# Volume Table of Contents



**Volume:** 09
**Title:** MI MAPs F76A-F7B5
**Machine Type:** 4331-2/4331-11
**Power Design Level:** 5
**B/M Number 4331-2:** 5683207
**B/M Number 4331-11:** 4687170





13SEP82 PN 4687017

EC 366582 PEC EC366493

## POWER PROBLEM



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0280 | X | 3 | 012 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 5 | 027 | 0200 | A |
| 5 | 030 | 0202 | A |
| 4 | 019 | 0204 | A |
| 2 | 005 | 0212 | A |
| 3 | 013 | 0280 | A |
| 2 | 003 | 0293 | A |
| 6 | 041 | 0297 | A |

**001**

Symptom:
PS102 +6.8V to PS114 on 01A-C1 out of tolerance, A61.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | TR102 primary fuse. |
| 2 | PS102-CP06 tripped. |
| 3 | Relay PCC-K03 failing. |
| 4 | PS114 power module 01A-C1F5/G5/H5 |
| 5 | PS114 control card 01A-C1D4. |
| 6 | PC sense card 01A-A2D2. |
| 7 | TR102. |
| 8 | PS102. |
| 9 | A61 sense wiring. |
| 10 | +6.8V bulk distribution. |

**(Entry Point A)**

Press power-off key.

**Is PS102-CP06 tripped?**

Y N

5 2
A B

002
(Entry Point D)

1.Switch PCC-CB01 off.
2.Check primary fuse TR102-F01.

**Is the fuse TR102-F01 ok?**
Y N

003
**Go To Map 0293, Entry Point A.**

004

```
|--------------------------------|
| DANGER:                        |
| Line voltage present inside of |
| the PCC-box.                   |
|--------------------------------|
```

1.Switch PCC-SW01 off (if not already off).
2.Open PCC box and connect CE-meter (range 500VAC)
to connector PCC-26-001
and to connector PCC-26-002
(ALD-YA321)
3.Switch PCC-CB01 on.
4.Observe meter, press power-on switch and wait approximately one minute.

**Was line voltage at least momentarily present?**
Y N

**005**
**Go To Map 0212, Entry Point A.**

**006**
**Is reference code F7C21201 displayed?**
Y N

**007**
Go to MAP for displayed reference code.
If no reference code is displayed,
**Go to Page 5, Step 027, Entry Point C.**

**008**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to PS102-TB07
'+6.8V FL PS102 to 01A-C1 PS114'
-lead to PS102-TB08
(ALD-YA433)
The leads of your meter must be connected without removing the FDS cable.
3.Press power-on switch and wait approximately one minute.

**Was approximately +6.8VDC at least least momentarily present?**
Y N

**009**
1.Check connector PS102-04 for correct seating.
2.Connect CE-meter (range 15VAC) to connector PS102-04-001
'7.1VAC CP06'
and to connector PS102-04-004
'center'
(ALD-YA433)
3.Press power-on switch, observe meter and wait approximately one minute.
4.Press power-off switch.
5.Disconnect CE-meter from connector PS102-04-001.
6.Connect the lead just disconnected before to
connector PS102-04-012
'7.1VAC CP06'
7.Press power-off switch.
8.Observe meter, press power-on switch and wait approximately one minute.

**Was approximately 7.1VAC at least momentarily present for both measurements?**
Y N

**010**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace transformer TR102.
**Go to Page 4, Step 019, Entry Point Z.**

**011**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace power supply PS102.
**Go to Page 4, Step 019, Entry Point Z.**

**012**
**(Entry Point X)**

**Have you already performed the IPS service check for PS114?**
Y N

**013**
Perform IPS service check for PS114 according to Map 0280.
Return to ENTRY POINT X of this Map.
**Go To Map 0280, Entry Point A.**

014
**Any error detected and repaired?**
Y N

**015**
1.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2D2-D05
'+1.5V sense +6.8VDC 01A-C1 A61'
(ALD-YB641)
-lead to any D08 pin.
2.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least least momentarily present?**
Y N

**016**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC)
+lead to 01A-C1B4-B10
'+6.8V FL sens PS102 01A-C1 A61'
(ALD-YA529)
-lead to 01A-C1H6-00A
'-6.8V FL bulk to PS114 output'
(ALD-YA523)
3.Press power-on switch and wait approximately one minute.

**Was approximately +6.8VDC at least momentarily present?**
Y N

**017**
1.Connect CE-meter (range 1.5VDC)
+lead to 01A-C1G7-00A
-lead to 01A-C1H6-00A
(ALD-YA523)
2.Press power-on switch and wait approximately one minute.

**Was approximately +6.8VDC at least momentarily present?**
Y N

**018**
1.Press power-off switch.
2.Repair or replace
cabling from PS102-TB07 and PS102-TB08
(ALD-YA433)
to 01A-C1H6 and 01A-C1G7
(ALD-YA523)
**Go to Step 019, Entry Point Z.**





**019**
1.Press power-off switch.
2.Repair wire from 01A-C1G7-00B
(ALD-YA523)
to 01A-C1B4-B10
'+6.8V FL sense PS102 01A-C1 A61'
(ALD-YA529)

**(Entry Point Z)**

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

**020**
1.Connect CE-meter (range 1.5VDC)
+lead to paddle card connector exit
01A-A2A2-D11
'+1.5V sense +6.8V 01A-C1 A61'
(ALD-YB241)
-lead to any D08 pin.
2.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

**021**
1.Press power-off switch.
2.Connect CE-Meter (range ohm X1) to
01A-A1A2-D11
'+1.5V sense +6.8V 01A-C1 A61'
(ALD-YB241)
and to any D08 pin.
3.Remove PC sense card 1 from 01A-A2D2 and paddle card from 01A-A2A2.

**Is the resistance below 100 ohm?**
Y N

**022**
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-C1B4 to 01A-A2A2.
**Go to Step 019, Entry Point Z.**

023
There is a short circuit to ground. Check and repair wiring of signal
'+1.5V sense +6.8V 01A-C1 A61'
(ALD-YB241)
or replace board 01A-A2.
**Go to Page 4, Step 019, Entry Point Z.**

024
1.Press power-off key.
2.Repair sense wiring from 01A-A2D2-D05
'+1.5V sense +6.8V 01A-C1 A61'
(ALD-YB641)
to 01A-A2A2-B11
'+1.5V sense +6.8V 01A-C1 A61'
(ALD-YB241)
or replace board 01A-A2.
**Go to Page 4, Step 019, Entry Point Z.**

025
1.Press power-off switch.
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

026
**(Entry Point H)**

**Is any reference code displayed?**
Y N

027
**(Entry Point C)**

**Go To Map 0200, Entry Point A.**

028
**Is the reference code F7C21201 displayed?**
Y N

P Q R



029
1.Press power-off switch.
2.Replace sense card which is now located in position 01A-A2C2.
**Go to Page 4, Step 019, Entry Point Z.**

030
Suspect wiring problem.
Perform "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER.
If no error detected,
**Go To Map 0202, Entry Point A.**

031
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

032
**Go to Step 026, Entry Point H.**

033
**Go to Page 4, Step 019, Entry Point Z.**

034
**Go to Page 4, Step 019, Entry Point Z.**

035
1.Switch PS102-CP06 on.
2.Press power-on switch and wait approximately one minute.

**Is reference code F7C21201 displayed?**
Y N

036
**Is any other reference code displayed?**
Y N

**037**
**Go to Page 4, Step 019, Entry Point Z.**

**038**
Go to corresponding MAP

**039**
**Is PS102-CP06 tripped?**
**Y N**

**040**
**Go to Page 2, Step 002, Entry Point D.**

**041**
**Go To Map 0297, Entry Point A.**

## POWER PROBLEM



**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 |
| 6 | 033 | F76F | H |
| 10 | 061 | 02A0 | A |
| 5 | 026 | 0200 | A |
| 9 | 054 | 0202 | A |
| 6 | 032 | 0204 | A |
| 3 | 006 | 0212 | A |
| 6 | 035 | 0292 | A |
| 2 | 004 | 0293 | A |

**001**

Symptom:

PS102 +10.1V on 01A-B2 out of tolerance, A39.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | TR102 primary fuse. |
| 2 | PS102-CP03 tripped. |
| 3 | Relay PCC-K03 failing. |
| 4 | PS111 power module 01A-C1E4. |
| 5 | PS111 control card 01A-C1C2. |
| 6 | PC sense card 01A-A2D2. |
| 7 | A39 sense wiring. |
| 8 | 10.1VDC distribution. |
| 9 | PS102. |
| 10 | TR102. |
| 11 | AC-distribution from PCC to TR102 |

**(Entry Point A)**

Press power-off key.

**Is PS102-CP03 tripped?**

Y N

9 2
A B

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

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

**Is the *power complete* indicator on?**
Y N

**003**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Check primary fuse TR102-F01. (ALD-YA433).

**Is fuse TR102-F01 ok?**
Y N

**004**
**Go To Map 0293, Entry Point A.**

**005**
**(Entry Point M)**

```
|---------------------|
| DANGER              |
| Line Voltage present|
| during following    |
| measurements        |
|---------------------|
```

1.Switch PCC-SW01 off (if not already off).
2.Connect CE-meter (range 500VAC) to connector PCC-26-001 and to connector PCC-26-002. (ALD-YA321)
3.Switch PCC-CB01 on.
4.Observe meter press power-on switch and wait approximately one minute.

**Was Line voltage at least momentarily present?**
Y N

**006**
**Go To Map 0212, Entry Point A.**

**007**
**Is reference code F7C21401 displayed?**
Y N

**008**
Go to MAP for displayed reference code.
If no reference code is displayed,
**Go to Page 5, Step 026, Entry Point Y.**

**009**
1. Press POWER-OFF key.
2. Disconnect FDS cables from PS102-TB01 and PS102-TB05.
3. Connect CE-meter (range 15VDC) according to following table and measure the output voltages of PS102.
4. Press POWER-ON switch and wait approximately one minute.

| Normal Voltage | + Lead | - Lead | Lower Limit |
|---|---|---|---|
| + 5.1V | PS102-TB01-001 | PS102-TB02-001 | +4.6V |
| +10.1V | PS102-TB05-001 | PS102-TB06-001 | +8.2V |

**Are both voltages below its lower limit?**
Y N

**010**
1.Press POWER-OFF key.
2.Reconnect FDS cables to PS102-TB01 and PS102-TB05.
3.Connect CE-meter (range 15VDC)
+lead to 01A-B2B2-E14
'+10.1V sense PS102 01A-B2 A39'
(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 approximatley +10.1VDC at least momentarily present?**
Y N

**011**
1.Press power-off key.
2.Ensure that connectors on 01A-B2B2-E14 and 01A-B2W3-E14 and 01A-B2B3-E14 are seated correctly.
3.Connect CE-meter (range 15VDC)
+lead to 01A-B2B3-E14 or 01A-B2W3-E14
'+10.1V PS102 to 01A-B2 IC 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 approximately +10.1VDC at least momentarily present?**
Y N

**012**
**Go to Page 6, Step 038, Entry Point G.**

**013**
Board wiring of +10.1V net is defective.
1.Press power-off key.
2.Replace board 01A-B2.
**Go to Page 6, Step 032, Entry Point Z.**

**014**
1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2D2-B06
'+1.5V sense +10.1V 01A-B2 A39'
(ALD-YB641)
-lead to any D08 pin.
3.Carefully watch your meter.
4.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

**015**
**Is the voltage measured in previous step higher than 2.0VDC?**
Y N

**016**
1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
+lead to paddle card connector exit 01A-A2A2-D12
'+1.5V sense +10.1V 01A-B2 A39'
(ALD-YB241)
-lead to any D08 pin.
3.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

017
1.Press power-off key.
2.Connect CE-meter (range ohm x1) to any D08 pin and to 01A-A2A2-D12 '+1.5V sense +10.1V 01A-B2 A39' (ALD-YB241).
3.Remove PC sense card from position 01A-A2D2.

**Is the resistance below 200 ohm?**
Y N

018
**(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 6, Step 032, Entry Point Z.**

019
Do not disconnect the CE-meter.
1.Remove paddle card from position 01A-A2A2.

**Is the resistance below 200 ohm?**
Y N

020
**Go to Step 018, Entry Point L.**

021
There is a short circuit between the signal '+1.5V sense +10.1V 01A-B2 A39'
(ALD-YB641)
(ALD-YB241)
and DC-GND.
Check and repair board wiring or replace board 01A-A2.
**Go to Page 6, Step 032, Entry Point Z.**

022
1.Press power-off key.
2.Repair sense wiring from 01A-A2D2-B06 '+1.5V sense +10.1V 01A-B2 A39' (ALD-YB641) to 01A-A2A2-D12 '+1.5V sense +10.1V 01A-B2 A39' (ALD-YB241) or replace board 01A-A2.
**Go to Page 6, Step 032, Entry Point Z.**

023
1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A2.
**Go to Page 6, Step 032, Entry Point Z.**

024
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

025
**(Entry Point H)**

**Is any reference code displayed?**
Y N

026
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

027
**Is reference code F7C21401 displayed?**
Y N

028
1. Press power-off key.
2. Replace PC sense card in position 01A-A2C2.

**Go to Step 032, Entry Point Z.**

029
Suspect power program error. Retry power-on with the diagnostic diskette. If the problem still exists,
**Go to Page 9, Step 054, Entry Point X.**

030
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

031
**Go to Page 5, Step 025, Entry Point H.**

032
**(Entry Point Z)**

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

033
**Go To Map F76F, Entry Point H.**

034
**(Entry Point K)**

**Run voltage measurement program. Is only +10.1V PS102 on 01A-B2 out of tolerance (Address 85, bit 6)?**
Y N

035
**Go To Map 0292, Entry Point A.**

036
1. Connect CE-meter (range 15VDC)
+lead to 01A-B2B2-E14
'+10.1V sense PS102 01A-B2 A39'
(ALD-YC851)
-Lead to any D08 pin
'DC-GND'

**Is +10.1VDC +/-1.0V present?**
Y N

037
1. Connect CE-meter (range 15VDC)
+lead to 01A-B2B3-E14
or 01A-B2W3-E14
'+10.1V PS102 to 01A-B2 IC Adapt'
-lead to any D08 pin
'DC-GND'
(ALD-YC851)

**Is +10.1VDC +/-1.0V present?**
Y N

038
**(Entry Point G)**

1. Connect CE-meter (range 15VDC)
+lead to PS102-TB05-001 or to PS102-TB05-002
'+10.1V PS102 to 01A-C1 PS111'
-lead to PS102-TB06-001 or to PS102-TB06-002
'DC-GND'
(ALD-YA433).
2. Press power-on switch and wait approximately one minute.

**Was approximately +10.0VDC at least momentarily present?**
Y N

**039**
1.Press power-off key.
2.Check connector PS102-03 for correct seating.
3.Connect CE-meter (range 15VAC) to connector PS102-03-001 or to connector PS102-03-004 '10.7VAC CP03' and to connector PS102-03-002 or PS102-03-003. 'center' (ALD-YA433).
4.Press power-on switch and wait approximately one minute.

**Was approximatley 10.7VAC at least momentarily present?**
Y N

**040**
**Go to Step 042, Entry Point J.**

**041**
1.Press power off switch.
2.Connect CE-meter (range15VAC) to connector PS102-03-005 or connector PS102-03-006 '10.7VAC CP03' and to connector PS102-03-002 or connector PS102-03-003 'center' (ALD-YA433)
3.Press power on switch and wait approximately one minute.

**Was approximately 10.7VAC at least momentarily present?**
Y N





**042**
**(Entry Point J)**

1.Press power off switch.
2.Switch PCC-CB01 off.
3.Replace transformer TR102.
**Go to Page 6, Step 034, Entry Point K.**

**043**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace power supply PS102.
**Go to Page 6, Step 032, Entry Point Z.**

**044**

1.Press power-off key.
2.Perform wiring check for the following nets according to the "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER. Repair or replace defective cable.

```
|-------| | PS102-TB05-001
| TB05  |*| (ALD-YA433)
|-------| |
          | FDS-Cable
          |
|-------| | 01A-C1E2-00B
| Conn. |=| (ALD-YA523)
|-------| |
* '+10.1V PS102 to
  01A-C1 PS111'

|-------| | PS102-TB06-022
| TB06  |*| (ALD-YA433)
|-------| |
          | FDS-Cable
          |
|-------| | 01A-C1F1-00A
| Conn. |=| (ALD-YA523)
|-------| |
* '(DC-GND PS102 to
  01A-C1 PS111)'

|-------| | 01A-C1E2-00B
| Conn. |*| (ALD-YA523)
|-------| |
          | Cable
          |
|-------| | 01A-B2B3-E14
| Conn. |=| (ALD-YC851)
|-------|
* '+10.1V PS102 to
  01A-B2 IC ADAPT'
```

**Go to Page 6, Step 032, Entry Point Z.**



**045**

1.Press power-off key.
2.Remove all cards from board 01A-B2.
3.Connect CE-meter (range 15VDC)
 +lead to 01A-B2B2-E14
 '+10.1V sense PS102 01A-B2 A39'
 (ALD-YC851)
 -lead to any D08 pin.
4.Press power-on switch and wait approximately one minute.

**Was +10.1VDC +/- 1.0V present?**
Y N

**046**

1.Press power-off key.
2.Suspect sense wiring error on board 01A-B2.
 Repair board wiring or replace board 01A-B2.
3.Press power-on switch and wait approximately one minute.
**Go to Page 6, Step 034, Entry Point K.**

**047**

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 wait approximately one minute and observe your meter reading. 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 034, Entry Point K.**

048
(Entry Point F)

1.Press power-off key.
2.Check the accuracy of your CE-meter according to "Hints For Power MAP Usage" in book MI POWER, Vol.16.
3.Check +1.5V voltage at PC sense card 1 entry:
Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-B06
'+1.5V sense +10.1V 01A-B2 A39'
-lead to any D08 pin.
'DC-GND'
(ALD-YB641).

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

049
Check +1.5 voltage at connector exit:
1.Connect CE-meter (range 1.5V DC)
+lead to 01A-A2A2-D12.
'+1.5V sense +10.1V 01A-B2 A39'
-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

050
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.
**Go to Page 6, Step 032, Entry Point Z.**

051
1.Press power-off key.
2.Repair wiring or replace board 01A-A2.
**Go to Page 6, Step 032, Entry Point Z.**

Y

A 1 Y 2630 MAP F76B-9

052
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 6 out of tolerance?**
Y N

053
1.Press power-off key.
2.Replace PC sense card which is now in position 01A-A2C2.
**Go to Page 6, Step 032, Entry Point Z.**

054
(Entry Point X)

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

055
1.Switch PS102-CP03 on.
2.Press power-on switch and wait approximately one minute.

**Is reference code F7C21401 displayed?**
Y N

056
**Is any other reference code displayed?**
Y N

057
**Go to Page 6, Step 032, Entry Point Z.**

058
Go to corresponding MAP

059
**Is PS102-CP03 tripped?**
Y N

060
**Go to Page 2, Step 002, Entry Point B.**

061

Go To Map 02A0, Entry Point A.

## POWER PROBLEM



### ENTRY POINTS

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0280 | X | 3 | 012 |

### EXIT POINTS

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 5 | 027 | 0200 | A |
| 5 | 030 | 0202 | A |
| 3 | 011 | 0204 | A |
| 2 | 005 | 0212 | A |
| 3 | 013 | 0280 | A |
| 2 | 003 | 0293 | A |
| 6 | 041 | 0295 | A |

**001**

Symptom:
PS102 +7.1V to PS112 on 01A-C1 out of tolerance, A57.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | Primary fuse TR102-F01. |
| 2 | PS102-CP05 tripped. |
| 3 | Relay PCC-K03 failing. |
| 4 | PS112 power module 01A-C1H4. |
| 5 | PS113 power module 01A-C1/F3/G3/H3 and 01A-C1E3 if present. |
| 6 | PS112 control card 01A-C1C4. |
| 7 | PS113 control card 01A-C1D2. |
| 8 | PC sense card 01A-A2D2. |
| 9 | TR102. |
| 10 | PS102. |
| 11 | A57 sense wiring. |
| 12 | 7.1V bulk distribution. |

**(Entry Point A)**

Press power-off key.

(Step 001 continues)

(Step 001 continued)

**Is PS102-CP05 tripped?**

Y N

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

1.Switch PCC-CB01 off.
2.Check primary fuse TR102-F01.

**Is the primary fuse TR102-F01 ok?**

Y N

**003**
**Go To Map 0293, Entry Point A.**

**004**

```
|-------------------------------|
| DANGER                        |
| Line voltage present inside of |
| the PCC-box.                  |
|-------------------------------|
```

1.Switch PCC-SW01 off (if not already off).
2.Open PCC-box and connect CE-meter
(range 500VAC)
to connector PCC-26-001
and to connector PCC-26-002
(ALD-YA321)
3.Switch PCC-CB01 on.
4.Observe meter, press power-on switch
and wait approximately one minute.

**Was line voltage at least momentarily present?**

Y N

**005**
**Go To Map 0212, Entry Point A.**

**006**

**Is reference code F7C21601 displayed?**

Y N

6 3 3
A B C

**007**
Go to MAP for displayed reference code.
If no reference code is displayed,
**Go to Page 5, Step 027, Entry Point C.**

**008**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to connector PS102-09-001
'+7.1V FL PS102 to 01A-C1 PS112'
-lead to connector PS102-09-002
(ALD-YA433)
The leads or your meter must be connected without removing the FDS cables.
3.Press power-on switch and wait approximately one minute.

**Was approximately +7.1VDC at least momentarily present?**
Y N

**009**
1.Press power-off switch.
2.Check connector PS102-05 for correct seating.
3.Connect CE-meter (range 15VAC)
to connector PS102-05-001
'7.5VAC CP05'
and to connector PS102-05-002
'center'
(ALD-YA433)
4.Press power-on switch, observe meter and wait approximately one minute.
5.Press power-off switch.
6.Disconnect CE-meter from connector PS102-05-001.
7.Connect the lead just disconnected before to connector PS102-05-005
'7.5VAC F03'
8.Observe meter and press power-on switch and wait approximately one minute.

(Step 009 continues)

(Step 009 continued)
**Was approximately 7.5VAC at least momentarily present for both measurements?**
Y N

**010**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace transformer TR102.
**Go to Step 011, Entry Point Z.**

**011**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace power supply PS102.

**(Entry Point Z)**

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

**012**
**(Entry Point X)**

**Have you already performed the the IPS service check for PS112 and PS113?**
Y N

**013**
Perform IPS service check for PS112 and for PS113 according to MAP 0280. Return to ENTRY POINT X of this MAP if no error detected.
**Go To Map 0280, Entry Point A.**

**014**
**Any error detected and repaired?**
Y N

**015**
1.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2D2-B11
'+1.5V sense +7.1V 01A-C1 A57'
(ALD-YB641)
-lead to any D08 pin.
2.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

**016**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC)
+lead to 01A-C1B4-B13
'+7.1V FL sense PS102 01A-C1 A57'
(ALD-YA529)
-lead to 01A-C1J4-B
'DC GND'
(ALD-YA535)
2.Press power-on switch and wait approximately one minute.

**Was approximately +7.1VDC at least momentarily present?**
Y N

**017**
1.Connect CE-meter (range 1.5VDC)
+lead to 01A-C1E7-00A
-lead to 01A-C1F6-00A
(ALD-YA523)
2.Press power-on switch and wait approximately one minute.

