are ok!

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	DC distribution from 01A-C2 to 01A-B2.
3	A23 sense wiring.

**(Entry Point A)**

1. Press power-off key.
2. Switch to CE-mode at CE panel.
3. Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

**002**

Is reference code F7A52201 displayed?

Y N

**003**

Is any reference code displayed?

Y N

4 2 2 2  
A B C D

© Copyright IBM Corp. 1981

REF.CODE F7A52201

4331

23JAN81

EC 366388

2930

PN 8488573

PEC 366407

MAP F7BB-1

B C D  
1 1 1

REF.CODE F7A52201

F G

2930

MAP F7BB-2

**Power Problem**

PAGE 2 OF 4

**004**

(Entry Point Y)

Go To Map 0200, Entry Point A.

**005**

Go to MAP for displayed reference code.

**006**

- 1.Press power-off key.
- 2.Connect CE-meter  
(range 15VDC)  
+lead to 01A-B2B3-A01  
'+8.5V sense PS1045 01A-B2 A23'  
(ALD-YC851)  
-lead to any D08 pin.

The +lead of your meter must be connected without removing the connectors.

- 3.Press power-on switch and wait approximately one minute.

**Was +8.5VDC +/- 10% at least momentarily present?**

Y N

**007**

- 1.Press power-off key.
- 2.Ensure that connectors on 01A-B2B3-A01 and on 01A-B2W4-A14 are seated correctly.
- 3.Connect CE-meter  
(range 15VDC)  
+lead to 01A-B2W4-A14  
'+8.5V PS1045 to 01A-B2 AC ADAPT'  
(ALD-YC851)  
-lead to any D08 pin.

The +lead of your meter must be connected without removing the connectors.

- 4.Press power-on switch and wait approximately one minute.

**Was +8.5VDC +/- 10% at least momentarily present?**

Y N

3  
F G

**008**

- 1.Press power-off key.
- 2.Connect CE-meter  
(range 15VDC)  
+lead to 01A-C2B4-A14  
'+8.5V PS1045 to 01A-B2 AC ADAPT'  
(ALD-YC871)  
-lead to any D08 pin.

- 3.Press power-on switch and wait approximately one minute.

**Was +8.5VDC +/- 10% at least momentarily present?**

Y N

**009**

- 1.Press power-off switch.
- 2.Check and repair +8.5V wiring on board 01A-C2  
(ALD-YC871)  
or replace board 01A-C2.

Go to Page 4, Step 030, Entry Point Z.

**010**

- 1.Press power-off switch.
- 2.Check and repair or replace cable for +8.5V from board 01A-C2B4-A14  
'+8.5V PS1045 to 01A-B2 AC ADAPT'  
(ALD-YC871)  
to board 01A-B2W5-A01  
'+8.5V PS1045 to 01A-B2 AC ADAPT'  
(ALD-YC851)

Go to Page 4, Step 030, Entry Point Z.

**011**

Board wiring of +8.5V net is defective.

- 1.Press power-off key.
- 2.Check and repair +8.5V board wiring or replace board 01A-B2.

Go to Page 4, Step 030, Entry Point Z.

23JAN81 PN 8488573

EC 366388 PEC 366407

2930 MAP F7BB-2

E  
2

REF.CODE F7A52201

Power Problem

PAGE 3 OF 4

L

2930

MAP F7BB-3

**012**

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - +lead to 01A-A2D2-B05
  - '+1.5V sense +8.5V 01A-B2 A23' (ALD-YB641)
  - lead to any D08 pin.
3. Carefully observe your meter, press power-on switch and wait approximately one minute.

Was +1.5VDC +/-10% at least momentarily present?

Y N

**013**

Was the voltage measured in the previous step higher than 2.0VDC?

Y N

**014**

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - + lead to paddle card connector exit 01A-A2A2-B08
  - '+1.5V sense +8.5V 01A-B2 A23' (ALD-YB241)
  - lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Was +1.5VDC +/-10% at least momentarily present?

Y N

4 4 4  
H J K L

**015**

1. Press power-off key.
2. Connect CE-meter (range ohm x1)
  - to any D08 pin and to 01A-A2A2-B08.
  - '+1.5V sense +8.5V 01A-B2 A23' (ALD-YB241).
3. Remove PC-sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

**016**

(Entry Point L)

Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.  
Go to Page 4, Step 030, Entry Point Z.

**017**

- Do not disconnect the CE-meter.
- Remove paddle card from position 01A-A2A2.

Is the resistance below 200 ohm?

Y N

**018**

Go to Step 016, Entry Point L.

**019**

There is a short circuit between the signal '+1.5V sense +8.5V 01A-B2 A23' (ALD-YB641) (ALD-YB241) and DC-GND.  
Check and repair board wiring or replace board 01A-A2.  
Go to Page 4, Step 030, Entry Point Z.

23JAN81 PN 8488573

EC 366388 PEC 366407

2930 MAP F7BB-3

H J K  
3 3 3

REF.CODE F7A52201

A M N P

2930

MAP F7BB-4

**Power Problem**

PAGE 4 OF 4

**020**

1. Press power-off key.
2. Repair sense wiring from  
01A-A1D2-B05  
'+1.5V sense +8.5V 01A-B2 A23'  
(ALD-YB641)  
to 01A-A2A2-B08  
'+1.5V sense +8.5V 01A-B2 A23'  
(ALD-YB241)  
or replace board 01A-A2.  
**Go to Step 030, Entry Point Z.**

**021**

1. Press power-off key.
2. Replace paddle card with cable in position  
01A-A2A2.  
**Go to Step 030, Entry Point Z.**

**022**

1. Press power-off key.
2. Exchange both PC sense cards in positions  
01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait  
approximately one minute.

Is the \*power complete\* indicator on?

Y N

**023**

(Entry Point H)

Is any reference code displayed?

Y N

**024**

1. Press power-off key.
2. Replace PC sense card which is now  
plugged in position 01A-C2.  
**Go to Step 030, Entry Point Z.**

**025**

Is reference code F7A52201 displayed?

Y N

M N P

**026**

1. Press power-off key.
2. Replace sense card in position  
01A-A2C2  
**Go to Step 030, Entry Point Z.**

**027**

Suspect power program error. Retry  
power on with the diagnostic diskette. If  
the reference code F7A52201 is displayed  
again,  
**Go To Map 0202, Entry Point A.**

**028**

1. Press power-off key.
2. Replace PC sense card which is now in  
position 01A-A2C2.
3. Press power-on switch and wait  
approximately one minute.

Is the \*power complete\* indicator on?

Y N

**029**

**Go to Step 023, Entry Point H.**

**030**

(Entry Point Z)

**Go To Map 0204, Entry Point A.**

**031**

1. Press power-off key.
2. Suspect faulty paddle card in position  
01A-A2A2.  
Replace cable with paddle card.  
**Go to Step 030, Entry Point Z.**

23JAN81 PN 8488573

EC 366388 PEC 366407

2930 MAP F7BB-4

## POWER PROBLEM

PAGE 1 OF 11

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7B3	AA	3	011
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
7	038	0200	A
10	064	0202	A
7	044	0204	A
11	073	0282	A
7	045	0287	A

001

Symptom:

PS105 +8.5V on 01A-B2 01A-C2 and out of tolerance, A31 and A23.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	+8.5VDC distribution.
3	Load fault.
4	A31 or A23 sense wiring.
5	PS105.
6	TR105.
7	Line voltage distribution.

(Entry Point A)

Is PS105-CP06 tripped?

Y N

1  
1 2  
A B

© Copyright IBM Corp. 1982

REF.CODE F7D52401

ACA2940

15SEP82

EC 366589

2940

PN 4008788

PEC 366493

MAP F7BC-1

B  
1

REF.CODE F7D52401

2940

MAP F7BC-2

**POWER PROBLEM**

PAGE 2 OF 11

002

1. Press power-off key.
2. Switch to CE-mode at CE-panel.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

003

Is reference code F7D52401 displayed?

Y N

004

Is any other reference code displayed?

Y N

005

Is the \*basic check\* indicator on?

Y N

006

Go to Page 7, Step 038,  
Entry Point Y.

007

Press cancel key and wait  
approximately one minute.

Is any referene code displayed?

Y N

008

Go to Page 7, Step 038,  
Entry Point Y.

009

Go to corresponding MAP.

010

Go to MAP for displayed reference code.

8 3  
C D

15SEP82

PN 4008788

EC 366589

PEC 366493

2940

MAP F7BC-2

D  
2

REF.CODE F7D52401

2940

MAP F7BC-3

**POWER PROBLEM**

PAGE 3 OF 11

011  
(Entry Point AA)

1. Press power-off key.
2. Disconnect connector PS105-04 (ALD-YA461).
3. Install a jumper from 01A-A2B2-B12 'Pick PCC-K02 C02' (ALD-YB421) to any D08 pin 'DC-GND'.  
NOTE: This jumper will pick PCC-K02 and PS105 will be switched on.
4. Connect CE-meter (range 15VDC) to following table and check for correct DC-voltage from PS105. (ALD-YA461)
5. Press power-on switch.

Normal Voltage	+ Lead	- Lead	Lower Limit
+8.5 V	PS105-04-013	PS105-04-006	+7.8 V
-5.1 V	PS105-04-002	PS105-04-001	-4.6 V

Are any DC-voltage below the lower limit?

Y N

012

1. Press power-off key.
2. Reconnect connector PS105-04.
3. Remove jumper 01A-A2B2-B12 previously installed.
4. Connect CE-meter (range 15VDC) +lead to 01A-C2W2-A14 ' +8.5V sense PS1045 01A-C2 A31' (ALD-YC871) -lead to any D08 pin.  
The +lead of your meter must be connected without removing the connectors.
5. Press power-on switch and wait approximately one minute.

(Step 012 continues)

7  
E

15SEP82 PN 4008788

EC 366589 PEC 366493

2940

MAP F7BC-3

## POWER PROBLEM

PAGE 4 OF 11

(Step 012 continued)

Was +8.5VDC at least momentarily present?

Y N

## 013

Do not disconnect your meter.

1. Disconnect voltage connector block from  
01A-C2B5-E01 (-8.5V)  
01A-C2B5-A01 (DC-GND)  
01A-C2B4-A14 (+8.5V)  
01A-C2B4-E14 (DC-GND)  
'+8.5V PS1045 to 01A-B2 AC ADAPT'  
(ALD-YC871)
2. Press power-on switch and wait approximately one minute.

Was +8.5VDC +/- 1.0V at least momentarily present?

Y N

## 014

1. Press power-off key.
2. Ensure that connectors on  
01A-C2W3-A14 and 01A-C2W2-A14  
and on 01A-C2W4-A14 are seated correctly.
3. Connect CE-meter (range 15VDC)  
+lead to 01A-C2W3-A14 or  
01A-C2W4-A14  
'+8.5V PS1045 to 01A-C2 K/W CA'  
(ALD-YC871)  
-lead to any D08 pin.  
The +lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute.

Was +8.5VDC at least momentarily present?

Y N

## 015

Go to Page 9, Step 052, Entry Point G.

## 016

1. Press power-off key.
2. Board wiring of +8.5V net is defective.  
Replace board 01A-C2.

Go to Page 7, Step 044, Entry Point Z.

## 017

There is a load fault on board 01A-B2 Col.S or sense wiring problem of analog sense line A23. Do not disconnect your meter.

1. Press power-off switch.
2. Reconnect the connectors which were disconnected in the previous step.
3. Disconnect the sense line connector block from  
01A-B2B3-E01 (-8.5V)  
01A-B2B3-A01 (+8.5V)  
01A-B2B2-E14 (+10.1V).  
01A-B2B2-A14 (+5.1V)  
(ALD-YC851)
4. Press power-on switch and wait approximately one minute.

Was +8.5VDC +/- 1.0V at least momentarily present?

Y N

## 018

Suspect a load fault on 01A-B2. Replace ACA (Auto Call Adapter) card(s) in positions 01A-B2S2 and/or 01A-B2S4. If the problem is not solved by previous card replacement replace board 01A-B2.

Go to Page 7, Step 044, Entry Point Z.



J  
4

REF.CODE F7D52401

POWER PROBLEM

PAGE 5 OF 11

019

There is a sense wiring problem of sense line A23.

1. Press power-off key.
2. Connect CE-meter (range 15VDC)
  - lead to 01A-B2B3-A01
  - '+8.5V sense PS1045 01A-B2 A23'
  - (ALD-YC851)

+lead to any D08 pin.

The -lead of your meter must be connected without removing the connectors.

3. Press power-on switch and wait approximately one minute.

Was +8.5VDC +/- 1.0V at least momentarily present?

Y N

020

Sense wiring error on board 01A-B2. Replace board 01A-B2.

Go to Page 7, Step 044, Entry Point Z.

021

1. Press Power-off key.
2. Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A2-B08
  - '-1.5V sense +8.5V 01A-B2 A23'
  - (ALD-YB241)
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

022

1. Press power-off key.
2. Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.

Go to Page 7, Step 044, Entry Point Z.

K

F K  
4

2940

MAP F7BC-5

023

Do not disconnect the CE-meter. Remove paddle card from position 01A-A2A2.

Is the resistance below 200 ohm?

Y N

024

Go to Page 7, Step 044, Entry Point Z.

025

There is a short circuit between the signal '-1.5V sense +8.5V 01A-B2 A23'

(ALD-YB643)

(ALD-YB241)

and DC-GND.

Check and repair board wiring or replace board 01A-A2.

Go to Page 7, Step 044, Entry Point Z.

026

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - +lead to 01A-A2D2-U02
  - '+1.5V sense +8.5V 01A-C2 A31'
  - (ALD-YB643)
- lead to any D08 pin.
3. Carefully watch your meter, press power-on switch and wait approximately one minute.

Was +1.5VDC at least momentarily present?

Y N

027

Was the voltage measured in previous step higher than 2.0VDC.

Y N

15SEP82 PN 4008788

EC 366589 PEC 366493

2940 MAP F7BC-5

6 6 6  
L M N

N  
5

REF.CODE F7D52401

L M P Q  
5 5

2940

MAP F7BC-6

**POWER PROBLEM**

PAGE 6 OF 11

**028**

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)
  - +lead to paddle card connector exit 01A-A2A3-B13
  - '+1.5V sense +8.5V 01A-C2 A31' (ALD-YB241)
  - lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Was +1.5VDC +/- 10% at least momentarily present?

Y N

**029**

1. Press Power-off key.
2. Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A3-B13
  - '+1.5V sense +8.5V 01A-C2 A31' (ALD-YB241)
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

**030**

(Entry Point L)

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-C2 to 01A-A2A3.
- Go to Page 7, Step 044, Entry Point Z.

**031**

Do not disconnect the CE-meter.

1. Remove paddle card from position 01A-A2A3.

Is the resistance below 200 ohm?

Y N

**032**

Go to Page 7, Step 044, Entry Point Z.

**033**

There is a short circuit between the signal

'+1.5V sense +8.5V 01A-C2 A31' (ALD-YB643) (ALD-YB241) and DC-GND. Check and repair board wiring or replace board 01A-A2.

Go to Page 7, Step 044, Entry Point Z.

**034**

1. Press power-off key.
  2. Repair sense wiring from 01A-A1D2-U02
    - '+1.5V sense +8.5V 01A-C2 A31' (ALD-YB643)
    - to 01A-A2A3-B13
    - '+1.5V sense +8.5V 01A-C2 A31' (ALD-YB241)
- or replace board 01A-A2.
- Go to Page 7, Step 044, Entry Point Z.

**035**

1. Press power-off key.
  2. Replace paddle card with cable in position 01A-A2A3.
- Go to Page 7, Step 044, Entry Point Z.

**036**

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

**037**

(Entry Point H)

Is any reference code displayed?

Y N

P Q

7 7 7  
R S T

15SEP82 PN 4008788

EC 366589 PEC 366493

2940 MAP F7BC-6

E R S T  
3 6 6 6

REF.CODE F7D52401

2940

MAP F7BC-7

**POWER PROBLEM**

PAGE 7 OF 11

**038**

(Entry Point Y)

Go To Map 0200, Entry Point A.

**039**

Is reference code F7D52401 displayed?

Y N

**040**

- 1.Press power-off key.
- 2.Replace PC sense card in position 01A-A2C2.

Go to Step 044, Entry Point Z.

**041**

Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D52401 is displayed again,

Go to Page 10, Step 064, Entry Point X.

**042**

- 1.Press power-off key.
- 2.Replace PC sense card which is now in position 01A-A2C2.
- 3.Press power-on switch and wait approximately one minute.

Is the \*power complete\* indicator on?

Y N

**043**

Go to Page 6, Step 037, Entry Point H.

**044**

(Entry Point Z)

Go To Map 0204, Entry Point A.

**045**

(Entry Point M)

Go To Map 0287, Entry Point A.

15SEP82 PN 4008788

EC 366589 PEC 366493

2940 MAP F7BC-7

C  
2

REF.CODE F7D52401

2940

MAP F7BC-8

**POWER PROBLEM**

PAGE 8 OF 11

046

(Entry Point E)

1. Run voltage measurement program.						
2. Check the following voltages for out of tolerance.						
Addr	Bit	Voltage	Board	Sense No.	Go to MAP	
85	5	+8.5V PS105	01A-A1	A02	F7B1	
97	5	-5.1V PS105	01A-C2	A33	F7B4	
95	5	-8.5V PS105	01A-C2	A62	F7B5	
95	6	-8.5V PS105	01A-A1	A38	F7B6	
97	4	+5.1V PS105	01A-A1	A03	F7BA	
97	7	+8.5V PS105	01A-C2	A31	F7B3	
85	7	+8.5V PS105	01A-B2	A23	F7BB	
87	2	+5.1V PS105	01A-C2	A30	F7B8	
85	0	+6.0V PS105	01A-A1	A52	F7B7	
95	0	-8.5V PS105	01A-B2	A32	F7B9	

Are all voltages below maximum limit?

Y N

047

Is more than one voltage out of tolerance?

Y N

048

(Entry Point K)

Is +8.5VDC PS105 on 01A-C2 out of tolerance (Address 97, bit 7)?

Y N

1 1  
0 0 9 9  
U V W X

15SEP82 PN 4008788

EC 366589 PEC 366493

2940 MAP F7BC-8

W X  
8 8

REF.CODE F7D52401

POWER PROBLEM

PAGE 9 OF 11

049

Go to MAP for failing voltage shown in table after ENTRY POINT E of this MAP.

Go to Page 8, Step 046, Entry Point E.

050

Connect CE-meter (range 15VDC)

+lead to 01A-C2W2-A14

'+8.5V sense PS1045 01A-C2 A31'

(ALD-YC871)

-lead to any D08 pin

'DC-GND'

Is +8.5VDC +/-1.0V present?

Y N

051

Connect CE-meter (range 15VDC)

+lead to 01A-C2W3-A14

or 01A-C2W4-A14

'+8.5V PS1045 to 01A-C2 K/W CA'

-lead to any D08 pin

'DC-GND'

(ALD-YC871)

Is +8.5VDC +/-1.0V present?

Y N

052

(Entry Point G)

1.Press power-off key.

2.Connect CE-meter (range 15VDC)

+lead to connector PS105-04-013

'+8.5V PS105 to 01A-C2 K/W CA'

-lead to connector PS105-04-006

'DC-GND'

(ALD-YA461).

3.Press power-on switch and wait approximately one minute.

Was +8.5VDC +/- 1.0V at least momentarily present?

Y N

1  
0 A A  
Y Z A B

Z A A  
A B

2940

MAP F7BC-9

053

Go to Page 7, Step 045, Entry Point M.

054

1.Press power-off key.

2.Repair or replace cable from

connector PS105-04

to board 01A-C2.

(ALD-YA461)

(ALD-YC871)

Go to Page 7, Step 044, Entry Point Z.

055

1.Press power-off key.

2.Remove all cards from board 01A-C2 column

K through W and from board 01A-B2 column

S

if Auto Call Adapter (ACA) is installed.

3.Connect CE-meter (range 15VDC)

+lead to 01A-C2W2-A14

'+8.5V sense PS1045 01A-C2 A31'

(ALD-YC871)

-lead to any D08 pin.

4.Press power-on switch and wait

approximately one minute.

Is +8.5VDC +/- 1.0V present?

Y N

056

1.Press power-off key.

2.Suspect sense wiring error on board

01A-C2.

Repair board wiring or replace board

01A-C2.

3.Press power-on switch and wait

approximately one minute.

Go to Page 8, Step 046, Entry Point E.