**Was approximately +7.1VDC at least momentarily present?**
Y N

**018**
1.Press power-off switch.
2.Repair or replace cabling from connector PS102-09
(ALD-YA433)
to 01A-C1E7 and 01A-C1F6.
(ALD-YA523).
**Go to Page 3, Step 011, Entry Point Z.**

**019**
1.Press power-off switch.
2.Repair wire from 01A-C1E7-00B
(ALD-YA523)
to 01A-C1B4-B13 (ALD-YA529)
'+7.1V FL sense PS102 01A-C1 A57'
**Go to Page 3, Step 011, Entry Point Z.**

**020**
1.Connect CE-meter (range 1.5VDC)
+lead to paddle card connector exit
01A-A2A2-D07
'+1.5V sense +7.1V 01A-C1 A57'
(ALD-YB241)
-lead to any D08 pin.
2.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

**021**
1.Press power-off switch.
2.Connect CE-meter (range ohm X1)
to 01A-A2D2-B11
'+1.5V sense +7.1V 01A-C1 A57'
(ALD-YB641)
and to any D08 pin.
3.Remove PC sense card 1 from 01A-A2D2 and paddle card from 01A-A2A2.

**Is the resistance below 100 ohm?**
Y N

**022**
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-C1B4 to 01A-A2A2.
**Go to Page 3, Step 011, Entry Point Z.**

**023**
There is a short circuit to ground.
Check and repair wiring of signal '+1.5V sense +7.1V 01A-C1 A57' (ALD-YB641)
or replace board 01A-A2.
**Go to Page 3, Step 011, Entry Point Z.**

**024**
1.Press power-off key.
2.Repair sense wiring from 01A-A1D2-B11 '+1.5V sense +7.1V 01A-C1 A57' (ALD-YB641)
to 01A-A2A2-D07 '+1.5V sense +7.1V 01A-C1 A57' (ALD-YB241)
or replace board 01A-A2.
**Go to Page 3, Step 011, Entry Point Z.**

**025**
1.Press power-off switch.
2.Exchange both PC sense cards in position 01A-A2D2 and 01A-A2C2.
3.Press power-on switch and wait approximately one minute.

**Is the "power complete" indicator on?**
Y N

**026**
**(Entry Point H)**

Is any reference code displayed?

Y N





**027**
**(Entry Point C)**

**Go To Map 0200, Entry Point A.**

**028**
Is reference code F7C21601 displayed?

Y N

**029**
1.Press power-off switch.
2.Replace sense card which is now located in position 01A-A2C2.
**Go to Step 027, Entry Point C.**

**030**
1.Press power-off switch.
2.Suspect wiring problem. Check wiring according to "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER. If no error detected,
**Go To Map 0202, Entry Point A.**

**031**
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

**032**
**Go to Step 026, Entry Point H.**

**033**
**Go to Page 3, Step 011, Entry Point Z.**

**034**
**Go to Page 3, Step 011, Entry Point Z.**

**035**
1.Switch PS102-CP05 on.
2.Press power-on switch and wait approximately one minute.

**Is reference code F7C21601 displayed?**
Y N

**036**
**Is any other reference code displayed?**
Y N

**037**
**Go to Page 3, Step 011, Entry Point Z.**

**038**
Go to corresponding MAP

**039**
Press power-off switch.

**Is PS102-CP05 tripped?**
Y N

**040**
**Go to Page 2, Step 002, Entry Point B.**

**041**
**Go To Map 0295, Entry Point A.**

## POWER PROBLEM



**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 |
| 5 | 030 | 0200 | A |
| 6 | 035 | 0202 | A |
| 6 | 038 | 0204 | A |
| 9 | 047 | 0212 | A |
| 11 | 064 | 0292 | A |
| 2 | 004 | 0293 | A |
| 11 | 065 | 0299 | A |

**001**

Symptom:

PS102 +5.1V on 01A-B1 out of tolerance, A54.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PS102-CP02 tripped. |
| 2 | PC sense card 01A-A2D2. |
| 3 | +5.1VDC distribution (via 01A-B2) |
| 4 | A54 sense wiring. |
| 5 | Primary fuse TR102-F01. |
| 6 | PS102. |
| 7 | TR102. |
| 8 | AC distribution from PCC-box to TR102. |

**(Entry Point A)**

**Is PS102-CP02 tripped?**

Y N

1 1 2
A B

**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**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Check primary fuse TR102-F01. (ALD-YA431).

**Is fuse TR102-F01 ok?**
Y N

**004**
**Go To Map 0293, Entry Point A.**

**005**
Connect CE-meter (range 15VDC) to PS102-TB01-001 (+) and to PS102-TB02-001 (-)
'+5.1V PS102 to 01A-B2 IC adapt'
(ALD-YA431)
Press power-on switch and wait approximately one minute.

**Was approximately 5.1VDC at least momentarily present?**
Y N

**006**
**Go to Page 8, Step 045, Entry Point C.**





**007**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2A2-D06
'+5.1V sense PS102 01A-B1 A54'
(ALD-YB241).
-lead to any D08 pin.
3.Press power-on switch and wait approximately one minute.

**Was approximately +5.1VDC at least momentarily present?**
Y N

**008**
1.Press power-off key.
2.Ensure that connectors on 01A-B1A1 and on 01A-B1B4 are seated correctly.
3.Connect CE-meter (range 15VDC)
+lead to 01A-B1C4-D01
'(TP +5.1V PS102 on 01A-B1 BSM)'
(ALD-YC843)
-lead to any D08 pin.
4.Press power-on switch and wait approximately one minute.

**Was approximately +5.1VDC at least momentarily present?**
Y N

**009**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC) to 01A-B1A1-A01 (+)
'+5.1V PS102 to 01A-B1 BSM'
(ALD-YC843)
and to any D08 pin (-). The FDS cable 01A-B1A1 must not be disconnected during measurements. (See "Board 01A-B1 of 4331-2" in book MI POWER, Vol.16).
3.Press power on switch and wait approximately one minute.

(Step 009 continues)

(Step 009 continued)
**Was approximately +5.1VDC at least momentarily present?**
Y N

**010**
**Go to Page 10, Step 052, Entry Point D.**

**011**
1.Press power-off switch.
2.Replace board 01A-B1.
**Go to Page 6, Step 038, Entry Point Z.**

**012**
1.Press power-off key.
2.Disconnect FDS connector 01A-B1A1.
3.Ensure that connector 01A-B1B4 is seated correctly.
4.Use CE-meter (range ohm x1) and check for electrical connection between 01A-B1A1-A01 and 01A-A2A2-D06 '+5.1V sense PS102 01A-B1 A54' (ALD-YC843).

**Does electrical connection exists between the listed pins?**
Y N

**013**
1.Disconnect cable from 01A-A2ZC.
2.Disconnect cable connector 01A-B1B4.
3.Use your CE-meter (range ohm X1) and check continuity between the following pins (use the disconnected cable connector 01A-B1B4 for the measurements)

| from | to |
|---|---|
| 01A-B1B4-A04 (ALD-YC843) | 01A-A2F6-E02 (ALD-YB233) |
| 01A-B1B4-A06 (ALD-YC843) | 01A-A2G6-A04 (ALD-YB233) |

'+5.1V sense PS102 01A-B1 A54'

**Is continuity present for each connection shown in the previous table?**
Y N

**014**
Replace cable from 01A-B1B4 to 01A-A2ZC.
**Go to Page 6, Step 038, Entry Point Z.**

**015**
Use CE-meter (range ohm X1) and check for electrical connection between the following pins:
01A-A2F6-E02 (ALD-YB233)
01A-A2G6-A04 (ALD-YB233)
01A-A2A2-D06 (ALD-YB241)
'+5.1V sense PS102 01A-B1 A54'
(ALD-YB233/YB241)

**Does electrical connection exists between all listed pins?**
Y N

**016**
Suspect defective board wiring of +5.1V sense net. 1.Check and repair board wiring or replace board 01A-A2.
2.Reconnect all disconnected cables.
**Go to Page 6, Step 038, Entry Point Z.**

**017**
Suspect connector problem of 01A-B1B4 or 01A-A2ZC or defective board wiring of +5.1V net. If no connector problem found, replace board 01A-B1.
**Go to Page 6, Step 038, Entry Point Z.**



**018**
1.Reconnect all previously disconnected connectors to 01A-B1.

**(Entry Point B)**

2.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2D2-S05
'+1.5V sense +5.1V 01A-B1 A54'
(ALD-YB643)
-lead to any D08 pin.
3.Carefully observe your meter and press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

**019**
**Was the voltage measured in the previous step higher than 2.0VDC?**
Y N

**020**
1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
+lead to paddle card connector exit
01A-A2A2-B06
'+1.5V sense +5.1V 01A-B1 A54'
(ALD-YB241)
-lead to any D08 pin.
3.Press power-on switch and wait approximately one minute.

**Was approximately +1.5VDC at least momentarily present?**
Y N

**021**
1.Press Power-off key.
2.Connect CE-meter (range ohm x1)
to any D08 pin and to
01A-A2A2-B06
'+1.5V sense +5.1V 01A-B1 A54'
(ALD-YB241).
3.Remove PC-sense card from position
01A-A2D2.

**Is the resistance below 200 ohm?**
Y N

**022**
**(Entry Point L)**

Replace cable with paddle card in position
01A-A2A2.
**Go to Page 6, Step 038, Entry Point Z.**

**023**
Do not disconnect the CE-meter.
1.Remove paddle card from position
01A-A2A2.

**Is the resistance below 200 ohm?**
Y N

**024**
**Go to Step 022, Entry Point L.**

**025**
There is a short circuit between the signal
'+1.5V sense +5.1V 01A-B1 A54'
(ALD-YB643)
(ALD-YB241)
and DC-GND.
Check and repair board wiring or replace board
01A-A2.
**Go to Page 6, Step 038, Entry Point Z.**

**026**
1.Press power-off key.
2.Repair sense wiring from
01A-A2D2-S05
'+1.5V sense +5.1V 01A-B1 A54'
(ALD-YB643)
to 01A-A2A2-B06
'+1.5V sense +5.1V 01A-B1 A54'
(ALD-YB241)
or replace board 01A-A2.
**Go to Page 6, Step 038, Entry Point Z.**

**027**
1.Press power-off key.
2.Replace paddle card with cable in position
01A-A2A2.
**Go to Page 6, Step 038, Entry Point Z.**

**028**
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

**029**
**(Entry Point H)**

**Is any reference code displayed?**
Y N

**030**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**031**
**Is reference code F7F21801 displayed?**
Y N

**032**
1.Press power-off key.
2.Replace PC sense card in position 01A-A2C2.
**Go to Step 038, Entry Point Z.**

**033**
Suspect power program error. Retry power on with the diagnostic diskette and wait approximately one minute.

**Is reference code F7F21801 displayed?**
Y N

**034**
1.Press power-off switch.
2.Replace the control diskette.
**Go to Step 038, Entry Point Z.**

**035**
**Go To Map 0202, Entry Point A.**

**036**
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

**037**
**Go to Page 5, Step 029, Entry Point H.**

**038**
**(Entry Point Z)**

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

**039**
**Go to Page 4, Step 018, Entry Point B.**

040
(Entry Point K)

Run the voltage measurement program.

**Is address 97 bit 2 out of tolerance?**
**(+5.1V PS102 on 01A-B1)**
Y N

041
**Go to Page 6, Step 038, Entry Point Z.**

042
Check the following listed voltages:

| Addr | Bit | Voltage | from board | sense No. |
|---|---|---|---|---|
| 87 | 3 | +12.3V PS102 | 01A-C1 | A56 |
| 87 | 1 | + 7.3V PS102 | 01A-C1 | A57 |
| 87 | 4 | +12.3V PS102 | 01A-C1 | A58 |
| 87 | 6 | + 9.5V PS102 | 01A-C1 | A59 |
| 87 | 5 | +12.3V PS102 | 01A-C1 | A60 |
| 87 | 7 | + 6.8V PS102 | 01A-C1 | A61 |
| 85 | 6 | +10.1V PS102 | 01A-B2 | A39 |

**Is any of the previous listed voltages out of tolerance?**
Y N

043
1.Connect CE-meter (range 15VDC)
+lead to 01A-A2A2-D06
'+5.1V sense PS102 01A-B1 A54'
(ALD-YB241)
-lead to any D08 pin
'DC-GND'

**Is +5.1VDC +/-1.0V present?**
Y N

**044**
**(Entry Point G)**

1.Press power-off kay.
2.Connect CE-meter (range 15VDC)
+lead to PS102-TB01
'+5.1V PS102 to 01A-B2 IC adapt'
-lead to PS102-TB02
'DC-GND'
(ALD-YA431).
3.Press power-on switch and wait
approximately one minute.

**Is +5.1VDC +/-1.0V present?**
**Y N**

**045**
**(Entry Point C)**

1.Press power-off key.
2.Check connector PS102-01 for correct
seating.
3.Connect CE-meter (range 15VAC) to
Connector PS102-01-001 or
Connector PS102-01-002 or
Connector PS102-01-003 or
Connector PS102-01-006
'5.4VAC CP02'
and to
Connector PS102-01-004 (50HZ only)
Connector PS102-01-005 (50HZ only)
Connector PS102-01-007 or
Connector PS102-01-008 or
Connector PS102-01-009 or
Connector PS102-01-010 or
Connector PS102-01-011 (50HZ only)
'center'
(ALD-YA433).
4.Press power-on switch and wait
approximately one minute.
Was 5.4VAC at least momentarily present
between above listed connectors.

**Y N**

**046**
**(Entry Point E)**

```
|--------------------------------|
| DANGER                         |
| Line voltage present inside of |
| the PCC-box.                   |
|--------------------------------|
```

1.Press power-off switch (if not already done).
2.Switch PCC-CB01 off (if not already off).
3.Switch PCC-SW01 off (if not already off).
4.Open PCC-box and connect CE-meter (range 500VAC)
to connector PCC-26-001
and to connector PCC-26-002.
(ALD-YA321)
5.Switch PCC-CB01 on.
6.Observe meter, press power-on switch and wait approximately one minute.

**Was line voltage at least momentarily present?**
Y N

**047**
1.Switch PCC-CB01 off.
2.Disconnect your meter.
3.Close the PCC-box.
4.Switch PCC-CB01 on.
**Go To Map 0212, Entry Point A.**

**048**
1.Switch PCC-CB01 off.
2.Disconnect your meter.
3.Close the PCC-box.
4.Replace power supply PS102.
**Go to Page 6, Step 038, Entry Point Z.**

**049**
1.Press power-off key.
2.Connect CE-meter
(range 15VAC) to
Connector PS102-01-012 or
Connector PS102-01-013 or
Connector PS102-01-014 or
Connector PS102-01-015
'5.4VAC CP02'
and to
Connector PS102-01-004 or
(50HZ only)
Connector PS102-01-005
(50HZ only)
Connector PS102-01-007 or
Connector PS102-01-008 or
Connector PS102-01-009 or
Connector PS102-01-010 or
Connector PS102-01-011
(50HZ only)
'center'
(ALD-YA433).
4.Press power-on switch and wait
approximately one minute.

Was approximately 5.4VAC at least
momentarily present between above listed
connections?

Y N

**050**
**Go to Page 9, Step 046, Entry Point E.**

**051**
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace power supply
PS102.
**Go to Page 6, Step 038, Entry Point Z.**



**052**
**(Entry Point D)**

1.Press power-off key.
2.Ensure that FDS connectors 01A-B2YF,
01A-B2YC, 01A-B2ZC, 01A-B2ZF,
01A-B2ZG, 01A-B2YD, and 01A-B2YB are
seated correctly.
3.Connect CE-meter (range 5VDC)
+lead 01A-B2T6-B03
'+5.1V PS102 to 01A-B2 IC adapt'
(ALD-YC851).
-lead to any D08 pin.
3.Press power-on switch and wait
approximately one minute.

**Was +5.1VDC +/-1.0V at least momentarily
present?**
Y N

**053**
1.Press power-off key.
2.Repair or replace FDS cables from PS102
(ALD-YA433)
to board 01A-B2.
(ALD-YC851)
**Go to Page 6, Step 038, Entry Point Z.**

**054**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-B2D1-B07
'+5.1V PS102 to 01A-B1 BSM' (ALD-YC851)
-lead to any D08 pin.
3.Press power-on switch and wait
approximately one minute.

**Was 5.1VDC +/-1.0V at least momentarily
present?**
Y N

**055**
1.Press power-off key.
2.Replace board 01A-B2.
(ALD-YC851)
**Go to Page 6, Step 038, Entry Point Z.**

056
1.Press power-off key.
2.Check and repair or replace FDS cable for
+5.1V from 01A-B2YB
(ALD-YC851)
to 01A-B1A1
(ALD-YC843).
**Go to Page 6, Step 038, Entry Point Z.**

057
**(Entry Point F)**

1.Check the accuracy of your CE-meter
according to *Hints For Power MAP Usage*
(See book MI POWER).
2.Check +1.5V voltage at sense card 1 entry:
Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-S05
'Is +1.5VDC sense +5.1V 01A-B1 A54'
-lead to any D08 pin.
'DC-GND'
(ALD-YB641).

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

058
Check +1.5 voltage at connector exit:
1.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2A2-B06.
'+1.5V sense +5.1V 01A-B1 A54'
-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

059
1.Press power-off key.
2.Replace cable with paddle card in
position 01A-A2A2.
**Go to Page 6, Step 038, Entry Point Z.**





060
Repair wiring or replace board
01A-A2.
**Go to Page 6, Step 038, Entry Point Z.**

061
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 2 out of tolerance?**
Y N

062
1.Press power-off key.
2.Replace PC sense card which is now
in position 01A-A2C2.
**Go to Page 6, Step 038, Entry Point Z.**

063
**Go to Page 9, Step 046, Entry Point E.**

064
**Go To Map 0292, Entry Point A.**

065
**Go To Map 0299, Entry Point A.**

**POWER PROBLEM**



**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 |
| 4 | 009 | 0202 | A |
| 3 | 005 | 0204 | A |

**001**
Symptom:
PS102 on by mistake (+5.1V, A54)

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | PC sense card 1 in pos. 01A-A2D2. |
| 2 | Relay PCC-K03. |
| 3 | C34 wiring. |
| 4 | BPC card in position 01A-A2B2. |
| 5 | Diskette error. |

**(Entry Point A)**

DANGER
Line voltage is present inside of the PCC-box. Always remove line voltage from customer's wall outlet before part replacement in the PCC-box.
Line voltage is present during all measurements.

1. Press power-off switch (if not already done).
2. Switch PCC-CB01 off (if not already off).
3. Switch PCC-SW01 off (if not already off).
4. Open PCC-box and make a visual inspection of PCC-K03. Check for closed contact of PCC-K03.

**Any error detected?**
Y N

6 3
A B

**002**
1.Remove diskette (s)
from diskette drive.
2.Switch PCC-CB01 on.
3.Press power-on switch and observe
PCC-K03.

**Is PCC-K03 picked?**
Y N

**003**
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 F7A22001 displayed?**
Y N

**004**
**Is any other reference code displayed?**
Y N

**005**
**(Entry Point Z)**

1.Ensure that the PCC-box is closed.
**Go To Map 0204, Entry Point A.**

**006**
Go to corresponding MAP.

**007**
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 F7A22001 displayed?**
Y N

**008**
1.Press power-off switch.
2.Replace control diskette.
**Go to Page 3, Step 005, Entry Point Z.**

**009**

```
|-----------------------------------|
| DANGER                            |
| Line voltage is present inside of |
| the PCC-box. Always remove line   |
| voltage from customer's wall      |
| outlet before part replacement in |
| the PCC-box.                      |
| Line voltage is present during    |
| all measurements.                 |
|-----------------------------------|
```

1.Press power-off switch.
Suspect AC line voltage wiring problem from PCC-box to TR102 or sense wiring short circuit to any other voltage. Use ALD and book Maintenance Information Power and try to isolate the fault. If you are not successful,
2.Close PCC-box.
**Go To Map 0202, Entry Point A.**

**010**
Connect probe to 01A-A2B2-D09
'-Pick PCC-K03 C34'
(ALD-YB421)

**Is the down indicator of the probe on?**
**Y N**

**011**
1.Press power-off switch.
2.Replace BPC card in position 01A-A2B2.
3.Press power-on switch and observe PCC-K03.

**Is PCC-K03 picked?**
**Y N**

**012**

**Go to Page 3, Step 005, Entry Point Z.**

**013**

```
|--------------------------------|
| DANGER                         |
| Line voltage present inside of |
| the PCC-box.                   |
|--------------------------------|
```

1.Press power-off switch (if not already done).
2.Switch PCC-CB01 off (if not already off).
3.Switch PCC-SW01 off (if not already off).
4.Remove BPC-card from position 01A-A2B2.
5.Perform wiring check for the following net.
Apply wiring check procedure shown in book
Maintenance Information Power.

```
|-------|
| CARD  |*| 01A-A2B2-B11 (ALD-YB421)
|-------| |
          | Board. Wiring
|-------| |
| CARD  |=| 01A-A2B1-C08 (ALD-YB221)
|-------| |
          | Cable
|-------| |
| CARD  |=| PCC-10-006 (ALD-YA321)
|-------| |
          | Cable
|-------| |
|  K03  |=| PCC-K03-002 (ALD-YA321)
|-------|
```

* '-Pick PCC-K03 C34'

**Go to Page 3, Step 005, Entry Point Z.**

**014**
1.Press power-off switch.
2.Replace PC sense card 1 in position 01A-A2D2.
3.Press power-on switch.
Connect probe to 01A-A2B2-D09
'-Pick PCC-K03 C34'
(ALD-YB421)

**Is the down indicator of the probe on?**
**Y N**

**015**
**Go to Page 3, Step 005, Entry Point Z.**

**016**
1.Press power-off switch.
2.Remove BPC card from position 01A-A2B2 and PC-sense card 1 from position 01A-A2D2.
3.Perform wiring check for the following net.
Apply the wiring check procedure shown in book Maintenance Information Power.

```
|-------|
| CARD  |*| 01A-A2D2-M02 (ALD-YB643)
|-------| |
          | Board Wiring
|-------| |
| CARD  |=| 01A-A2B2-D09 (ALD-YB421)
|-------|

* '-Pick PCC-K03 C34'
```

If no wiring error could be found, replace the BPC card in position 01A-A2B2.
**Go to Page 3, Step 005, Entry Point Z.**

**017**
1.Replace PCC-K03.
2.Switch PCC-CB01 on.
**Go to Page 3, Step 005, Entry Point Z.**

**POWER PROBLEM**



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| F76B | H | 4 | 016 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 8 | 037 | 02A0 | A |
| 2 | 004 | 0200 | A |
| 1 | 002 | 0204 | A |
| 4 | 019 | 0292 | C |
| 2 | 010 | 0293 | A |
| 8 | 033 | 0294 | A |
| 8 | 035 | 0295 | A |
| 8 | 036 | 0296 | A |
| 8 | 034 | 0297 | A |
| 8 | 038 | 0299 | A |

**001**

Symptom:

PS102 more than one voltage out of tolerance.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | TR102. |
| 2 | PS102. |
| 3 | TR102 line voltage connections. |

**(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.**

**003**
**Is the *base power on* indicator still on?**
**Y N**

**004**
**Go To Map 0200, Entry Point A.**

**005**
**(Entry Point C)**

**Are all CP's of PS102 on?**
**Y N**

**006**
1.Switch all CP's of PS102 on.
2.Press power-on switch and wait approximately one minute.

**Is any CP of PS102 tripped?**
**Y N**

**007**
**(Entry Point E)**

1.Press power-off switch.
2.Check the primary fuse TR102-F01.

**Is the fuse ok?**
**Y N**

**008**
**Was the fuse TR102-F01 already replaced before?**
**Y N**

**009**
Replace fuse TR102-F01.
**Go to Step 005,**
**Entry Point C.**

**010**
**Go To Map 0293, Entry Point A.**

**011**

1. Install a jumper from 01A-A2B2-B11 '-Pick PCC-K03 C34' (ALD-YB241) to any D08 pin 'DC-GND'
   NOTE: This jumper will pick PCC-K03 and PS102 will be switched on.
2. Connect CE-meter (range 15VDC) according to the following table and measure the output voltages of PS102.
   Connectors of PS102 must not be disconnected).
3. Press POWER-ON switch.

**(Entry Point D)**

| Nominal Voltage | + Lead | - Lead | Lower Limit | Go to MAP |
|---|---|---|---|---|
| +5.1 V | PS102-TB01-001 | PS102-TB02-001 | +4.6 V | F76D |
| 9.5 V FL | PS102-TB03-001 | PS102-TB04-001 | 8.2 V | F769 |
| +10.1 V | PS102-TB05-001 | PS102-TB06-001 | +8.2 V | F76B |
| 6.8 V FL | PS102-TB07-001 | PS102-TB08-001 | 5.3 V | F76A |
| 7.1 V FL | PS102-09-001 | PS102-09-002 | 5.5 V | F76C |
| 12.3 V FL | PS102-09-010 | PS102-09-006 | 10.9 V | F767 |
| 12.3 V FL | PS102-09-012 | PS102-09-009 | 10.9 V | F766 |
| +12.3 V | PS102-09-011 | PS102-09-003 | +10.9 V | F768 |

FL - Floating voltage.

**Is more than one voltage below its lower limit shown in the previous table?**

Y N

**012**

**Is at least on voltage below the limit shown in the previous table?**

Y N

4 4 4
E F G

**013**
**Go to Page 1, Step 002, Entry Point Z.**

**014**
Go to MAP according to table after ENTRY POINT D.

**015**
**Are all voltages missing?**
Y N

**016**
**(Entry Point H)**

1. Press POWER-OFF key.
2. Switch PSS-CB01 off.
3. Check Transformer TR102-TB01 for correct connection according to customers line voltage. 'Power line PCC to TR102' (ALD-YA433).
   Refer to line voltage conversion chart in ALD.
   (ALD-YA021).

**Is the line voltage connection correct for customer's line voltage?**
Y N

**017**
1. Change line voltage connection TR102-TB01 according to customer's line voltage.
   Refer to line voltage conversion chart in ALD
   (ALD-YA021).
2. Disconnect jumper from 01A-A2B2-B11 to any D08 pin previously installed.

**Go to Page 1, Step 002, Entry Point Z.**





**018**
**(Entry Point F)**

1. Press POWER-OFF key.
2. Switch PCC-CB01 off.
3. Install a jumper from 01A-A2B2-B11 'Pick PCC-K03 C34' (ALD-YB241) to any D08 pin 'DC-GND' if not already done before.
4. Ensure that screws of TR102-TB01 (if present) are tight.
5. Ensure that connector PCC-26 is correctly seated.
6. Connect CE-meter (range 500VAC) to TR102-TB01-001 and to TR102-TB01-002, 003, 004, 005 according to customer's line voltage.
   (ALD-YA433).
7. Switch PCC-CB01 on.
8. Press POWER-ON key.

**Is line voltage present within tolerance limit of +8% / -15% ?**
Y N

**019**
Disconnect jumper from 01A-A2B2-B11 to any D08 pin previously installed.
**Go To Map 0292, Entry Point C.**

**020**

1. Press POWER-OFF key.
2. Disconnect connectors PS102-01, PS102-03, PS102-04 and PS102-09 and all FDS cables from PS102-TB01 to PS102-TB08.
3. Do not disconnect connectors PS102-02, PS102-05, PS102-06 and PS102-08.
4. Connect CE-meter (range 15VAC) according to following table and check for correct AC-Voltage from TR102 (use the cable connectors for the measurements.) (ALD-YA431)
5. Press POWER-ON switch.

| Nominal Voltage | Lead 1 | Lead 2 | Lower Limit |
|---|---|---|---|
| 5.4 V AC | PS102-01-001 | PS102-01-005 | 4.9 V AC |
| 5.4 V AC | PS102-01-013 | PS102-01-010 | 4.9 V AC |
| 10.0 V AC | PS102-02-004 | PS102-02-005 | 8.7 V AC |
| 10.7 V AC | PS102-03-001 | PS102-03-002 | 8.8 V AC |
| 10.7 V AC | PS102-03-006 | PS102-03-003 | 8.8 V AC |
| 7.1 V AC | PS102-04-001 | PS102-04-004 | 5.5 V AC |
| 7.1 V AC | PS102-04-012 | PS102-04-008 | 5.5 V AC |
| 7.5 V AC | PS102-05-001 | PS102-05-002 | 6.0 V AC |
| 12.9 V AC | PS102-06-006 | PS102-06-001 | 11.4 V AC |
| 12.9 V AC | PS102-06-004 | PS102-06-002 | 11.4 V AC |
| 12.7 V AC | PS102-06-010 | PS102-06-003 | 11.4 V AC |

**Is any AC-voltage below lower limit?**

Y N

**021**

**Go to Page 7, Step 023, Entry Point G.**

022

1. Press POWER-OFF key.
2. Reconnect connectors PS102-01, PS102-03 and PS102-04.
3. Disconnect connectors PS102-02, PS102-05 and PS102-06.
4. Jumper connector on PS102 from PS102-06-005 to PS102-06-009. 'TR102-TH' (ALD-YA433).
5. Connect CE-meter (range 15VAC) according to following table and check for correct AC-voltage from TR102 (use the cable connectors for each measurement). (ALD-YA433)
6. Press POWER-ON switch.

| Nominal Voltage | Lead 1 | Lead 2 | Lower Limit |
|---|---|---|---|
| 5.4 V AC | PS102-01-001 | PS102-01-005 | 4.9 V AC |
| 10.0 V AC | PS102-02-004 | PS102-02-005 | 8.7 V AC |
| 10.0 V AC | PS102-02-015 | PS102-02-001 | 8.7 V AC |
| 10.7 V AC | PS102-03-001 | PS102-03-002 | 8.8 V AC |
| 7.1 V AC | PS102-04-001 | PS102-04-004 | 5.5 V AC |
| 7.5 V AC | PS102-05-001 | PS102-05-002 | 6.0 V AC |
| 7.5 V AC | PS102-05-006 | PS102-05-003 | 6.0 V AC |
| 12.9 V AC | PS102-06-006 | PS102-06-001 | 11.4 V AC |
| 12.9 V AC | PS102-06-004 | PS102-06-002 | 11.4 V AC |
| 12.7 V AC | PS102-06-010 | PS102-06-003 | 11.4 V AC |

**Is any AC-voltage below lower limit?**

Y N

**023**
**(Entry Point G)**

1. Press POWER-OFF key.
2. Reconnect connectors PS102-01, PS102-02, PS102-03, PS102-04, PS102-05 and PS102-06.
3. Connect CE-meter (range 15VDC) according to following table and check for correct DC-voltage from PS102.
   FDS cables and connector PS102-09 must be disconnected.
   (ALD-YA433)
4. Press POWER-ON switch.

| Nominal Voltage | + Lead | - Lead | Lower Limit |
|---|---|---|---|
| + 5.1 V | PS102-TB01-001 | PS102-TB02-001 | + 4.6 V |
| 9.5 V FL | PS102-TB03-001 | PS102-TB04-001 | 8.2 V |
| +10.1 V | PS102-TB05-001 | PS102-TB06-001 | + 8.2 V |
| 6.8 V FL | PS102-TB07-001 | PS102-TB08-001 | 5.3 V |
| 7.1 V FL | PS102-09-001 | PS102-09-002 | 5.5 V |
| 12.3 V FL | PS102-09-010 | PS102-09-006 | 10.9 V |
| 12.3 V FL | PS102-09-012 | PS102-09-009 | 10.9 V |
| +12.3 V | PS102-09-011 | PS102-09-003 | +10.9 V |

FL - Floating voltage.

**Is any DC-voltage below lower limit?**

Y N

**024**
1. Press POWER-OFF key.
2. Reconnect all cables.
3. Disconnect jumper from 01A-A2B2-B11 to any D08 pin previously installed.

**Go to Page 1, Step 002, Entry Point Z.**

**025**
1. Press POWER-OFF key.
2. Disconnect jumper from 01A-A2B2-B11 to any D08 pin previously installed.
3. Replace PS102.

**Go to Page 1, Step 002, Entry Point Z.**

**026**
1. Press POWER-OFF key.
2. Disconnect jumper from 01A-A2B2-B11 to any D08 pin previously installed.
3. Replace TR102.
4. Reconnect all cables.

**Go to Page 1, Step 002, Entry Point Z.**

**027**
**Go to Page 4, Step 018, Entry Point F.**

**028**
Press power-off switch.

**Is PS102-CP02 tripped?**
Y N

**029**
**Is PS102-CP03 tripped?**
Y N

**030**
**Is PS102-CP04 tripped?**
Y N

**031**
**Is PS102-CP05 tripped?**
Y N

**032**
**Is PS102-CP06 tripped?**
Y N

**033**
**Go To Map 0294, Entry Point A.**

**034**
**Go To Map 0297, Entry Point A.**

**035**
**Go To Map 0295, Entry Point A.**

**036**
**Go To Map 0296, Entry Point A.**

**037**
**Go To Map 02A0, Entry Point A.**

**038**
**Go To Map 0299, Entry Point A.**

039

**Go to Page 2, Step 007, Entry Point E.**

## POWER PROBLEM



**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 | 018 | 0202 | A |
| 3 | 021 | 0204 | A |

**001**

Symptom:

PS104 +24V on 01A-A2 out of tolerance, A41.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | +24V DC distribution. |
| 3 | A41 sense wiring. |
| 4 | PS104. |
| 5 | TR104. |

**(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 the "Base power on" indicator on?**

Y N

**003**

**(Entry Point D)**

**Go To Map 0200, Entry Point A.**

**004**
**Is the reference code F7D30001 displayed?**
Y N

**005**
**Is any other reference code displayed?**
Y N

**006**
**Go to Page 1, Step 003, Entry Point D.**

**007**
Go to corresponding MAP.

**008**
**(Entry Point C)**

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 reference code F7D30001 displayed?**
Y N

**009**
1.Press power-on key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**010**
1.Press power-off key.
2.Connect CE-meter (range 5.0VDC)
+lead to 01A-A2D2-B10
'+1.5V sense +24V 01A-A2 A41'
(ALD-YB641)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Is 1.5VDC at least momentarily present?**
Y N





**011**
1.Press power-off key.
2.Connect CE-meter (range 50VDC)
+lead to 01A-A2A3-B02
'+24V sense PS104 A-A2 A41/H01'
(ALD-YB241)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Is 24VDC at least momentarily present?**
Y N

**012**
1.Press power-off key.
2.Connect CE-meter (range 50VDC)
+lead to 01A-A2B3-E14
'+24V PS104 to 01A-A2'
(ALD-YC831)
-lead to any D08 pin.
3.Observe meter and press power-on switch.

**Is 24VDC at least momentarily present?**
Y N

**013**
1.Press power-off switch.
2.Check and repair wiring from connector PS104-05-003
'+24V PS104 to 01A-A2'
(ALD-YA451)
to 01A-A2B3-E14
(ALD-YC831)
**Go to Page 3, Step 021, Entry Point Y.**

**014**
1.Press power-off switch.
2.Check and repair wiring from
01A-A2A3-B02
'+24V sense PS104 A-A2 A41/H01'
(ALD-YB241)
to 01A-A2B3-E14
'+24V PS104 to 01A-A2'
(ALD-YC831)
**Go to Page 3, Step 021, Entry Point Y.**

015
1.Press power-off switch.
2.Connect CE-meter (range ohm X1)
to 01A-A2D2-B10
'+1.5V sense +24V 01A-A2 A41'
(ALD-YB641)
and to any D08 pin.
3.Remove PC sense card 1 form
01A-A2D2 and paddle card from
01A-A2A3.

**Is the resistance below 100 ohm?**
Y N

016
1.Press power-off switch.
2.Replace cable and paddle card with
resistor network in position 01A-A2A3
**Go to Step 021, Entry Point Y.**

017
There is a short circuit to ground. Check
and repair wiring of signal
'+1.5V sense +24V 01A-A1 A41'
(ALD-YB641)
or replace board 01A-A2.
**Go to Step 021, Entry Point Y.**

018

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

019
Run voltage measurement program.

**Is address 85 bit 1 out of tolerance?**
Y N

020
**Is any other voltage out of tolerance?**
Y N

021
**(Entry Point Y)**

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

022
**(Entry Point Z)**

**Go to Step 021, Entry Point Y.**

023
Connect CE-meter (range 50VAC)
to connector PS104-09-013
'25.2VAC'
and to connector PS104-09-006
'Center'
(ALD-YA421)

**Is 25.2VAC present?**
Y N

024
**(Entry Point B)**

1.Press power-off key.
2.Check input line connection to TR104
according to customers line voltage. For
correct connection see
(ALD-YA451)
(ALD-YA021)
3.Check connector PS104-09 and wiring
between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

025
Connect CE-meter (range 50VDC) to connector
PS104-09-010
'25.2VAC'
and to connector PS104-09-006
'Center'
(ALD-YA421)

**Is 25.2VAC present?**
Y N

026
**Go to Step 024, Entry Point B.**

**027**
Connect CE-meter (range 50VDC)
+lead to connector PS104-05-003
'+24V PS104 to 01A-A2'
(ALD-YA441)
-lead to PS104-05-006
'DC-GND'

**Is 24VDC present?**
**Y N**

**028**
1.Press power-off key.
2.Replace PS104.
**Go to Page 1, Step 001, Entry Point A.**

**029**
**Go to Page 2, Step 008, Entry Point C.**

**POWER PROBLEM**



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 |
| 3 | 014 | 0202 | A |
| 2 | 011 | 0204 | A |
| 3 | 016 | 0275 | A |

**001**
Symptom:
PS104 +12V on 01A-A2 out of tolerance, A42.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | A42 sense wiring. |
| 3 | +12V DC distribution. |
| 4 | PS104. |
| 5 | TR104. |

**(Entry Point A)**

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

**Is the °power complete° indicator on?**
Y N

**002**
**Is the reference code F7D40001 displayed?**
Y N

**REF.CODE F7D40001**

**Power Problem**



**003**
**Is any other reference code displayed?**
Y N

**004**
**Go To Map 0200, Entry Point A.**

**005**
Go to corresponding MAP.

**006**
**(Entry Point C)**

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 reference code F7D40001 displayed?**
Y N

**007**
1.Press power-off key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**008**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-B02
'+1.5V sense +12V 01A-A2 A42'
(ALD-YB641)
-lead to any D08 pin
3.Observe meter, Press power-on switch and wait approximatley one minute.

**Are +1.5VDC at least momentarily present?**
Y N





**009**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2A3-B04
'+12V sense PS104 A-A2 A42/H02'
(ALD-YB241)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Are +12VDC at least momentarily present?**
Y N

**010**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2D2-P11
'+12V PS104 to cards'
(ALD-YB643)
-lead to any D08 pin.
3.Observe meter and press power-on switch.

**Are +12VDC at least momentarily present?**
Y N

**011**
+12V wiring on board 01A-A2 defective.
1.Press power-off switch.
2.Check and repair wiring from
01A-A2B5-E01
'+12V PS104 to 01A-A2 PC'
(ALD-YC831)
to 01A-A2D2-P11
'+12V PS104 to cards'
(ALD-YB643)
or replace board 01A-A2.

**(Entry Point Z)**

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

**012**
1.Press power-off switch.
2.Check and repair wiring from
01A-A2B5-E01 to 01A-A2A3-B04
'+12V sense PS104 A-A2 A42/H02'
(ALD-YB241)

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

**013**
1.Press power-off switch.
2.Replace cable and paddle card with
resistor network in position 01A-A2A3.
**Go to Page 2, Step 011, Entry Point Z.**

**014**
**(Entry Point D)**

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

**015**
1.Run voltage measurement program.

**Is address 85 bit 2 out of tolerance?**
**Y N**

**016**
**Go To Map 0275, Entry Point A.**

**017**
Connect CE-meter (range 15VAC)
to connector PS104-09-001
'12.6VAC'
and to connector PS104-09-009
'Center'
(ALD-YA451)

**Are 12.6VAC present?**
**Y N**

**018**
**(Entry Point B)**

1.Press power-off key.
2.Check input line connection to TR104
according to customers line voltage. For
correct connection see (ALD-YA451) or
(ALD-YA021)
3.Check connector PS104-09 and wiring
between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

**019**
Connect CE-meter (range 15VAC)
to connector PS104-09-003
'12.6VAC'
(ALD-YA451)
and to connector PS104-09-009
'Center'

**Are 12.6VAC present?**
**Y N**

**020**
**Go to Step 018, Entry Point B.**

**021**
Connect CE-meter (range 15VDC)
+lead to connector PS104-06-008
'+12V PS104 to 01A-A2 B/J UC'
(ALD-YA451)
-lead to PS104-06-005
'DC-GND'

**Are +12VDC present?**
**Y N**

**022**
1.Press power-off key.
2.Replace PS104.
**Go to Page 2, Step 011, Entry Point Z.**

**023**
**Go to Page 2, Step 006, Entry Point C.**

## POWER PROBLEM



### ENTRY POINTS

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7A0 | A | 1 | 001 |
| F7XX | A | 1 | 001 |

### EXIT POINTS

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 2 | 004 | 0200 | A |
| 4 | 028 | 0202 | A |
| 5 | 030 | 0204 | A |

**001**

Symptom:
PS104 +5.1V on 01A-B1 failing, A44/H04.

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | A44 sense wiring. |
| 3 | +5.1VDC distribution. |
| 4 | PS104. |
| 5 | TR104. |

**(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 the reference code F7F40201 displayed?**

Y N

**003**

**Is any other reference code displayed?**

Y N

5 2 2 2
A B C D

**004**
**(Entry Point D)**

**Go To Map 0200, Entry Point A.**

**005**
Go to corresponding MAP.

**006**
**(Entry Point C)**

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 reference code F7F40201 displayed?**
Y N

**007**
1.Press power-off key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**008**
1.Press power-off key.
2.Connect CE-meter (range 15VDC).
+lead to 01A-B1C1-D13
'+5.1V sense PS104 A-B1 A44/H04'
(ALD-YC843)
-lead to any D08 pin.
The +lead of your meter must be connected without removing the connector.
3.Press power-on switch.

**Was +5.1VDC present as long as the power-on switch was pressed?**
Y N

4
E F

**009**
1.Press power-off key.
2.Ensure that the following listed connectors are seated correctly.
01A-B1C1
01A-B1C1-B13
01A-C2ZC
01A-C2YB
01A-C2YC
01A-A2YF
01A-A2ZC
01A-A2YB

**Was any error detected and repaired?**
Y N

**010**
1.Connect CE-meter (range 15VDC).
+lead to 01A-B1C1-B01
'+5.1V PS104 to 01A-B1 PU'
(ALD-YC843)
-lead to any D08 pin.
The +lead of your meter must be connected without removing the connectors.
2.Press power-on switch.

**Was +5.1VDC present as long as the power-on switch was pressed?**
Y N

**011**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC)
+lead to 01A-C2G6-A03
'+5.1V PS104 to 01A-B1 PU'
(ALD-YC871)
-lead to any D08 pin.
The +lead of your meter must be connected without removing the connetctor.
3.Press power-on switch.

**Was +5.1VDC present as long as the power-on switch is pressed?**
Y N

4 4 4 3
G H J K

**Power Problem**



**012**
1.Press power-off key.
2.Connect CE-meter
(range 15VDC)
+lead to 01A-C2D1-B07
'+5.1V PS104 to 01A-C2 B/J UC'
(ALD-YC871)
-lead to any D08 pin.
3.Observe meter, press power-on switch.

**Was +5.1VDC present as long as the power-on switch was pressed?**
Y N

**013**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2G6-A03
'+5.1V PS104 to 01A-A2 MSSS'
(ALD-YC831)
-lead to any D08 pin.
3.Observe your meter and press the power-on switch.

**Was 5.1VDC present as long as the power-on switch was pressed?**
Y N

**014**
1.Press power-off switch.
2.Check and repair FDS wiring from
PS104-TB02-001
'+5.1V PS104 to 01A-A2 MSSS'
(ALD-YA451)
to 01A-C2ZC
and to 01A-C2YB
(ALD-YC871)
**Go to Page 5, Step 030, Entry Point Z.**

**015**
1.Press power-off switch.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2D1-B07
'+5.1V PS104 to 01A-C2 B/J UC'
(ALD-YC831)
-lead to any D08 pin.
3.Observe your meter and press the power-on switch.

**Was 5.1VDC present as long as the power-on switch is pressed?**
Y N

**016**
1.Press power-off switch.
Suspect connector problem of
01A-A2YB. If no connector problem
found, replace board 01A-A2.
**Go to Page 5, Step 030, Entry Point Z.**

**017**
1.Press power-off switch.
2.Repair or replace FDS cable from
01A-A2YB to 01A-C2YB.
**Go to Page 5, Step 030, Entry Point Z.**

**018**
**(Entry Point E)**

There is a wiring error on 01A-C2 from
01A-C2YB to 01A-C2ZC.
'+5.1V PS104 to 01A-C2 B/J UC'
1.Press power-off switch.
2.Replace board 01A-C2.
(ALD-YC871)
**Go to Page 5, Step 030, Entry Point Z.**

**019**
1.Press power-off switch.
2.Check and repair or replace
+5.1V FDS cable from 01A-C2
'+5.1V PS104 to 01A-B1 PU'
(ALD-YC871)
to 01A-B1C1.
(ALD-YC843)
**Go to Page 5, Step 030, Entry Point Z.**

**020**
Board wiring of +5.1V net on 01A-B1 is defective.
Replace board 01A-B1.
**Go to Page 5, Step 030, Entry Point Z.**

**021**
**Go to Page 5, Step 030, Entry Point Z.**

**022**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2B4-A14
'+5.1V sen PS104 -C2/B1 A44/H04'
(ALD-YC831)
-lead to any D08 pin.
3.Press power-on switch.

**Was +5.1VDC present as long as the power-on switch was pressed?**
Y N

**023**
1.Press power-off switch.
2.Check and repair or replace cable from
01A-B1C1-B13
'+5.1V sense PS104 A-B1 A44/H04'
(ALD-YC843)
to 01A-A2B4-A14
'+5.1 sen PS104 -C2/B1 A44/H04'
(ALD-YC831)
**Go to Page 5, Step 030, Entry Point Z.**

N

N 2680 MAP F798-4

**024**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-B03
'+1.5V sense +5.1V -C2/B1 A44'
(ALD-YB641)
-lead to any D08 pin
3.Observe meter, press power-on switch.