1  
0 A A  
C

15SEP82

PN 4008788

EC 366589

PEC 366493

2940

MAP F7BC-9

Y A  
9 C  
9

REF.CODE F7D52401

POWER PROBLEM

PAGE 10 OF 11

057

Suspect overload condition caused by a faulty card.

1. Press power-off key.
2. Replug cards step by step. After each step press power on switch, observe your meter reading and wait approximately one minute. Replace the defective card which caused an incorrect meter reading at the sense point.
3. Press power-on switch and wait approximately one minute.

Go to Page 8, Step 046, Entry Point E.

058

(Entry Point F)

1. Check the accuracy of your CE-meter according to \*Hints For Power MAP Usage\* in book MI POWER, Vol.16.
2. Check +1.5V voltage at sense card 1 entry: Connect CE-meter (range 5VDC)  
+lead to 01A-A2D2-U02  
'+1.5V sense +8.5V 01A-C2 A31'  
-lead to any D08 pin.  
'DC-GND'  
(ALD-YB643).

Is +1.5VDC +/-10% present?

Y N

059

Check +1.5 voltage at connector exit:

1. Connect CE-meter (range 1.5VDC)  
+lead to 01A-A2A3-B13.  
'+1.5V sense +8.5V 01A-C2 A31'  
-lead to any D08 pin  
'DC-GND'  
(ALD-YB241).

2. Press power-on switch and wait approximately one minute.

Is +1.5VDC +/-10% present?

Y N

A A A  
D E F

U V A A A 2940  
8 8 D E F

MAP F7BC-10

060

1. Press power-off key.
2. Repair or replace cable with paddle card from board 01A-C2 to 01A-A2A3.

Go to Page 7, Step 044, Entry Point Z.

061

1. Press power-off key.
2. Repair wiring or replace board 01A-A2.

Go to Page 7, Step 044, Entry Point Z.

062

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.
4. Run voltage measurement program.

Is address 97 bit 7 out of tolerance?

Y N

063

1. Press power-off key.
2. Replace PC sense card which is now in position 01A-A2C2.

Go to Page 7, Step 044, Entry Point Z.

064

(Entry Point X)

Go To Map 0202, Entry Point A.

065

Go to Page 7, Step 045, Entry Point M.

066

Are all voltages below call CE-limit?

Y N

1 1  
1 1  
A A  
G H

15SEP82 PN 4008788

EC 366589 PEC 366493

2940 MAP F7BC-10

A A A  
1 G H  
1 1  
0 0

REF.CODE F7D52401

2940

MAP F7BC-11

**POWER PROBLEM**

PAGE 11 OF 11

**067**

Go to MAP for failing voltage shown in the table after ENTRY POINT-E of this MAP.

Go to Page 8, Step 046, Entry Point E.

**068**

- 1.Press power-off key.
- 2.Switch CE mode off.
- 3.Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

**069**

Suspect intermittent error.

Go to Page 7, Step 044, Entry Point Z.

**070**

Go to corresponding MAP.

**071**

- 1.Switch PS105-CP06 on.
- 2.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?

Y N

**072**

Go to Page 1, Step 001, Entry Point A.

**073**

Go To Map 0282, Entry Point A.

15SEP82 PN 4008788

EC 366589 PEC 366493

2940 MAP F7BC-11







## POWER PROBLEM

PAGE 1 OF 9

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7B5	AA	2	009
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	035	0200	A
8	060	0202	A
3	013	0204	A
9	069	0282	A
2	008	0287	A

001

## Symptom:

PS105 -8.5V on 01A-B2 and 01A-C2 out of tolerance, A62 and A32.

-----  
Suspected errors or FRU's  
(including intermittent errors)  
-----

- 1 | PC sense card 01A-A2D2.
- 2 | -8.5VDC distribution.
- 3 | Load fault.
- 4 | A62 or A32 sense wiring.
- 5 | PS105.
- 6 | TR105.
- 7 | Line voltage distribution.

(Entry Point A)

Is PS105-CP05 tripped?

Y N

002

- 1. Press power-off key.
- 2. Switch to CE-mode at the CE-panel.
- 3. Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

© Copyright IBM Corp. 1981

REF.CODE F7D52601

26OCT81

PN 4008789

EC 366493

PEC 366387

2950

MAP F7BD-1

9 6 2  
A B C

C  
I

Power Problem

003

Is reference code F7D52601 displayed?

Y N

004

Is any other reference code displayed?

Y N

005

Go to Page 5, Step 035, Entry Point Y.

006

Go to MAP for displayed reference code.

007

1. Press power-off key.
2. Connect CE-meter (range 15VDC)
  - lead to connector PS105-04-007.
  - '-8.5V PS105 to 01A-C2 K/W CA' (ALD-YA461)
  - +lead to connector PS105-04-010
3. Press power-on switch and wait approximately one minute.

Was -8.5V at least momentarily present?

Y N

008

(Entry Point M)

Go To Map 0287, Entry Point A.

009

(Entry Point AA)

1. Press power-off key.
2. Switch to CE mode if not already done.
3. Connect CE-meter (range 15VDC)
  - lead to 01A-C2W3-A01
  - '-X.XV sense PS1045 A-C2 A64/62' (ALD-YC871)
  - +lead to any D08 pin.
  - The -lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute. (Step 009 continues)

(Step 009 continued)

Was -8.5VDC +/- 1.0V at least momentarily present?

Y N

010

Do not disconnect your meter.

1. Disconnect voltage connector block from
  - 01A-C2B5-E01 (-8.5V)
  - 01A-C2B5-A01 (DC-GND)
  - 01A-C2B4-A14 (+8.5V)
  - 01A-C2B4-E14 (DC-GND)
  - '-8.5V PS1045 to 01A-B2 AC ADAPT' (ALD-YC871)
2. Press power-on switch and wait approximately one minute.

Was -8.5VDC +/- 1.0V at least momentarily present?

Y N

011

1. Press power-off key.
2. Ensure that connectors
  - 01A-C2W3-A01 and 01A-C2W5-E01 are seated correctly.
3. Connect CE-meter (range 15VDC)
  - lead to 01A-C2W5-E01
  - '-8.5V PS1045 to 01A-C2 K/W CA' (ALD-YC871)
  - +lead to any D08 pin.
  - The -lead of your meter must be connected without removing the connectors.
4. Press power-on switch and wait approximately one minute.

Was -8.5VDC +/- 1.0V at least momentarily present?

Y N

012

Go to Page 7, Step 048, Entry Point G.

26OCT81 PN 4008789

EC 366493 PEC 366387

2950 MAP F7BD-2

4 3 3  
D E F

E F  
2 2

REF.CODE F7D52801

Power Problem

PAGE 3 OF 9

013

1. Press power-off key.
2. Board wiring of -8.5V net defective.  
Replace board 01A-C2.

(Entry Point Z)

Go To Map 0204, Entry Point A.

014

There is a load fault on board 01A-B2 Col.S or sense wiring problem of analog sense line A32. Do not disconnect your meter.

1. Press power-off switch.
2. Reconnect the connectors which were disconnected in the previous step.
3. Disconnect the sense line connector block from  
01A-B2B3-E01 (-8.5V)  
01A-B2B3-A01 (+8.5V)  
01A-B2B2-E14 (+10.1V).  
01A-B2B2-A14 (+5.1V)  
(ALD-YC851)
4. Press power-on switch and wait approximately one minute.

Was -8.5VDC +/- 1.0V at least momentarily present?

Y N

015

Suspect a load fault on 01A-B2. Replace ACA (Auto Call Adapter) card(s) in positions 01A-B2S2 and/or 01A-B2S4. If the problem is not solved by previous card replacement replace board 01A-B2.

Go to Step 013, Entry Point Z.

G

G

2950

MAP F7BD-3

016

There is a sense wiring problem of sense line A32.

1. Press power-off key.
2. Connect CE-meter (range 15VDC)  
-lead to 01A-B2B3-E01  
'-X.XV sense PS1045 01A-B2 A32'  
(ALD-YC851)  
+lead to any D08 pin.

The -lead of your meter must be connected without removing the connectors.

3. Press power-on switch and wait approximately one minute.

Was -8.5VDC +/- 1.0V at least momentarily present?

Y N

017

Sense wiring error on board 01A-B2. Replace board 01A-B2.  
Go to Step 013, Entry Point Z.

018

1. Press Power-off key.
2. Connect CE-meter (range ohm X1) to any D08 pin and to  
01A-A2A2-D02  
'-1.5V sense -8.5V 01A-B2 A32'  
(ALD-YB241)
3. Remove PC sense card from position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

019

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.
- Go to Step 013, Entry Point Z.

4  
H

26OCT81

PN 4008789

EC 366493

PEC 366387

2950

MAP F7BD-3

D H  
2 3

REF.CODE F7D52601

Power Problem

PAGE 4 OF 9

020

Do not disconnect the CE-meter.  
Remove paddle card from position  
01A-A2A2.

Is the resistance below 200 ohm?

Y N

021

Go to Page 3, Step 013, Entry Point Z.

022

There is a short circuit between the signal  
'-1.5V sense -8.5V 01A-B2 A32'  
(ALD-YB643)  
(ALD-YB241)  
and DC-GND.

Check and repair board wiring or replace  
board 01A-A2.

Go to Page 3, Step 013, Entry Point Z.

023

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)  
-lead to 01A-A2D2-S07  
'-1.5V sense -8.5V 01A-C2 A62'  
(ALD-YB643)  
+lead to any D08 pin.
3. Carefully watch your meter, press power-on  
switch and wait approximately one minute.

Was -1.5VDC +/- 10% at least momentarily  
present?

Y N

024

Was the voltage measured in previous  
step higher than 2.0VDC?

Y N

5 5  
J K L

L

2950

MAP F7BD-4

025

1. Press power-off key.
2. Connect CE-meter (range 1.5VDC)  
-lead to paddle card connector exit  
01A-A2A3-B10  
'-1.5V sense -8.5V 01A-C2 A62'  
(ALD-YB241)  
+lead to any D08 pin.
3. Press power-on switch and wait  
approximately one minute.

Was -1.5VDC +/- 10% at least momentarily  
present?

Y N

026

1. Press power-off key.
2. Connect CE-meter (range ohm X1) to any  
D08 pin and to 01A-A2A3-B10  
'-1.5V sense -8.5V 01A-C2 A62'  
(ALD-YB241)
3. Remove PC sense card from  
position 01A-A2D2.

Is the resistance below 200 ohm?

Y N

027

(Entry Point L)

1. Press power-off key.
  2. Repair or replace cable with paddle card  
from board 01A-C2 to 01A-A2A3.
- Go to Page 3, Step 013, Entry Point Z.

028

Do not disconnect the CE-meter.  
1. Remove paddle card from  
position 01A-A2A3.

Is the resistance below 200 ohm?

Y N

029

Go to Step 027, Entry Point L.

5 5  
M N

26OCT81 PN 4008789

EC 366493 PEC 366387

2950 MAP F7BD-4

J K M N  
4 4 4 4

REF.CODE F7D52601

Power Problem

PAGE 5 OF 9

030

There is a short circuit between the signal

'-1.5V sense -8.5V 01A-C2 A62'

(ALD-YB643)

(ALD-YB241)

and DC-GND.

Check and repair board wiring or replace board 01A-A2.

Go to Page 3, Step 013, Entry Point Z.

031

1. Press power-off key.

2. Repair sense wiring form

01A-A2D2-S07

'-1.5V sense -8.5V 01A-C2 A62'

(ALD-YB643)

to 01A-A2A3-B10

'-1.5V sense -8.5V 01A-C2 A62'

(ALD-YB241)

or replace board 01A-A2.

Go to Page 3, Step 013, Entry Point Z.

032

1. Press power-off key.

2. Replace paddle card with cable in position 01A-A2A3.

(ALD-YB241)

Go to Page 3, Step 013, Entry Point Z.

033

1. Press power-off key.

2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.

3. Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

034

(Entry Point H)

Is any reference code displayed?

Y N

P Q R

P Q R

2950

MAP F7BD-5

035

(Entry Point Y)

Go To Map 0200, Entry Point A.

036

Is reference code F7D52601 displayed?

Y N

037

1. Press power-off key.

2. Replace PC sense card in position 01A-A2C2.

Go to Page 3, Step 013, Entry Point Z.

038

Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D52601 is displayed again, Go to Page 3, Step 030, Entry Point X.

039

1. Press power-off key.

2. Replace PC sense card which is now in position 01A-A2C2.

3. Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

040

Go to Step 034, Entry Point H.

041

Go to Page 3, Step 013, Entry Point Z.

26OCT81

PN 4008789

EC 366493

PEC 366387

2950

MAP F7BD-5

B

REF.CODE F7D52601

2950

MAP F7BD-6

Power Problem

PAGE 6 OF 9

042  
(Entry Point E)

1. Run voltage measurement program. 2. Check the following voltages for out of tolerance.						
Addr	Bit	Voltage	Board	Sense No.	Go to MAP	
85	5	+8.5V PS105	01A-A1	A02	F7B1	
97	5	-5.1V PS105	01A-C2	A33	F7B4	
95	5	-8.5V PS105	01A-C2	A62	F7B5	
95	6	-8.5V PS105	01A-A1	A38	F7B6	
97	4	+5.1V PS105	01A-A1	A03	F7BA	
97	7	+8.5V PS105	01A-C2	A31	F7B3	
85	7	+8.5V PS105	01A-B2	A23	F7BB	
87	2	+5.1V PS105	01A-C2	A30	F7B8	
85	0	+6.0V PS105	01A-A1	A52	F7B7	
95	0	-8.5V PS105	01A-B2	A32	F7B9	

Are all voltages below maximum limit?

Y N

043

Is more than one voltage out of tolerance?

Y N

044

(Entry Point K)

Is -8.5V PS105 on 01A-C2 out of tolerance (Address 95, bit 5)?

Y N

8 8 7 7  
S T U V

26OCT81 PN 4008789

EC 366493 PEC 366387

2950 MAP F7BD-6

U V  
6 6

REF.CODE F7052801

Power Problem

PAGE 7 OF 9

045

Go to MAP shown in table after ENTRY POINT E of this MAP.  
Go to Page 6, Step 042, Entry Point E.

046

Connect CE-meter (range 15VDC)  
-lead to 01A-C2W3-A01  
'-X.XV sense PS1045 A-C2 A64/62'  
(ALD-YC871)  
+lead to any D08 pin  
'DC-GND'

Is -8.5VDC +/-1.0V present?

Y N

047

Connect CE-meter (range 15VDC)  
-lead to 01A-C2W5-E01  
'-8.5V PS105 to 01A-C2 K/W CA'  
+lead to any D08 pin  
'DC-GND'  
(ALD-YC871)

Is -8.5VDC +/-1.0V present?

Y N

048

(Entry Point G)

1. Press power-off key.
2. Connect CE-meter (range 15VDC)  
-lead to connector PS105-04-007  
'-8.5V PS105 to 01A-C2 K/W CA'  
+lead to connector PS105-04-010  
'DC-GND'  
(ALD-YA461).
3. Press power-on switch and wait approximately one minute.

Was -8.5VDC +/- 1.0V at least momentarily present?

Y N

049

Go to Page 2, Step 008, Entry Point M.

8  
W X Y

X Y

2950

MAP F7BD-7

050

1. Press power-off key.
2. Repair or replace cable from connector PS105-04 to board 01A-C2.  
(ALD-YA461)  
(ALD-YC871)  
Go to Page 3, Step 013, Entry Point Z.

051

1. Press power-off key.
2. Remove all cards from board 01A-C2 column K thru W.
3. Connect CE-meter (range 15VDC)  
-lead to 01A-C2W3-A01  
'-X.XV sense PS1045 A-C2 A64/62'  
(ALD-YC871)  
+lead to any D08 pin.
4. Press power-on switch and wait approximately one minute.

Is -8.5VDC +/- 1.0V present?

Y N

052

1. Press power-off key.
2. Suspect sense wiring error on board 01A-C2.  
Repair board wiring or replace board 01A-C2.
3. Press power-on switch and wait approximately one minute.  
Go to Page 6, Step 042, Entry Point E.

053

Suspect overload condition caused by a faulty card.

1. Press power-off key.
2. Replug cards step by step. After each step press power on switch, observe your meter reading and wait approximately one minute. Replace the defective card which caused an incorrect meter reading at the sense point.
3. Press power-on switch and wait approximately one minute.  
Go to Page 6, Step 042, Entry Point E.

26OCT81 PN 4008789

EC 366493 PEC 366387

2950 MAP F7BD-7

W  
7

REF.CODE F7D52601

Power Problem

PAGE 8 OF 9

054

(Entry Point F)

1. Check the accuracy of your CE-meter according to "Hints For Power MAP Usage" in book MI POWER, Vol. 16.
2. Check -1.5V voltage at sense card 1 entry:
  - Connect CE-meter (range 5VDC)
  - lead to 01A-A2D2-S07
  - '-1.5V sense -8.5V 01A-C2 A62'
  - +lead to any D08 pin.
  - 'DC-GND'
  - (ALD-YB643).

Is +1.5VDC +/- 10% present?

Y N

055

1. Connect CE-meter (range 1.5VDC)
  - +lead to 01A-A2A3-B10
  - '-1.5V sense -8.5V 01A-C2 A62'
  - +lead to any D08 pin
  - 'DC-GND'
  - (ALD-YB241).
2. Press power-on switch and wait approximately one minute.

Is -1.5VDC +/- 10% present?

Y N

056

1. Press power-off key.
  2. Repair or replace cable with paddle card from board 01A-C2 to 01A-A2A3.
- Go to Page 3, Step 013, Entry Point Z.

057

1. Press power-off key.
  2. Repair wiring or replace board 01A-A2.
- Go to Page 3, Step 013, Entry Point Z.

Z

S T Z  
6 6

2950

MAP F7BD-8

058

1. Press power-off key.
2. Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.
4. Run voltage measurement program.

Is address 95 bit 5 out of tolerance?

Y N

059

1. Press power-off key.
  2. Replace PC sense card which is now in position 01A-A2C2.
- Go to Page 3, Step 013, Entry Point Z.

060

(Entry Point X)

Go To Map 0202, Entry Point A.

061

Go to Page 2, Step 006, Entry Point M.

062

Are all voltages below call CE-limit?

Y N

063

Go to MAP for failing voltage according to table after ENTRY POINT E of this MAP.

Go to Page 6, Step 042, Entry Point E.

064

1. Press power-off key.
2. Switch CE-mode off.
3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

065

Go to Page 3, Step 013, Entry Point Z.

26OCT81 PN 4008789

EC 366493 PEC 366387

2950 MAP F7BD-8

9  
A  
A



A A  
1 A  
8

REF.CODE F7D52801

2950

MAP F7BD-9

Power Problem

PAGE 9 OF 9

066

Go to corresponding MAP.

067

1. Switch PS105-CP05 on.
2. Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?

Y N

068

Go to Page 1, Step 001, Entry Point A.

069

Go To Map 0282, Entry Point A.

26OCT81 PN 4008789

EC 366493 PEC 366387

2950 MAP F7BD-9



**POWER PROBLEM**

PAGE 1 OF 6

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	017	0202	A
4	013	0204	A

**001**

Symptom:

PS105 on by mistake (-8.5V, A62 or A38)

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 1 in pos. 01A-A2D2.
2	Contactor (Relay) PCC-K02.
3	C02 wiring.
4	BPC card in position 01A-A2B2.
5	Diskette error.
6	PC interface card in pos.01A-A2E2
7	Paddle card 01A-A2A4.

**(Entry Point A)**

1. Press power off key.
2. Connect CE-meter (range 1.5VDC) to  
01A-A2D2-S07 (-)  
'-1.5V sense -8.5V 01A-C2 A62'  
(ALD-YB643)  
and to any D08 pin (+).
3. Press the power on switch and wait  
approximately one minute.

Was 1.5VDC at least momentarily present?

Y	N

3	2
A	B

© Copyright IBM Corp. 1981

REF.CODE F7A52801

4331

23JAN81 PN 8488598

EC 366388 PEC 366407

2952 MAP F7BE-1

B  
1

REF.CODE F7A52801

2952

MAP F7BE-2

**Power Problem**

PAGE 2 OF 6

**002**

Check paddle card 01A-A2A4 and 01A-A2A3 and PC sense card 01A-A2D2 for correct seating.

**Any error found?**

Y N

**003**

Use your CE-meter (range ohm X1) and ensure that electrical continuity exists between the following listed pins:

First measurement:

01A-A2D2-S07 and 01A-A2A3-B10

'-1.5V sense -8.5V 01A-C2 A62'

(ALD-YB643).....(ALD-YB241)

Second measurement:

01A-A2D2-U10 and 01A-A2A4-D13

'-1.5V sense -8.5V 01A-A1 A38'

(ALD-YB643).....(ALD-YB243)

**Is electrical continuity present in both nets ?**

Y N

**004**

Repair the failing wiring or replace board 01A-A2.