**Was +1.5VDC present as long as the power-on switch was pressed?**
Y N

**025**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2A3-B03
'+5.1V sen PS104 -C2/B1 A44/H04'
(ALD-YB241)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Was +5.1VDC present as long as the power-on switch was pressed?**
Y N

**026**
1.Press power-off switch.
2.Check and repair wiring from
01A-A2B4-A14 (ALD-YC831)
to 01A-A2A3-B03 (ALD-YB241)
'+5.1V sen PS104 -C2/B1 A44/H04'
**Go to Page 5, Step 030, Entry Point Z.**

**027**
1.Press power-off switch.
2.Replace cable and paddle card with resistor network in position 01A-A2A3.
**Go to Page 5, Step 030, Entry Point Z.**

**028**
**Go To Map 0202, Entry Point A.**

029
1.Run voltage measurement program.

**Is address 85 bit 3 out of tolerance?**
Y N

**030**
**(Entry Point Z)**

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

031
Connect CE-meter (range 15VAC)
to connector PS104-08-001
'5.4VAC'
and to connector PS104-08-003
'Center'
(ALD-YA451)

**Is 5.4VAC present?**
Y N

**032**
**(Entry Point B)**

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Check input line connection to TR104 according to customer's line voltage. For correct connection see
(ALD-YA451)
4.Check connector PS104-08 and wiring between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

033
Connect CE-meter (range 15VAC)
to connector PS104-08-011
'5.4VAC'
(ALD-YA451)
and to connector PS104-08-012
'Center'

**Is 5.4VAC present?**
Y N

**034**
**Go to Step 032, Entry Point B.**

035
Connect CE-meter (range 15VDC)
+lead to PS104-TB02-001
'+5.1V PS104 to 01A-A2 MSSS'
-lead to PS104-TB01-001
'DC-GND'
(ALD-YA451)

**Is +5.1VDC present?**
Y N

**036**
1.Press power-off key.
2.Replace PS104.
**Go to Page 1, Step 001, Entry Point A.**

037
**Go to Page 2, Step 006, Entry Point C.**

POWER PROBLEM



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 |
| 3 | 014 | 0202 | A |
| 3 | 017 | 0204 | A |

001
Symptom:
PS104 +8.5V on 01A-C2 failing, A46.

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | PC sense card 01A-A202. |
| 2 | A46 sense wiring. |
| 3 | +8.5VDC distribution. |
| 4 | PS104. |
| 5 | TR104. |

(Entry Point A)

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

Is the "power complete" indicator on?
Y N

002
Is the reference code F7D40401 displayed?
Y N

003
Is any other reference code displayed?
Y N

3 2 2 2
A B C D

004
(Entry Point D)

Go To Map 0200, Entry Point A.

005
Go to corresponding MAP.

006
(Entry Point C)

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 reference code F7D40401 displayed?
Y N

007
1.Press power-off switch.
2.Replace PC-sense card in position 01A-A2C2.
Go to Page 1, Step 001, Entry Point A.

008
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-D02
'+1.5V sense +8.5V 01A-C2 A46'
(ALD-YB641)
-lead to any D08 pin
3.Observe meter and press power-on switch.

Is +1.5VDC at least momentarily present?
Y N

009
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2A3-B08
'+8.5V sense PS104 A-C2 A46/H06'
(ALD-YB241)
-lead to any D08 pin
3.Observe meter and press power-on switch.

Is +8.5VDC at least momentarily present?
Y N

010
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-C2B3-A14
'+8.5V PS104 to 01A-C2 B/J UC'
(ALD-YC871)
-lead to any D08 pin.
3.Observe meter and press power-on switch.

Is +8.5VDC at least momentarily present?
Y N

011
1.Press power-off switch.
2.Check and repair wiring from connector PS104-05-007
'+8.5V PS104 to 01A-A2 MSSS'
(ALD-YA451)
to 01A-C2B3-A14
and to 01A-C2B2-A14
(ALD-YC871)
Go to Page 3, Step 017, Entry Point Y.

012
1.Press power-off switch.
2.Check and repair wiring from 01A-A2A3-B08
'+8.5V sense PS104 A-C2 A46/H06'
(ALD-YB241)
to 01A-C2B3-A14
'+8.5V PS104 to 01A-C2 B/J UC'
(ALD-YC871)
Go to Page 3, Step 017, Entry Point Y.

**013**
1.Press power-off switch.
2.Replace cable and paddle card with resistor network in position 01A-A2A3.
**Go to Step 017, Entry Point Y.**

014
**Go To Map 0202, Entry Point A.**

**015**
Run voltage measurement program.

**Is address 85 bit 4 out of tolerance?**
**(+8.5V PS104 01A-A2 MSSS, A46)**
Y N

**016**
**Is any other voltage out of tolerance?**
Y N

**017**
**(Entry Point Y)**

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

018
**Go to Step 017, Entry Point Y.**

019
Do not diconnect the connectors for the following measurements. Connect CE-meter (range 15VAC)
to connector PS104-09-015
'8.9VAC'
and to connector PS104-09-014
'Center'
(ALD-YA451)

**Is 8.9VAC present?**
Y N





**020**
**(Entry Point B)**

1.Press power-off key.
2.Check input line connection to TR104 according to customers line voltage. For correct connection see
(ALD-YA451)
3.Check connector PS104-09 and wiring between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

**021**
Connect CE-meter (range 15VAC)
to connector PS104-09-012
'8.9VAC'
(ALD-YA451)
and to connector PS104-09-014
'Center'

**Is 8.9VAC present?**
Y N

**022**
**Go to Step 020, Entry Point B.**

**023**
Connect CE-meter (range 15VDC)
+lead to connector PS104-05-007
'+8.5V PS104 to 01A-A2 MSSS'
-lead to PS104-05-012
'DC-GND'
(ALD-YA451)

**Is +8.5VDC present?**
Y N

**024**
1.Press power-off key.
2.Replace PS104.
**Go to Page 1, Step 001, Entry Point A.**

**025**
**Go to Page 2, Step 006, Entry Point C.**

## POWER PROBLEM



**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 | F7A4 | AA |
| 2 | 005 | 0200 | A |

**001**

Symptom:

PS104 +8.5V on 01A-C2 failing, A31.

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | +8.5VDC distribution. |
| 2 | PS104. |
| 3 | TR104. |

**(Entry Point A)**

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

**Is reference code F7A40601 displayed?**

**Y N**

**002**

**Is any other reference code displayed?**

**Y N**

**003**

**Is the power complete indicator on?**

**Y N**

**004**

**Is the basic check indicator on?**

**Y N**

2A 2B 2C 2D 2E

**Power Problem**



**005**
**(Entry Point B)**

**Go To Map 0200, Entry Point A.**

**006**
Press the cancel key and wait approximately one minute.

**Is any reference code displayed?**
**Y N**

**007**
**Go to Step 005,**
**Entry Point B.**

**008**
Go to corresponding MAP.

**009**
Suspect intermittent error. See hints in book Maintenance Information (MI) POWER.

**010**
Go to corresponding MAP.

**011**
**Go To Map F7A4, Entry Point AA.**

POWER PROBLEM



ENTRY POINTS

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0260 | A | 1 | 001 |

EXIT POINTS

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 4 | 024 | 0200 | A |
| 8 | 049 | 0202 | A |
| 4 | 030 | 0204 | A |
| 8 | 050 | 0250 | A |

001
Symptom:
PS104 -5.1V on 01A-C2 out of tolerance, A33.

| Suspected errors or FRUs (including intermittent errors) | |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | -5.1VDC distribution. |
| 3 | Load fault. |
| 4 | A33 sense wiring. |
| 5 | PS104. |
| 6 | TR104. |
| 7 | Line voltage distribution. |

(Entry Point A)

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

**Is the "power complete" indicator on?**
Y N

002
**Is reference code F7D40801 displayed?**
Y N





5 2 2
A B C

003
Is any other reference code displayed?
Y N

004
Go to Page 4, Step 024, Entry Point Y.

005
Go to MAP for displayed reference code.

006
1.Press power-off switch.
2.Ensure that a wire is installed from
01A-C2B4-E01 to 01A-C2K3-B06
and from
01A-C2K3-B06 to 01A-C2W3-E01
'-5.1V PS104 to 01A-C2 B/J UC'
'-5.1V sense PS1045 01A-C2 A33'
(ALD-YC871)

Are the above mentioned wires present?
Y N

007
Install the wires listed in the previous step.
These wires must always be present if no PS105 is installed.
Go to Page 1, Step 001, Entry Point A.

008
1.Connect CE-meter (range 15VDC)
-lead to 01A-C2W3-E01
'-5.1V sense PS1045 01A-C2 A33'
(ALD-YC871)
+lead to any D08 pin.
The -lead of your meter must be connected without removing the connectors.
2.Press power-on switch.

Is -5.1VDC +/- 1.0V at least momentarily present?
Y N

D E

009
1.Press power-off key.
2.Ensure that connectors on
01A-C2W3-E01 and on 01A-C2W4-E01
are seated correctly.
3.Connect CE-meter (range 15VDC)
-lead to 01A-C2W4-E01
'-5.1V PS104 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.

Is -5.1VDC +/- 1.0V at least momentarily present?
Y N

010
Go to Page 6, Step 037, Entry Point G.

011
Board wiring of -5.1V net defective.
1.Press power-off key.
2.Replace board 01A-C2.
Go to Page 4, Step 030, Entry Point Z.

012
1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
-lead to 01A-A2D2-S03
'-1.5V sense -5.1V 01A-C2 A33'
(ALD-YB643)
+lead to any D08 pin.
3.Carefully observe your meter and press power-on switch.

Is -1.5VDC +/- 15% 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-A2A3-B12
'-1.5V sense -5.1V 01A-C2 A33'
(ALD-YB241)
+lead to any D08 pin.
3.Press power-on switch.

Is -1.5VDC +/- 15% 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-A2A3-B12
'-1.5V sense -5.1V 01A-C2 A33'
(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-C2 to 01A-A2A3.
Go to Page 4, Step 030, Entry Point Z.

017
Do not disconnect the CE-meter.
Remove paddle card from position
01A-A2A3.

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 -5.1V 01A-C2 A33'
(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-S03
'-1.5V sense -5.1V 01A-C2 A33'
(ALD-YB643)
to 01A-A2A3-B12
'-1.5V sense -5.1V 01A-C2 A33'
(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-A2A3 (ALD-YB241).
Go to Page 4, 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**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**025**
**Is reference code F7D40801 displayed?**
Y N

**026**
1.Press power-off key.
2.Replace sense PC sense card in position 01A-A2C2.
**Go to Step 030, Entry Point Z.**

**027**
Suspect power program error. Retry power on using the diagnostic diskette. If your problem is not solved,
**Go to Page 8, Step 049, Entry Point X.**

**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 Page 3, Step 023, Entry Point H.**

**030**
**(Entry Point Z)**

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

031
(Entry Point E)

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

| Addr | Bit | Voltage | Board | Sense Line No. | Corresponding MAP |
|---|---|---|---|---|---|
| 85 | 1 | +24V PS104 | 01A-A2 MSSS | A41 | F796 |
| 85 | 4 | +8.5V PS104 | 01A-C2 MSSS | A46 | F799 |
| 97 | 5 | -5.1V PS104 | 01A-C2 | A33 | F79B |
| 95 | 7 | -12V PS104 | 01A-C2 | A64 | F79C |
| 97 | 0 | -12V PS104 | 01A-A2 | A43 | F79D |
| 85 | 3 | +5.1V PS104 | 01A-C2 MSSS | A44 | F798 |
| 97 | 1 | -5.1V PS104 | 01A-C2 MSSS | A45 | F79E |
| 97 | 7 | +8.5V PS104 | 01A-C2 | A31 | F79A |
| 85 | 7 | +8.5V PS104 | 01A-B2 | A23 | F79F |
| 87 | 2 | +5.1V PS104 | 01A-C2 | A30 | F7A0 |
| 85 | 2 | +12V PS104 | 01A-A2 MSSS | A42 | F797 |
| 95 | 0 | -12V PS104 | 01A-B2 | A32 | F7A1 |
| 97 | 3 | +5.1V PS104 | 01A-C1 | A22 | F7A2 |
| 95 | 1 | -5.1V PS104 | 01A-B1 | A63 | F7A6 |
| 97 | 6 | -5.1V PS104 | 01A-A1 | A01 | F7AA |
| A5 | 1 | +12V PS104 | 01A-B1 | A48 | F7A8 |
| A5 | 0 | +12V PS104 | 01A-A1 | A13 | F7A7 |

(Step 031 continues)

(Step 031 continued)
**Are all voltages below maximum limit?**
Y N

**032**
**Is more than one voltage out of tolerance?**
Y N

**033**
**(Entry Point K)**

**Is -5.1VDC PS104 on 01A-C2 out of tolerance**
**(Address 97, bit 5)?**
Y N

**034**
Go to MAP according to table after ENTRY POINT E.
**Go to Page 5, Step 031, Entry Point E.**

**035**
Connect CE-meter (range 15VDC)
-lead to 01A-C2W3-E01
'-5.1V sensa PS1045 01A-C2 A33'
(ALD-YC871)
+Lead to any D08 pin
'DC-GND'

**Is -5.1VDC +/-1.0V present?**
Y N

**036**
Connect CE-meter (range 15VDC)
-lead to 01A-C2W4-E01
'-5.1V PS1045 to 01A-C2 K/W CA'
+-lead to any D08 pin
'DC-GND'
(ALD-YC871)

**Is -5.1VDC +/- 1.0V present?**
Y N

8 8 7
P Q R S T

S T 2710 MAP F79B-6

**037**
**(Entry Point G)**

1.Press power-off key
2.Connect CE-meter (range 15VDC)
-lead 01A-A2W5-E01
'-5.1V PS104 to 01A-C2 K/W CA'
+lead to any D08 pin.
'DC-GND'
(ALD-YC831).
3.Press power-on switch.

**Is -5.1VDC +/- 1.0V at least momentarily present?**
Y N

**038**
1.Press power-off key.
2.Check and repair board wiring for -5.1V from PS104
(ALD-YC831)
or replace board 01A-A2.
**Go to Page 4, Step 030, Entry Point Z.**

**039**
1.Press power-off key.
2.Check and repair or replace cable from 01A-A2W5
(ALD-YC831)
to 01A-C2W4.
(ALD-YC871)
**Go to Page 4, Step 030, Entry Point Z.**

**040**
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-E01
'-5.1V sense PS1045 01A-C2 A33'
(ALD-YC871)
+lead to any D08 pin.
'DC-GND'
4.Press power-on switch.

(Step 040 continues)

(Step 040 continued)
**Is -5.1VDC +/- 1.0V present?**
Y N

**041**
Suspect sense wiring error on board 01A-C2.
1.Press power-off key.
2.Repair board wiring or replace board 01A-C2.
3.Press power-on switch.
**Go to Page 5, Step 031, Entry Point E.**

**042**
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 and wait approximately one minute and observe your meter reading.
Replace the defective card which caused an incorrect meter reading at the sense point.
3.Press power-on switch.
**Go to Page 5, Step 031, Entry Point E.**

**043**
**(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-S03
'-1.5V sense -5.1V 01A-C2 A33'
+lead to any D08 pin.
'DC-GND'
(ALD-YB643).

**Is -1.5VDC +/-15% present?**
Y N

**044**
Check -1.5 voltage at connector exit:
1.Connect CE-meter
(range 1.5VDC)
+lead to 01A-A2A3-B12.
'-1.5V sense -5.1V 01A-C2 A33'
+lead to any D08 pin
'DC-GND'
(ALD-YB241).
2.Press power-on switch.

**Is -1.5VDC +/-15% present?**
Y N

**045**
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 030, Entry Point Z.**

**046**
1.Press power-off key.
2.Repair wiring or replace board 01A-A2.
**Go to Page 4, Step 030, Entry Point Z.**

**047**
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 5 out of tolerance?**
**(-5.1V PS104 01A-C2 A33)**
Y N

**048**
1.Press power-off key.
2.Replace PC sense card which is now in position 01A-A2C2.
**Go to Page 4, Step 030, Entry Point Z.**

049
(Entry Point X)

Go To Map 0202, Entry Point A.

050
Go To Map 0250, Entry Point A.

051
Are all voltages below call CE-limit?
Y N

052
Go to MAP for failing voltage according to table after ENTRY POINT E of this MAP.
Go to Page 5, Step 031, Entry Point E.

053
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

054
Go to Page 4, Step 030, Entry Point Z.

055
Go to corresponding MAP.

## POWER PROBLEM



**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 | F7A5 | AA |
| 2 | 005 | 0200 | A |

**001**
Symptom:
PS104 -12.0V on 01A-C2 failing, A64

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | -12VDC distribution. |
| 2 | PS104. |
| 3 | TR104. |

**(Entry Point A)**

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

**Is reference code F7A41001 displayed?**
Y N

**002**
**Is any reference code displayed?**
Y N

**003**
**Is the "power complete" indicator on?**
Y N

**004**
**Is the "basic check" indicator on?**
Y N

2A 2B 2C 2D 2E

**Power Problem**



**005**
**(Entry Point B)**

**Go To Map 0200, Entry Point A.**

**006**
Press cancel key and wait approximately on minute.

**Is any reference code displayed?**
Y N

**007**
**Go to Step 005, Entry Point B.**

**008**
Go to corresponding MAP.

**009**
Suspect intermittent error. See hints in book Maintenance Information (MI) POWER.

**010**
Go to corresponding MAP.

**011**
**Go To Map F7A5, Entry Point AA.**

## POWER PROBLEM



**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 |
| 3 | 021 | 0204 | A |
| 3 | 015 | 0275 | A |

**001**
Symptom:
PS104 -12V on 01A-A2 failing, A43.

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | A43 sense wiring. |
| 3 | -12VDC distribution. |
| 4 | PS104. |
| 5 | TR104. |

**(Entry Point A)**

1. Press power-off switch.
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 the reference code F7D41201 displayed?**
Y N

**003**
**Is any other reference code displayed?**
Y N

**004**
**(Entry Point G)**

**Go To Map 0200, Entry Point A.**

**005**
Go to corresponding MAP.

**006**
**(Entry Point C)**

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 reference code F7D41201 displayed?**
Y N

**007**
1.Press power-off switch.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**008**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
-lead to 01A-A2D2-P12
'-1.5V sense -12V 01A-A2 A43'
(ALD-YB643)
+lead to any D08 pin
3.Observe meter and press power-on switch.

**Is -1.5VDC at least momentarily present?**
Y N

3 E F

**009**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
-lead to 01A-A2A3-B05
'-12V sense PS104 A-A2 A43/H03'
(ALD-YB241)
+lead to any D08 pin
3.Observe meter and press power-on switch.

**Is -12VDC at least momentarily present?**
Y N

**010**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
-lead to 01A-A2D2-P06
'-12V PS104 to cards'
(ALD-YB643)
+lead to any D08 pin.
3.Observe meter and press power-on switch.

**Is -12VDC at least momentarily present?**
Y N

**011**
1.Press power-off key.
2.Check and repair wiring from
01A-A2B3-E01
'-12V PS104 to 01A-A2 PC'
(ALD-YC831)
to 01A-A2D2-P06
(ALD-YB643)
or replace board 01A-A2.

**(Entry Point Y)**

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

Is "power complete" indicator on?

Y N

3 G 3 H 3 J 3 K

Power Problem

PAGE 3 OF 4

012
Is any reference code displayed?
Y N

013
Go to Page 2, Step 004, Entry Point G.

014
Go to MAP for displayed reference code.

015
Go To Map 0275, Entry Point A.

016
1.Press power-off switch.
2.Check and repair wiring from
01A-A2A3-B05
'-12V sense PS104 A-A2 A43/H03'
(ALD-YB241)
to 01A-A2D2-P06
'-12V PS104 to cards'
(ALD-YB643)
Go to Page 2, Step 011, Entry Point Y.

017
1.Press power-off switch.
2.Replace cable and paddle card with resistor network in position 01A-A2A3.
Go to Page 2, Step 011, Entry Point Y.

018
Suspect wiring problem.
Perform "Wiring Check Procedure" according to hints in book Maintenance Information (MI) POWER.

019
1.Run voltage measurement program.

Is address 97 bit 0 out of tolerance?
(-12V PS104, 01A-A2, A43)
Y N

020
Is any other voltage out of tolerance?
Y N

021
Go To Map 0204, Entry Point A.

022
Go to Page 2, Step 011, Entry Point Y.

023
Connect CE-meter (range 15VAC)
to connector PS104-09-001
'12.6VAC'
and to connector PS104-09-009
'Center'
(ALD-YA451)

Is 12.6VAC present?
Y N

024
(Entry Point B)

1.Press power-off key.
2.Check input line connection to TR104 according to customers line voltage. For correct connection see
(ALD-YA451)
3.Check connector PS104-09 and wiring between TR104 and PS104.
If no error detected, replace TR104.
Go to Page 1, Step 001, Entry Point A.

025
Connect CE-meter (range 15VAC)
to connector PS104-09-003
'12.6VAC'
and to connector PS104-09-009
'Center'
(ALD-YA451)

Is 12.6VAC present?
Y N

**026**
**Go to Page 3, Step 024, Entry Point B.**

**027**
Connect CE-meter (range 15VDC)
-lead to connector PS104-05-004
'-12V PS104 to 01A-A2 PC'
+lead to PS104-05-011
'DC-GND'
(ALD-YA451)

**Is -12VDC present?**
**Y N**

**028**
1.Press power-off key.
2.Replace PS104
**Go to Page 1, Step 001, Entry Point A.**

**029**
**Go to Page 2, Step 006, Entry Point C.**

## POWER PROBLEM



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0260 | A | 1 | 001 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 2 | 006 | 0200 | A |
| 5 | 040 | 0204 | A |
| 5 | 044 | 0260 | A |
| 3 | 026 | 0275 | A |
| 5 | 042 | 0275 | A |

**001**
Symptom:
PS104 -5.1V on 01A-C2 failing, A45/A47.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card in pos. 01A-A2D2. |
| 2 | PC sense card in pos. 01A-A2C2. |
| 3 | A45 sense wiring. |
| 4 | A47 sense wiring. |
| 5 | -5.1VDC distibution. |
| 6 | PS104. |
| 7 | TR104. |

**(Entry Point A)**

Note:
The -5.1V from PS104
(sense points A45 and A47) are also used by
the power-on-test for a DAC-test of both
PC-sense cards.
1.Press power-off key.
2.Press power-on switch and wait
approximately one minute.

**Is the reference code F7D41401 displayed?**

Y N

2 2
A B

**002**
Go to MAP for displayed reference code.

**003**
1.Switch to CE-mode at CE panel.
2.Press power-on switch and wait approximately one minute.

**Is the *power complete* indicator on?**
Y N

**004**
**Is the reference code F7D41401 displayed?**
Y N

**005**
**Is any other reference code displayed?**
Y N

**006**
**(Entry Point H)**

**Go To Map 0200, Entry Point A.**

**007**
Go to corresponding MAP.

**008**
**(Entry Point C)**

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 reference code F7D41401 displayed?**
Y N

**009**
1.Press power-off switch.
2.Replace PC-sense card in position 01A-A2C2.
3.Press power-on switch and wait approximately one minute.

**Is reference code F7D41401 displayed?**
Y N

**010**
**Is any other reference code displayed?**
Y N

**011**
**Go to Page 5, Step 040, Entry Point Z.**

**012**
Go to corresponding MAP.

**013**
1.Press power-off switch.
2.Replace PC-sense card in position 01A-A2D2.
3.Press power-on switch and wait approximately one minute.

**Is reference code F7D41401 displayed?**
Y N

**014**
**Is any other reference code displayed?**
Y N

**015**
**Go to Page 5, Step 040, Entry Point Z.**

**016**
Go to corresponding MAP.

**017**
**Go to Page 1, Step 001, Entry Point A.**

018

(Entry Point D)

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
3.Observe meter and press power-on switch.