**005**

Connect CE-meter (range ohm X1) to any D08 pin and to the following listed pins:

01A-A2A3-B10 , 01A-A2A4-D13

The resistance must be approximately 850 ohm for each measurement.

**Are the measured resistances ok?**

Y N

3 3 3  
C D E

23JAN81

PN 8488598

EC 366388

PEC 366407

2952

MAP F7BE-2



G  
3

REF.CODE F7A52801

Power Problem

PAGE 4 OF 6

010

- 1.Remove diskette(s) from diskette drive(s).
- 2.Switch PCC-CB01 on.
- 3.Observe PCC-K02 and press power-on switch.

Is PCC-K02 picked?

Y N

011

- 1.Press power-off switch.
- 2.Replace PC sense card 1 in position 01A-A2D2.
- 3.Insert control diskette.
- 4.Press power-on switch and wait approximately one minute.

Is reference code F7A52801 displayed?

Y N

012

Is any other reference code displayed?

Y N

013

(Entry Point Z)

Go To Map 0204, Entry Point A.

014

Go to corresponding MAP.

015

- 1.Press power-off switch.
- 2.Insert the diagnostic diskette into the diskette drive.
- 3.Press power-on switch and wait approximately one minute.

Is reference code F7A52801 displayed?

Y N

016

- 1.Press power-off switch.
  - 2.Replace control diskette.
- Go to Step 013, Entry Point Z.

H J

H J

2952

MAP F7BE-4

017

- 1.Press power-off switch.
- Suspect AC line voltage wiring problem from PCC-box to TR105 or sense wiring short circuit to any other voltage. Use ALD and book \*Maintenance Information, Power\* and try to isolate the fault.

Go To Map 0202, Entry Point A.

018

- Connect general logic probe input to 01A-A2B2-D11  
'-Pick PCC-K02 C02'  
(ALD-YB421)

Is the \*down\* indicator of the probe on?

Y N

019

- 1.Press power-off switch.
- 2.Replace BPC card in position 01A-A2B2.
- 3.Press power-on switch and observe PCC-K02.

Is PCC-K02 picked?

Y N

020

Go to Step 013, Entry Point Z.

5 5  
K L

23JAN81

PN 8488598

EC 366388

PEC 366407

2952

MAP F7BE-4

K L  
4 4

REF.CODE F7A52801

2952

MAP F7BE-5

**Power Problem**

PAGE 5 OF 6

**021**

1. Press power-off switch.
2. Remove BPC-card from position  
01A-A2B2.
3. Perform wiring check for the following net.  
Apply "Wiring Check Procedure" shown in  
book Maintenance Information Power.

-----			
CARD	*		01A-A2B2-B12 (ALD-YB421)
-----			
			Board Wiring
-----			
CONN	=		01A-A2B1-B08 (ALD-YB221)
-----			
			Cable
-----			
CONN	=		PCC-08-001 (ALD-YA321)
-----			
			Cable
-----			
K02	=		PCC-K02-002 (ALD-YA321)
-----			

\* '-Pick PCC-K02 C02'  
Go to Page 4, Step 013, Entry Point Z.

**022**

1. Press power-off switch.
2. Replace PC interface card in position  
01A-A2E2.
3. Press power-on switch.  
Connect general logic probe input to  
01A-A2B2-D11  
'-Pick PCC-K02 C02'  
(ALD-YB421)

Is the "down" indicator of the probe on?

Y N

**023**

Go to Page 4, Step 013, Entry Point Z.

6  
M

23JAN81 PN 8488598  
EC 366388 PEC 366407  
2952 MAP F7BE-5

**Power Problem**

PAGE 6 OF 6

**024**

1. Press power-off switch.
2. Remove BPC card from position 01A-A2B2 and PC interface card from position 01A-A2E2.
3. Perform wiring check for the following net.  
Apply the \*Wiring Check Procedure\* shown in book Maintenance Information Power.

-----				
	CARD	*		01A-A2E2-J09 (ALD-YB661)
	-----			
				Board Wiring
	-----			
	CARD	=		01A-A2B2-D11 (ALD-YB421)
	-----			

\* '-Pick PCC-K02 C02'

If no wiring error could be found, replace the BPC card in position 01A-A2B2.  
Go to Page 4, Step 013, Entry Point Z.

**025**

1. Replace PCC-K02.
  2. Switch PCC-CB01 on.
- Go to Page 4, Step 013, Entry Point Z.



**POWER PROBLEM**

PAGE 1 OF 4

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	011	0202	A
2	003	0204	A

**001**

Symptom:

PS105-K01 on by mistake (+6V,A52)

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 1 in pos. 01A-A2D2.
2	PS105.
3	C24 wiring.
4	BPC card in position 01A-A2B2.
5	Diskette error.
6	PC interface card in pos.01A-A2E2

**(Entry Point A)**

- 1.Press power-off switch.
- 2.Replace PC interface card in position 01A-A2E2.
- 3.Press power on switch and wait approximately one minute.

Is reference code F7A53001 displayed?

Y N

**002****(Entry Point B)**

Is any other reference code displayed?

Y N

2 2 2  
A B C

© Copyright IBM Corp. 1979

REF.CODE F7A53001

4331

25MAY79 PN 8488599

EC 366232 PEC 366205

2954 MAP F7BF-1

A B C  
1 1 1

Ref.C.F7A53001

2954

MAP F7BF-2

**Power Problem**

PAGE 2 OF 4

**003**

(Entry Point Z)

Go To Map 0204, Entry Point A.

**004**

Go to corresponding MAP.

**005**

- 1.Press power-off switch.
- 2.Replace the BPC card in position 01A-A2B2.
- 3.Press power on switch and wait approximately one minute.

Is reference code F7A53001 displayed?

Y N

**006**

Go to Page 1, Step 002, Entry Point B.

**007**

- 1.Press power-off switch.
- 2.Replace the PC sense card 1 in position 01A-A2D2.
- 3.Press power on switch and wait approximately one minute.

Is reference code F7A53001 displayed?

Y N

**008**

Go to Page 1, Step 002, Entry Point B.

3  
D

25MAY79 PN 8488599

EC 366232 PEC 366205

2954 MAP F7BF-2



**Power Problem**

PAGE 4 OF 4

**010**

Remove paddle card from position  
01A-A2A4.

Perform wiring check for the following nets:  
Apply the wiring check procedure shown in  
book Maintenance Information Power.

-----			
CARD	*		01A-A2A4-B05 (ALD-YB243)
-----			
			Board wiring
-----			
CONN	=		01A-A2D2-B07 (ALD-YB641)
-----			

\* '+1.5V sense +6.0V 01A-A1 A52'

**Any wiring error detected?**

Y N

**011**

Suspect defective PS105 or sense wiring  
short circuit to any other DC voltage.

Use ALD and book Maintenance  
Information Power and try to isolate the  
fault.

If you are not successful,

**Go To Map 0202, Entry Point A.**

**012**

**(Entry Point C)**

Reinstall all previously removed parts.  
**Go to Page 2, Step 003, Entry Point Z.**

**013**

**Go to Step 012, Entry Point C.**

## POWER PROBLEM

PAGE 1 OF 2

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0202	A
1	003	0204	A

## 001

Symptom:

Control line C02 for PCC-K02 missing.

Suspected errors or FRU's (including intermittent errors)	
1	PC-interface card in position 01A-A2E2.
2	Control diskette.

## (Entry Point A)

1. Press power-off key.
2. Replace PC interface card in position 01A-A2E2.
3. Press power-on switch and wait approximately one minute.

Is the reference code F7A60001 displayed?

Y N

## 002

Is any reference code displayed?

Y N

## 003

(Entry Point Z)

Go To Map 0204, Entry Point A.

## 004

Go to MAP for displayed reference code.

A

Ref.C.F7A60001

2960

MAP F7C0-2

Power Problem

PAGE 2 OF 2

005

Suspect operation control program problem.  
Use diagnostic diskette and press power-on  
switch and wait approximately one minute.

Is the power complete indicator on?

Y N

006

Go To Map 0202, Entry Point A.

007

Replace control diskette.  
Go to Page 1, Step 003, Entry Point Z.

25MAY79 PN 8488576

EC 366232 PEC 366205

2960 MAP F7C0-2



A B  
1 1

Ref.C.F7A60201

2970

MAP F7C1-2

**Power Problem**

PAGE 2 OF 2

**002**

- 1.Press power-off key.
- 2.Replace PC-sense card which is in now in position 01A-A2C2.
- 3.Press power-on switch and wait approximately one minute.

Is the power complete indicator on after execution of the power-on sequence?

Y N

**003**

Is any ref.code displayed?

Y N

**004**

Go To Map 0200, Entry Point A.

**005**

Go to MAP for displayed ref.code.

**006**

(Entry Point Z)

Go To Map 0204, Entry Point A.

**007**

Suspect operation control program problem.  
Use other diskette (diagnostic diskette), press power-on switch and wait approximately one minute.

Is the power complete indicator on?

Y N

**008**

Go To Map 0202, Entry Point A.

**009**

Replace control diskette.  
Go to Step 006, Entry Point Z.

25MAY79 PN 8488577

EC 366232 PEC 366205

2970 MAP F7C1-2



## POWER PROBLEM

PAGE 1 OF 2

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0202	A
1	003	0204	A

## 001

## Symptom:

Control line C24 for PS105-K01 missing.

Suspected errors or FRU's (including intermittent errors)	
1	PC interface card in position 01A-A2E2.
2	Control diskette.

## (Entry Point A)

1. Press power-off key.
2. Replace PC interface card in position 01A-A2E2.
3. Press power-on switch and wait approximately one minute.

Is the reference code F7A60401 displayed?

Y N

## 002

Is any reference code displayed?

Y N

## 003

(Entry Point Z)

Go To Map 0204, Entry Point A.

## 004

Go to corresponding MAP.

2  
A

© Copyright IBM Corp. 1979

REF.CODE F7A60401

4331

25MAY79 PN 8488578

EC 366232 PEC 366205

2980 MAP F7C2-1

A  
1

Ref.C.F7A60401

2980

MAP F7C2-2

Power Problem

PAGE 2 OF 2

005

Suspect operation control program problem.  
Use diagnostic diskette press power-on switch  
and wait approximately one minute.

Is the power complete indicator on?

Y N

006

Go To Map 0202, Entry Point A.

007

Replace control diskette.  
Go to Page 1, Step 003, Entry Point Z.

25MAY79 PN 8488578

EC 366232 PEC 366205

2980 MAP F7C2-2

## POWER PROBLEM

PAGE 1 OF 8

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001
0200	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0200	A
3	010	0204	A
4	012	0215	A

001

Symptom:

Thermal loop gate 01A and power supplies open, D18

Suspected errors or FRU's (including intermittent errors)	
1	Blower problem.
2	Air filter problem.
3	High ambient temperature.
4	Component overheating.
5	+24V PS104 distribution.
6	BPC card 01A-A2B2.
7	PC sense card 01A-A2D2.
8	Defective thermal switch.
9	Thermal loop wiring.
10	D18 sense wiring.

(Entry Point A)

Note: Opening of a thermal switch is indicated by a red indicator pin on top of the thermal switch. If overheating condition disappears, the switch closes again but the indicator pin is still out.

Check all thermal switches listed below:

(Step 001 continues)

© Copyright IBM Corp. 1980

REF.CODE F7D60601

4331

18JUL80 PN 4008769

EC 366387 PEC 366356

2990 MAP F7C3-1

Power Problem

PAGE 2 OF 8

(Step 001 continued)

- 1.Three switches on top of the board columns.
- 2.Three switches at bottom of board.
- 3.Two switches next to AMD101.

Does any red indicator pin of a thermal switch stick out?

Y N

002

- 1.Connect CE-meter (range 5VDC)
- lead to 01A-A2D2-M07
- '-Thermals failed D18'
- {ALD-YB643}
- +lead to 01A-A2D2-D03
- '(+5.1V PS104)'
- 2.Observe your meter, press and hold the power-on switch.

Is 5.1VDC present?

Y N

003

Is the "power complete" indicator on?

Y N

004

Is any reference code displayed?

Y N

005

Go To Map 0200, Entry Point A.

006

is reference code F7D60601 displayed?

Y N

007

Go to corresponding MAP.

8 5 4 3  
A B C D

18JUL80 PN 4008769

EC 366387 PEC 366356

2990 MAP F7C3-2

**Power Problem**

PAGE 3 OF 8

**008**

1. Press power-off key.
2. Remove cards from 01A-A2B2 and 01A-A2D2.

Perform wiring check for the following net.  
Apply the \*Wiring Check Procedure\* shown in book Maintenance Information (MI) POWER.

-----	CARD	*	01A-A2B2-G12 (ALD-YB421)
-----			Board wiring
-----	CARD	=	01A-A2B2-J10 (ALD-YB421)
-----			Board wiring
-----	CARD	=	01A-A2D2-M07 (ALD-YB643)
-----			

\* '-Thermals failed D18'

**Any wiring error detected and repaired?**

Y N

**009**

Replace PC-sense card which was previously removed from position 01A-A2D2 and reinstall BPC card into position 01A-A2B2.  
If problem not solved, replace BPC card in position 01A-A2B2.  
Go to Step 010, Entry Point Z.

**010****(Entry Point Z)**

Reconnect all disconnected cables and install all removed cards (if applicable).  
Go To Map 0204, Entry Point A.

18JUL80 PN 4008769

EC 366387 PEC 366356

2990 MAP F7C3-3

C  
2

REF.CODE F7D60601

2990

MAP F7C3-4

Power Problem

PAGE 4 OF 8

011

Thermal switch(es) may have closed again.

(Entry Point B)

- 1.Press and hold the power-on switch.
- 2.Check all blowers for correct operation.

Are all blowers running?

Y N

012

Go To Map 0215, Entry Point A.

013

- 1.Press power-off key.
  - 2.Check all air filters and clean them if necessary.
  - 3.Check visually for smoke caused by hot components for example cards in board columns A to C and power supplies.
  - 4.Check for burnt components.
- If no error detected, suspect intermittent error.  
Go to Page 3, Step 010, Entry Point Z.

18JUL80 PN 4008769

EC 366387 PEC 366356

2990 MAP F7C3-4



F G  
5 5

REF.CODE F7D60601

2990

MAP F7C3-6

**Power Problem**

PAGE 6 OF 8

**016**

1. Press power-off key.
2. Connect CE-meter (range 50VDC)  
+lead to 01A-A2C1-A06  
'+24V PS104 to thermals'  
(ALD-YB221)  
-lead to any D08 pin.
3. Observe your meter, press and hold power-on switch.

**Is 24VDC present?**

Y N

**017**

1. Press power-off switch.
2. Check and repair +24V wiring from 01A-A2B3-E14 to 01A-A2C1-A06.  
'+24V PS104 to thermals'  
Go to Page 3, Step 010, Entry Point Z.

**018**

1. Press power-off switch.
2. Check and repair wiring from 01A-A2C1-A06 to TH107-NCL.  
'+24V PS104 to thermals'  
(ALD-YA341)  
Go to Page 3, Step 010, Entry Point Z.

**019**

Suspect open thermal loop.

1. Press power-off switch.
2. Use ohmmeter (range ohm X1 and check thermal loop for continuity.  
(ALD-YA341).

**Any error detected and repaired?**

Y N

7 7  
H J

18JUL80 PN 4008769

EC 366387 PEC 366356

2990 MAP F7C3-6



E H J  
5 6 6

REF.CODE F7D60601

2990

MAP F7C3-7

**Power Problem**

PAGE 7 OF 8

**020**

Perform wiring check for the following net.

Apply "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER.

-----			
TH107	*	TH107-NCL (ALD-YA341)	
-----			
		TH-Loop	
-----			
TH104	=	TH104-COM (ALD-YA341)	
-----			
		Cable	
-----			
CONN	=	01A-A2A1-A06 (ALD-YB221)	
-----			
		board wiring	
-----			
CARD	=	01A-A2B2-P05 (ALD-YB423)	
-----			

\* '-Thermals failed D18'

Any error found and repaired?

Y N

**021**

Replace BPC card in position 01A-A2B2.

Go to Page 3, Step 010, Entry Point Z.

**022**

Go to Page 3, Step 010, Entry Point Z.

**023**

Go to Page 3, Step 010, Entry Point Z.

**024**

Go to Page 3, Step 010, Entry Point Z.

18JUL80 PN 4008769  
EC 366387 PEC 366356  
2990 MAP F7C3-7

A  
2

REF.CODE F7D60601

2990

MAP F7C3-8

Power Problem

PAGE 8 OF 8

025

Is the ambient temperature above 33  
degrees centigrade  
(92 degrees F)?

Y N

026

Suspect cooling or overheating problem.  
Go to Page 4, Step 011, Entry Point B.

027

Customer must keep the ambient temperatur  
within the specified limit. No machine problem  
exists.

18JUL80 PN 4008769

EC 366387 PEC 366356

2990 MAP F7C3-8

**POWER PROBLEM**

PAGE 1 OF 5

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0200	A
1	002	0204	A
4	024	0281	A
4	021	0282	A
4	022	0283	A
4	023	0284	A
4	026	0285	A
4	025	0286	A
3	012	0287	A

**001**

Symptom:

PS105 more than one voltage out of tolerance.

Suspected errors or FRU's (including intermittent errors)	
1	TR105.
2	PS105.
3	TR105 line voltage connections.
4	DC voltage distribution.

**(Entry Point A)**

1. Press power-off switch.
2. Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

**002****(Entry Point Z)****Go To Map 0204, Entry Point A.**

A

REF.CODE F7A53201

2992

MAP F7C4-2

**POWER PROBLEM**

PAGE 2 OF 5

003

Is reference code F7A53201 displayed?

Y N

004

Go to corresponding MAP.

005

Is the \*base power on\* indicator still on?

Y N

006

Go To Map 0200, Entry Point A.

007

Are all CP's of PS105 on?

Y N

008

- 1.Switch all CP's of PS105 on.
- 2.Press power-on switch and wait approximately one minute.

Is any CP of PS105 tripped?

Y N

009

(Entry Point D)

- 1.Press POWER-OFF key.
- 2.Check the primary fuse TR105-F01.

Is the fuse ok?

Y N

010

Was the fuse TR105-F01 already replaced before?

Y N

011

Replace fuse TR105-F01.  
Go to Step 009,  
Entry Point D.

5 4 3 3  
B C D E

15SEP82

PN 4008803

EC 366589

PEC 366493

2992

MAP F7C4-2

D E  
2 2

REF.CODE F7A53201

2992

MAP F7C4-3

**POWER PROBLEM**

PAGE 3 OF 5

012  
(Entry Point C)

Go To Map 0287, Entry Point A.

013

1. Disconnect connectors PS105-02 and PS105-04 and all FDS cables from PS105-TB01 to PS105-TB03. (ALD-YA461)
2. Install a jumper from 01A-A2B2-B12 '-Pick PCC-K02 C02' (ALD-YB421) to any D08 pin 'DC GND'.  
NOTE: This jumper will pick PCC-K02 and PS105 will be switched on.
3. If a 5424 is installed, install a second jumper from 01A-A2B2-B07 to any D08 pin '-Pick PS105-K01 C24' (ALD-YB421)
4. Connect CE-meter (range 15VDC) to following table and check for correct DC-voltage from PS105. (ALD-YA461)
5. Press POWER-ON switch.

(Entry Point F)

Normal Voltage	+ Lead	- Lead	Lower Limit	Go to MAP
+5.1 V	PS105-TB01-001	PS105-TB03-001	+4.6 V	F7B8
+5.1 V	PS105-TB02-001	PS105-TB03-001	+4.6 V	F7BA
+8.5 V	PS105-04-013	PS105-04-003	+7.8 V	F7BC
-8.5 V	PS105-04-010	PS105-04-007	-7.8 V	F7BD
-5.1 V	PS105-04-002	PS105-04-001	-4.6 V	F7B4
+6.0 V *	PS102-02-001	PS105-02-008	+5.5 V	F7B7

\* only if 5424 is installed

Are any DC voltage below the lower limit?

Y N

4 4  
F G

15SEP82 PN 4008803

EC 366589 PEC 366493

2992 MAP F7C4-3

C F G  
2 3 3

REF.CODE F7A53201

POWER PROBLEM

PAGE 4 OF 5

014

- 1.Press POWER-OFF key.
  - 2.Reconnect connectors PS105-02 and PS105-04 and all FDS cables PS105-TB01 to PS105-TB03.
  - 3.Connect CE-meter (range 15VDC) and measure again according to table after Entry Point F and GO TO MAP for failing voltage.
  - 4.Press POWER-ON switch.
- Go to Page 3, Step 013, Entry Point F.

015

Go to Page 3, Step 012, Entry Point C.

016

Press power-off switch.

Is PS105-CP01 tripped?

Y N

017

Is PS105-CP02 tripped?

Y N

018

Is PS105-CP03 tripped?

Y N

019

Is PS105-CP04 tripped?

Y N

020

Is PS105-CP05 tripped?

Y N

H J K L M N 2992

MAP F7C4-4

021

Go To Map 0282, Entry Point A.

022

Go To Map 0283, Entry Point A.

023

Go To Map 0284, Entry Point A.

024

Go To Map 0281, Entry Point A.

025

Go To Map 0286, Entry Point A.

026

Go To Map 0285, Entry Point A.

H J K L M N

15SEP82 PN 4008803  
 EC 366589 PEC 366493  
 2992 MAP F7C4-4

B  
2

REF.CODE F7A53201

2992

MAP F7C4-5

POWER PROBLEM

PAGE 5 OF 5

027

Go to Page 2, Step 009, Entry Point D.

15SEP82

PN 4008803

EC 366589

PEC 366493

2992

MAP F7C4-5





REF.CODE F7A8XX01 FIX 0000

3000

MAP F7D0-1

POWER PROBLEM.

PAGE 1 OF 4.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	003	0204	A

**REF.CODE F7A8XX01**

**3000**

**MAP F7D0-2**

**Power Problem**

**PAGE 2 OF 4**

**001**

**Symptom:**

**Missing tie-down on unused analog sense line.**

**This MAP is valid for the following listed  
reference codes:**

**Ref. code**

**Ref. code**

**F7A80001**

**F7A83401**

**F7A80401**

**F7A83601**

**F7A80601**

**F7A83801**

**F7A80801**

**F7A84001**

**F7A81001**

**F7A84201**

**F7A81201**

**F7A84401**

**F7A81401**

**F7A84601**

**F7A81601**

**F7A84801**

**F7A81801**

**F7A85001**

**F7A82001**

**F7A85201**

**F7A82201**

**F7A85401**

**F7A82401**

**F7A85601**

**F7A82601**

**F7A85801**

**F7A82801**

**F7A86001**

**F7A83001**

**F7A86201**

**F7A83201**

**F7A86401**

**(Step 001 continues)**

**28SEP79**

**PN 8488580**

**EC 366335**

**PEC 366205**

**3000**

**MAP F7D0-2**

## Power Problem

PAGE 3 OF 4

(Step 001 continued)

(Entry Point A)

1. Press power-off key.
2. Connect CE-meter (Range ohm x1) to the physical pin of the analog sense point shown on ALD-page (ALD-YA023).

Use the sense point corresponding to the displayed reference code according to following table:

Ref.code	Anal.sense line	Ref.code	Anal.sense line
F7A80001	A63	F7A83401	A19
F7A80401	A13	F7A83601	A25
F7A80601	A48	F7A83801	A50
F7A80801	A18	F7A84001	A24
F7A81001	A20	F7A84201	A53
F7A81201	A21	F7A84401	A26
F7A81401	A16	F7A84601	A27
F7A81601	A09	F7A84801	A28
F7A81801	A04	F7A85001	A29
F7A82001	A55	F7A85201	A12
F7A82201	A10	F7A85401	A11
F7A82401	A40	F7A85601	A14
F7A82601	A34	F7A85801	A51
F7A82801	A35	F7A86001	A15
F7A83001	A36	F7A86201	A49
F7A83201	A37	F7A86401	A17

The second lead of the CE-meter should be connected by any D08 pin.

Is the measured resistance between the D08 pin and the analog sense point approximately zero ohm?

Y N

002

Repair tie-down connection according to (ALD-YA023).

Go to Page 4, Step 003, Entry Point Z.

4  
A

28SEP79 PN 8488580

EC 366335 PEC 366205

3000 MAP F7D0-3

A  
3

REF.CODE F7A8XX01

3000

MAP F7D0-4

Power Problem

PAGE 4 OF 4

003

Replace PC-sense card 1 in  
position 01A-A2D2 or PC-sense card 2 in  
position 01A-A2C2 as shown on  
(ALD-YA023).

(Entry Point Z)

Go To Map 0204, Entry Point A.

28SEP79 PN 8488580

EC 366335 PEC 366205

3000 MAP F7D0-4

## POWER PROBLEM

PAGE 1 OF 2

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	2	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	0204	A

001

Symptom:

Missing tie-up on unused digital sense line.

This MAP is valid for the following listed reference codes:

Suspected errors or FRU's (including intermittent errors)	
1	Missing tie up connection.
2	PC sense card 1 in pos. 01A-A2D2.
3	PC sense card 2 in pos. 01A-A2C2.

## Ref. code

-----  
 F7A91001  
 F7A91201  
 F7A91401  
 F7A91601  
 F7A91801  
 F7A92001  
 F7A92201  
 F7A92401  
 F7A92601  
 F7A92801  
 F7A93001  
 F7A93201  
 F7A93401  
 F7A93601  
 F7A93801  
 F7A94001  
 F7A94201

(Step 001 continues)

© Copyright IBM Corp. 1979

REF.CODE F7A9XX01

4331

28SEP79 PN 8488581

EC 366335 PEC 366205

3010 MAP F7D1-1

**Power Problem**

PAGE 2 OF 2

(Step 001 continued)

**(Entry Point A)**

1. Press power-off key.
2. Switch PCC-CB01 off.
3. Connect CE-meter (Range ohm x1) to the physical pin of the digital sense point shown on (ALD-YA023).

Use the sense point corresponding to the displayed reference code. (See the following table)

Ref.code	Digital sense line
F7A91001	D34
F7A91201	D32
F7A91401	D53
F7A91601	D54
F7A91801	D17
F7A92001	D12
F7A92201	D52
F7A92401	D11
F7A92601	D14
F7A92801	D21
F7A93001	D38
F7A93201	D02
F7A93401	D33
F7A93601	D06
F7A93801	D07
F7A94001	D15
F7A94201	D16

The second lead of the CE-meter should be connected to any D03 pin (+5.1VDC)  
Is the measured resistance between the D03 pin and the digital sense point approximately zero ohm?

(Step 001 continues)

(Step 001 continued)

Y N

**002**

Repair tie-up connection according to (ALD-YA023).

**Go to Step 003, Entry Point Z.**

**003**

Replace PC-sense card 1 in position 01A-A2D2 or PC-sense card 2 in position 01A-A2C2 as shown on (ALD-YA023).

**(Entry Point Z)**

**Go To Map 0204, Entry Point A.**

28SEP79 PN 8488581

EC 366335 PEC 366205

3010 MAP F7D1-2

**POWER PROBLEM**

PAGE 1 OF 2

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER

No entries in this table

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT

2	006	0202	A
2	003	0204	A

**001**

Symptom: Any failure during power off sequence and power off key operated.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 1 in pos. 01A-A2D2.
2	PC interface card in pos. 01A-A2E2
3	Short circuit to ground of a PC controlline (C08, C09, C10, C11, C19, C34, C02 or C24).

**(Entry Point A)**

1. Press power-off switch.
2. Press power on switch and wait approximately one minute.

Is any reference code displayed?

Y N

**002**

Press power-off switch.

Is any reference code displayed?

Y N

2 2 2  
A B C

A B C  
1 1 1

REF.CODE F7ADFF01

3019

MAP F7DF-2

Power Problem

PAGE 2 OF 2

003

Suspect intermittent error.

Note: The reference code F7ADFF01 can be generated by a control line which could not be reset during the power off sequence. A list of suspected control lines is shown below:

- '-I-PWR on PS111 C08' (ALD-YB641)
- '-Power on PS112 C09' (ALD-YB641)
- '-Power on PS113 C10' (ALD-YB641)
- '-Power on PS114 C11' (ALD-YB641)
- '-F-PWR on PS111 C19' (ALD-YB641)
- '-Pick PCC-K03 C34' (ALD-YB641)
- '-Pick PCC-K02 C02' (ALD-YB661)
- '-Pick PCC105-K01 C24' (ALD-YB661)

(Entry Point Z)

Go To Map 0204, Entry Point A.

004

Is reference code F7ADFF01 displayed?

Y N

005

Go to corresponding MAP.

006

Go To Map 0202, Entry Point A.

007

Go to corresponding MAP.

28SEP79 PN 5683416

EC 366335 PEC-NONE-

3019 MAP F7DF-2





A B  
1 1

REF.CODE F7AE0001

3020

MAP F7E0-2

Power Problem

PAGE 2 OF 2

002

1. Press power off key
2. Use diagnostic diskette and  
retry power on/power off.

Problem solved?

Y N

003

Go To Map 0403, Entry Point A.

004

Order new control diskette.

005

Go To Map 0204, Entry Point A.

28SEP79 PN 8488582

EC 366335 PEC 366205

3020 MAP F7E0-2

**POWER PROBLEM**

PAGE 1 OF 6

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7E3	A	1	001
F7E4	A	1	001
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	010	0202	A
6	035	0204	A

**001**

## Symptom:

MFCU (5424) power incomplete, D01.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	PC interface card 01A-A2E2.
3	5424 ATT. card 01A-A1X2.
4	5424 ATT. card 01A-A1T2.
5	C35 wiring.
6	D01 wiring.
7	Interface connector 01D-A1BD.
8	MFCU SAF power problem.

**(Entry Point A)**

1. Press power-off switch.
2. Ensure that line voltage is present for the MFCU and that the MFCU main line switch is switched on.
3. Ensure that the MFCU local/remote switch is set to remote.

Are all previously listed conditions met?

Y N

**002**

Apply corrective actions.

Go to Page 6, Step 035, Entry Point Z.

2  
A

© Copyright IBM Corp. 1980

REF.CODE F7AE0101

4331

30JUN80 PN 8488583

EC 366407 PEC 366335

3030 MAP F7E1-1

A  
1

REF.CODE F7AE0101

Power Problem

PAGE 2 OF 6

003

Press power-on switch and wait approximately one minute.

Is reference code F7AE0101 displayed?

Y N

004

Note: Reference code F7AE0101 is generated and displayed if the MFCU has no power complete. The reference code is removed from the screen if MFCU (5424) has power complete.

Go to Page 6, Step 035, Entry Point Z.

005

1. Press power off key.
2. Exchange both PC-sense cards in position 01A-A2D2 and 01A-A2C2.
3. Press power-on switch and wait approximately one minute.

Is reference code F7AE0101 or F7AE8101 displayed?

Y N

006

1. Press power-off key.
2. Replace PC-sense card which is now plugged in position 01A-A2C2.

Go to Page 6, Step 035, Entry Point Z.

007

1. Press power-off key.
2. Probe 01A-A1F6-E04  
'-5424 power on C35'  
(ALD-YC823)
3. Press power-on key and wait 1 minute.

Is the \*down\* indicator of the probe continuously on?

Y N

3  
B C

C

3030

MAP F7E1-2

008

1. Press power-off key.
2. Probe 01A-A2E2-J11  
'-5424 power on C35'  
(ALD-YB661)
3. Press power-on switch and wait 1 minute.

Is the \*down\* indicator of the probe continuously on?

Y N

009

1. Press power-off switch.
2. Replace PC interface card in position 01A-A2E2.
3. Press power-on switch and wait approximately one minute.
4. Probe 01A-A2E2-J11  
'-5424 power on C35'  
(ALD-YB661)

Is the \*down\* indicator of the probe continuously on?

Y N

010

- Suspect operation control program problem.
1. Use diagnostic diskette and perform a power on retry.  
If retry fails,

(Entry Point D)

Go To Map 0202, Entry Point A.

011

Go to Page 6, Step 035, Entry Point Z.

3  
D

30JUN80

PN 8488583

EC 366407

PEC 366335

3030

MAP F7E1-2

B D  
2 2

REF.CODE F7AE0101

**Power Problem**

PAGE 3 OF 6

**012**

1. Press power-off key.
2. Probe 01A-A2A4-B03  
'-5424 power on C35'  
(ALD-YB243)
3. Press power-on switch and wait 1 minute.

**Was the \*down\* indicator of the probe at least momentarily on?**

Y N

**013**

1. Press power-off key.
2. Check and repair board wiring for signal  
'-5424 power on C35'  
from 01A-A2E2-J11  
(ALD-YB661)  
to 01A-A2A4-B03  
(ALD-YB243)  
Go to Page 6, Step 035, Entry Point Z.

**014**

1. Press power-off key.
2. Suspect connector problem in connector position  
01A-A2A4 or 01A-A1F6.  
If no connector problem found, replace the cable plugged in previous listed positions.  
Go to Page 6, Step 035, Entry Point Z.

**015**

1. Press power-off key.
2. Disconnect cable from position 01A-A1X2-Z  
(Top connector)
3. Connect CE-meter  
(range ohm X1)  
to 01A-A1F6-E04.  
'-5424 power on C35'  
(ALD-YC823)  
and to 01A-A1X2-Z32

**Is electrical continuity present?**

Y N

E F

E F

3030

MAP F7E1-3

**016**

- Connect CE-meter  
(range ohm X1)  
to 01A-A1X2-U12  
'-5424 power on C35'  
and to 01A-A1F6-E04  
(ALD-YC823)

**Is electrical continuity present?**

Y N

**017**

- Check and repair board wiring for signal  
'-5424 power on C35'  
from 01A-A1X2-U12 and  
01A-A1F6-E04.  
Go to Page 6, Step 035, Entry Point Z.

**018**

1. Check card seating and pins of position  
01A-A1X2.  
If no error detected, replace card in position  
01A-A1X2.  
Go to Page 6, Step 035, Entry Point Z.

**019**

1. Disconnect cable from position 01D-A1BD and 01A-A1X2-Z.
2. Connect CE-meter to cable connectors  
(female side)  
01D-A1-D02 and to  
01A-A1X2-Z32.  
'(MFCU power on)'

**Is electrical continuity present?**

Y N

**020**

**(Entry Point C)**

- Replace flat cable from  
01A-A1X2-Z to 01D-A1BD.  
Go to Page 6, Step 035, Entry Point Z.

4  
G

30JUN80

PN 8488583

EC 366407

PEC 366335

3030

MAP F7E1-3

G  
3

REF.CODE F7AE0101

**Power Problem**

PAGE 4 OF 6

**021**

1.Connect CE-meter  
(range ohm X1)  
to female plug  
01D-A1-D05 and to  
01A-A1X2-Z30  
'-5424 power complete'

Is electrical continuity present?

Y N

**022**

Go to Page 3, Step 020, Entry Point C.

**023**

Connect CE-meter  
(range ohm X1)  
to female plug  
01D-A1-D04 and to  
01A-A1X2-Z31  
'(+5.1V to MFCU)'

Is electrical continuity present?

Y N

**024**

Go to Page 3, Step 020, Entry Point C.

**025**

Connect CE-meter (range ohm X1)  
to 01A-A1X2-U11 and to 01A-A1X2-Z31 card  
top connector.  
'(+5.1V to MFCU)'

Is electrical continuity present?

Y N

**026**

1.Replace card 01A-A1X2.  
2.Reconnect all previously disconnected  
cables.  
Go to Page 6, Step 035, Entry Point Z.

H

3030

MAP F7E1-4

**027**

1.Reconnect all previously disconnected cables.  
2.Probe 01A-A1X2-U10  
'-5424 power complete'  
3.Observe probe indicators, press power-on  
switch and wait approximately one minute.

Was the \*up\* indicator of the probe at least momentarily on?

Y N

**028**

Perform wiring check for the following net.  
Apply \*Wiring Check Procedure\* shown in  
book Maintenance Information (MI) POWER.

-----		-----		-----
	CONN		*	01D-A1-D05
				Cable
-----		-----		-----
	Card		=	01A-A1X2-Z30

\*'-5424 power complete'

Is the wiring ok?

Y N

**029**

Repair or replace failing parts.  
Go to Page 6, Step 035, Entry Point Z.

**030**

Suspect MFCU power control problem.  
1.Switch PCC-CB01 off.  
2.Check all connections of interface cables.  
3.Remove all previously installed jumpers  
and reconnect all disconnected cables.  
GO TO 5424 SAF INTERFACE MAP 5050,  
ENTRY POINT B.

H

5  
J

30JUN80

PN 8488583

EC 366407

PEC 366335

3030

MAP F7E1-4

J  
4

REF.CODE F7AE0101

3030

MAP F7E1-5

**Power Problem**

PAGE 5 OF 6

**031**

1. Press power-off key.
2. Perform a wiring check for the following nets.  
Apply the \*Wiring Check Procedure\* shown in book Maintenance Information (MI) POWER.

```
|-----|  
| Card  |*| 01A-A1X2-U10  
|-----| |  
|       | | Board wiring  
|-----| |  
| Card  |=| 01A-A1T2-U11  
|-----|
```

\* '-5424 power complete'

```
|-----|  
| Card  |*| 01A-A1T2-P04  
|-----| |  
|       | | Board wiring  
|-----| |  
| CONN  |=| 01A-A1F6-D04 (ALD-YC823)  
|-----| |  
|       | | Cable  
|-----| |  
| CONN  |=| 01A-A2A4-B02 (ALD-YB243)  
|-----| |  
|       | | Board wiring  
|-----| |  
| Card  |=| 01A-A2D2-D09 (ALD-YB641)  
|-----|
```

\* '-5424 power incomplete D01'

Is the wiring ok?

Y N

**032**

Repair or replace failing parts.  
Go to Page 6, Step 035, Entry Point Z.

6  
K

30JUN80 PN 8488583  
EC 366407 PEC 366335  
3030 MAP F7E1-5

K  
5

REF.CODE F7AE0101

3030

MAP F7E1-6

**Power Problem**

PAGE 6 OF 6

**033**

Suspect a failing card.

Replace the following listed cards step by step  
01A-A1X2, 01A-A1T2 and 01A-A2H2.

After each card replacement retry power-on  
and wait until the \*power complete\* indicator  
is switched on. Is the \*power complete\*  
indicator is not switched on and the reference  
code F7AE0101 or F7AE8101 is displayed  
proceed with the next card replacement.

**Any error detected and repaired?**

Y N

**034**

Go to Page 2, Step 010, Entry Point D.

**035**

(Entry Point Z)

Go To Map 0204, Entry Point A.

30JUN80

PN 8488583

EC 366407

PEC 366335

3030

MAP F7E1-6



**POWER PROBLEM**

PAGE 1 OF 7

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001
0270	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0200	A
2	010	0204	A
7	031	0270	A

**001****SYMPTOM:**

CHANNEL I/O POWER INCOMPLETE, D36

Suspected errors or FRUs (including intermittent errors)	
1	+24V wiring from PS103 or PS104.
2	PC interface card 01A-A2E2.
3	BPC card 01A-A2B2.
4	PC sense card 01A-A2D2.
5	C01 wiring.
6	D36 wiring.

**(Entry Point A)**

Note: Reference code F7AE8001 is generated and displayed if any channel attached I/O unit has not power complete. If many I/O units are attached to the channel(s) the reference code F7AE8001 will flash on the screen and is removed after all I/O units have power complete.

1. Press power-off switch.
2. Press power-on switch and wait approximately three minutes.

Is reference code F7AE8001 permanently displayed?

Y N

Y	N

2 2  
A B

© Copyright IBM Corp. 1981

REF.CODE F7AE8001

26OCT81 PN 8488584

EC 366493 PEC 366407

3040

MAP F7E2-1

A B  
1 1

REF.CODE F7AE8001

E

3040

MAP F7E2-2

**Power Problem**

PAGE 2 OF 7

**002**

There is no Channel I/O problem.  
Return machine to the customer.

**003**

1. Press power-off key.
2. Disconnect SPI cable from connector SPI-11.
3. Connect SPI jumper from the first unused SPI position into connector SPI-11.
4. Press power-on switch and wait approximately 1 minute.

Is the "power complete" indicator on?

Y N

**004**

Is reference code F7AE8001 or F7AE8101 displayed?

Y N

**005**

Is any reference code displayed?

Y N

**006**

(Entry Point Y)

Go To Map 0200, Entry Point A.

**007**

Go to corresponding MAP

**008**

Connect CE-meter (range 50VDC)  
-lead to DC-GND or frame ground  
+lead to connector SPI-11-003  
'+CU11 system source'  
(ALD-YA731)

Is +24VDC present?