Is -1.5VDC present as long as the power on switch is pressed?
Y N

019
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
-lead to 01A-A2A3-B07
'-5.1V sense PS104 A-C2 A45/H05'
(ALD-YB241)
+lead to any D08 pin
3.Observe meter and press power-on switch.

Is -5.1VDC present as long as the power on switch is pressed?
Y N

020
Check and repair wiring from connector 01A-A2B5-A01
'-5.1V sense PS104 A-A2 A45/H05'
(ALD-YC831)
to 01A-A2A3-B07
'-5.1V sense PS104 A-A2 A45/H05'
(ALD-YB241)
or replace board 01A-A2.

(Entry Point Y)

Press power-on switch and wait approximately one minute.

Is the *power complete* indicator on?
(Step 020 continues)





(Step 020 continued)

Y N

021
Is any reference code displayed?
Y N

022
Go to Page 2, Step 006, Entry Point H.

023
Is reference code F7D41401 displayed?
Y N

024
Go to Page 2, Step 008, Entry Point C.

025
Go to MAP for displayed reference code.

026
Go To Map 0275, Entry Point A.

027
1.Press power-off switch.
2.Connect CE-meter (range 1.5VDC) to
01A-A2A3-D09 (-)
'-1.5V sense -5.1V 01A-C2 A45'
(ALD-YB241)
and to any D08 (+) pin.
3.Observe your meter and press power-on switch.

Is 1.5VDC present as long as the power on switch is pressed?
Y N

**028**
1.Press power-off switch.
2.Remove cards from 01A-A2A3 (paddle card) and from 01A-A2D2 (PC sense card 1)
3.Connect CE-meter (range ohm X1) to
01A-A2A3-D09
'-1.5V sense -5.1V 01A-C2 A45'
(ALD-YB241)
and to any D08 pin.

**Is the resistance below 100 ohm?**
Y N

**029**
Replace cable and paddle card with resistor network in position 01A-A2A3.
**Go to Page 5, Step 040, Entry Point Z.**

**030**
There is a short circuit between A45 sense wiring and ground on board 01A-A2.
1.Check and repair the sense wiring or replace board 01A-A2.
2.Plug all removed cards into their original positions.
**Go to Page 5, Step 040, Entry Point Z.**

**031**
1.Press power-off switch.
2.Check and repair wiring from
01A-A2A3-D09
(ALD-YB241)
to 01A-A2D2-S04
(ALD-YB643)
'-1.5V sense -5.1V 01A-C2 A45'
or replace board 01A-A2.
**Go to Page 5, Step 040, Entry Point Z.**

**032**
1.Press power-off switch.
2.Replace PC sense card 1 in position 01A-A2D2.
3.Press power-on switch and wait approximately one minute.

**Is reference code F7D41401 displayed?**
Y N

**033**
**Is any other reference code displayed?**
Y N

**034**
**Go to Page 5, Step 040, Entry Point Z.**

**035**
Go to corresponding MAP.

**036**
1.Press power-off switch.
2.Connect CE-meter (Range 5VDC) to
01A-A2C2-S08 (-)
'-1.5V sense -5.1V 01A-C2 A47'
(ALD-YB623)
and to any D08 pin (+)
3.Observe your meter and press power-on switch.

**Is 1.5VDC present as long as the power-on switch is pressed?**
Y N

**037**
1.Press power-on switch.
01A-A2A3-D09
(ALD-YB241)
to 01A-A2C2-S08
'-1.5V sense -5.1V 01A-C2 A47'
(ALD-YB623)
or replace board 01A-A2.
**Go to Page 5, Step 040, Entry Point Z.**

**038**
1.Press power-off switch.
2.Replace the PC sense card 2 in position 01A-A2C2.
**Go to Step 040, Entry Point Z.**

**039**
1.Run voltage measurement program.
**Is any other voltage out of tolerance?**
Y N

**040**
**(Entry Point Z)**

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

**041**
Is one of the following listed voltages out of tolerance?

| Addr. | Bit | Voltage | PWR supply | Sense | Board |
|---|---|---|---|---|---|
| 97 | 5 | -5.1V | 104 or 105 | A33 | 01A-C2 K/W |
| 95 | 1 | -5.1V | 104 | A63 | 01A-B1 |
| 97 | 6 | -5.1V | 104 | A01 | 01A-A1 |
| 97 | 1 | -5.1V | 104 | A45 | 01A-C2 B/J |

Y N

**042**
**Go To Map 0275, Entry Point A.**

**043**
Is only address 97 bit 1 out of tolerance?
'-5.1V sense PS104 01A-C2 A45'

Y N

**044**
**Go To Map 0260, Entry Point A.**

**045**
**Go to Page 2, Step 008, Entry Point C.**

## POWER PROBLEM



**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 | 005 | 0200 | A |
| 4 | 031 | 0202 | A |
| 4 | 034 | 0204 | A |

**001**
Symptom:
PS104 + 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 F7A41601 displayed?**
**Y N**

**003**
**Is any reference code displayed?**
Y N

**004**
**Is the basic check indicator on?**
Y N

**005**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**006**
Press cancel key and wait approximately one minute.

**Is any reference code displayed?**
Y N

**007**
**Go to Step 005, Entry Point Y.**

**008**
Go to corresponding MAP.

**009**
Go to MAP for displayed reference code.

**010**
1Press 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.

**+8.5VDC at least momentarily present?**
Y N

**011**
1.Press power-off key.
2.Ensure that
connectors on 01A-B2B3-A01 and
on 01A-B2W5-A01 are seated correctly.
3.Connect CE-meter (range 15VDC)
+lead to 01A-B2W5-A01
'+8.5V PS1045 to 01A-B2 ACA'
(ALD-YC851)
-lead to any D08 pin.
The +lead of your meter must be connected without removing the connectors.
4.Press power-on switch.

**+8.5VDC at least momentarily present?**
Y N

**012**
1.Press power-off key
2.Connect CE-meter (range 15VDC)
+lead to 01A-C2B4-A14
'+8.5V PS1045 to 01A-B2 ACA'
(ALD-YC871)
-lead to any D08 pin.
3.Press power-on switch.

**+8.5VDC at least momentarily present?**
Y N

**013**
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 034, Entry Point Z.**

**014**
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 ACA'
(ALD-YC871)
to board 01A-B2W5-A01
'+8.5V PS1045 to 01A-B2 ACA'
(ALD-YC851)
**Go to Page 4, Step 034, Entry Point Z.**

**015**
Board wiring of +8.5V net defective.
1.Press power-off key.
2.Check and repair +8.5V board wiring or
replace board 01A-B2.
**Go to Page 4, Step 034, Entry Point Z.**

016
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.
2.Press power-on switch.

**+1.5VDC at least momentarily present?**
Y N

**017**
**Is the voltage measured in previous step higher than 2.0VDC?**
Y N

**018**
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.

**+1.5VDC at least momentarily present?**
Y N

**019**
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

**020**
**(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 034, Entry Point Z.**

**021**
1.Do not disconnect the CE-meter.
2.Remove paddle card from position
01A-A2A2.

**Is the resistance below 200 ohm?**
Y N

**022**
**Go to Step 020, Entry Point L.**

**023**
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 Step 034, Entry Point Z.**

**024**
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.

**025**
1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A2.
**Go to Step 034, Entry Point Z.**

**026**
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

**027**
**(Entry Point H)**

**Any reference code displayed?**
Y N





**028**
1.Press power-off key.
2.Replace PC sense card which is now plugged in position 01A-C2.
**Go to Step 034, Entry Point Z.**

**029**
**Reference code F7A41601 displayed?**
Y N

**030**
1.Press power-off key.
2.Replace sense card in position 01A-A2C2
**Go to Step 034, Entry Point Z.**

**031**
Suspect power program error.
**Go To Map 0202, Entry Point A.**

**032**
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

**033**
**Go to Step 027, Entry Point H.**

**034**
**(Entry Point Z)**

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

**035**
1.Press power-off key
2.Suspect faulty paddle card in position 01A-A2A2.
Replace cable with paddle card.
**Go to Step 034, Entry Point Z.**

## POWER PROBLEM



**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 | 022 | 0200 | A |
| 8 | 047 | 0202 | A |
| 4 | 028 | 0204 | A |
| 8 | 048 | 0278 | A |

**001**
Symptom.
PS104 +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 | PS104. |
| 6 | TR104. |
| 7 | Line voltage distribution. |

**(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 F7D41801 displayed?**
Y N

5 2 2
A B C

003
**Is any other reference code displayed?**
Y N

004
**Go to Page 3, Step 022, Entry Point Y.**

005
Go to MAP for displayed reference code.

006
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 connector.
3.Press power-on switch.

**Is +5.1VDC +/-1.0V present as long as the power-on switch is pressed?**
Y N

007
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-C2Q1-C07
'+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.

**Is +5.1VDC +/-1.0V present as long as the power-on switch is pressed?**
Y N

008
**Go to Page 6, Step 035, Entry Point G.**

009
Board wiring of +5.1V net on 01A-C2 is defective.
1.Press power-off key.
Replace board 01A-C2.
**Go to Page 4, Step 028, Entry Point Z.**

010
1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2D2-D11
'+1.5V sense +5.1V 01A-C2 A30'
(ALD-YB641)
-lead to any D08 pin.
3.Carefully observe your meter and press power-on switch.

**Is +1.5VDC +/-15% present as long as the power-on switch is pressed?**
Y N

011
**Was the voltage measured in previous step higher than 2.0VDC?**
Y N

012
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.

**Is +1.5VDC +/-15% present as long as the power-on switch is pressed?**
Y N

**013**
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

**014**
**(Entry Point L)**

1.Press power-off key.
2.Repair or replace cable with paddle card from 01A-C2W2-E14
(ALD-YC871)
to 01A-A2A3-B11
(ALD-YB241).
**Go to Page 4, Step 028, Entry Point Z.**

**015**
Do not disconnect the CE-meter.
Remove paddle card from position 01A-A2A3.

**Is the resistance below 200 ohm?**
Y N

**016**
**Go to Step 014, Entry Point L.**

**017**
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 028, Entry Point Z.**

**018**
1.Press power-off key.
2.Repair sense wiring form
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 028, Entry Point Z.**

**019**
1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A3
(ALD-YB241).
**Go to Page 4, Step 028, Entry Point Z.**

**020**
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

**021**
**(Entry Point H)**

**Is any reference code displayed?**
Y N

**022**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**023**
**Is reference code F7D41801 displayed?**
Y N

024
1.Press power-off key.
2.Replace PC sense card in position 01A-A2C2.
**Go to Step 028, Entry Point Z.**

025
Suspect power program error. Retry power on with the diagnostic diskette. If the problem is not solved,
**Go to Page 8, Step 047, Entry Point X.**

026
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

027
**Go to Page 3, Step 021, Entry Point H.**

028
(Entry Point Z)

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

029
(Entry Point E)

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

| Addr | Bits | Voltages | Board | sense line | Corresponding MAP |
|---|---|---|---|---|---|
| 85 | 1 | +24V PS104 | 01A-A2 | A41 | F796 |
| 85 | 4 | +8.5V PS104 | 01A-C2 MSSS | A46 | F799 |
| 97 | 5 | -5.1V PS104 | 01A-C2 | A33 | F79B |
| 95 | 7 | -12V PS104 | 01A-C2 | A64 | F79C |
| 97 | 0 | -12V PS104 | 01A-A2 | A43 | F79D |
| 85 | 3 | +5.1V PS104 | 01A-C2 MSSS | A44 | F798 |
| XOR | | | | | |
| 85 | 3 | +5.1V PS104 | 01A-B1 MSSS | A44 | F798 |
| 97 | 1 | -5.1V PS104 | 01A-C2 MSSS | A45 | F79E |
| 97 | 7 | +8.5V PS104 | 01A-C2 | A31 | F79A |
| 85 | 7 | +8.5V PS104 | 01A-B2 | A23 | F79F |
| 87 | 2 | +5.1V PS104 | 01A-C2 | A30 | F7A0 |
| 85 | 2 | +12V PS104 | 01A-A2 MSSS | A42 | F797 |
| 95 | 0 | -12V PS104 | 01A-B2 | A32 | F7A1 |
| 97 | 3 | +5.1V PS104 | 01A-C1 | A22 | F7A2 |
| 95 | 1 | -5.1V PS104 | 01A-B1 | A63 | F7A6 |
| 97 | 6 | -5.1V PS104 | 01A-A1 | A01 | F7AA |
| A5 | 1 | +12V PS104 | 01A-B1 | A48 | F7A8 |

(Step 029 continues)

(Step 029 continued)
**Are all voltages below maximum limit?**
Y N

**030**
**Is more than one voltage out of tolerance?**
Y N

**031**
**(Entry Point K)**

**Is address 87, bit 2 out of tolerance?**
**(+5.1V PS104, 01A-C2, A30)**
Y N

032
Go to MAP according to table after
ENTRY POINT E.
**Go to Page 5, Step 029, Entry Point E.**

033
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'

**Is +5.1VDC +/-1.0V present?**
Y N

034
Connect CE-meter (range 15VDC)
+lead to 01A-C2Q1-C07
'+5.1V PS1045 to 01A-C2 K/W CA'
-lead to any D08 pin
'DC-GND'
(ALD-YC871)

**Is +5.1VDC +/-1.0V present?**
Y N

8 8 7
N P Q R S

R S 2760 MAP F7A0-6

**035**
**(Entry Point G)**

1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to connector 01A-A2T6-B03.
'+5.1V PS104 01A-C2 K/W CA'
-lead to any D08 pin.
'DC-GND'
(ALD-YC831)
3.Press power-on switch.

**Is +5.1VDC +/-1.0V present as long as the power-on switch is pressed?**
Y N

036
Suspect connector problem of
01A-A2ZG. If no error found, press
power-off key and replace board
01A-A2.
**Go to Page 4, Step 028, Entry Point Z.**

037
1.Press power-off key.
2.Check and reair or replace cable from
01A-A2ZG
(ALD-YC831)
to 01A-C2YF.
(ALD-YC871)
**Go to Page 4, Step 028, Entry Point Z.**

**038**
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.

(Step 038 continues)

(Step 038 continued)
**Is +5.1VDC +/-1.0V present as long as the power-on switch is pressed?**
Y N

039
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.
**Go to Page 5, Step 029, Entry Point E.**

040
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 and observe your meter reading. Replace the defective card which caused incorrect meter reading at the sense point.
3.Press power-on switch.
**Go to Page 5, Step 029, Entry Point E.**

041
(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 +/-15% present as long as the power-on switch is pressed?**
Y N

T U

042
Check +1.5 voltage at connector exit:
1.Connect CE-meter
(range 1.5VDC)
+lead to 01A-A2A3-B11.
'+1.5V sense +5.1V 01A-C2 A30'
(ALD-YB241).
-lead to any D08 pin
'DC-GND'
2.Press power-on switch.

**Is +1.5VDC +/-15% present as long as the power-on switch is pressed?**
Y N

043
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 028, Entry Point Z.**

044
1.Press power-off key.
2.Repair wiring or replace board 01A-A2.
**Go to Page 4, Step 028, Entry Point Z.**

045
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?**
**(+5.1V PS104 01A-C2 A30)**
Y N

046
1.Press power-off key.
2.Replace PC sense card which is now in position 01A-A2C2.
**Go to Page 4, Step 028, Entry Point Z.**

047
(Entry Point X)

Go To Map 0202, Entry Point A.

048
Go To Map 0278, Entry Point A.

049
Are all voltages below call CE-limits?
Y N

050
Go to MAP for failing voltage according to table after ENTRY POINT E of this MAP.
Go to Page 5, Step 029, Entry Point E.

051
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

052
Go to Page 4, Step 028, Entry Point Z.

053
Go to corresponding MAP.

## POWER PROBLEM



**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:
PS104 -12V on 01A-B2 out of tolerance, A32.
Note:
-12V 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 F7A42001 displayed?**
Y N

**003**
**Is any other reference code displayed?**
Y N

**004**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**005**
Go to MAP for displayed reference code.

**006**
1Press 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.

**-12VDC 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.
The -lead of your meter must be connected without removing the connectors.
4.Press power-on switch.

**-12VDC at least momentarily present?**
Y N

**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.

**-12V DC at least momentarily present?**
Y N

**009**
1.Press power-off switch.
2.Check and repair -12V wiring on board 01A-C2
(ALD-YC871)
or replace board 01A-C2.
**Go to Page 4, Step 030, Entry Point Z.**

**010**
Check and repair or replace cable for -12V from board 01A-C2B5-E01
'-X.XV PS1045 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 -12V net defective.
1.Press power-off key.
2.Check and repair -12V board wiring or replace board 01A-B2.
**Go to Page 4, Step 030, Entry Point Z.**

**Power Problem**



012
1.Press power-off key.
2.Connect CE-meter (Range 1.5VDC)
-lead to 01A-A2D2-U06
'-1.5V sense -12V 01A-B2 A32'
(ALD-YB643)
+lead to any D08 pin.
3.Press power-on switch.

**-1.5VDC at least momentarily present?**
Y N

013
**Is 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-D09
'-1.5V sense -12V 01A-B2 A32'
(ALD-YB241)
+lead to any D08 pin.
3.Press power-on switch.

**-1.5VDC 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-D09
'-1.5V sense -12V 01A-B2 A32'
(ALD-YB241)
3.Remove PC sense card from
position 01A-A2D2.

**Is the resistance below 200 ohm?**
Y N

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 -12V 01A-B2 A32'
(ALD-YB643)
(ALD-YB241)
and DC-ground. 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-A1D2-U06
'-1.5V sense -12V 01A-B2 A32'
(ALD-YB643)
to 01A-A2A2-D09
'-1.5V sense -12V 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.**

**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)**

**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**
**Reference code F7A42001 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.

**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.**

## POWER PROBLEM



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 | 005 | 0200 | A |
| 4 | 021 | 0202 | A |
| 3 | 015 | 0204 | A |
| 5 | 035 | 0242 | A |

001
Symptom:
PS104 +5.1V on 01A-C1 out of tolerance, A22

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PS104-CP02 tripped. |
| 2 | Paddle card 01A-A2A2. |
| 3 | Paddle card 01A-C1B4. |
| 4 | PC-sense card 01A-A2D2. |
| 5 | +5.1VDC distribution. |
| 6 | A22 sense wiring. |
| 7 | PS104. |
| 8 | TR104. |

(Entry Point A)

Switch to CE-mode at CE-panel.

**Is PS104-CP02 tripped?**

Y N

002
Press power-on switch and wait approximately one minute.

**Is the "power complete" indicator on?**

Y N

5 4 2
A B C

**003**
**Is the reference code F7D42201 displayed?**
Y N

**004**
**Is any other reference code displayed?**
Y N

**005**
**Go To Map 0200, Entry Point A.**

**006**
Go to corresponding MAP.

**007**
**(Entry Point C)**

1.Press power-off key.
2.Ensure that the following listed connectors and paddlecards are seated correctly:
01A-A2A2
01A-C1B4
01A-C1A2
3.If no error found exchange both PC-sense cards in positions 01A-A2D2 and 01A-A2C2.
4.Press power-on switch and wait approximately one minute.

**Is the reference code F7D42201 displayed?**
Y N

**008**
1.Press power-off key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 3, Step 015, Entry Point Z.**





**009**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-U05
'+1.5V sense +5.1V 01A-C1 A22'
(ALD-YB643)
-lead to any D08 pin
3.Observe your meter and press the power-on switch.

**Was 1.5VDC at least momentarily present?**
Y N

**010**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2A2-B09
'+1.5V sense +5.1V 01A-C1 A22'
(ALD-YB241)
-lead to any D08 pin
3.Observe your meter and press the power-on switch.

**Was 1.5VDC at least momentarily present?**
Y N

**011**
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-C1B4-D03
'+5.1V PS104 to 01A-C1 IPS'
(ALD-YA529)
-lead to any D08 pin.
3.Observe your meter and press the power-on switch.

**Was 5.1VDC at least momentarily present?**
Y N

012
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-C1A2-002
'+5.1V PS104 to 01A-C1 IPS TEST'
(ALD-YA525)
-lead to 01A-C1A2-003
'DC-GND'
3.Observe your meter and press the power-on switch.

Was 5.1VDC at least momentarily present?
Y N

013
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to connector PS104-04-005
'+5.1V PS104 to 01A-C1 IPS TEST'
(ALD-YA451)
-lead to connector PS104-04-003
'DC-GND'

Was 5.1VDC at least momentarily present?
Y N

014
1.Press the power-off key.
2.Connect CE-meter (range 5VDC)
+lead to connector PS104-02-001
'+5.1V PS104 to 53FD SYS'
(ALD-YA451)
-lead to PS104-02-002 'DC-GND'
3.Press power-on switch.

Was 5.1VDC at least momentarily present?
Y N

J K L M



015
1.Press power-off key.
2.Replace PS104.

(Entry Point Z)

Go To Map 0204, Entry Point A.

016
1.Press power-off key.
2.Replace PS104.
Go to Step 015, Entry Point Z.

017
1.Press power-off key.
2.Check and repair or replace wiring from
PS104
(ALD-YA451)
to 01A-C1A2.
(ALD-YA525)
Go to Step 015, Entry Point Z.

018
1.Press power-off key.
2.Check and repair wiring from
01A-C1A2-002
'+5.1V PS104 to 01A-C1 IPS TEST'
(ALD-YA525)
to 01A-C1B4-D03
(ALD-YB529)
Go to Step 015, Entry Point Z.

019
Check and repair wiring or replace cable and paddle card with resistor network in position 01A-C1B4.
Go to Step 015, Entry Point Z.

020
1.Press power-off switch.
2.Check and repair wiring from
01A-A2A2-B09
'+1.5V sense +5.1V 01A-C1 A22'
(ALD-YB241)
to 01A-A2D2-U05
'+1.5V sense +5.1V 01A-C1 A22'
(ALD-YB643)
**Go to Page 3, Step 015, Entry Point Z.**

021
Suspect operation control program problem.
Use diagnostic diskette and retry power on.
If the problem is not solved,
**Go To Map 0202, Entry Point A.**

022
Run the voltage measurement program.

**Is address 97 bit 3 (+5.1V PS104, 01A-C1, A22) out of tolerance?**
Y N

023
**Is any other voltage out of tolerance?**
Y N

024
**Go to Page 3, Step 015, Entry Point Z.**

025
**Go to Page 3, Step 015, Entry Point Z.**

026
Connect CE-meter (range 15VAC)
to connector PS104-08-010
'5.4VAC'
and to connector PS104-08-012
'Center'
(ALD-YA451)

**Is 5.4VAC present?**
Y N

N P



027
(Entry Point B)

1.Press power-off key.
2.Check input line connection to TR104 according to customers line voltage. For correct connection see
(ALD-YA541)
(ALD-YA021)
3.Check connector PS104-09 and wiring between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

028
Connect CE-meter (range 15VAC)
to connector PS104-08-001
'5.4VAC'
(ALD-YA451)
and to connector PS104-08-012
'Center'

**Is 5.4VAC present?**
Y N

029
**Go to Step 027, Entry Point B.**

030
Connect CE-meter (range 15VDC)
+lead to connector PS104-02-001
'+5.1V PS104 to 53FD SYS'
(ALD-YA451)
-lead to PS104-02-002
'DC-GND'

**Is 5.1VDC present?**
Y N

031
1.Press power-off key.
2.Replace PS104.
**Go to Page 1, Step 001, Entry Point A.**

032
**Go to Page 2, Step 007, Entry Point C.**

033
1.Switch PS104-CP02 on.
2.Press power-on switch.