Y N

7 5  
C D E

**009**

1. Press power-off key.
2. Switch PCC-CB01 off.
3. Remove all SPI panels, except panel SPI-P00.
4. Do not disconnect the -lead of your meter. Connect CE-meter (range 50VDC) +lead to connector SPI-00-010 (on small SPI panel) '+24V PS104 to SPI' or '+24V PS103 to SPI' (ALD-YA721)
4. Press power-on switch and wait approximately one minute.

Is +24VDC present?

Y N

**010**

1. Switch PCC-CB01 off.
2. Check and repair wiring from '+24V PS104 to SPI' or '+24V PS103 to SPI' (ALD-YA721) to 01A-A2B2-M07.
3. Reinstall SPI panels and reconnect all disconnected connectors.

(Entry Point Z)

Go To Map 0204, Entry Point A.

**011**

Do not disconnect the +lead of your meter. Connect -lead of your meter to connector SPI-00-007.

Is +24VDC present?

Y N

4 3  
F G

26OCT81

PN 8488584

EC 366493

PEC 366407

3040

MAP F7E2-2

G  
2

REF.CODE F7AE8001

3040

MAP F7E2-3

**Power Problem**

PAGE 3 OF 7

**012**

Probe 01A-A2E2-G11

'-Start I/O CU C01'

(ALD-YB661)

Is the \*down\* indicator on?

Y N

**013**

1.Press power-off key.

2.Replace PC-interface card in position

01A-A2E2.

Go to Page 2, Step 010, Entry Point Z.

**014**

Probe 01A-A2B2-D06

'-Start I/O CU C01'

(ALD-YA661)

Is the \*down\* indicator on?

Y N

**015**

Press power-off key.

Check and repair wiring of following net.

Apply \*Wiring Check Procedure\* shown in  
book Maintenance Information (MI) POWER.

Card	*	01A-A2E2-G11 (ALD-YB661)
		Board wiring
Conn.	=	01A-A2B2-D06 (ALD-YB421)

\* '-Start I/O CU C01'

Go to Page 2, Step 010, Entry Point Z.

4  
H

26OCT81

PN 8488584

EC 366493

PEC 366407

3040

MAP F7E2-3

**Power Problem**

PAGE 4 OF 7

**016**

Connect CE-meter (range 50VDC)

+lead to 01A-A2B2-M07

'+24V PS104 CTRLD' or

'+24V PS103 CTRLD'

(ALD-YB423)

-lead to 01A-A2B2-B06

'-Start I/O CU C01'

(ALD-YA661)

**Is +24VDC present?**

Y N

**017**

1.Press power-off key.

2.Replace BPC-card in position

01A-A2B2.

**Go to Page 2, Step 010, Entry Point Z.**

**018**

1.Press power-off switch.

2.Check and repair wiring of following net.

Apply \*Wiring Check Procedure\* shown in  
book Maintenance Information (MI) POWER.

-----		
Card	*	01A-A2B2-B06 (ALD-YB421)
-----		
		Cable
-----		
Conn.	=	SPI-00-007 (ALD-YA721)
-----		

\* '-Start I/O CU C01'

**Go to Page 2, Step 010, Entry Point Z.**

**019**

1.Press power-off key.

2.Switch PCC-CB01 off.

3.Replace SPI panel P00 (small panel)

**Go to Page 2, Step 010, Entry Point Z.**

D  
2

REF.CODE F7AE8001

Power Problem

PAGE 5 OF 7

L

3040

MAP F7E2-5

**020**

Probe 01A-A2D2-G02  
'-PWR I/O incomplete D36'  
(ALD-YB641)

Is the \*up\* indicator of the probe on?

Y N

**021**

1. Press power-off key.
2. Switch PCC-CB01 off.
3. Remove SPI panels so that you have access to connector SPI-00.
4. Do not disconnect the cables and wires.
5. Press power-on switch and wait one minute.
6. Connect CE-meter (range 5VDC)  
+lead to connector SPI-00-013  
'-PWR I/O incomplete D36'  
(ALD-YA721)  
-lead to DC-GND or frame ground.

Is +5.1VDC present?

Y N

**022**

Connect CE-meter (range 50VDC)  
+lead to connector SPI-10-004  
'-PWR I/O incomplete D36'  
(ALD-YA731)  
-lead to DC-GND or frame ground.

Is +24VDC present?

Y N

**023**

1. Press power-off switch.
  2. Check SPI jumper and connector SPI-10.  
If no error detected, switch PCC-CB01 off and replace SPI panel 10.
- Go to Page 2, Step 010, Entry Point Z.

7 6  
J K L

**024**

Connect CE-meter (range 50VDC)  
+lead to connector SPI-09-004.  
'-PWR I/O incomplete D36'  
(ALD-YA721)  
-lead to DC-GND or frame ground.

Is +24VDC present?

Y N

**025**

1. Press power-off key.
  2. Repair or replace cable from connector SPI-09 to connector SPI-10.
- Go to Page 2, Step 010, Entry Point Z.

**026**

1. Press power-off switch.
2. Disconnect connector SPI-00.
3. Remove PC sense card from position 01A-A2D2.
4. Connect CE-meter (range ohm X1) to 01A-A2D2-G02  
'-PWR I/O incomplete D36'  
(ALD-YB641)  
and to any D08 pin.

Is the resistance below 100 ohm?

Y N

**027**

1. Reinstall PC sense card into position 01A-A2D2.
  2. Replace SPI panel P00.
- Go to Page 2, Step 010, Entry Point Z.

6  
M

26OCT81 PN 8488584  
EC 366493 PEC 366407  
3040 MAP F7E2-5

**Power Problem**

PAGE 6 OF 7

**028**

There is a short circuit to ground. Check and repair or replace wiring of the following net.

Card	*	SPI-00-013 (ALD-YA721)
		Cable
Conn	=	01A-A2A6-A04 (ALD-YB231)
		Board wiring
Card	=	01A-A2D2-G02 (ALD-YB641)

\* '-PWR I/O incomplete D36'

**Go to Page 2, Step 010, Entry Point Z.**

**029**

1. Press power-off key.
2. Switch PCC-CB01 off.
3. Perform wiring check of the following net.  
Apply \*Wiring Check Procedure\* shown in book Maintenance Information (MI) POWER.

Card	*	SPI-00-013 (ALD-YA721)
		Cable
Conn.	=	01A-A2A6-A04 (ALD-YB231)
		Board wiring
Card	=	01A-A2D2-G02 (ALD-YB641)

\* '-PWR I/O incomplete D36'

**Go to Page 2, Step 010, Entry Point Z.**

C J  
2 5

REF.CODE F7AE8001

3040

MAP F7E2-7

**Power Problem**

PAGE 7 OF 7

**030**

- 1.Press power-off key.
- 2.Replace PC-sense card in position  
01A-A2D2.

**Go to Page 2, Step 010, Entry Point Z.**

**031**

- 1.Press power-off switch.
- 2.Perform SPI panel check procedure.

**Go To Map 0270, Entry Point A.**

26OCT81 PN 8488584

EC 366493 PEC 366407

3040 MAP F7E2-7





## POWER PROBLEM

PAGE 1 OF 2

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	015	F7E1	A
2	011	0204	A

## 001

Symptom:

MFCU and channel I/O power incomplete, D01 and D36.

-----	
Suspected errors or FRU's (including intermittent errors)	
-----	
1	PC-sense card 01A-A2D2.
2	PC-interface card 01A-A2E2.
3	Control diskette.
-----	

## (Entry Point A)

Note: Reference code F7AE8001 is generated and displayed if the MFCU (5424) and any channel I/O unit has not power complete. If many I/O units are attached to the channel(s) the reference code F7AE8101 or F7AE8001 will flash on the screen and will be removed after all I/O units and the MFCU have power complete.

1. Press power-off switch.
2. Press power-on switch and wait approximately one minute (3min).

Is reference code F7AE8001 or F7AE8101 permanently displayed?

Y N

## 002

Go to Page 2, Step 011, Entry Point Z.

© Copyright IBM Corp. 1980

REF.CODE F7AE8101

4331

30JUN80

EC 366407

3050

PN 8488585

PEC 366335

MAP F7E3-1

2  
A

A  
1

REF.CODE F7AE8101

Power Problem

PAGE 2 OF 2

003

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.
3. Press IML key and wait approximately one minute.

Is any reference code displayed?

Y N

004

Suspect intermittent error  
Go to Step 011, Entry Point Z.

005

Is reference code F7AE8101 displayed?

Y N

006

Go to corresponding MAP

007

1. Press power-off key.
2. Insert diagnostic diskette into drive 1.
3. Press power-on switch and wait approximately one minute.

Is reference code F7AE8101 displayed?

Y N

008

Use new control diskette and  
Go to Step 011, Entry Point Z.

009

1. Press power-off key.
2. Replace PC-sense card in position 01A-A2D2.
3. Press power-on switch and wait approximately one minute.

Is reference code F7AE8101 displayed?

Y N

||

B C

B C

3050

MAP F7E3-2

010

(Entry Point B)

Any other reference code displayed?

Y N

011

(Entry Point Z)

Go To Map 0204, Entry Point A.

012

Go to corresponding MAP

013

1. Press power-off key
2. Reinstall the previously removed PC-sense card into position 01A-A2D2
3. Replace PC interface card in position 01A-A2E2.
4. Press power-on switch and wait approximately one minute.

Is reference code F7AE8101 displayed?

Y N

014

Go to Step 010, Entry Point B.

015

Isolate the 5424 power problem first.  
Go To Map F7E1, Entry Point A.

30JUN80

PN 8488585

EC 366407

PEC 366335

3050

MAP F7E3-2

## POWER PROBLEM

PAGE 1 OF 7

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7E6	A	1	001
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	F7E1	A
7	021	0202	A
4	006	0204	A

001

Symptom:

MFCU power off failure.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 01A-A2D2.
2	PC interface card 01A-A2E2.
3	D01 wiring.
4	C35 wiring.
5	MFCU-ATT card 01A-A1X2.
6	MFCU-ATT card 01A-A1T2.
7	Interface connector 01D-A1BD.

(Entry Point A)

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.
3. Probe 01A-A2D2-D09  
'-5424 power incomplete D01'  
(ALD-YB641)

Is the "up" indicator of the probe on?

Y N

002

Go To Map F7E1, Entry Point A.

2  
A

A  
1

REF.CODE F7AD0101

3060

MAP F7E4-2

Power Problem

PAGE 2 OF 7

003

Do not disconnect the probe. Observe the probe indicators and Press power-off key.

Is the \*down\* indicator of the probe on?

Y N

004

1. Press power-on switch and wait approximately one minute.

2. Probe 01A-A1X2-U12

'-5424 power on C35'

3. Observe probe indicators and Press power-off key.

Is the \*up\* indicator of the probe on?

Y N

7 5 3  
B C D

30JUN80 PN 8488586

EC 366407 PEC 366335

3060 MAP F7E4-2



E F  
3 3

REF.CODE F7AD0101

3060

MAP F7E4-4

Power Problem

PAGE 4 OF 7

006

Repair wiring or replace defective parts.

(Entry Point Z)

Go To Map 0204, Entry Point A.

007

1. Replace PC interface card in position 01A-A2E2.
2. Plug previously removed card back into position 01A-A1X2.
3. Plug previously removed cable back to the interface connector 01D-A1BD.
4. Press power-on switch and wait approximately one minute.
5. Probe 01A-A1X2-U12 '-5424 power on C35'
6. Observe probe indicators and Press power-off key.

Did the probe indicators change from down to up?

Y N

008

Suspect power program error.  
Use diagnostic discette and perform a retry.  
If retry fails,  
Go to Page 7, Step 021, Entry Point C.

009

Is the reference code F7AD0101 or F7AD8101 displayed?

Y N

010

Go to Step 006, Entry Point Z.

011

Go to Page 1, Step 001, Entry Point A.

30JUN80 PN 8488586

EC 366407 PEC 366335

3060 MAP F7E4-4

C  
2

REF.CODE F7AD0101

3060

MAP F7E4-5

**Power Problem**

PAGE 5 OF 7

**012**

1. Remove cards from positions 01A-A2H2, 01A-A1T2 and 01A-A1X2.
2. Remove cable from interface connector 01D-D1BD.
3. Perform wiring check for the following nets.  
Apply "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER.

```
|-----|  
| Conn. |*| 01D-A1-D05  
|-----| |  
          | Cable  
|-----| |  
| Card  |=| 01A-A1X2-Z30  
|-----|
```

\* '-MFCU power complete'

```
|-----|  
| Conn. |*| 01A-A1X2-U10  
|-----| |  
          | Board wiring  
|-----| |  
| Card  |=| 01A-A1T2-U11  
|-----|
```

\* '-MFCU power complete'

(Step 012 continues)

30JUN80 PN 8488586

EC 366407 PEC 366335

3060 MAP F7E4-5

**Power Problem**

PAGE 6 OF 7

(Step 012 continued)

-----		
Card  *		01A-A1T2-P04
-----		
		Board wiring
-----		
Conn.  =		01A-A1F6-D04 (ALD-YC823)
-----		
		Cable
-----		
Conn.  =		01A-A2A4-B02 (ALD-YB243)
-----		
		Board wiring
-----		
Card  =		01A-A2D2-D09 (ALD-YB641)
-----		

\* '-5424 power incomplete D01'

Is the wiring ok?

Y N

**013**

Repair wiring or replace defective parts.  
Go to Page 4, Step 008, Entry Point Z.

**014**

- 1.Plug all previously removed cables and cards to their original positions.
- 2.Replace card in position 01A-A1X2.
- 3.Press power-on switch and wait approximately one minute.
- 4.Press power-off key.

Is reference code F7AD0101 displayed?

Y N

**015**

Go to Page 4, Step 008, Entry Point Z.

7  
G

30JUN80 PN 8488586

EC 366407 PEC 366335

3060 MAP F7E4-6



B G  
2 6

REF.CODE F7AD0101

3060

MAP F7E4-7

**Power Problem**

PAGE 7 OF 7

**018**

1. Press power-off key.
2. Reinstall the previously replaced card into position 01A-A1X2.
3. Replace MFCU Attachment card in position 01A-A1T2.
4. Press power-on switch and wait approximately one minute.
5. Press power-off key.

Is reference code F7AD0101 or F7AD8101 displayed?

Y N

**017**

Go to Page 4, Step 006, Entry Point Z.

**018**

(Entry Point B)

Suspect MFCU power control problem.

1. Switch PCC-CB01 off.
2. Check all connections of interface cables.
3. Remove all previously installed jumpers and reconnect all disconnected cables.

Go to 5424 SAF INTERFACE MAP 5050, ENTRY POINT B.

**019**

1. Replace PC-sense card in position 01A-A2D2.
2. Press power-on key and wait approximately one minute.
3. Press power-off key.

Is reference code F7AD01101 or F7AD8101 displayed?

Y N

**020**

Go to Page 4, Step 008, Entry Point Z.

**021**

(Entry Point C)

Go To Map 0202, Entry Point A.

30JUN80 PN 8488586

EC 366407 PEC 366335

3060 MAP F7E4-7



## POWER PROBLEM

PAGE 1 OF 6

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	003	0200	A
3	013	0204	A
5	022	0270	A

## 001

Symptom:

Channel I/O power off failure, D36

-----  
 Suspected errors or FRU's  
 (including intermittent errors)  
 -----

- 1 | SPI panel P00.
  - 2 | SPI panel 10 or 20 or 30.
  - 3 | PC interface card 01A-A2E2.
  - 4 | BPC card 01A-A2B2.
  - 5 | PC sense card 01A-A2D2.
  - 6 | D36 wiring.
  - 7 | C01 wiring.
- 

## (Entry Point A)

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.

Is the power on function of the channel I/O units successfully completed?

Y N

## 002

Is any reference code displayed?

Y N

## 003

Go To Map 0200, Entry Point A.

© Copyright IBM Corp. 1980

REF.CODE F7AD8001

4331

30JUN80

EC 366407

3070

PN 5684085

PEC 366369

MAP F7E5-1

2 2  
A B

A B  
1 1

REF.CODE F7AD8001

3070

MAP F7E5-2

**Power Problem**

PAGE 2 OF 6

**004**

Go to corresponding MAP

**005**

Press power-off key.

**Is reference code F7AD8001 or F7AD8101 displayed?**

Y N

**006**

**Is any other reference code displayed?**

Y N

**007**

Suspect intermittend error.

**008**

Go to corresponding MAP

**009**

**Are all control units switched off?**

Y N

**010**

Ensure that all CU's are switched to \*Remote\*.

**Is only one CU failing?**

Y N

**011**

1. Probe 01A-A2E2-G11

'-Start I/O CU C01'

(ALD-YB661)

2. Press power-on switch and wait approximately one minute.

**Is the down indicator of the probe permanently on?**

Y N

5 5 4 3  
C D E F

30JUN80

PN 5684085

EC 366407

PEC 366369

3070

MAP F7E5-2

**Power Problem**

PAGE 3 OF 6

**012**

1. Press power off key.
2. Connect CE meter (range 50VDC)  
+lead to 01A-A2B2-M07  
'+24V PS104 CTRLD'  
or '+24V PS103 CTRLD'  
(ALD-YB423)  
-lead to 01A-A2B2-B06  
'-start I/O CU C01'  
(ALD-YB661).
3. Press power-on switch and wait approximately one minute.

Is 24VDC present?

Y N

**013**

1. Press power-off key.
2. Switch PCC-CB01 off.
3. Replace SPI panel P00.

(Entry Point Z)

Go To Map 0204, Entry Point A.

**014**

1. Press power off key.
2. Remove BPC card from position 01A-A2B2.
3. Perform wiring check for the following net.  
Apply \*Wiring Check Procedure\* shown in book Maintenance Information (MI) POWER Vol.16.

Card	*	01A-A2B2-B06 (ALD-YB421)
		board wiring
Conn.	=	01A-A2A6-B04 (ALD-YB231)
		Cable
SPI	=	SPI-00-007 (ALD-YA721)

\* '-Start I/O CU C01'  
(Step 014 continues)

E  
2

REF.CODE F7AD8001

3070

MAP F7E5-4

**Power Problem**

PAGE 4 OF 6

(Step 014 continued)

**Any error detected and repaired?**

Y N

**015**

1. Press power off key.
2. Replace BPC card in position 01A-A2B2.

**Go to Page 3, Step 013, Entry Point Z.**

**016**

**Go to Page 3, Step 013, Entry Point Z.**

**017**

1. Press power off key.
  2. Do not disconnect the probe.
  3. Remove PC-interface card from position 01A-A2E2 and BPC card from position 01A-A2B2.
  4. Press power-on switch and wait approximately one minute.
- Is the down indicator of the probe permanently on ?

Y N

**018**

1. Press power off key.
  2. Reinstall BPC card into position 01A-A2B2.
  3. Press power-on switch and wait approximately one minute.
- Is the down indicator of the probe permanently on ?

Y N

**019**

1. Press power-off switch.
  2. Replace the previously removed interface card.
- Go to Page 3, Step 013, Entry Point Z.**

5 5  
G H

30JUN80

PN 5684085

EC 366407

PEC 366369

3070

MAP F7E5-4



C D G H  
2 2 4 4

REF.CODE F7AD8001

3070

MAP F7E5-5

**Power Problem**

PAGE 5 OF 6

**020**

- 1. Press power off key.
- 2. Replace the BPC card in position 01A-A2B2.

Go to Page 3, Step 013, Entry Point Z.

**021**

- 1. Switch PCC-CB01 off.
  - 2. Check and repair wiring of the following net.
- Apply "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER, Vol.16.

```

|-----|
| Card  |*| 01A-A2E2-G11 (ALD-YB661)
|-----| |
|       | | board wiring
|-----| |
| Card  |=| 01A-A2B2-D06 (ALD-YB421)
|-----|

```

\* '-Start I/O CU C01'

Go to Page 3, Step 013, Entry Point Z.

**022**

- Suspect CU power control failure.
  - Perform SPI panel Check procedure.
- Go To Map 0270, Entry Point A.

**023**

- 1. Press power-on switch.
- 2. Probe 01A-A2D2-G02 '-PWR I/O incomplete D36' (ALD-YB641)
- 3. Press power off key.

Is the down indicator of the probe on?

Y N

Y |  
N |

6 6  
J K

30JUN80 PN 5684085

EC 366407 PEC 366369

3070 MAP F7E5-5

**Power Problem**

PAGE 6 OF 6

**024**

- 1.Switch PCC-CB01 off.
- 2.Check and repair or replace wiring of the following net.

Apply \*Wiring Check Procedure\* shown in book Maintenance Information (MI) POWER, Vol.16.

-----		
Conn.  *		SPI-00-013 (ALD-YA721)
-----		
		Cable
-----		
Conn.  =		01A-A2A6-A04 (ALD-YB231)
-----		
		board wiring
-----		
Card.  =		01A-A2D2-G02 (ALD-YB641)
-----		

\* '-PWR I/O incomplete D36'

Go to Page 3, Step 013, Entry Point Z.

**025**

- 1.Press power-off key.
- 2.Replace PC-sense card in position 01A-A2D2.

Go to Page 3, Step 013, Entry Point Z.



**POWER PROBLEM**

PAGE 1 OF 2

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	013	F7E4	A
2	009	0204	A

001

Symptom:

MFCU and channel I/O power off failure.

```

-----
|           Suspected errors or FRU's           |
| (including intermittent errors)                |
|-----|-----|
| 1 | Control diskette.                         |
| 2 | PC-sense card 01A-A2D2.                  |
|-----|-----|
    
```

**(Entry Point A)**

1. Press power-on switch.
2. Press power-off key.

Is any reference code displayed?

Y N

002

Suspect intermittent error

003

Is reference code F7AD8101 displayed?

Y N

004

Go to corresponding MAP

2  
A

A  
1

**REF.CODE F7AD8101**

**Power Problem**

PAGE 2 OF 2

**005**

- 1.Press power-off key.
- 2.Insert diagnostic diskette into drive 1.
- 3.Press power-on switch and wait approximately one minute.
- 4.Press power-off switch.

**Is reference code F7AD8101 displayed?**

Y N

**006**

Use new control diskette and  
Go to Step 009, Entry Point Z.

**007**

- 1.Press power-off key
- 2.Replace PC-sense card in position 01A-A2D2
- 3.Press power-on switch and wait approximately one minute.
- 4.Press power-off switch.

**Is reference code F7AD8101 displayed?**

Y N

**008**

(Entry Point B)

**Any other reference code displayed?**

Y N

**009**

(Entry Point Z)  
Go To Map 0204, Entry Point A.

**010**

Go to corresponding MAP

B

3080

MAP F7E6-2

**011**

- 1.Press power-off key
- 2.Reinstall the previously removed PC-sense card into position 01A-A2D2
- 3.Replace PC interface card in position 01A-A2E2.
- 4.Press power-on switch and wait approximately one minute.
- 5.Press power-off switch.

**Is reference code F7AD8101 displayed?**

Y N

**012**

Go to Step 008, Entry Point B.

**013**

Isolate the 5424 power problem **first**  
Go To Map F7E4, Entry Point A.

B

28SEP79 PN 8488588

EC 366335 PEC 366205

3080 MAP F7E6-2

POWER PROBLEM

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	004	0200	A
2	019	0202	A
2	016	0204	A

001

Symptom:

Invalid power on/off code, (K5).

MSSS is still on.

Suspected errors or FRU's (including intermittent errors)	
1	Control diskette.
2	PC interface card 01A-A2E2.

(Entry Point A)

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.

Is reference code F7AE0701 displayed?

Y N

002

Is any other reference code displayed?

Y N

003

Is the power complete indicator on?

Y N

004

(Entry Point Y)

Go To Map 0200, Entry Point A.

© Copyright IBM Corp. 1979

28SEP79

PN 8488589

REF.CODE F7AE0701

EC 366335

PEC 366205

2 2 2  
A B C

4331

3090

MAP F7E7-1

A B C  
1 1 1

REF.CODE F7AE0701

D E

3090

MAP F7E7-2

**Power Problem**

PAGE 2 OF 2

005

Suspect intermittent error. Retry power on several times and go to MAP for displayed reference code. If no reference code is displayed and the basic check indicator is not on,  
**Go to Step 016, Entry Point Z.**

006

Go to MAP for displayed reference code.

007

1.Press power-off key.  
2.Use diagnostic diskette, press power-on switch and wait approximately one minute.

Is reference code F7AE0701 displayed?

Y N

008

Is any other reference code displayed?

Y N

009

Suspect control diskette problem.  
Replace control diskette.  
**Go to Step 016, Entry Point Z.**

010

Go to MAP for displayed reference code.

011

1.Press power-off key.  
2.Replace PC-interface card in position 01A-A2E2.  
3.Press power-on switch and wait approximately one minute.

Is reference code F7AE0701 displayed?

Y N

D E

012

(Entry Point B)

Is the power complete indicator on after execution of the power-on sequence?

Y N

013

Is any reference code displayed?

Y N

014

Go to Page 1, Step 004, Entry Point Y.

015

Go to MAP for displayed reference code.

016

(Entry Point Z)

Go To Map 0204, Entry Point A.

017

1.Press power-off key.  
2.Replace both PC sense cards in position 01A-A2C2 and 01A-A2D2 step by step.  
3.Retry power on after each card replacement and wait approximately one minute.

Is reference code F7AE0701 displayed?

Y N

018

Go to Step 012, Entry Point B.

019

Go To Map 0202, Entry Point A.

28SEP79

PN 8488589

EC 366335

PEC 366205

3090

MAP F7E7-2

**Power Problem**

PAGE 1 OF 2

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	011	0202	A
2	012	0204	A

**001****Symptoms:**

All controllatches reset by 36 ms timeout of PC-sense card 1 or 2.

Suspected errors or FRU's (including intermittent errors)	
1	PC-sense card 1 in pos. 01A-A2D2.
2	PC-sense card 2 in pos. 01A-A2C2.
3	PC-interf. card in pos. 01A-A2E2.

**(Entry Point A)**

1. Press power off key.
2. Press power-on switch and wait approximately one minute.

**Is any reference code displayed?**

Y N

**002**

Intermittent error.

Suspect defective power controller card.

Replace cards step by step. After each card replacement retry power on and wait approximately one minute.

1. PC-sence card 1 position 01A-A2D2
2. PC-sense card 2 in position 01A-A2C2.
3. PC interface card in position 01A-A2E2.

© Copyright IBM Corp. 1979

28SEP79 PN 8488590

REF.CODE F7AE0801

EC 366335 PEC 366232

4331

3100 MAP F7E8-1

2  
-A

A  
1

REF.CODE F7AE0801

**Power Problem**

PAGE 2 OF 2

003

Is reference code F7AE0801 displayed?

Y N

004

Go to corresponding MAP

005

1. Press power off key.
2. Remove both PC sense cards from positions 01A-A2D2 and from 01A-A2C2.
3. Check both cards for correct jumpering. The card jumper must be positioned parallel to the short side of the card.

Is the card jumpering correct?

Y N

006

1. Set correct card jumpering.
2. Plug removed cards into their board positions.
3. Press power on switch and wait approximately one minute.

Is any reference code displayed?

Y N

007

Go to Step 012, Entry Point Z.

008

Is reference code F7AE0801 displayed?

Y N

009

Go to corresponding MAP.

B C

3100

MAP F7E8-2

010

(Entry Point B)

1. Press power off switch.
2. Replace the following power controller cards step by step. After each card replacement retry power-on and wait approximately one minute.
  - a) PC-sense card 1 in pos. 01A-A2D2.
  - b) PC-sense card 2 in pos. 01A-A2C2.
  - c) PC interface card in pos. 01A-A2E2.

Problem solved?

Y N

011

Go To Map 0202, Entry Point A.

012

(Entry Point Z)

Go To Map 0204, Entry Point A.

013

Go to Step 010, Entry Point B.

28SEP79

PN 8488590

EC 366335

PEC 366232

3100

MAP F7E8-2

B C

POWER PROBLEM

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	004	0200	A
2	016	0204	A
2	017	0403	A

001

Symptom:

Monitor control error,(K7).  
(MC or CC active)

```

-----
Suspected errors or FRU's
(including intermittent errors)
-----
1 | Control diskette.
2 | PC interface card 01A-A2E2.
-----
    
```

(Entry Point A)

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.

Is reference code F7AE0901 displayed?

Y N

002

Is any other reference code displayed?

Y N

003

Is the power complete indicator on?

Y N

004

(Entry Point Y)  
Go To Map 0200, Entry Point A.

© Copyright IBM Corp. 1979

28SEP79

PN 8488591

REF.CODE F7AE0901

EC 366335

PEC 366205

2 2 2  
A B C

4331

3110

MAP F7E9-1

A B C  
1 1 1

REF.CODE F7AE0901

Power Problem

PAGE 2 OF 2

005

Suspect intermittent error. Retry power on several times and go to MAP for displayed reference code. If no reference code is displayed and the basic check indicator is not on,

Go to Step 016, Entry Point Z.

006

Go to MAP for displayed reference code.

007

- 1.Press power-off key.
- 2.Use diagnostic diskette, press power-on switch and wait approximately one minute.

Is reference code F7AE0901 displayed?

Y N

008

Is any other reference code displayed?

Y N

009

Suspect control diskette problem.  
Replace control diskette.

Go to Step 016, Entry Point Z.

010

Go to MAP for displayed reference code.

011

- 1.Press power-off key.
- 2.Replace PC-interface card in position 01A-A2E2.
- 3.Press power-on switch and wait approximately one minute.

Is reference code F7AE0901 displayed?

Y N

D E

D E

3110

MAP F7E9-2

012

Is the power complete indicator on after execution of the power-on sequence?

Y N

013

Is any reference code displayed?

Y N

014

Go to Page 1, Step 004, Entry Point Y.

015

Go to MAP for displayed reference code.

016

(Entry Point Z)

Go To Map 0204, Entry Point A.

017

Go To Map 0403, Entry Point A.

28SEP79

PN 8488591

EC 366335

PEC 366205

3110

MAP F7E9-2



**POWER PROBLEM**

PAGE 1 OF 2

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	004	0200	A
2	016	0204	A
2	019	0403	A

**001**

Symptom:

Power on control error,(M2).

Failing power instruction during power-on sequence.

Suspected errors or FRU's  
(including intermittent errors)

- 1 | Control diskette.
- 2 | PC interface card 01A-A2E2.

**(Entry Point A)**

- 1.Press power-off key.
- 2.Press power-on switch and wait approximately one minute.

Is reference code F7AE0A01 displayed?

Y N

**002**

Is any other reference code displayed?

Y N

**003**

Is the power complete indicator on?

Y N

**004****(Entry Point Y)**

Go To Map 0200, Entry Point A.

© Copyright IBM Corp. 1979

28SEP79

PN 8488592

REF.CODE F7AE0A01

EC 366335

PEC 366205

2 2 2  
A B C

4331

3120

MAP F7EA-1

A B C  
1 1 1

REF.CODE F7AE0A01

Power Problem

PAGE 2 OF 2

005

Suspect intermittent error. Retry power on several times and go to MAP for displayed reference code. If no reference code is displayed and the basic check indicator is not on,

Go to Step 016, Entry Point Z.

006

Go to MAP for displayed reference code.

007

- 1.Press power-off key.
- 2.Use diagnostic diskette, press power-on switch and wait approximately one minute.

Is reference code F7AE0A01 displayed?

Y N

008

Is any other reference code displayed?

Y N

009

Suspect control diskette problem. Replace control diskette.

Go to Step 016, Entry Point Z.

010

Go to MAP for displayed reference code.

011

- 1.Press power-off key.
- 2.Replace PC-interface card in position 01A-A2E2.
- 3.Press power-on switch and wait approximately one minute.

Is reference code F7AE0A01 displayed?

Y N

D E

D E

3120

MAP F7EA-2

012

(Entry Point B)

Is the power complete indicator on after execution of the power-on sequence?

Y N

013

Is any reference code displayed?

Y N

014

Go to Page 1, Step 004, Entry Point Y.

015

Go to MAP for displayed reference code.

016

(Entry Point Z)

Go To Map 0204, Entry Point A.

017

- 1.Press power-off key.
- 2.Replace both PC sense cards in position 01A-A2C2 and 01A-A2D2 step by step.
- 3.Retry power on after each card replacement and wait approximately one minute.

Is reference code F7AE0A01 displayed?

Y N

018

Go to Step 012, Entry Point B.

019

Go To Map 0403, Entry Point A.

28SEP79 PN 8488592

EC 366335 PEC 366205

3120 MAP F7EA-2

## Power Problem

PAGE 1 OF 3

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	013	0200	A
3	017	0202	A
2	007	0204	A

001

## Symptoms:

Power off key pressed and escape done.  
(Key bit 4 and Mark bit 6 active)

Suspected errors or FRU's (including intermittent errors)	
1	PS111 control card.
2	PS112 control card.
3	PS113 control card.
4	PS114 control card.
5	PC sense card 1 in pos. 01A-A2D2.
6	C09, C11, C10, C19 wiring.
7	D19, D26, D20, D13 wiring.

(Entry Point A)

1. Press power off key.
2. Press power on switch and wait approximately one minute.

Is any reference code displayed?

Y N

002

Press power off key.

Is any reference code displayed?

Y N

3 2 2  
A B C

© Copyright IBM Corp. 1979

REF.CODE F7AE0B01

4331

28SEP79

PN 8488593

EC 366335

PEC 366205

3130

MAP F7EB-1

B C  
1 1

REF.CODE F7AE0B01

3130

MAP F7EB-2

Power Problem

PAGE 2 OF 3

003

Suspect intermittent error.  
See hints in book Maintenance Information  
(MI) POWER.

004

Is reference code F7AE0B01 displayed?

Y N

005

Go to corresponding MAP.

006

Do not press the power off key.  
1. Perform IPS service check for all IPS voltages  
(PS111 to PS114). Remove only one control  
card at a time and reinstall into the same  
position after testing (if card is ok).  
Observe the proper function of the UV  
indicator.

Is the IPS service check for all power  
supplies ok?

Y N

007

Replace the failing card.

(Entry Point Z)

Go To Map 0204, Entry Point A.

008

Probe IPS power on signals:

1) 01A-C1C2-G08

(ALD-YA541)

'-I-power on PS111 C08'

2) 01A-C1C2-B11

(ALD-YA541)

'-F-power on PS111 C19'

3) 01A-C1C4-G08

(ALD-YA551)

'-power on PS112 C03'

4) 01A-C1D2-G08

(ALD-YA562)

'-power on PS113 C10'

(Step 008 continues)

(Step 008 continued)

5) 01A-C1D4-G08

(ALD-YA571)

'-power on PS114 C11'

Is any power on signal at down level?

Y N

009

Try to isolate the fault by inserting a new IPS  
control card step by step into all IPS control  
card positions.

1. Switch to CE-mode at CE-panel.

2. Retry power on after each card  
replacement.

If this procedure was not successful.

Go to Page 3, Step 017, Entry Point B.

010

Do not disconnect the probe from the failing  
pin.

1. Press power off key.

2. Replace PC sense card in position  
01A-A2D2.

3. Press power-on switch and wait  
approximately one minute.

4. Press power-off switch.

Is reference code F7AE0B01 displayed?

Y N

011

Is any other reference code displayed?

Y N

012

Is the power complete indicator on?

Y N

013

Go To Map 0200, Entry Point A.

014

Go to Step 007, Entry Point Z.

015

Go to corresponding MAP.

28SEP79 PN 8488593

EC 366335 PEC 366205

3130 MAP F7EB-2

3  
D

D  
2

REF.CODE F7AE0B01

Power Problem

PAGE 3 OF 3

A  
1

3130

MAP F7EB-3

018

1. Press power-off switch.
2. Remove PC sense card 1 from position 01A-A2D2.
3. Remove IPS control cards from positions 01A-C1C2  
01A-C1C4  
01A-C1D2  
01A-C1D4
4. Connect CE-meter (Range ohm X1) to any D08 pin and to the following listed pins:
  - 1) 01A-C1C2-G08  
(ALD-YA541)  
'-I-power on PS111 C08'
  - 2) 01A-C1C2-B11  
(ALD-YA541)  
'-F-power on PS111 C19'
  - 3) 01A-C1C4-G08  
(ALD-YA551)  
'-power on PS112 C09'
  - 4) 01A-C1D2-G08  
(ALD-YA562)  
'-power on PS113 C10'
  - 5) 01A-C1D4-G08  
(ALD-YA571)  
'-power on PS114 C11'

Is the resistance at any pin below 100 ohm?

Y N

017

(Entry Point B)

Go To Map 0202, Entry Point A.

018

- Check and repair wiring of failing power on signal from PC sense card in position 01A-A2D2 to IPS control card.  
(ALD-YB621)  
Apply wiring check procedure shown in book Maintenance Information (MI) Power.  
Go to Page 2, Step 007, Entry Point Z.

019

Go to corresponding MAP.

28SEP79 PN 8488593  
EC 366335 PEC 366205  
3130 MAP F7EB-3



Power Problem

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0202	A
2	007	0204	A

001

Symptoms:

Power off escape done w/o power off key pressed.

(Mark bit 6 on and key bit 4 off)

Suspected errors or FRU's (including intermittent errors)	
1	PS111 control card.
2	PS112 control card.
3	PS113 control card.
4	PS114 control card.
5	PC sense card 01A-A2D2.
6	C09, C10, C11, C19 wiring.
7	D13, D19, D20, D26 wiring.

(Entry Point A)

1. Press power off key.
2. Press power on switch and wait approximately one minute.

Is any reference code displayed?

Y N

002

Press power off key.

Is any reference code displayed?

Y N

2 2 2  
A B C

B C  
1 1

REF.CODE F7AE0C01

A D  
1 1

3140

MAP F7EC-2

Power Problem

PAGE 2 OF 2

003

Suspect intermittent error.  
See hints in book Maintenance Information  
(MI) POWER.

010

Go to Step 007, Entry Point Z.

011

Go to corresponding MAP.

004

Is reference code F7AE0C01 displayed?

Y N

005

Go to corresponding MAP.

006

1. Perform IPS service check for all IPS voltages  
(PS111 to PS114) according to MAP 0280.  
Remove only one control card at a time and  
reinstall into the same position after testing (if  
card is ok).  
Observe the proper function of the UV  
indicator.

Was the IPS service check for all power  
supplies ok?

Y N

007

Replace the failing card.

(Entry Point Z)

Go To Map 0204, Entry Point A.

008

1. Press power off key.  
2. Suspect defective PC-interface card in  
position 01A-A2E2 or PC sense card in position  
01A-A2D2.  
Replace both cards step by step. After each  
card replacement press power on switch and  
wait approximately one minute.

Is the problem solved?

Y N

009

Go To Map 0202, Entry Point A.

28SEP79

PN 8488594

EC 366335

PEC 366205

3140

MAP F7EC-2

D



## POWER PROBLEM

PAGE 1 OF 2

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	004	0200	A
2	016	0204	Z
2	017	0403	A

001

Symptom:

Permanent interrupt at end of power-on, (K1).

Suspected errors or FRU's (including intermittent errors)	
1	Control diskette.
2	PC interface card 01A-A2E2.

## (Entry Point A)

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.

Is reference code F7AE0D01 displayed?

Y N

002

Is any other reference code displayed?

Y N

003

Is the "power complete" indicator on?

Y N

004

(Entry Point Y)

Go To Map 0200, Entry Point A.

© Copyright IBM Corp. 1980

30JUN80

PN 8488595

REF.CODE F7AE0D01

EC 366407

PEC 366335

2 2 2  
A B C

4331

3150

MAP F7ED-1

A B C  
1 1 1

**REF.CODE F7AE0D01**

**Power Problem**

PAGE 2 OF 2

**005**

Suspect intermittent error. Retry power on several times and go to MAP for displayed reference code. If no reference code is displayed and the basic check indicator is not on,

**Go to Step 016, Entry Point Z.**

**006**

Go to MAP for displayed reference code.

**007**

1. Press power-off key.
2. Use diagnostic diskette and press power-on switch and wait approximately one minute.

**Is reference code F7AE0D01 displayed?**

Y N

**008**

Is any other reference code displayed?

Y N

**009**

Suspect control diskette problem. Replace control diskette.

**Go to Step 016, Entry Point Z.**

**010**

Go to MAP for displayed reference code.

**011**

1. Press power-off key.
2. Replace PC-interface card in position 01A-A2E2.
3. Press power-on switch and wait approximately one minute.

**Is reference code F7AE0D01 displayed?**

Y N

D E

D E

3150

MAP F7ED-2

**012**

Is the \*power complete\* indicator on after execution of the power-on sequence?

Y N

**013**

Is any reference code displayed?

Y N

**014**

Go to Page 1, Step 004, Entry Point Y.

**015**

Go to MAP for displayed reference code.

**016**

(Entry Point Z)

**Go To Map 0204, Entry Point Z.**

**017**

Go To Map 0403, Entry Point A.