Is PS104-CP02 tripped?
Y N

034
Go to Page 1, Step 001, Entry Point A.

035
Go To Map 0242, Entry Point A.

**POWER PROBLEM**



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0200 | B | 3 | 009 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 2 | 003 | 0200 | A |
| 2 | 008 | 0202 | A |
| 5 | 023 | 0204 | A |

**001**
Symptom:
TR104 thermal failure, D03.

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | 24V wiring from PS104 to TR104. |
| 3 | BPC card 01A-A2B2. |
| 4 | D03 sense wiring. |
| 5 | TR104. |

**(Entry Point A)**

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

**Is the reference code F7D42401 displayed?**

Y N

2 2
A B

002
1.Press power-off key.
2.Observe the "base power on" indicator and press the power-on switch.

Is the "base power on" indicator switched on?
Y N

003
1.Press power-off key.
Go To Map 0200, Entry Point A.

004
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 any reference code displayed?
Y N

005
Go to Page 5, Step 023, Entry Point Z.

006
Go to corresponding MAP

007
1.Probe 01A-A2D2-M05
'-TR104 TH failed D03'
(ALD-YB643).

Is the down indicator of the probe on?
Y N

008
1.Press power-off key.
Suspect bent pin 01A-A2D2-M05
If no error detected,

Go To Map 0202, Entry Point A.

009
(Entry Point B)

Connect CE-meter (range 30VDC)
-lead to PS104-TB01-001
'DC-GND'
+lead to connector PS104-01-001
'+24V PS104 to PS104'
(ALD-YA451).

Is +24VDC present?
Y N

010
1.Press power-off switch.
2.Check and repair wiring of +24V net from PS104 to PS104.
Apply "Wiring Check Procedure" shown book in Maintenance Information (MI) POWER.

```
 |-------|
 | Board |*| 01A-A2B3-E14 (ALD-YC831)
 |-------| |
           |Baord wiring
 |-------| |
 | Conn. |=| 01A-A2C1-B06 (ALD-YB221)
 |-------| |
           | Cable
 |-------| |
 | Conn. |=| PS104-01-001 (ALD-YA451)
 |-------|
```

* '+24V PS104'

Go to Page 5, Step 023, Entry Point Z.

011
(Entry Point D)

Disconnect connector PS104-09.
Use ohmmeter and check connection via TR104 thermal switch between connector PS104-09-005 and PS104-09-011 male plug.
(ALD-YA451)
Attention:
Thermal switch is located inside of TR104. The thermal switch opens if an overheating condition appears and closes if the overheating condition disappears.

Is the thermal switch of TR104 open?

(no connection between connector PS104-09-011 and PS104-09-005).
Y N

012
Connect CE-meter (range ohm X1) to
PS104-09-011
'TR104-TH'
and to PS104-01-003
'TR104 TH failed D03'
(ALD-YA451)

Is the resistance approximately zero ohm?
Y N

013
(Entry Point E)

1.Switch PCC-CB01 off.
2.Replace PS104.
**Go to Page 5, Step 023, Entry Point Z.**





014
Connect CE-meter (range ohm X1) to
PS104-01-001
'+24V PS104 to PS104'
and to PS104-09-005
'+24V'
(ALD-YA451)

Is the resistance approximately zero ohm?
Y N

015
**Go to Step 013, Entry Point E.**

016
Use ohmmeter and check connection between connector PS104-01-003
'-TR104 TH failed D03'
(ALD-YA451)
and 01A-A2B2-P10
'-TR104 TH failed D03'
(ALD-YB643).

Is the connection ok?
Y N

017
Repair wiring of signal
'-TR104 TH failed D03'
from connector PS104-01-003
(ALD-YA451)
to 01A-A2B2-P10.
(ALD-YB423).
**Go to Page 5, Step 023, Entry Point Z.**

**018**
1.Disconnect paddle card from position 01A-A2YA.
2.Remove PC sense Card 01A-A2D2.
3.Use ohmmeter (range ohm x1) and check resistance between the following points:
a) 01A-A2B2-D08
and 01A-A2B2-P10
Resistance must be approximately 1150 ohm.
b) 01A-A2B2-P10
and 01A-A2B2-G13
Resistance must be approximately 900 ohm.

**Are both resistances ok.?**
Y N

**019**
1.Remove BPC card from 01A-A2B2.
2.Use ohm meter (range ohm X1) and connect the leads to any D08 pin 'DC-Gnd'
and to 01A-A2D2-M05
'-TR104 TH failed D03'
(ALD-YB643).

**Is the resistance higher than 100k ohm?**
Y N

**020**
Suspect short circuit to ground.
Repair wiring of signal '-TR104 TH failed D03'
(ALD-YB643)
**Go to Step 023, Entry Point Z.**

**021**
1.Replace BPC card which was previously removed from 01A-A2B2.
2.Reinstall all previously removed cards and connectors.
**Go to Step 023, Entry Point Z.**



**022**
The Wiring is ok.

**(Entry Point C)**

The TR104 thermal switch may have closd again.
Reconnect all connectors and retry power on.
If the same failure occurs again, replace transformer TR104.
If any other failure occurs go to MAP according to displayed reference code.

**023**
Thermal switch of TR104 is open.
1.Switch off PCC-CB01.
2.Replace TR104.

**(Entry Point Z)**

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

## POWER PROBLEM



### ENTRY POINTS

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| F79A | AA | 2 | 006 |

### EXIT POINTS

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 5 | 032 | 0200 | A |
| 9 | 057 | 0202 | A |
| 5 | 038 | 0204 | A |
| 9 | 058 | 0250 | A |

**001**

Symptom:
PS104 +8.5V on 01A-B2 and 01A-C2 out of tolerance, A23 and A31.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | +8.5VDC distribution. |
| 3 | Load fault. |
| 4 | A31 and A23 sense wiring. |
| 5 | PS104. |
| 6 | TR104. |
| 7 | Line voltage distribution. |

**(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 F7D42601 displayed?**

Y N

6 2 2
A B C

**003**
**Is any other reference code displayed?**
**Y N**

**004**
**Go to Page 5, Step 032, Entry Point Y.**

**005**
Go to MAP for displayed reference code.

**006**
**(Entry Point AA)**

1.Press power-off key.
2.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.
3.Press Power-on switch.

**Was +8.5VDC +/- 1.0V present as long as the power-on switch was pressed?**
**Y N**

**007**
Do not disconnect your meter.
1.Disconnect voltage connector block from
01A-C2B5-E01 (-12V)
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.

**Was +8.5VDC +/- 1.0V present as long as the power-on switch was pressed?**
**Y N**

**008**
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.

**Is +8.5VDC at least momentarily present?**
**Y N**

**009**
**Go to Page 7, Step 045, Entry Point G.**

**010**
1.Press power-off key.
2.Board wiring of +8.5V net is defective.
Replace board 01A-C2.
**Go to Page 5, Step 038, Entry Point Z.**

**011**
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 (-12V)
01A-B2B3-A01 (+8.5V)
01A-B2B2-E14 (+10.1V)
01A-B2B2-A14 (+5.1V)
(ALD-YC851)
4.Press power-on switch.

(Step 011 continues)

(Step 011 continued)
**Was +8.5VDC +/- 1.0V present as long as the power-on switch was pressed?**
Y N

012
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 5, Step 038, Entry Point Z.**

013
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.

**Was +8.5VDC +/- 1.0V present as long as the power-on switch was pressed?**
Y N

014
Sense wiring error on board 01A-B2.
Replace board 01A-B2.
**Go to Page 5, Step 038, Entry Point Z.**





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
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.
**Go to Page 5, Step 038, 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 Page 5, Step 038, Entry Point Z.**

019
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 5, Step 038, Entry Point Z.**

**020**

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 observe your meter and press power-on switch.

**Was +1.5VDC +/- 10% present as long as the power-on switch was pressed?**

Y N

**021**

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

Y N

**022**

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.

**Was +1.5VDC +/- 1.0V present as long as the power-on switch was pressed?**

Y N

**023**

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





**024**

**(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 5, Step 038, Entry Point Z.**

**025**

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

**Is the resistance below 200 ohm?**

Y N

**026**

**Go to Page 5, Step 038, Entry Point Z.**

**027**

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 5, Step 038, Entry Point Z.**

**028**

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 5, Step 038, Entry Point Z.**

**029**

1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A3.

**Go to Page 5, Step 038, Entry Point Z.**

**030**

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

**031**

**(Entry Point H)**

**Is any reference code displayed?**

Y N

**032**

**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**033**

**Is reference code F7D42601 displayed?**

Y N

**034**

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

**Go to Step 038, Entry Point Z.**

**035**

Suspect power program error. Retry power on with the diagnostic diskette. If the problem is not solved,

**Go to Page 9, Step 057, Entry Point X.**

**036**

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

**037**

**Go to Step 031, Entry Point H.**

**038**

**(Entry Point Z)**

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

**039**
**(Entry Point E)**

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

| Addr | Bits | Voltages | from board | sense line | Corresponding MAP |
|---|---|---|---|---|---|
| 85 | 4 | +8.5V PS104 | 01A-C2 MSSS | A46 | F799 |
| 97 | 5 | -5.1V PS104 | 01A-C2 | A33 | F79B |
| 95 | 5 | -12V PS104 | 01A-C2 | A64 | F79C |
| 97 | 0 | -12V PS104 | 01A-A2 | A43 | F79D |
| 85 | 3 | +5.1V PS104 | 01A-C2 or B1* | A44 | F798 |
| 97 | 1 | -5.1V PS104 | 01A-C2 MSSS | A45 | F79E |
| 97 | 7 | +8.5V PS104 | 01A-C2 | A31 | F79A |
| 85 | 7 | +8.5V PS104 | 01A-B2 | A23 | F79F |
| 87 | 2 | +5.1V PS104 | 01A-C2 | A30 | F7A0 |
| 85 | 2 | +12V PS104 | 01A-A2 MSSS | A42 | F797 |
| 95 | 0 | -12V P104 | 01A-B2 | A32 | F7A1 |
| 97 | 3 | +5.1V PS104 | 01A-C1 | A22 | F7A2 |
| 95 | 1 | -5.1V PS104 | 01A-B1 | A63 | F7A6 |
| 97 | 6 | -5.1V PS104 | 01A-A1 | A01 | F7AA |
| A5 | 1 | +12V PS104 | 01A-B1 | A48 | F7A8 |
| A5 | 0 | +12V PS104 | 01A-A1 | A13 | F7A7 |

* For 4321/4331-1 is the sense point A44 on 01A-C2.
For 4331-2/4331-11 is the sense point A44 on 01A-B1.

(Step 039 continues)

(Step 039 continued)

**Are voltages below maximum limit?**

Y N

**040**

**Is more than one voltage out of tolerance?**

Y N

**041**

**(Entry Point K)**

**Is +8.5VDC from PS104 on 01A-C2 out of tolerance (Address 97, bit 7)?**

Y N

**042**

Go to MAP according to table after ENTRY POINT E, of this MAP

**Go to Page 6, Step 039, Entry Point E.**

**043**

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

**044**

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

9 9 8
P Q R S T

S T

**045**

**(Entry Point G)**

1. Press power-off key.
2. Connect CE-meter (range 15VDC)
   +lead to 01A-A2W4-A14
   '+8.5V PS1045 to 01A-C2 K/W CA'
   -lead to any D08 pin
   'DC-GND'
   (ALD-YA831).
3. Press power-on switch.

**Was +8.5VDC +/- 1.0V present as long as the power-on switch was pressed?**

Y N

**046**

1. Press power-off key
2. Check and repair board wiring for +8.5V PS104 on board 01A-A2.
   (ALD-YC831)
   or replace board 01A-A2

**Go to Page 5, Step 038, Entry Point Z.**

**047**

1. Press power-off key.
2. Check and repair or replace cable from 01A-A2W4 and 01A-A2W5 to 01A-C2W3 and 01A-C2W4.
   (ALD-YC871)
   (ALD-YC831)

**Go to Page 5, Step 038, Entry Point Z.**

**048**

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 adapters are 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.

(Step 048 continues)

(Step 048 continued)

**Is +8.5VDC +/- 1.0V present?**

Y N

**049**

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 039, Entry Point E.**

**050**

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 and observe your meter reading. Replace the defective card which caused incorrect meter reading at sense point.
3. Press power-on switch.

**Go to Page 6, Step 039, Entry Point E.**

**051**

**(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

**052**

Check +1.5VDC 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.

**Is +1.5VDC +/-10% present?**

Y N

**053**

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

**Go to Page 5, Step 038, Entry Point Z.**

**054**

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

**Go to Page 5, Step 038, Entry Point Z.**

**055**

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 (+8.5V PS104, 01A-C2, A31)**

Y N

**056**

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

**Go to Page 5, Step 038, Entry Point Z.**

057
(Entry Point X)

Go To Map 0202, Entry Point A.

058
Go To Map 0250, Entry Point A.

059
Are all voltages below call CE-limit?
Y N

060
Go to MAP for failing voltage according to table after ENTRY POINT E of this MAP.
Go to Page 6, Step 039, Entry Point E.

061
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

062
Suspect intermittent error.
Go to Page 5, Step 038, Entry Point Z.

063
Go to corresponding MAP.

## POWER PROBLEM



### ENTRY POINTS

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| F79C | AA | 2 | 006 |

### EXIT POINTS

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 5 | 032 | 0200 | A |
| 8 | 057 | 0202 | A |
| 2 | 010 | 0204 | A |
| 9 | 058 | 0250 | A |
| 9 | 062 | 0275 | A |

**001**

Symptom:
PS104 -12V on 01A-B2 and 01A-C2 out of tolerance, A32 and A64.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | -12VDC distribution. |
| 3 | Load fault. |
| 4 | A64 and A32 sense wiring. |
| 5 | PS104. |
| 6 | TR104. |
| 7 | Line voltage distribution. |

**(Entry Point A)**

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

**002**

**Is reference code FDA42801 displayed?**

Y N

**POWER PROBLEM**



**003**
**Is any other reference code displayed?**
Y N

**004**
**Go to Page 5, Step 032, Entry Point Y.**

**005**
Go to MAP for displayed reference code.

**006**
**(Entry Point AA)**

1.Press power-off key.
2.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.
3.Press Power-on switch.

**Was -12VDC +/-1.0V present as long as the power on switch was pressed?**
Y N

**007**
1.Do not disconnect your meter.
Disconnect voltage connector block from
01A-C2B5-E01 (-12V)
01A-C2B5-A01 (DC-GND)
01A-C2B4-A14 (+8.5V)
01A-C2B4-E14 (DC-GND)
'-X.XV PS1045 to 01A-B2 ACA'
(ALD-YC871)
2.Press power-on switch.

**Was -12VDC +/- 1.0V present as long as the power-on switch was pressed?**
Y N

**008**
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
'-X.XV 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.

**Is -12VDC +/-1.0V present as long as the power on switch is pressed?**
Y N

**009**
**Go to Page 7, Step 045, Entry Point G.**

**010**
1.Press power-off key.
2.Board wiring of -12V net defective.
Replace board 01A-C2.

**(Entry Point Z)**

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

**011**
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 (-12V)
01A-B2B3-A01 (+8.5V)
01A-B2B2-E14 (+10.1V).
01A-B2B2-A14 (+5.1V)
(ALD-YC851)
4.Press power-on switch.

(Step 011 continues)

(Step 011 continued)
**Was -12VDC +/- 1.0V present as long as the power-on switch was pressed?**
Y N

**012**
Suspect a load fault on 01A-B2.
Replace ACA (Auto Call Adapter) card 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 2, Step 010, Entry Point Z.**

**013**
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.

**Was -12VDC +/- 1.0V present as long as the power-on switch was pressed?**
Y N

**014**
Sense wiring error on board 01A-B2.
Replace board 01A-B2.
**Go to Page 2, Step 010, Entry Point Z.**





**015**
1.Press Power-off key.
2.Connect CE-meter (range ohm X1)
to any D08 pin and to
01A-A2A2-D09
'-1.5V sense -12V 01A-B2 A32'
(ALD-YB241)
3.Remove PC sense card from position 01A-A2D2.

**Is the resistance below 200 ohm?**
Y N

**016**
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-B2 to 01A-A2A2.
**Go to Page 2, Step 010, 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 Page 2, Step 010, Entry Point Z.**

**019**
There is a short circuit between the signal
'-1.5V sense -12V 01A-B2 A32'
(ALD-YB643)
(ALD-YB241)
and DC-GND.
Check and repair board wiring or replace board 01A-A2.
**Go to Page 2, Step 010, Entry Point Z.**

**POWER PROBLEM**



**020**

1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
 -lead to 01A-A2D2-S07
 '-1.5V sense -12V 01A-C2 A64'
 (ALD-YB643)
 +lead to any D08 pin.
3.Carefully observe your meter and press power-on switch.

**Is -1.5VDC +/- 10% present as long as the power on switch is pressed?**

Y N

**021**

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

Y N

**022**

1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
 -lead to paddle card connector exit 01A-A2A3-B09
 '-1.5V sense -12V 01A-C2 A64'
 (ALD-YB241)
 +lead to any D08 pin.
3.Press power-on switch.

**Is -1.5VDC +/- 10% present as long as the power on switch is pressed?**

Y N

**023**

1.Press power-off key.
2.Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A3-B09
 '-1.5V sense -12V 01A-C2 A64'
 (ALD-YB241)
3.Remove PC sense card from position 01A-A2D2.

**Is the resistance below 200 ohm?**

Y N

**024**

**(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 2, Step 010, Entry Point Z.**

**025**

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

**Is the resistance below 200 ohm?**

Y N

**026**

**Go to Step 024, Entry Point L.**

**027**

There is a short circuit between the signal
'-1.5V sense -12V 01A-C2 A64'
(ALD-YB643)
(ALD-YB241)
and DC-GND.
Check and repair board wiring or replace board 01A-A2.

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

**028**

1.Press power-off key.
2.Repair sense wiring form 01A-A2D2-S07
 '-1.5V sense -12V 01A-C2 A64'
 (ALD-YB643)
 to 01A-A2A3-B09
 '-1.5V sense -12V 01A-C2 A64'
 (ALD-YB241)
 or replace board 01A-A2.

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

**029**
1. Press power-off key.
2. Replace paddle card with cable in position 01A-A2A3.
(ALD-YB241)
**Go to Page 2, Step 010, Entry Point Z.**

**030**
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

**031**
**(Entry Point H)**

**Is any reference code displayed?**
Y N

**032**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**033**
**Is reference code F7D42801 displayed?**
Y N

**034**
1. Press power-off key.
2. Replace PC sense card in position 01A-A2C2.
**Go to Page 2, Step 010, Entry Point Z.**

**035**
Suspect power program error. Retry power on with the diagnostic diskette. If the problem is not solved
**Go to Page 8, Step 057, Entry Point X.**

N



**036**
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

**037**
**Go to Step 031, Entry Point H.**

**038**
**Go to Page 2, Step 010, Entry Point Z.**

**039**
**(Entry Point E)**

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

| Addr | Bits | Voltages | from board | sense No. | Corresponding MAP |
|---|---|---|---|---|---|
| 85 | 4 | +8.5V PS104 | 01A-C2 MSSS | A46 | F799 |
| 97 | 5 | -5.1V PS104 | 01A-C2 | A33 | F79B |
| 95 | 5 | -12V PS104 | 01A-C2 | A64 | F79C |
| 97 | 0 | -12V PS104 | 01A-A2 | A43 | F79D |
| 85 | 3 | +5.1V PS104 | 01A-C2 or B1* | A44 | F798 |
| 97 | 1 | -5.1V PS104 | 01A-C2 MSSS | A45 | F79E |
| 97 | 7 | +8.5V PS104 | 01A-C2 | A31 | F79A |
| 85 | 7 | +8.5V PS104 | 01A-B2 | A23 | F79F |
| 87 | 2 | +5.1V PS104 | 01A-C2 | A30 | F7A0 |
| 85 | 2 | +12V PS104 | 01A-A2 MSSS | A42 | F797 |
| 95 | 0 | -12V PS104 | 01A-B2 | A32 | F7A1 |
| 97 | 3 | +5.1V PS104 | 01A-C2 | A22 | F7A2 |
| 95 | 1 | -5.1V PS104 | 01A-B1 | A63 | F7A6 |
| 97 | 6 | -5.1V PS104 | 01A-A1 | A01 | F7AA |
| A5 | 1 | +12V PS104 | 01A-B1 | A48 | F7A8 |
| A5 | 0 | +12V PS104 | 01A-A1 | A13 | F7A7 |

* For 4321/4331-1 is the sense point A44 on 01A-C2.
For 4331-2/4331-11 is the sense point A44 on 01A-B1.

(Step 039 continues)

(Step 039 continued)
**Are all voltages below maximum limit?**
Y N

**040**
**Is more than one not sense line out of tolerance?**
Y N

**041**
**(Entry Point K)**

**Is sense line A64 -12V PS104 on 01A-C2 out of tolerance?**
**Address 95, bit 5)**
Y N

**042**
Go to MAP according to table after ENTRY POINT E.
**Go to Page 6, Step 039, Entry Point E.**

**043**
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 -12VDC +/- 1.0V present?**
Y N

**044**
Connect CE-meter (range 15VDC)
-lead to 01A-C2W5-E01
'-X.XV PS1045 to 01A-C2 K/W CA'
+lead to any D08 pin
'DC-GND'
(ALD-YC871)

**Is -12VDC +/-1.0V present?**
Y N

9 9 8
P Q R S T

S T

**045**
**(Entry Point G)**

1.Press power-off key.
2.Connect CE-meter (range 15VDC)
-lead to 01A-A2W4-E14
'-12V PS104 to 01A-C2 K/W CA'
+lead to any D08 pin.
'DC-GND'
(ALD-YC831).
3.Press power-on switch.

**Was -12V at least momentarily present?**
Y N

**046**
1.Press power-off.
2.Check and repair board wiring for
-12VDC from PS104 on board 01A-A2
(ALD-YC831)
or replace board 01A-A2.
**Go to Page 2, Step 010, Entry Point Z.**

**047**
1.Press power-off key.
2.Check and repair or replace cable from
01A-A2W4
to 01A-C2W5.
(ALD-YC831)
(ALD-YC871)
**Go to Page 2, Step 010, Entry Point Z.**

**048**
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.

**Is -12VDC +/- 1.0V present?**
Y N

8 8
U V

**049**
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.
**Go to Page 6, Step 039, Entry Point E.**

**050**
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 key and observe your meter reading. Replace the defective card which caused incorrect meter reading at sense point.
3.Press power-on switch.
**Go to Page 6, Step 039, Entry Point E.**

**051**
**(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-S10
'-1.5V sense -12V 01A-C2 A64'
+lead to any D08 pin.
'DC-GND'
(ALD-YB643).

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

W X



**052**
Check -1.5 voltage at connector exit:
1.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2A3-B09.
'-1.5V sense -12V 01A-C2 A64'
+lead to any D08 pin
'DC-GND'
(ALD-YB241).
2.Press power-on switch.

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

**053**
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-C2 to 01A-A2A3.
**Go to Page 2, Step 010, Entry Point Z.**

**054**
1.Press power-off key.
2.Repair wiring or replace board 01A-A2.
**Go to Page 2, Step 010, Entry Point Z.**

**055**
1.Press power-off key.
2.Exchange both PC sense cards in positions 01A-A2D2 and 01A-A2C2.
3.Press power-on switch.
4.Run voltage measurement program.