30JUN80

PN 8488595

EC 366407

PEC 366335

3150

MAP F7ED-2

**Power problem.**

PAGE 1 OF 8

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	2	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	020	0204	A

**001**

Symptom: Power problem without error found during Log analysis.

Suspected errors or FRU's (including intermittent errors)	
1	Control diskette defective.
2	PC interface card 01A-A2E2.
3	PC sense card 01A-A2D2.
4	PC sense card 01A-A2C2.
5	BPC card 01A-A2B2.
6	PS111 control card.
7	PS112 control card.
8	PS113 control card.
9	PS114 control card.
10	Noise or intermittend load problems on one of the following voltages sensed by sense card 1: +5.1V PS105 on 01A-A1, A03. -5.1V PS104 on 01A-C2, A33. -5.1V PS105 on 01A-A2, A01. +4.26V PS111 on 01A-B1, D19, UV. -6.54V PS112 on 01A-B1, D26, UV. -4.34V PS113 on 01A-B1, D20, UV. -1.52V PS114 on 01A-B1, D13, UV.
11	Spikes on one of the following thermal loops: TR102 thermal, D09. TR105 thermal, D08.

Note: This reference code is usually generated by intermittend failures. The reference code F7A00001 might (Step 001 continues)

© Copyright IBM Corp. 1980

REF.CODE F7A00001

4331

30JUN80 PN 8488596

EC 366407 PEC 366369

3155 MAP F7EE-1

**Power problem**

PAGE 2 OF 8

(Step 001 continued)

appear very seldom.

Therefore trouble shooting could be very time consuming.

Sometimes it is better to stop working on this error and to ask the customer to continue his job and look for the appearance of reference code F7A00001.

If you stop working on this error, write down all the actions you did to solve this problem.

**(Entry Point A)**

1. Press power-off key.

2. Ensure proper card seating of the following listed cards and connectors (Including top connectors).

PC interface card in position 01A-A2E2.

PC sense card 1 in position 01A-A2D2.

PC sense card 2 in position 01A-A2C2.

BPC card in position 01A-A2B2.

Paddle cards and connectors on positions 01A-A2YA, 01A-A2YC, 01A-A2ZA, 01A-A2ZB, 01A-A2A2, 01A-A2A3, 01A-A2A4.

3. Retry power-on several times and wait some times after each retry.

**Is reference code F7A00001 displayed?**

Y N

**002****Is any other reference code displayed?**

Y N

**003****(Entry Point C)**

Wait some time until reference code F7A00001 appears again or ask the customer to continue his job if the error is high intermittend. If any other reference code is displayed, go to corresponding MAP. If reference code F7A00001 is displayed,

**Go to Page 3, Step 005, Entry Point B.**3 3  
A B

30JUN80

PN 8488596

EC 366407

PEC 366369

3155

MAP F7EE-2

A B  
2 2

REF.CODE F7A00001

3155

MAP F7EE-3

Power problem

PAGE 3 OF 8

004

Go to corresponding MAP.

005

(Entry Point B)

1. Press power-off switch.
2. Use the second control diskette, retry power on and wait some time.

Is the reference code F7A00001 still generated?

Y N

006

Replace the first used control diskette.  
Go to Page 6, Step 020, Entry Point Z.

007

1. Press power-off key.
2. Perform IPS service check for all IPS voltages (PS111 to PS114) according to MAP 0280. Remove only one control card at a time and reinstall it in the same position after testing (if card is ok). Observe the proper function of the UV indicator.

Is the IPS service check for all power supplies ok?

Y N

008

Replace the failing card.  
Go to Page 6, Step 020, Entry Point Z.

4  
C

30JUN80 PN 8488596

EC 366407 PEC 366369

3155 MAP F7EE-3

## Power problem

PAGE 4 OF 8

## 009

1. Press power-off switch.
2. Replace the following listed power controller cards and the BPC card step by step:  
PC interface card 01A-A2E2  
PC sense card 2 01A-A2D2  
BPC card 01A-A2B2
3. Retry power on several times after each card replacement and wait some time after each retry.

Is reference code F7A00001 display?

Y N

## 010

Is any other reference code displayed?

Y N

## 011

Go to Page 2, Step 003, Entry Point C.

## 012

Go to corresponding MAP.

## 013

1. Reinstall the previously removed cards into their original positions.  
The reference code F7A00001 could be generated by an intermittent digital interrupt.
2. Press power-on switch and wait approximately one minute.
3. Connect the General Logic probe step by step to the following listed pins. The latch switch of the probe must be set to \*down\* after the probe is connected to the listed pins. If the \*down\* indicator of the probe is switched on and the reference code F7A00001 is displayed, you know that the measured signal caused the interrupt. It is necessary to measure each line until the error occurs.

Digital sense	Line name	Pin	ALD-Reference
D08	'TR105-TH failed D08'	01A-A2D2-M04	(ALD-YB643)
D09	'TR102-TH failed D09'	01A-A2D2-M03	(ALD-YB643)

(Step 013 continues)

30JUN80 PN 8488596

EC 366407 PEC 366369

3155 MAP F7EE-4

## Power problem

PAGE 5 OF 8

(Step 013 continued)

D13	'PS114 UV failed D13'	01A-A2D2-P10	(ALD-YB643)
D19	'PS111 UV failed D19'	01A-A2D2-P05	(ALD-YB643)
D20	'PS113 UV failed D20'	01A-A2D2-M11	(ALD-YB643)
D26	'PS112 UV failed D26'	01A-A2D2-P04	(ALD-YB643)

Was the "down" indicator of the probe switched on during the previous measurements?

Y N

014

Was the reference code F7A00001 displayed during the previous measurements?

Y N

015

Was any other reference code displayed?

Y N

016

Write down what you did up to now.  
This information is required if the error appears again.  
Go to Page 2, Step 003, Entry Point C.

017

Go to corresponding MAP.

018

1. Press power-off switch.

The reference code F7A00001 is generated by an intermittent analog interrupt.

The following listed voltages can generate an interrupt:

+5.1V PS105 on 01A-A1, A03, (ALD-YC821)  
-5.1V PS105 on 01A-A2, A01, (ALD-YC831)  
-5.1V PS104/105 on 01A-C2, A33, (ALD-YC871)

An intermittent load fault on any card supplied by the previous listed voltages can generate the interrupt. The following table shows the cards which are supplied by those (Step 018 continues)

30JUN80 PN 8488596

EC 366407 PEC 366369

3155 MAP F7EE-5

**Power problem**

PAGE 6 OF 8

(Step 018 continued)  
voltages.

2. Remove the cards step by step for each voltage according to table below.
3. Switch to CE mode at the CE panel.
4. Press power-on switch and wait until the error occurs. If the error does not appear, reinstall the removed cards step by step and replace the card which generates reference code F7A00001.

Voltage	Supplied card
+5.1V PS105	All cards on board 01A-A1
-5.1V PS105	01A-A1A4, 01A-A1C2, 01A-A1D2, 01A-A1E2, 01A-A1J2, 01A-A1K2, 01A-A1K4, 01A-A1L2, 01A-A1M2, 01A-A1M4, 01A-A1N2, 01A-A1Q2
-5.1V PS105 only if PS105 installed	01A-C2L2, 01A-C2L4, 01A-C2M2, 01A-C2N2, 01A-C2P2, 01A-C2P4, 01A-C2Q2, 01A-C2R2, 01A-C2S2, 01A-C2S4, 01A-C2T2, 01A-C2U2, 01A-C2V2, 01A-C2V4, 01A-C2W2

Have you any error found?

Y N

**019**

Call your Field Support Center for support.

**020**

(Entry Point Z)

Go To Map 0204, Entry Point A.

**021**

Was any UV signal of PS111 through PS114 on?

Y N



E F  
6 6

REF.CODE F7A00001

3155

MAP F7EE-7

Power problem

PAGE 7 OF 8

022

1. Press power-off switch.
2. Check the wiring of the failing thermal signal from the PC sense card 01A-A2D2 via the BPC card 01A-A2B2 the corresponding transformer. Ensure that all pins are correctly positioned and that there is a sufficient contact.
3. If no wiring error found, jumper temporarily the thermal switch of the failing transformer.

Transformer	Jumper from/to
TR102	PS102-04-008/PS102-04-007
TR105	PS105-07-005/PS105-07-008

Caution: There is no overheating protection for the transformer if the jumper is installed.

4. If the error does not appear again after jumpering, the corresponding transformer has to be replaced. If reference code F7A00001 is displayed again, call your Field Support Center for support.

023

1. Press power-off switch.
2. Replace the control card of the failing power supply.

PS#	Control card
PS111	01A-C1C2
PS112	01A-C1C4
PS113	01A-C1D2
PS114	01A-C1D4

3. Press power-on switch and check if the error occurs again.

Is reference code F7A00001 display?

Y N  
| |  
| |  
| |  
| |  
| |

8 8  
G H

30JUN80 PN 8488596

EC 366407 PEC 366369

3155 MAP F7EE-7

G H  
7 7

REF.CODE F7A00001

Power problem

PAGE 8 OF 8

024

Go to Page 6, Step 020, Entry Point Z.

025

1. Press power-off switch.
2. Reinstall the old control card into their original position.
3. Replace the power module(s) of the failing power supply.

PS#	Power module(s)
PS111	01A-C1E4
PS112	01A-C1H4
PS113	01A-C1G3, 01A-C1F3 01A-C1H3 (if inst.) 01A-C1E3 (if inst.)
PS114	01A-C1G5, 01A-C1F5 01A-C1H5 (if inst.)

4. Press power-on switch and check if error occurs again.

Is reference code F7A00001 displayed?

Y N

026

Go to Page 6, Step 020, Entry Point Z.

027

1. Press power-off switch.
2. Reinstall the previously removed power modules into their original positions.
3. Remove all cards from board 01A-B1.
4. Press power-on switch and check if the error occurs again.

Is reference code F7A00001 displayed?

Y N

Vertical line separator

J K

J K

3155

MAP F7EE-8

028

1. Press power-off switch.
  2. Suspect an intermittent load fault on one of the removed cards. Reinstall those cards step by step and replace the card which generates the reference code F7A00001.
- Go to Page 6, Step 020, Entry Point Z.

029

Call your Field Support Center for support.

30JUN80 PN 8488596

EC 366407 PEC 366369

3155 MAP F7EE-8

**POWER PROBLEM**

PAGE 1 OF 2

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	004	0200	A
2	019	0202	A
2	016	0204	A

**001**

Symptom:

Initial loop count zero (BIT K6 on)  
MSSS is still on.

```

-----
| Suspected errors or FRU's |
| (including intermittent errors) |
|-----|
| 1 | Control diskette. |
| 2 | PC interface card 01A-A2E2. |
|-----|
    
```

**(Entry Point A)**

1. Press power-off key.
2. Press power-on switch and wait approximately one minute.

Is reference code F7AE0F01 displayed?

Y N

**002**

Is any other reference code displayed?

Y N

**003**

Is the power complete indicator on?

Y N

**004**

(Entry Point Y)

Go To Map 0200, Entry Point A.

© Copyright IBM Corp. 1979

28SEP79

PN 8488520

REF.CODE F7AE0F01

EC 366335

PEC 366205

2 2 2  
A B C

4331

3156

MAP F7EF-1

A B C  
1 1 1

REF.CODE F7AE0F01

D E

3156

MAP F7EF-2

**Power Problem**

PAGE 2 OF 2

**005**

Suspect intermittent error. Retry power on several times and go to MAP for displayed reference code. If no reference code is displayed and the basic check indicator is not on.

**Go to Step 016, Entry Point Z.**

**006**

Go to MAP for displayed reference code.

**007**

1. Press power-off key.
2. Use diagnostic diskette, press power-on switch and wait approximately one minute.

**Is reference code F7AE0F01 displayed?**

Y N

**008**

Is any other reference code displayed?

Y N

**009**

Suspect control diskette problem. Replace control diskette.

**Go to Step 016, Entry Point Z.**

**010**

Go to MAP for displayed reference code.

**011**

1. Press power-off key.
2. Replace PC-interface card in position 01A-A2E2.
3. Press power-on switch and wait approximately one minute.

**Is reference code F7AE0F01 displayed?**

Y N

**012**

**(Entry Point B)**

Is the power complete indicator on after execution of the power-on sequence?

Y N

**013**

Is any reference code displayed?

Y N

**014**

**Go to Page 1, Step 004, Entry Point Y.**

**015**

Go to MAP for displayed reference code.

**016**

**(Entry Point Z)**

**Go To Map 0204, Entry Point A.**

**017**

1. Press power-off key.
2. Replace both PC sense cards in position 01A-A2C2 and 01A-A2D2 step by step.
3. Retry power on after each card replacement and wait approximately one minute.

**Is reference code F7AE0F01 displayed?**

Y N

**018**

**Go to Step 012, Entry Point B.**

**019**

**Go To Map 0202, Entry Point A.**

28SEP79 PN 8488520

EC 366335 PEC 366205

3156 MAP F7EF-2

D E

## POWER PROBLEM

PAGE 1 OF 10

001

## ENTRY POINTS

FROM   ENTER THIS MAP			
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP   TO			
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	001	0202	A
2	001	0403	A
2	001	F7F1	A
2	001	F7F2	A
2	001	F7F3	A
2	001	F7F4	A

## SYMPTOM:

ALL REFERENCE CODES F7AXXX81  
ARE GENERATED DURING POWER ON TEST.

## (Entry Point A)

Note: The letter X used within a reference code, stands for any hex digit 0 to F.

For the following reference codes are separate MAPS available.  
F7A21181, F7A41181, F7A41281, F7A43181.

Press the enter key to repeat the test or press power-off key and perform a power-on retry.

If any reference code F7AXXX81 is displayed, go to the following reference code table and perform the actions according to the priority defined in the table (digits 1 to 5).

If a special action is to be performed, carry out the procedure listed in the last column of the table.

## Note:

If the actions you performed failed, restart the execution of the Power On Test by pressing the enter key.  
If another reference code is displayed, perform the actions listed under the new displayed reference code.  
If the displayed reference code is the same as before, go to MAP 0202, ENTRY POINT A.

(Step 001 continues)

## POWER PROBLEM

PAGE 2 OF 10

(Step 001 continued)

Ref. code #	Check top Con. & card seating (See note2)	Replace card (See note 1)	IFC	SC1	SC2	ESD	Call for assist.	Remarks
F7A...81								
09X	1	2	-	-	-			3 Go to MAP 0403
10X	1	2	3	4	-		5	
110	1	3	2	-	-		5	4 Do action C
111	-	2	1	-	-		3	
120	-	2	-	1	-		4	3 Do action C
121	-	2	-	1	-		3	
130	-	1	-	-	-		3	2 Do action C
131	-	1	-	-	-		2	
19X	1	2	-	-	-			3 Go to MAP 0403
200	1	3	2	-	-		4	
201	1	3	2	-	-		4	
202	1	3	2	-	-		4	
203	1	3	2	-	-		4	
204	1	3	-	2	-		4	
205	1	3	-	2	-		4	
206	1	3	-	2	-		4	
207	1	3	-	2	-		4	
208	1	3	2	-	-		4	
209	1	3	2	-	-		4	
20A	1	3	2	-	-		4	
20B	1	3	2	-	-		4	
20C	1	3	-	2			4	
20D	1	3	-	2			4	
20E	1	3	-	2			4	
20F	1	3	-	2			4	

(Step 001 continues)

15SEP82 PN 5684086

EC 366589 PEC 366388

3160

MAP F7F0-2

## POWER PROBLEM

PAGE 3 OF 10

(Step 001 continued)

Ref.code #	Check top Con.& card seating (See note2)	Replace card (See note 1)	Call for assist.	Remarks
F7A...81	(See note2)	IFC SC1 SC2 ESD		
211	-	-   -   -   -	-	Go to MAP F7F1
212	1	3   2   4	-   5	
213	1	3   2   4	-   5	
22X	1	3   4   2	-   5	
231	1	2   -   -   -	3	
29X	1	2   -   -   -		3 Go to MAP 0403
310	1	3   2   -   -	4	
311	-	2   1   -   -	3	
312	-	-   1   -   -	2	
313	-	2   1   -   -	3	
32X	-	2   -   1   -	3	
33X	1	2   -   -   -	3	
39X	1	2   -   -   -		3 Go to MAP 0403
410	1	3   2   -   -	4	
411	-	-   -   -   -	-	Go to MAP F7F2
412	-	-   -   -   -	-	Go to MAP F7F3
413	-	2   1   -   -	3	
420	-	2   -   1   -	3	
421	-	-   -   1   -	-	2 Do action A
422	-	-   -   1   -	-	
423	-	2   -   1   -	3	
430	-	1   -   -   -	2	
431	-	-   -   -   -	-	Go to MAP F7F4
432	-	-   1   2   -	-	
49X	1	2   -   -   -		3 Go to MAP 0403

(Step 001 continues)

15SEP82 PN 5684086

EC 366589 PEC 366388

3160

MAP F7F0-3

## POWER PROBLEM

PAGE 4 OF 10

(Step 001 continued)

Ref. code #	Check top Con. & card seating (See note2)	Replace card (See note 1)	Call for assist.	Remarks
F7A...81		IFC SC1 SC2 ESD		
510	1	3   2   -   -	4	
511	1	3   2   -   -	4	
512	-	2   1   -   -	3	
513	-	-   1   -   -	2	
520	-	2   -   1   -	3	
521	1	3   -   2   -	4	
522	-	2   -   1   -	3	
523	-	-   -   1   -	-	
53X	-	1   -   -   -	3	2 Do action B
59X	1	2   -   -   -		3 Go to MAP 0403
610	1	3   2   -   -	4	
611	1	3   2   -   -	4	
612	-	-   1   -   -	2	
613	-	-   1   -   -	2	
614	-	-   1   -   -	2	
615	-	-   -   1   -	2	
616	-	1   -   -   -	2	
620	-	2   -   1   -	3	
621	1	-   -   2   -	3	
622	-	-   -   1   -	2	
623	-	-   -   1   -	2	
630	-	1   -   -   -	2	
69X	1	2   -   -   -		3 Go to MAP 0403
72X	1	3   -   2   -	4	
79X	1	2   -   -   -		3 Go to MAP 0403

(Step 001 continues)

15SEP82 PN 5684086

EC 366589 PEC 366388

3160 MAP F7F0-4



## POWER PROBLEM

PAGE 5 OF 10

(Step 001 continued)

Ref. code #	Check top Con. & card seating (See note2)	Replace card (See note 1)	Call for assist.	Remarks
F7A...81	(See note2)	IFC SC1 SC2 ESD		
810	1	2   -   -   -		3 Go to MAP 0403
820	1	2   -   -   -		3 Go to MAP 0403
821	1	3   4   2   -		5 Go to MAP 0403
822	1	3   4   2   -		5 Go to MAP 0403
83X	1	2   -   -   -		3 Go to MAP 0403
84X	1	6   4   3   2**	7	5 Do action D
85X	1	6   4   3   2**	7	5 Do action D
89X	1	2   -   -   -		3 Go to MAP 0403

\*\* I M P O R T A N T N O T E :

=====

There are machines in the field which have no ESD monitor installed. Check if a card is installed in position 01A-A2A5. If no card is present in position 01A-A2A5 the current minimum ESD sense level must be set to zero which means the ESD monitor is disabled (see IBM 4331 Processor Power, Vol.16, "Ambient Recording Log Display").

If the current ESD sense level is not zero and the ESD monitor card is not installed in position 01A-A2A5, a reference code F7A8XX81 will be displayed.

(Step 001 continues)

15SEP82 PN 5684086

EC 366589 PEC 366388

3160 MAP F7F0-5

## POWER PROBLEM

PAGE 6 OF 10

(Step 001 continued)

## N o t e 1:

Before card replacement, press power-off key.

Power controller cards are plugged in the following positions:

Interface card (IFC).....01A-A2E2

Sense card 1 (SC1).....01A-A2D2

Sense card 2 (SC2).....01A-A2C2

The ESD card is plugged in 01A-A2A5

## N o t e 2:

Only mechanical seating of cards and correct positioning of top-connectors (see Maintenance Information Power, Vol. 16) should be checked. Check also for bent or broken pins on the top connectors in position 01A-A2C2 to 01A-A2E2.

Check also correct seating of connector 01A-A2A5 pin side and connector ESDM 01 (line filter) and the flat cables in positions

01A-A2YD and 01A-C2YJ.

01A-A2YM and 01A-C2YK.

No measurements are necessary.

(Step 001 continues)

15SEP82 PN 5684086

EC 366589 PEC 366388

3160 MAP F7F0-6

POWER PROBLEM

PAGE 7 OF 10

(Step 001 continued)

\*\*\*\*\*  
 \* ACTION A \*  
 \* FOR REFERENCE CODE F7A42181 \*  
 \*\*\*\*\*

Symptom:  
 SC2 Reference voltage PS104 -5.1V <50%  
 Check and repair sense wiring between 01A-A2D2-S04  
 '-1.5V sense -5.1V 01A-C2 A45'  
 (ALD-YB643)  
 and 01A-A2C2-S08  
 (ALD-YA623)

\*\*\*\*\*  
 \* ACTION B \*  
 \* FOR REFERENCE CODE F7A53181 or F7A53381 \*  
 \*\*\*\*\*

Symptom:  
 1.No interrupt request latch set.  
 2.No interrupt on processor bus occurs.  
 Check and repair wiring between  
 01A-A2E2-J12 and 01A-A2E2-J13  
 '-UC interrupt to bit 0'  
 (ALD-YB661)

(Step 001 continues)

## POWER PROBLEM

PAGE 8 OF 10

(Step 001 continued)

```
*****
*                               *
*           ACTION C           *
* FOR REFERENCE CODES F7A11081, F7A12081, F7A13081 *
*****
```

SYMPTOMS: 1. SC1 Reset error (any bit)  
2. SC2 Reset error (any bit)  
3. IFC Reset error (any bit)

1. Ensure that electrical connection exists between pins  
01A-A2D2-P02  
(ALD-YB641)  
'-PC Reset C25'  
and 01A-A2B2-J12  
(ALD-YB421)

2. Ensure that electrical connection exists between pins  
01A-A2B2-G09  
(ALD-YB421)  
'-PC Reset C25'  
and 01A-A2E2-G07  
(ALD-YB661)

If no error detected, replace BPC Card in position 01A-A2B2.

(Step 001 continues)

15SEP82 PN 5684086

EC 366589 PEC 366388

3160 MAP F7F0-8

## POWER PROBLEM

PAGE 9 OF 10

(Step 001 continued)

\*\*\*\*\*  
 \* ACTION D \*  
 \* FOR REFERENCE CODES F7A84X81 AND F7A85X81 \*  
 \*\*\*\*\*

Symptoms: Any ESD latch could not be set or reset during  
 Power On Test 8.

IMPORTANT NOTE:  
 =====

There are machines in the field which have no ESD monitor installed. Check if a card is installed in position 01A-A2A5. If no card is present in position 01A-A2A5 the current minimum ESD sense level must be set to zero which means the ESD monitor is disabled (see Vol.16, Power, "Ambient Recording Log Display" ). If the current ESD sense level is not zero and the ESD monitor card is not installed in position 01A-A2A5, a reference code F7A8XX81 will be displayed.

- 1.Remove cards from positions 01A-A2C2 , 01A-A2D2 , 01A-A2A5 .
- 2.Remove connector from position 01A-A2A5 (pin side).
- 3.Ensure that electrical continuity exists between the following listed pins:

From pin	ALD-Ref	To pin	ALD-Ref	Signal name
01A-A2C2-G09	YB621	01A-A2A5-D04	YB721	'-Reset ESDM LT C06'
01A-A2D2-G04	YB641	01A-A2A5-D12	YB721	'-ESDM fail LT4 D37'
01A-A2D2-J09	YB641	01A-A2A5-D11	YB721	'-ESDM fail LT3 D31'
01A-A2C2-J09	YB621	01A-A2A5-D10	YB721	'-ESDM fail LT2 D39'
01A-A2C2-D09	YB621	01A-A2A5-D09	YB721	'-ESDM fail LT1 D05'

- 3.1.Ensure that there is no short circuit to ground (any D08 pin) from any of the previous listed pins.

(Step 001 continues)

## POWER PROBLEM

PAGE 10 OF 10

(Step 001 continued)

4. Disconnect ESDM cable from line filter connector ESDM-01. Ensure that electrical continuity exists between the following listed pins of the ESDM interface cable (from 01A-A2A5 to line filter connector ESDM 01).

4.1. Ensure that there is no short circuit between the signal wires.

From pin	ALD-Ref	To pin	ALD-Ref	Signal name
01A-A2A5-D13	YB721	ESDM 01-001	YA321	'Sense input ESDM'
01A-A2A5-B13	YB721	ESDM 01-002	YA321	'Shield'
01A-A2A5-D08	YB721	ESDM 01-003	YA321	'DC-Gnd PS104'
01A-A2A5-B08	YB721	ESDM 01-006	YA321	'DC-Gnd PS104'
01A-A2A5-B05	YB721	ESDM 01-004	YA321	'+ESDM Test C21'

5. If the wiring tested in steps 3 and 4 is ok, suspect an ESDM problem. The ESD monitor is part of the line filter. To allow customer operations until a new line filter is available, the ESD monitor must be disabled using the Ambient Recording Log Display.

5.1. Reinstall cards into positions 01A-A2C2,  
01A-A2D2 and  
01A-A2A5.

5.2. Reconnect ESDM cable to connector ESDM-01 and to 01A-A2A5 pin side.

5.3. Press power on switch and wait approximately one minute.

5.4. Use the Ambient Recording Log Display and set the current minimum ESD sense level to zero (monitor disabled).

5.5. Press the IML key.

5.6. -----

<p>DANGER: Line voltage must be removed from mains supply before the line filter is replaced.</p>
---

Replace the line filter including the ESD monitor as soon as spare parts are available.

5.7. Enable the ESD monitor by setting the ESD sense level to 3 or to the last used sense level.

15SEP82 PN 5684086

EC 366589 PEC 366388

3160 MAP F7F0-10

**POWER PROBLEM**

PAGE 1 OF 3

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	014	0202	A
3	013	0204	A

**001**

Symptom:

SC1 diagnostic control bit off.

Note: Permanent PC-reset is suspected.

**(Entry Point A)**

1. Press power-off key.
2. Check for bent or broken pins in positions 01A-A2C2, 01A-A2D2 and 01A-A2E2.
3. Check power controller cards in positions 01A-A2C2, 01A-A2D2, and 01A-A2E2 for correct seating.
4. Check top connectors of previously listed power controller cards for correct plugging and seating. See hints in book Maintenance Information (MI) POWER.
5. Press power-on switch and wait approximately one minute.

Is reference code F7A21181 displayed?

Y N

**002**

**(Entry Point B)**

Is any other reference code displayed?

Y N

**003**

Go to Page 3, Step 013, Entry Point Z.

**004**

Go to corresponding MAP.

2  
A

A  
1

REF.CODE F7A21181

3170

MAP F7F1-2

**Power problem**

PAGE 2 OF 3

**005**

1. Press power-off switch.
2. Remove BPC card from position 01A-A2B2.
3. Remove PC-interface card from position 01A-A2E2.
4. Remove PC-sense card 1 from position 01A-A2D2.
5. Perform wiring check for the following nets. Apply wiring check procedure shown in book Maintenance Information (MI) POWER.

```

|-----|
| Card  |*| 01A-A2D2-P02 (ALD-YB641)
|-----|
|         |
|         | Board wiring
|         |
|-----|
| Card  |=| 01A-A2B2-J12 (ALD-YB421)
|-----|

```

\* '-PC reset C25'

```

|-----|
| Card  |*| 01A-A2B2-G09 (ALD-YB421)
|-----|
|         |
|         | Board wiring
|         |
|-----|
| Card  |=| 01A-A2E2-G07 (ALD-YB661)
|-----|

```

\* '-PC reset C25'

**Any trouble found and repaired?**

Y N

**006**

1. Press power-off key.
2. Replace PC-sense card in position 01A-A2D2.
3. Press power-on switch and wait approximately one minute.

**Is reference code F7A21181 displayed?**

Y N

3 3 3  
B C D

28SEP79 PN 8488501

EC 366335 PEC 366205

3170 MAP F7F1-2



C D  
2 2

REF.CODE F7A21181

Power problem

PAGE 3 OF 3

B  
2

3170

MAP F7F1-3

007

Go to Page 1, Step 002, Entry Point B.

008

1. Press power-off key.
2. Reinstall the previously replaced PC-sense card into position 01A-A2D2.
3. Replace the PC-interface card in position 01A-A2E2.
4. Press power-on switch and wait approximately one minute.

Is the reference code F7A21181 displayed?

Y N

009

Go to Page 1, Step 002, Entry Point B.

010

1. Press power-off key.
2. Reinstall the previously replaced PC-interface card into position 01A-A2E2.
3. Replace the PC-sense card 2 in position 01A-A2C2.
4. Press power-on switch and wait approximately one minute.

Is the reference code F7A21181 displayed?

Y N

011

Go to Page 1, Step 002, Entry Point B.

012

1. Press power-off key.
  2. Probe 01A-A2E2-G07  
'-Reset to PC'  
(ALD-YB661)
  3. Observe probe indicators and press power-on key.
- Is the up indicator of the probe on approximately 1.5 sec. after pressing of the power on key?

(Step 012 continues)

(Step 012 continued)

Y N

013

1. Press power-off key.
2. Replace BPC card in position 01A-A2B2.  
(Entry Point Z)

Go To Map 0204, Entry Point A.

014

Go To Map 0202, Entry Point A.

015

Go to Step 013, Entry Point Z.

28SEP79

PN 8488501

EC 366335

PEC 366205

3170

MAP F7F1-3



## POWER PROBLEM

PAGE 1 OF 3

## ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

## EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0200	A
3	015	0202	A
2	009	0204	A

001

Symptom:

-5.1V, PS104 reference voltage of sense card 1 is < 50%.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 1 in pos. 01A-A2D2.
2	PC sense card 2 in pos. 01A-A2C2.
3	A54 sense wiring on board 01A-A2.
4	Paddle card in pos. 01A-A2A3.

## (Entry Point A)

1. Press power-off key.
2. Replace PC-sense card 1 in position 01A-A2D2.
3. Press power-on switch and wait approximately one minute.

Is reference code F7A41181 displayed?

Y N

002

Go to Page 2, Step 005, Entry Point Y.

2  
A

© Copyright IBM Corp. 1979

REF.CODE F7A41181

4331

28SEP79 PN 8488502

EC 366335 PEC 366205

3180 MAP F7F2-1

A  
1

REF.CODE F7A41181

Power Problem

PAGE 2 OF 3

003

1. Press power-off key.
2. Reinstall the previously replaced PC-sense card into position 01A-A2D2.
3. Exchange power controller sense cards in position 01A-A2D2 and 01A-A2C2.
4. Press power-on switch and wait approximately one minute.

Is reference code F7A41181 displayed?

Y N

004

1. Press power-off key.
2. Replace sense card in position 01A-A2D2.
3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

005

(Entry Point Y)

Is the power complete indicator on after execution of the power-on sequence?

Y N

006

Is any reference code displayed?

Y N

007

(Entry Point C)

Go To Map 0200, Entry Point A.

008

Go to MAP for displayed reference code.

009

Go To Map 0204, Entry Point A.

B C

B C

3180

MAP F7F2-2

010

Go to MAP for displayed reference code.

011

1. Press power-off key.
2. Connect CE-meter (Range 5VDC)  
-lead to 01A-A2D2-S04  
'-1.5V sense -5.1V 01A-C2 A45'  
(ALD-YB643)  
+lead to any D08 pin.  
'DC-GND'
3. Press power-on switch and wait approximately one minute.

Is the voltage between -0.8VDC and -1.7VDC

?

Y N

012

1. Press power-off key.
2. Connect CE-meter (Range 5VDC)  
-lead to 01A-A2A3-D09  
'-1.5V sense -5.1V 01A-C2 A45'  
(ALD-YB241)  
+lead to any D08 pin.  
'DC-GND'
3. Press power-on switch and wait approximately one minute.

Is the voltage between -0.8VDC and

-1.7VDC ?

Y N

013

1. Press power-off key.
2. Connect CE-meter (Range 15VDC)  
-lead to 01A-A2A3-807  
'-5.1V sense PS104 A-C2 A45/H05'  
(ALD-YB241)  
+lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Are -5.1VDC present?

Y N

28SEP79

PN 8488502

EC 366335

PEC 366205

3180

MAP F7F2-2

3 3 3 3  
D E F G

E F G  
2 2 2

REF.CODE F7A41181

D  
2

3180

MAP F7F2-3

Power Problem

PAGE 3 OF 3

014

1. Press power-off key.
2. Connect CE-meter (Range 15VDC)  
-lead to 01A-A2B5-A01  
'-5.1V sense P3104 A-C2 A45/H05'  
(ALD-YC831)  
+lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Are 5.1VDC present?

Y N

015

(Entry Point B)

Go To Map 0202, Entry Point A.

016

1. Press power-off key.
  2. Check and repair wiring between  
01A-A2A3-B07 and  
01A-A2B5-A01  
'-5.1V sense PS104 A-C2 A45/H05'  
(ALD-YB241)  
(ALD-YC831)
- Go to Page 2, Step 005, Entry Point Y.

017

1. Press power-off key.
  2. Repair or replace paddle card in position  
01A-A2A3.
- Go to Page 2, Step 005, Entry Point Y.

018

1. Press power-off key.
  2. Check and repair wiring between  
01A-A2D2-S04 and  
01A-A2A3-D09  
'-1.5V sense -5.1V 01A-C2 A45'  
(ALD-YB643)  
(ALD-YB241)  
or replace board 01A-A2.
- Go to Page 2, Step 005, Entry Point Y.

019

- Suspect operation control program error.  
Use diagnostic diskette and perform a power  
on retry.  
If retry fails.  
Go to Step 015, Entry Point B.

28SEP79 PN 8488502

EC 366335 PEC 366205

3180 MAP F7F2-3



**POWER PROBLEM**

PAGE 1 OF 3

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0200	A
3	014	0202	A
2	009	0275	A

**001**

Symptom:

-5.1V PS104 reference voltage for DAC test of sense card 1 in position 01A-A2D2 <88%.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 1 in pos.01A-A2D2.
2	PC sense card 2 in pos.01A-A2C2.
3	A45 sense wiring on board 01A-A2.
4	paddle card in pos.01A-A2A3.

**(Entry Point A)**

- 1.Press power-off key.
- 2.Replace PC-sense card 2 in position 01A-A2D2.
- 3.Press power-on switch and wait approximately one minute.

Is reference code F7A41281 displayed?

Y N

**002**

Go to Page 2, Step 005, Entry Point Y.

A  
1

REF.CODE F7A41281

Power Problem

PAGE 2 OF 3

003

1. Press power-off key.
2. Reinstall the previously replaced PC-sense card into position 01A-A2D2.
3. Exchange power controller sense cards in position 01A-A2D2 and 01A-A2C2.
4. Press power-on switch and wait approximately one minute.

Is reference code F7A412181 displayed?

Y N

004

1. Press power-off key.
2. Replace sense card in position 01A-A2D2.
3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?

Y N

005

(Entry Point Y)

1. Press power-on switch and wait approximately one minute.
- Is the power complete indicator on after execution of the power-on sequence?

Y N

006

Is any reference code displayed?

Y N

007

(Entry Point C)

Go To Map 0200, Entry Point A.

008

Go to MAP for displayed reference code.

B C D

B C D

3190

MAP F7F3-2

009

Go To Map 0275, Entry Point A.

010

Go to MAP for displayed reference code.

011

1. Press power-off key.
2. Connect CE-meter (Range 5VDC)
  - lead to 01A-A2D2-S04
  - '-1.5V sense -5.1V 01A-C2 A45'
  - (ALD-YB643)
  - +lead to any D08 pin.
  - 'DC-GND'
3. Press power-on switch and wait approximately one minute.

Is the voltage between -1.3VDC and -1.7VDC

?

Y N

012

1. Press power-off key.
2. Connect CE-meter (Range 5VDC)
  - lead to 01A-A2A3-D09
  - '-1.5V sense -5.1V 01A-C2 A45'
  - (ALD-YB241)
  - +lead to any D08 pin.
  - 'DC-GND'
3. Press power-on switch and wait approximately one minute.

Is the voltage between -1.3VDC and -1.7VDC ?

Y N

3 3 3  
E F G

28SEP79 PN 8488503

EC 366335 PEC 366205

3190 MAP F7F3-2



E F G  
2 2 2

REF.CODE F7A41281

3190

MAP F7F3-3

**Power Problem**

PAGE 3 OF 3

**013**

1. Press power-off key.
2. Connect CE-meter (Range 15VDC)  
-lead to 01A-A2A3-B07  
'-5.1V sense PS104 A-C2 A45/H05'  
(ALD-YB241)  
+lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

**Are -5.1VDC present?**

Y N

**014**

(Entry Point B)

Go To Map 0202, Entry Point A.

**015**

1. Press power-off key.
  2. Repair or replace paddle card in position 01A-A2A3.
- Go to Page 2, Step 005, Entry Point Y.

**016**

1. Press power-off key.
  2. Check and repair wiring between 01A-A2D2-S04 and 01A-A2A3-D09.  
'-1.5V sense -5.1V 01A-C2 A45'  
(ALD-YB643)  
(ALD-YB241)  
or replace board 01A-A2.
- Go to Page 2, Step 005, Entry Point Y.

**017**

Suspect operation control program error.  
Use diagnostic diskette and perform a power on retry.  
If retry fails.  
Go to Step 014, Entry Point B.

28SEP79

PN 8488503

EC 366335

PEC 366205

3190

MAP F7F3-3



**POWER PROBLEM**

PAGE 1 OF 3

**ENTRY POINTS**

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	1	001

**EXIT POINTS**

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	011	0200	A
3	015	0202	A
2	013	0204	A
2	007	0250	A

**001**

Symptom:

-5.1V PS104 on SC1 and/or SC2 &gt;116%.

Suspected errors or FRU's (including intermittent errors)	
1	PC sense card 1 in pos. 01A-A2D2.
2	PC sense card 2 in pos. 01A-A2C2.
3	A45 sense wiring on board 01A-A2A3.
4	Paddle card in pos. 01A-A2A3.

**(Entry Point A)**

1. Press power-off key.
2. Replace PC sense card 1 in position 01A-A2D2.
3. Press power-on switch and wait approximately one minute.

Is reference code F7A43181 displayed?

Y N

**002**

Go to Page 2, Step 010, Entry Point C.

2  
A

A  
1

REF.CODE F7A43181

Power Problem

PAGE 2 OF 3

003

1. Press power-off key.
2. Reinstall the previously replaced PC sense card into position 01A-A2D2.
3. Replace the PC-sense card 2 in position 01A-A2C2.
4. Press power-on switch and wait approximately one minute.

Is the reference code F7A43181 displayed?

Y N

004

Go to Step 010, Entry Point C.

005

1. Press power-off key.
2. Reinstall the previously replaced PC-sense card into position 01A-A2C2.
3. Connect CE-meter (Range 5VDC)
  - lead to 01A-A2D2-S04
  - '-1.5V sense -5.1V 01A-C2 A45' (ALD-YB643)
  - +lead to any D08 pin.
  - 'DC-GND'
4. Press power-on switch and wait approximately one minute.

Is the voltage below 1.7VDC?

Y N

006

1. Press power-off key.
2. Connect CE-meter (Range 15VDC)
  - lead to 01A-A2A3-B07
  - '-5.1V sense PS104 A-C2 A45/H05' (ALD-YB241)
  - +lead to any D08 pin.
3. Press power-on switch and wait approximately one minute.

Is the voltage below 5.7VDC?

Y N

3  
B C D

C D

3200

MAP F7F4-2

007

Go To Map 0250, Entry Point A.

008

1. Press power-off key.
  2. Repair or replace paddle card in position 01A-A2A3.
- (Entry Point B)
3. Press power-on switch and wait approximately one minute.

Is reference code F7A43181 displayed?

Y N

009

Is the power complete indicator on after execution of the power-on sequence?

Y N

010

(Entry Point C)

Is any reference code displayed?

Y N

011

Go To Map 0200, Entry Point A.

012

Go to MAP for displayed reference code.

013

(Entry Point D)

Go To Map 0204, Entry Point A.

014

Go to Page 3, Step 015, Entry Point E.

28SEP79

PN 8488505

EC 366335

PEC 366205

3200

MAP F7F4-2

B  
2

REF.CODE F7A43181

3200

MAP F7F4-3

**Power Problem**

PAGE 3 OF 3

**015**

**(Entry Point E)**

Suspect operation control program error. Use diagnostic diskette and perform a power on retry. If retry fails,

**Go To Map 0202, Entry Point A.**

28SEP79 PN 8488505

EC 366335 PEC 366205

3200 MAP F7F4-3