**Is address 95 bit 5 out of tolerance (-12V PS104 01A-C2 A64)**
Y N

**056**
1.Press power-off key.
2.Replace PC sense card which is now in position 01A-A2C2.
**Go to Page 2, Step 010, Entry Point Z.**

**057**
**(Entry Point X)**

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

**058**
**Go To Map 0250, Entry Point A.**

**059**
**Are all voltages below CALL-CE-limit?**
**Y N**

**060**
Go to MAP for failing voltage according to table after ENTRY POINT E of this MAP.
**Go to Page 6, Step 039, Entry Point E.**

**061**
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**

**062**
**Go To Map 0275, Entry Point A.**

**063**
Go to corresponding MAP.

## POWER PROBLEM



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0200 | A | 1 | 001 |
| 0260 | A | 1 | 001 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 5 | 039 | F7A9 | F |
| 2 | 005 | 0200 | A |
| 3 | 013 | 0204 | A |
| 4 | 033 | 0275 | A |

**001**

Symptom:
PS104 -5.1V on 01A-B1 out of tolerance, A63.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | Load fault on 01A-B1,01A-A2, 01A-C2 or any diskette drive. |
| 2 | PC sense card 1 in pos. 01A-A2D2. |
| 3 | -5.1VDC distibution via 01A-A2. |
| 4 | PS104. |
| 5 | TR104. |
| 6 | A63 sense wiring. |
| 7 | Voltage divider 01A-A2A2. |

**(Entry Point A)**

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

**Is the *power complete* indicator on?**

Y N

**002**

**Is the reference code F7F43001 displayed?**

Y N

5 5 2
A B C

**003**
**Is any other reference code displayed?**
Y N

**004**
1.Press power-off switch.
2.Observe the *base power on* indicator and press power-on switch.

Is the *base power on* indicator on as long as the power on switch is pressed?

Y N

**005**
**Go To Map 0200, Entry Point A.**

**006**
1.Press power-off switch.
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

**007**
**Is the reference code F7F43001 displayed?**
Y N

**008**
**Is any other reference code displayed?**
Y N

4 4 4 4
D E F G H

**009**
**(Entry Point E)**

1.Press power-off switch.
2.Disconnect FDS connector 01A-A2ZC.
3.Connect CE-meter (range 15VDC) to
01A-A2H6-D04 or
01A-A2H6-E04 or
01A-A2H6-E02 (-)
'-5.1V PS104 to 01A-B1 PU/BSM'
(ALD-YB233)
and to any D08 pin (+)
'DC-GND'
4.Observe your meter and press power-on switch.

**Was -5.1VDC present as long as the power-on switch was pressed?**
Y N

**010**
1.Press power-off switch.
Suspect defective -5.1V net on baord 01A-A2. Replace board 01A-A2.
**Go to Page 3, Step 013, Entry Point Z.**

**011**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC) to
01A-A2H6-B04 or 01A-A2H6-B02
'-5.1V sense PS104 01A-B1 A63'
(ALD-YB233)
and to any D08 pin (+)
'DC-GND'
3.Observe your meter and press power-on switch.

**Was -5.1VDC present as long as the power on switch was pressed?**
Y N

3 3
J K

**012**
1.Reconnect FDS connector to 01A-A2ZC.
2.Disconnect connector 01A-B1B4
(accessible from card side)
3.Use your CE-meter (range ohm x1) and check for continuity between the following pins (use the disconnected cable connector 01A-B1B4 for the measurements)

| from | to |
|---|---|
| 01A-A2H6-D04 | 01A-B1B4-A23 |
| 01A-A2H6-E02 | 01A-B1B4-A24 |
| 01A-A2H6-E04 | 01A-B1B4-A22 |
| 01A-A2H6-B04 | 01A-B1B4-A19 |
| 01A-A2H6-B02 | 01A-B1B4-A18 |
| (ALD-YB233) | (ALD-YC843) |

**Is continuity present as shown in the previous table?**
Y N

**013**
Replace the cable from 01A-B1B4 to 01A-A2ZC.

**(Entry Point Z)**

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

**014**
Use your CE-meter (range ohm x1) and check for continuity between all following listed points on board 01A-B1.
01A-B1B4-A22 (ALD-YC843)
01A-B1B4-A23 (ALD-YC843)
01A-B1B4-A24 (ALD-YC843)
01A-B1B4-A18 (ALD-YC843)
01A-B1B4-A19 (ALD-YC843)

**Is the measured resistance zero ohm?**
Y N

**015**
Replace board 01A-B1.
**Go to Step 013, Entry Point Z.**





**016**
Suspect connector problem of 01A-B1B4
(ALD-YC843)
or 01A-A2ZC
(ALD-YB233)
Check the connectors carefully and repair or replace the failing parts.
**Go to Step 013, Entry Point Z.**

**017**
1.Press power-off switch.
2.Reconnect FDS connector 01A-A2ZC.
3.Connect CE-meter (range 15VDC) to
01A-A2A2-D10
(ALD-YB241)
'-5.1V sense PS104 01A-B1 A63'
4.Observe your meter and press power-on switch.

**Was -5.1VDC present as long as the power-on switch is pressed?**
Y N

**018**
Repair wiring between the pins listed in the previous step or replace board 01A-A2.
**Go to Step 013, Entry Point Z.**

**019**
1.Connect CE-meter (range ohm x1) to
01A-A2A2-D10
'-1.5V sense -5.1V 01A-B1 A63'
(ALD-YB241)
and to any D08 pin.
2.Remove PC sense card 1 from 01A-A2D2 and paddle card from 01A-A2A2.
3.Disconnect connector 01A-B1B4.

**Is the resistance below 100 ohm?**
Y N

**020**
Connect CE-meter (range ohm X1) to 01A-A2A2-B07 and to 01A-A2D2-U09 '-1.5V sense -5.1V 01A-B1 A63'

**Is the resistance below 100 ohm?**
Y N

**021**
**(Entry Point F)**

1.Repair wiring from 01A-A2A2-B07 to 01A-A2D2-U09
'-1.5V sense -5.1V 01A-B1 A63'
or replace board 01A-A2.
2.Reconnect connector 01A-B1B4.
**Go to Page 3, Step 013, Entry Point Z.**

**022**
Do not disconnect the lead 1 of your meter which is connected to 01A-A2A2-B07
2.Connect lead 2 of your meter to any D08.

**Is the resistance below 100 ohm?**
Y N

**023**
1.Press power-off switch.
2.Replace cable and paddle card with resistor network in position 01A-A2A2.
3.Reconnect connector 01A-B1B4.
**Go to Page 3, Step 013, Entry Point Z.**

**024**
**Go to Step 021, Entry Point F.**

**025**
There is a short circuit to ground.
1.Repair wiring of signal
'-1.5V sense -5.1V 01A-B1 A63'
(ALD-YB241)
or replace board 01A-A2.
2.Reconnect connector 01A-B1B4.
**Go to Page 3, Step 013, Entry Point Z.**

**026**
Go to corresponding MAP.

**027**
**(Entry Point D)**

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 the reference code F7F43001 displayed?**
Y N

**028**
1.Press power-off key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**029**
**Go to Page 2, Step 009, Entry Point E.**

**030**
Run voltage measurement program.

**Is address 95 bit 1 out of tolerance?**
Y N

**031**
**Is any other voltage out of tolerance?**
Y N

**032**
**Go to Page 3, Step 013, Entry Point Z.**

**033**
**Go To Map 0275, Entry Point A.**

**034**
**Go to Step 027, Entry Point D.**

**035**
Go to corresponding MAP.

**036**
**(Entry Point C)**

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 reference code F7F43001 displayed?**
Y N

**037**
1.Press power-off switch.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**038**
**Go to Page 2, Step 009, Entry Point E.**

**039**
Suspect intermittent voltage failure. Run voltage measurement program according to MAP 0275. If there is a single voltage failure of -5.1V of PS104
**Go To Map F7A9, Entry Point F.**

## POWER PROBLEM



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 | 020 | 0202 | A |
| 3 | 023 | 0204 | A |

**001**

Symptom:

PS104 +12V on 01A-A1 out of tolerance, A13.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | +12V DC distribution. |
| 3 | A13 sense wiring. |
| 4 | PS104. |
| 5 | TR104. |

**(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 the "Base power on" indicator on?**

Y N

**003**

**(Entry Point C)**

**Go To Map 0200, Entry Point A.**

004
**Is the reference code F7D43201 displayed?**
Y N

005
**Is any other reference code displayed?**
Y N

006
**Go to Page 1, Step 003, Entry Point C.**

007
Go to corresponding MAP.

008
**(Entry Point B)**

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 reference code F7D43201 displayed?**
Y N

009
1.Press power-on key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

010
1.Press power-off key.
2.Connect CE-meter (range 5VDC)
+lead to 01A-A2C2-B07
'+1.5V sense +12V 01A-A1 A13'
(ALD-YB621)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Is 1.5VDC at least momentarily present?**
Y N





011
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A1G6-C04
'+12V sense PS104 01A-A1 A13'
(ALD-YC821)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Is 12VDC at least momentarily present?**
Y N

012
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A1B4-A14
'+12V PS104 to 01A-A1 CD ATT'
(ALD-YC821)
-lead to any D08 pin.
3.Observe meter and press power-on switch.

**Is 12VDC at least momentarily present?**
Y N

013
1.Press power-off switch.
2.Check and repair wiring from connector PS104-07-007 or PS104-07-008.
'+12V PS104 to 01A-A1 CD ATT'
(ALD-YA451)
to 01A-A1B4-A14 or 01A-A1B5-E01
(ALD-YC821)
**Go to Page 3, Step 023, Entry Point Z.**

014
1.Press power-off switch.
2.Check and repair wiring from
01A-A1B4-A14 and 01A-A1B5-E01
'+12V PS104 to 01A-A1 CD ATT'
(ALD-YC821)
to 01A-A1G6-C04
'+12V sense PS104 01A-A1 A13'
(ALD-YC821)
or replace board 01A-A1.
**Go to Step 023, Entry Point Z.**

015
1.Press power-off switch.
2.Connect CE-meter (range 15VDC) to
01A-A2A4-D09 (+)
'+1.5V sense +12V 01A-A1 A13'
(ALD-YB243)
and to any D08 pin (-)
3.Observe meter, and press power-on switch.

**Is 1.5VDC at least momentarily present?**
Y N

016
1.Press power-off switch.
2.Remove PC sense card 2 from 01A-A2C2
and paddle card from 01A-A2A4.
3.Connect CE-meter (range ohm X1) to
01A-A2C2-B07
'+1.5V sense +12V 01A-A1 A13'
(ALD-YB621)
and to any D08 pin.

**Is the resistance below 100 ohm?**
Y N

017
Sense cable from 01A-A1G6-C04 to
01A-A2A4-D09 or resistor network on
01A-A2A4 is defective.
1.Press power-off switch.
2.Repair or replace cable and paddle card
with resistor network in position
01A-A2A4.
**Go to Step 023, Entry Point Z.**





018
There is a short circuit to ground.
**Go to Step 019, Entry Point D.**

019
(Entry Point D)

1.Press power-off switch.
2.Check and repair wiring from
01A-A2A4-D09
(ALD-YB243)
to 01A-A2C2-B07
(ALD-YB621)
'+1.5V sense +12V 01A-A1 A13'
or replace board 01A-A2.
**Go to Step 023, Entry Point Z.**

020

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

021
Run voltage measurement program.

**Is address A5 bit 0 out of tolerance?**
Y N

022
**Is any other voltage out of tolerance?**
Y N

023
(Entry Point Z)

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

024
**Go to Step 023, Entry Point Z.**

**025**
Connect CE-meter (range 15VAC)
to connector PS104-09-001 or PS104-09-003
'12.6VAC'
and to connector PS104-09-002
'Center'
(ALD-YA451)

**Is 12.6VAC present?**
Y N

**026**
1.Press power-off key.
2.Check input line connection to TR104 according to customers line voltage. For correct connection see
(ALD-YA451)
(ALD-YA021)
3.Check connector PS104-09 and wiring between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

**027**
Connect CE-meter (range 15VDC) to connector
PS104-09-001 or PS104-09-003
'+12.6VAC'
and to connector PS104-09-002
'Center'
(ALD-YA451)

**Is 12.2VAC present?**
Y N

**028**
**Go to Page 3, Step 023, Entry Point Z.**



**029**
Connect CE-meter (range 15VDC)
+lead to connector PS104-07-007 or
PS104-07-008
'+12V PS104 to 01A-A1 CD ATT'
(ALD-YA451)
-lead to PS104-07-005
'DC-GND'

**Is 12VDC present?**
Y N

**030**
1.Press power-off key.
2.Replace PS104.
**Go to Page 1, Step 001, Entry Point A.**

**031**
**Go to Page 2, Step 008, Entry Point B.**

## POWER PROBLEM



**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 | 003 | 0200 | A |
| 4 | 028 | 0202 | A |
| 5 | 031 | 0204 | A |
| 3 | 015 | 0250 | A |
| 5 | 032 | 0275 | A |

**001**

Symptom:

PS104 +12V on 01A-B1 out of tolerance, A48.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | +12VDC distribution. |
| 3 | A48 sense wiring. |
| 4 | PS104. |
| 5 | TR104. |
| 6 | Voltage divider 01A-A2A2. |

**(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 the *Base power on* indicator on?**

**Y N**

5 2 2
A B C

**003**
**(Entry Point C)**

**Go To Map 0200, Entry Point A.**

**004**
**Is the reference code F7F43401 displayed?**
**Y N**

**005**
**Is any other reference code displayed?**
**Y N**

**006**
**Go to Step 003, Entry Point C.**

**007**
Go to corresponding MAP.

**008**
**(Entry Point B)**

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 reference code F7F43401 displayed?**
**Y N**

**009**
1.Press power-off key.
2.Replace PC-sense card in position 01A-A2C2.
**Go to Page 1, Step 001, Entry Point A.**

**010**
1.Press power-off key.
2.Connect CE-meter (range 5.0VDC)
+lead to 01A-A2C2-B10
'+1.5V sense +12V 01A-B1 A48'
(ALD-YB621)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Was approximately 1.5VDC present as long as the power-on switch was pressed?**
**Y N**

**011**
1.Press power-off key.
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2A2-D13
'+12V sense PS104 01A-B1 A48'
(ALD-YB241)
-lead to any D08 pin
3.Observe meter and press power-on switch.

**Was approximately 12VDC present as long as the power-on switch was pressed?**
**Y N**

**012**
1.Press power-off key.
2.Disconnect FDS cable from 01A-A2ZC pin side.
3.Connect CE-meter (range 15VDC)
+lead to 01A-A2F6-D02
'+12V sense PS104 01A-B1 A48'
(ALD-YB233)
-lead to any D08 pin.
4.Observe meter and press power-on switch.

**Was approximately 12VDC present as long as the power-on switch was pressed?**
**Y N**

**013**
1.Press power-off switch.
2.Reconnect FDS connector to 01A-A2ZC pin side.
3.Connect CE-meter (range 15VDC) to
01A-B1E1-B13 (+)
'(+12V PS104 TP)'
(ALD-YC843)
and to 01A-B1E1-D13 (-)
'DC-GND'
4.Observe your meter and press power-on switch.

**Was approximately 12VDC present as log as the power-on switch was pressed?**
**Y N**

**014**
1.Press power-off switch.
2.Connect CE-meter (range 15VDC) to connector PS104-06-007 (+)
'+12V PS104 to 01A-B1 PU/BSM'
(ALD-YA451)
and to PS104-06-004 (-)
'DC-GND'
3.Observe meter and press power-on switch.

**Was approximately 12VDC present as long as the power-on switch was pressed?**
**Y N**

**015**
**Go To Map 0250, Entry Point A.**

**016**
1.Press power-off switch.
2.Disconnect connector 01A-B1A1-D13 and 01A-B1A1-E13.
3.Use your CE-meter (range ohm X1) and check for continuity between female connector
01A-B1A1-D13 or
01A-B1A1-E13
(ALD-YC843)
and connector PS104-06-007 or PS104-06-009
'+12V PS104 to 01A-B1 PU/BSM'
(ALD-YA541)

**Is continuity present?**
**Y N**

**017**
Check and repair or replace wiring from connector PS104-06-007 and PS104-06-009
'+12V PS104 to 01A-B1 PU/BSM'
(ALD-YA451)
to 01A-B1A1-D13 and 01A-B1A1-E13
(ALD-YC843)
**Go to Page 5, Step 031, Entry Point Z.**

**018**
**(Entry Point D)**

1.Disconnect connector 01A-B1B4 (accessible from card side)
2.Use your CE-meter and check for continuity between pin 01A-B1A1-D13 or
01A-B1A1-E13
'+12V PS104 to 01A-B1 PU/BSM'
(ALD-YC841)
and sense connector pin 01A-B1B4-A02 or
01A-B1B4-A03
'+12V sense PS104 01A-B1 A48'
(ALD-YC841)

**Is continuity present?**
**Y N**

**019**
1.Replace board 01A-B1.
2.Reconnect all disconnected connectors.
**Go to Page 5, Step 031, Entry Point Z.**

**020**
1.Replace the sense wiring from 01A-B1B4 to 01A-A2ZC.
2.Reconnect all disconnected connectors.
**Go to Page 5, Step 031, Entry Point Z.**

**021**
**Go to Page 3, Step 018, Entry Point D.**

**022**
1.Press power-off switch.
2.Reconnect FDS cable to 01A-A2ZC pin side.
3.Check and repair wiring from
01A-A2F6-D02
'+12V sense PS104 01A-B1 A48'
(ALD-YB233)
to 01A-A2A2-D13
(ALD-YB241)
**Go to Page 5, Step 031, Entry Point Z.**

**023**
1.Press power-off switch.
2.Connect CE-meter (range ohm X1)
to 01A-A2A2-D11
'+1.5V sense +12V 01A-B1 A48'
(ALD-YB241)
and to any D08 pin.
3.Remove PC sense card 2 form 01A-A2C2 and paddle card from 01A-A2A2.

**Is the resistance below 100 ohm?**
**Y N**

N P



**024**
Connect CE-meter (range ohm X1) to
01A-A2A2-D11 and to 01A-A2C2-B10
'+1.5V sense +12V 01A-B1 A48'
(ALD-YB241)
(ALD-YB621)

**Is the resistance below 100 ohm?**
**Y N**

**025**
Repair wiring from 01A-A2A2-D11
(ALD-YB241)
to 01A-A2C2-B10
(ALD-YB621)
'+1.5V sense +12V 01A-B1 A48'
or replace board 01A-A2.
**Go to Page 5, Step 031, Entry Point Z.**

**026**
1.Press power-off switch.
2.Replace cable and paddle card with resistor network in position 01A-A2A2.
3.Plug the removed cards into their positions and install all top connectors.
**Go to Page 5, Step 031, Entry Point Z.**

**027**
There is a short circuit to ground. Repair wiring of signal
'+1.5V sense +12V 01A-B1 A48'
(ALD-YB241)
or replace board 01A-A2.
**Go to Page 5, Step 031, Entry Point Z.**

**028**

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

**029**
Run voltage measurement program.

**Is address A5 bit 1 out of tolerance?**
Y N

**030**
**Is any other voltage out of tolerance?**
Y N

**031**
**(Entry Point Z)**

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

**032**
**Go To Map 0275, Entry Point A.**

**033**
Connect CE-meter (range 50VAC)
to connector PS104-09-001
'12.6VAC'
and to connector PS104-09-002
'Center'
(ALD-YA451)

**Is approximately 12.6VAC present?**
Y N

**034**
1.Press power-off key.
2.Check input line connection to TR104 according to customer's line voltage. For correct connection see
(ALD-YA451)
(ALD-YA021)
3.Check connector PS104-09 and wiring between TR104 and PS104.
If no error detected, replace TR104.
**Go to Page 1, Step 001, Entry Point A.**

**035**
Connect CE-meter (range 15VDC)
+lead to connector PS104-06-009
'+12V PS104 to 01A-B1 PU/BSM'
(ALD-YA451)
-lead to PS104-06-004
'DC-GND'

**Is approximately 12VDC present?**
Y N

**036**
1.Press power-off key.
2.Replace PS104.
**Go to Page 1, Step 001, Entry Point A.**

**037**
**Go to Page 2, Step 008, Entry Point B.**

## POWER PROBLEM



ENTRY POINTS

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7A6 | D | 3 | 018 |
| F7A6 | F | 2 | 010 |
| F7XX | A | 1 | 001 |

EXIT POINTS

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 2 | 008 | 0200 | A |
| 3 | 019 | 0204 | A |

**001**

Symptom:
PS104 -5.1V on 01A-B1 and 01A-C2 failing
A63 and A45.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | Load fault on 01A-B1,01A-A2, 01A-C2. |
| 2 | PC sense card 1 in pos. 01A-A2D2. |
| 3 | -5.1VDC distibution via 01A-A2. |
| 4 | PS104. |
| 5 | TR104. |
| 6 | A45 sense wiring. |
| 7 | A63 sense wiring. |
| 8 | Diskette drive control card. |

**(Entry Point A)**

Note:
The -5.1V from PS104
(sense points A45 and A47) are also used by
the power on test for a DAC-test of both
PC-sense cards.
1.Press power-off key.
2.Press power-on switch and wait
approximately one minute.

Is the reference code F7D43601 displayed?

Y N

2 2
A B

002
Is any other reference code displayed?
Y N

003
(Entry Point C)

Suspect intermittent voltage failure. Run voltage measurement program according to MAP 0275. If there is a single voltage failure of -5.1V from PS104,
Go to Step 010, Entry Point F.

004
Go to MAP for displayed reference code.

005
1.Switch to CE-mode at CE panel.
2.Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?
Y N

006
Is the reference code F7D43601 displayed?
Y N

007
Is any other reference code displayed?
Y N

008
(Entry Point B)

Go To Map 0200, Entry Point A.

009
Go to corresponding MAP.





010
(Entry Point F)

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 reference code F7D43601 displayed?
Y N

011
1.Press power-off switch.
2.Replace PC-sense card in position 01A-A2C2.
Go to Page 1, Step 001, Entry Point A.

012
Is PS105 installed?
Y N

013
Are cards installed in board 01A-C2 columns K to W?
Y N

014
Go to Page 3, Step 018, Entry Point D.

015
1.Remove all cards from board 01A-C2 columns K to W.
2.Press power-on switch and wait approximately one minute.

Is reference code F7D43601 displayed?
Y N

016
Suspect overload condition caused by a faulty card on board 01A-C2 col. K to W.
1.Press power-off switch.
2.Replug cards step by step. After each step press power-on switch and wait approximately one minute.
3.Replace the defective card which generated reference code F7D43601.
4.Press power-on switch and wait approximately one minute.
Go to Step 019, Entry Point Z.

017
1.Press power-off switch.
2.Reinstall all cards into board 01A-C2 col. K to W.
Go to Step 018, Entry Point D.

018
(Entry Point D)

Suspect intermittent load faults caused by a defective card on board 01A-B1 or on board 01A-C2 columns C to F or on board 01A-A2 columns K, N, Q and R.
1.Replace the previous listed cards step by step. After each step press power-on switch and wait approximately one minute.
2.The card which generated reference code F7D43601 or F7D43001 must be replaced by a new one. All other card must be plugged into their original positions again.
3.Press power-on switch and wait approximately one minute.

Is reference code F7D43601, F7E43001 or F7F43001 displayed?
Y N

019
(Entry Point Z)

Go To Map 0204, Entry Point A.

020
Press power-off switch.

Is an I/O diskette drive installed?
Y N

021
(Entry Point E)

Suspect an intermittent load fault caused by the system diskette drive control card. Replace the control card of the system diskette drive.
Go to Step 019, Entry Point Z.

022
1.Disconnect connector PS104-03 'DC voltages PS104 to 53FD I/O' (ALD-YA451)
2.Press power-on switch and wait approximately one minute.

Is reference code F7D43601 displayed?
Y N

023
1.Press power-off switch.
2.Replace the I/O diskette drive control card.
Go to Step 019, Entry Point Z.

024
Go to Step 021, Entry Point E.

025
Go to Page 2, Step 003, Entry Point C.

## POWER PROBLEM



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0200 | C | 2 | 009 |
| 0260 | A | 1 | 001 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 4 | 024 | 0200 | A |
| 4 | 027 | 0202 | A |
| 5 | 030 | 0204 | A |
| 2 | 007 | 0250 | A |
| 8 | 051 | 0260 | A |

**001**
Symptom:
PS104 -5.1V on 01A-A1 out of tolerance, A01.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | -5.1VDC distribution. |
| 3 | Load fault. |
| 4 | A01 sense wiring. |
| 5 | PS104. |
| 6 | TR104. |
| 7 | Line voltage distribution. |

**(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 F7D43801 displayed?**
**Y N**

**003**

**Is any other reference code displayed?**

Y N

**004**

**Go to Page 4, Step 024, Entry Point Y.**

**005**

Go to MAP for displayed reference code.

**006**

1.Press power-off key
2.Connect CE-meter (range 15VDC)
-lead to connector PS104-07-001
'-5.1V PS104 to 01A-A1 CD ATT'
(ALD-YA451)
+lead to connector PS104-07-002
3.Press power-on switch.

**Is -5.1VDC at least momentarily present?**

Y N

**007**

**(Entry Point B)**

**Go To Map 0250, Entry Point A.**

**008**

1Press power-off key.
2.Connect CE-meter (range 15VDC)
-lead to 01A-A1H6-B02
'-5.1V sense PS104 01A-A1 A01'
(ALD-YC821)
+lead to any D08 pin.
The +lead of your meter must be connected without removing the connectors.
3.Press power-on switch.

**Is -5.1VDC at least momentarily present?**

Y N

D E

**009**

**(Entry Point C)**

1.Press power-off key.
2.Ensure that connector on 01A-A1B4-E14 is seated correctly.
3.Connect CE-meter (range 15VDC)
-lead to 01A-A1B4-E14
'-5.1V PS104 to 01A-A1 CD ATT'
(ALD-YC821)
+lead to any D08 pin.
The +lead of your meter must be connected without removing the connector.
4.Press power-on switch.

**Is -5.1VDC at least momentarily present?**

Y N

**010**

**Go to Page 6, Step 038, Entry Point M.**

**011**

1.Press power-off key.
2.Board wiring of -5.1V net defective.
Replace board 01A-A1.
**Go to Page 5, Step 030, Entry Point Z.**

**012**

1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
-lead to 01A-A2D2-P13
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB643)
+lead to any D08 pin.
3.Carefully observe your meter and press power-on switch.

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

Y N

4 3
F G

**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-A2A4-D10
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB243)
+lead to any D08 pin.
3.Press power-on switch.

**Was -1.5VDC at least momentarily present?**
Y N

**015**
1.Press Power-off key.
2.Remove PC sense card from position 01A-A2D2.
3.Connect CE-meter (range ohm X1) to any D08 pin and to
01A-A2A4-D10
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB243)

**Is the resistance below 200 ohm?**
Y N

**016**
**(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 5, Step 030, Entry Point Z.**

**017**
Do not disconnect the CE-meter.
1.Remove paddle card from position 01A-A2A4.

**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 -5.1V 01A-A1 A01'
(ALD-YB643)
(ALD-YB243)
and DC-GND. Check and repair board wiring or replace board 01A-A2.
**Go to Page 5, Step 030, Entry Point Z.**

**020**
1.Press power-off key.
2.Repair sense wiring from 01A-A2D2-P13
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB643)
to 01A-A2A4-D10
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB243)
or replace board 01A-A2.
**Go to Page 5, Step 030, Entry Point Z.**

**021**
1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A4.
**Go to Page 5, 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**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**025**
**Is reference code F7D43801 displayed?**
**Y N**

**026**
1.Press power-off key.
2.Replace PC sense card in position 01A-A2C2.
**Go to Page 5, Step 030, Entry Point Z.**

**027**
1.Press power-off switch.
Suspect power program error.
2.Retry power on using the diagnostic diskette. If the problem is not solved.

**(Entry Point X)**

**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 Page 4, Step 023, Entry Point H.**

**030**
**(Entry Point Z)**

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

**031**
**(Entry Point E)**

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

| Addr | Bits | Voltages | from board | sense No. | Go to MAP |
|---|---|---|---|---|---|
| 97 | 5 | -5.1V PS104 | 01A-C2 | A33 | F79B |
| XOR 97 | 5 | -5.1V PS104 | 01A-C2 | A33 | F7B4 |
| 95 | 1 | -5.1V PS104 | 01A-B1 | A63 | F7A6 |
| 97 | 1 | -5.1V PS104 | 01A-C2 | A45 | F79E |
| 97 | 6 | -5.1V PS104 | 01A-A1 | A01 | Entry point K |

**Is more than one voltage out of tolerance?**
**Y N**

**032**
**(Entry Point K)**

**Is -5.1VDC PS104 on 01A-A1 out of tolerance (Address 97, bit 6)?**
Y N

**033**
Go to MAP according to table after ENTRY POINT E.
**Go to Page 5, Step 031, Entry Point E.**

034
1.Connect CE-meter (range 15VDC)
-lead to 01A-A1H6-B02
'-5.1V sense PS104 01A-A1 A01'
(ALD-YC823)
+Lead to any D08 pin
'DC-GND'

**Is -5.1VDC +/-1.0V present?**
Y N

**035**
1.Connect CE-meter (range 15VDC)
-lead to 01A-A1B4-E14
'-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

7
P Q R

Q R 2815 MAP F7AA-6

**036**
**(Entry Point G)**

1.Press power-off key.
2.Connect CE-meter (range 15VDC)
-lead to connector PS104-07-001
'-5.1V PS104 to 01A-A1 CD Att'
+lead to connector PS104-07-002
'DC-GND'
(ALD-YA451).
3.Press power-on switch.

**Is -5.1VDC at least momentarily present?**
Y N

**037**
**Go to Page 2, Step 007, Entry Point B.**

**038**

**(Entry Point M)**

1.Press power-off key.
2.Repair or replace cable from connector PS104-07-001 to 01A-A1B04-E14.
(ALD-YA451)
(ALD-YC821)
**Go to Page 5, Step 030, 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-B02
'-5.1V sense PS104 01A-A1 A01'
(ALD-YC823)
+lead to any D08 pin.
4.Press power-on switch.

**Is -5.1VDC +/- 1.0V present?**
Y N

7 7
S T

**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 031, Entry Point E.**

**041**
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 apporoximately one minute. Replace the defective card which caused incorrect meter reading at sense point.
3.Press power-on switch and wait approximately one minute.
**Go to Page 5, Step 031, Entry Point E.**

**042**
**(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-P13
'-1.5V sense -5.1V 01A-A1 A01'
+lead to any D08 pin.
'DC-GND'
(ALD-YB643).

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

**043**
1.Connect CE-meter (range 1.5VDC)
-lead to 01A-A2A4-D10.
'-1.5V sense -5.1V 01A-A1 A01'
+lead to any D08 pin
'DC-GND'
(ALD-YB243).
2.Press power-on switch.

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

**044**
1.Press power-off switch.
2.Connect CE-meter (range ohm X1) to 01A-A2D2-P13
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB643)
and to any D08 pin.
3.Remove PC sense card 1 from 01A-A2D2 and paddle card from 01A-A2A4.

**Is the resistance below 100 ohm?**
Y N

**045**
There is a short circuit to ground. Check and repair wiring of signal
'-1.5V sense -5.1V 01A-A1 A01'
(ALD-YB643)
or replace board 01A-A2.
**Go to Page 4, Step 024, Entry Point Y.**

**046**
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.
**Go to Page 5, Step 030, Entry Point Z.**

**047**
1.Press power-off key.
2.Repair wiring from 01A-A2D2-P13
(ALD-YB643)
to 01A-A2A4-D10
(ALD-YB243)
'-1.5V sense -5.1V 01A-A1 A01'
or replace board 01A-A2.
**Go to Page 5, Step 030, 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 6 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 5, Step 030, Entry Point Z.**

**050**
**Go to Page 4, Step 027, Entry Point X.**

**051**
**Go To Map 0260, Entry Point A.**

## POWER PROBLEM



**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 |
| 5 | 019 | 0204 | A |

**001**

Symptom:
TR105 thermal failure, D08

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | 24V wiring from PS104 to TR105. |
| 3 | BPC card 01A-A2B2. |
| 4 | D08 sense wiring. |
| 5 | TR105. |

**(Entry Point A)**

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 the reference code F7D50001 displayed?**
Y N

**002**
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 any reference code displayed?**
Y N

**003**
**Go to Page 5, Step 019, Entry Point Z.**

**004**
Go to corresponding MAP.

**005**
1.Probe 01A-A2D2-M04
'-TR105 TH failed D08'
(ALD-YB643).

**Is the down indicator of the probe on?**
Y N

**006**
1.Press power-off key.
2.Replace PC-sense card 2 in position
01A-A2C2.
**Go to Page 5, Step 019, Entry Point Z.**

**007**
**(Entry Point B)**

Connect CE-meter(range 30VDC)
-lead to PS105-TB03-001
'DC-GND'
+lead to connector PS105-01-004
'+24VDC PS104 to PS105'
(ALD-YA461).

**Is +24VDC present?**
Y N

**008**

1.Press power-off switch.
2.Check and repair wiring of +24V net from PS104 to PS105.

```
|-------|
| BOARD |*| 01A-A2B3-E14 (ALD-YC831)
|-------| |
          | Board wiring
|-------| |
| CONN  |=| 01A-A2C1-B13 (ALD-YB223)
|-------| |
          | Cable
|-------| |
| CONN  |=| PS105-01-004 (ALD-YA461)
|-------|
```

* '+24V PS104'

**Go to Page 5, Step 019, Entry Point Z.**

**009**

1.Press power-off key.
2.Disconnect connector PS105-07.
Use ohmmeter and check connection via TR105 thermal switch between connector PS105-07-005 and PS105-07-008 male plug.
Attention:
Thermal switch is located inside of TR105. The thermal switch opens if an overheating condition appears and closes if the overheating condition disappears.

**Is the thermal switch of TR105 open? (no connection between connector PS-105-07-005 and PS105-07-008)**

Y N

**010**
Use ohmmeter and check connection between connector PS105-01-001
'-TR105 TH failed D08'
(ALD-YA461)
and 01A-A2B2-U07
'-TR105 TH failed D08'
(ALD-YB423).

**Is the connection ok?**
Y N

**011**
Repair wiring of signal
'-TR105 TH failed D08'
from connector PS105-01-001
(ALD-YA461)
to 01A-A2B2-U07.
(ALD-YB423).
**Go to Page 5, Step 019, Entry Point Z.**

**012**
1.Disconnect paddle card from 01A-A2YA.
2.Remove PC sense card 01A-A2D2
3.Use ohmmeter (range ohm X 1)
and check resistance between the following points:
a) 01A-A2B2-D08
'DC-GND'
and 01A-A2B2-U07
Resistance must be approximately 1150 ohm.
b) 01A-A2B2-U07 and 01A-A2B2-S06
Resistance must be approximately 900 ohm.

**Are both resistances ok.?**
Y N

H J

**013**
1.Remove BPC card from position 01A-A2B2.
2.Use ohm meter (range ohm X1) and connect the leads to any D08 pin
'DC-Gnd'
and to 01A-A2D2-M04.
'-TR105 TH failed D08.'
(ALD-YB643).

**Is the resistance higher than 100k ohm?**
Y N

**014**
Suspect short circuit to ground.
Repair wiring of signal
'-TR105 TH failed D08'
(ALD-YB623)
**Go to Page 5, Step 019, Entry Point Z.**

**015**
1.Replace BPC card which was previously removed from 01A-A2B2.
2.Reinstall all previously removed cards and connectors.
**Go to Page 5, Step 019, Entry Point Z.**

**016**
Use ohmmeter (range ohm X1)
and check connection between 01A-A2B2-S06
'-TR105 TH failed D08'
(ALD-YB423)
and 01A-A2D2-M04
(ALD-YB643)

**Is the connection o.k.?**
Y N

**017**
Repair board wiring for signal
'-TR105 TH failed D08'
from 01A-A2B2-S06
to 01A-A2D2-M04
or replace board 01A-A2.
**Go to Page 5, Step 019, Entry Point Z.**

**018**

The Wiring is ok.

**(Entry Point C)**

TR105 thermal switch may have closed again.
Reconnect all connectors and retry power on.
If the same failure occurs again, replace transformer TR105
If any other failure occurs go to MAP according to displayed reference code.

**019**

Thermal switch of TR105 is open.
1.Switch off PCC-CB01.
2.Replace TR105.
**(Entry Point Z)**
**Go To Map 0204, Entry Point A.**

## POWER PROBLEM



### 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 |
| 5 | 024 | 0200 | A |
| 9 | 050 | 0202 | A |
| 5 | 021 | 0204 | A |
| 10 | 059 | 0282 | A |
| 6 | 031 | 0287 | A |

**001**

Symptom:

PS105 +8.5V on 01A-A1 out of tolerance, A02.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | +8.5VDC distribution. |
| 3 | Load fault. |
| 4 | A02 sense wiring. |
| 5 | PS105. |
| 6 | TR105. |
| 7 | Line voltage distribution. |

**(Entry Point A)**

**Is PS105-CP06 tripped?**

Y N

## POWER PROBLEM



**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 F7D50201 displayed?**

Y N

**004**

**Is any other reference code displayed?**

Y N

**005**

**Go to Page 5, Step 024, Entry Point Y.**

**006**

Go to MAP for displayed reference code.

**007**

1. Press power-off key.
2. Disconnect connectors PS105-02 and 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 | PS105-02-003 | PS105-02-007 | +7.8 V |
| -5.1 V | PS105-02-004 | PS105-02-012 | -4.6 V |

**Are any DC-voltage below the lower limit?**

Y N

**008**

1. Press power-off key.
2. Reconnect connectors PS105-02 and PS105-04.
3. Remove jumper 01A-A2B2-B12 previously installed.
4. Connect CE-meter (range 15VDC)
   +lead to 01A-A1H6-D02
   '+8.5V sense PS105 01A-A1 A02'
   (ALD-YC823)
   -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.

**Was +8.5VDC at least momentarily present?**

Y N

**009**

1.Press power-off key.
2.Ensure that connectors on 01A-A1B3-A14 and
on 01A-A1W3-A14 are seated correctly.
3.Connect CE-meter (range 15VDC)
+lead to 01A-A1B3-A14 or
01A-A1W3-A14
'+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.

**Was +8.5VDC at least momentarily present?**

Y N

**010**

**Go to Page 8, Step 038, Entry Point G.**

**011**

1.Board wiring of +8.5V net defective.
2.Press power-off key.
3.Replace board 01A-A1.
**Go to Page 5, Step 021, Entry Point Z.**

**012**

1.Press power-off key.
2.Connect CE-meter (range 1.5VDC)
+lead to 01A-A2D2-B04
'+1.5V sense +8.5V 01A-A1 A02'
(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

5
H J

**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-A2A4-D12
'+1.5V sense +8.5V 01A-A1 A02'
(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

**015**

1.Press power-off key.
2.Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2A4-D12
'+1.5V sense +8.5V 01A-A1 A02'
(ALD-YB243).
3.Remove PC sense card from position 01A-A2D2.

**Is the resistance below 200 ohm?**

Y N

**016**

**(Entry Point L)**

1.Press power-off key.
2.Repair or replace cable with paddle card from 01A-A1H6-D02
(ALD-YC823)
to
01A-A2A4-D12
(ALD-YB243)
**Go to Page 5, Step 021, Entry Point Z.**

5 5 5
K L M

**017**
Do not disconnect the CE-meter.
1.Remove paddle card from position 01A-A2A4.

**Is the resistance below 200 ohm?**
Y N

**018**
**Go to Page 4, Step 016, Entry Point L.**

**019**
There is a short circuit between the signal
'+1.5V sense +8.5V 01A-A1 A02'
(ALD-YB641)
(ALD-YB243)
and DC-GND.
Check and repair board wiring or replace board 01A-A2.
**Go to Step 021, Entry Point Z.**

**020**
1.Press power-off key.
2.Repair sense wiring from 01A-A2D2-B04
'+1.5V sense +8.5V 01A-A1 A02'
(ALD-YB641)
to 01A-A2A4-D12
'+1.5V sense +8.5V 01A-A1 A02'
(ALD-YB243)
or replace board 01A-A2.
**Go to Step 021, Entry Point Z.**

**021**
1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A4.

**(Entry Point Z)**

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

**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**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**025**
**Is reference code F7D50201 displayed?**
Y N

**026**
1.Press power-off key.
2.Replace PC sense card in position 01A-A2C2.
**Go to Step 021, Entry Point Z.**

**027**
Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D50201 is displayed again,
**Go to Page 9, Step 050, Entry Point B.**

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 Page 5, Step 023, Entry Point H.**

030

**Go to Page 5, Step 021, Entry Point Z.**

031

**(Entry Point M)**

**Go To Map 0287, Entry Point A.**

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 | 3 | -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 +8.5V PS105 on 01A-A1 out of tolerance (Address 85, bit 5)?
Y N

**035**
Go to MAP for failing voltage shown in table after ENTRY POINT E.
**Go to Page 7, Step 032, Entry Point E.**

**036**
Connect CE-meter (range 15VDC)
+lead to 01A-A1H6-D02
'+8.5V sense PS105 01A-A1 A02'
(ALD-YC823)
-Lead to any D08 pin
'DC-GND'

**Is +8.5VDC +/-1.0V present?**
Y N

**037**
Connect CE-meter (range 15VDC)
+lead to 01A-A1B3-A14
or 01A-A1W3-A14
'+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

**038**
**(Entry Point G)**

1. Press power-off key.
2. Connect CE-meter (range 15VDC)
   +lead to connector PS105-02-003
   '+8.5V PS105 to 01A-A1 CD ATT'
   lead to connector PS105-02-007
   'DC-GND'
   (ALD-YA461).
3. Press power-on switch and wait approximately one minute.

**Was +8.5VDC at least momentarily present?**
Y N





**039**
**Go to Page 6, Step 031, Entry Point M.**

**040**
1. Press power-off key.
2. Repair or replace cable from connector PS105-02 to board 01A-A1. (ALD-YA461)

**Go to Page 5, Step 021, Entry Point Z.**

**041**
1. Press power-off key.
2. Remove all cards from board 01A-C2 column K thru W and from board 01A-B2 column S if Auto Call Adapter (ACA) is installed and all cards from board 01A-A1.
3. Connect CE-meter (range 15VDC)
   +lead to 01A-A1H6-D02
   '+8.5V sense PS105 01A-A1 A02'
   (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

**042**
1. Press power-off key.
2. Suspect sense wiring error on board 01A-A1.
   Repair board wiring or replace board 01A-A1.

**Go to Page 9, Step 047, Entry Point W.**

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.
**Go to Page 7, Step 032, Entry Point E.**

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 PC sense card 1 entry:
Connect CE-meter (range 5VDC)
+lead to 01A-A2D2-B04
'+1.5V sense +8.5V 01A-A1 A02'
-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-A2A4-D12.
'+1.5V sense +8.5V 01A-A1 A02'
-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

Y Z A A



046
1.Press power-off key.
2.Repair or replace cable with paddle card from board 01A-A1 to 01A-A2A4.
**Go to Page 5, Step 021, Entry Point Z.**

047
**(Entry Point W)**

1.Press power-off key.
2.Repair wiring or replace board 01A-A2. Perform *Wiring Check Procedure* according to book Maintenance Information (MI) POWER in Vol.16.

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 85 bit 5 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 5, Step 021, Entry Point Z.**

050
**(Entry Point B)**

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

051
**Go to Page 6, Step 031, 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 7, 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 5, Step 021, Entry Point Z.**

056
Go to corresponding MAP

057
1.Press power-off switch.
2.Switch PS105-CP06 on.
3.Press power-on switch and wait approximately one minute.

**Is PS105-CP06 tripped?**
Y N

058
**Go to Page 1, Step 001, Entry Point A.**

059
**Go To Map 0282, Entry Point A.**

## POWER PROBLEM



**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 | F7BC | AA |
| 1 | 004 | 0200 | A |

**001**
Symptom:
PS105 +8.5V on 01A-C2 failing, A31

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | +8.5V distribution. |
| 2 | PS105. |
| 3 | TR105. |

(Entry Point A)

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

**Is ref. code F7A50601 displayed?**
Y N

**002**
**Is any reference code displayed?**
Y N

**003**
**Is the power complete indicator on?**
Y N

**004**
**Go To Map 0200, Entry Point A.**

**005**
Suspect intermittent error. See hints in book Maintenance Information (MI) POWER.

**006**
Go to corresponding MAP.

**007**
**Go To Map F7BC, Entry Point AA.**

## POWER PROBLEM



**ENTRY POINTS**

| FROM | ENTER THIS MAP | | |
|---|---|---|---|
| MAP NUMBER | ENTRY POINT | PAGE NUMBER | STEP NUMBER |
| F7XX | A | 1 | 001 |
| 0260 | A | 1 | 001 |

**EXIT POINTS**

| EXIT THIS MAP | | TO | |
|---|---|---|---|
| PAGE NUMBER | STEP NUMBER | MAP NUMBER | ENTRY POINT |
| 4 | 024 | 0200 | A |
| 8 | 050 | 0202 | A |
| 5 | 030 | 0204 | A |
| 9 | 059 | 0282 | A |
| 5 | 031 | 0287 | A |

**001**

Symptom:

PS105 -5.1V on 01A-C2 out of tolerance, A33.

| | Suspected errors or FRU's (including intermittent errors) |
|---|---|
| 1 | PC sense card 01A-A2D2. |
| 2 | -5.1VDC distribution. |
| 3 | Load fault. |
| 4 | A33 sense wiring. |
| 5 | PS105. |
| 6 | TR105. |
| 7 | Line Voltage distribution. |

**(Entry Point A)**

**Is PS105-CP04 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

**003**
**Is reference code F7D50801 displayed?**
Y N

**004**
**Is any other reference code displayed?**
Y N

**005**
**Go to Page 4, Step 024, Entry Point Y.**

**006**
Go to MAP for displayed reference code.

**007**
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

**008**
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-C2W3-E01 '-5.1V sense PS1045 01A-C2 A33'
(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

**009**
1.Press power-off key.
2.Ensure that connectors on 01A-C2W3-E01 and on 01A-C2W4-E01 are seated correctly.
3.Connect CE-meter (range 15VDC) -lead to 01A-C2W4-E01 '-5.1V PS105 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

**010**
**Go to Page 7, Step 038, Entry Point G.**

**011**
Board wiring of -5.1V net is defective.
1.Press power-off key.
2.Replace board 01A-C2.
**Go to Page 5, Step 030, Entry Point Z.**





**012**
1.Press power-off key.
2.Connect CE-meter (range 1.5VDC) -lead to 01A-A2D2-S03 '-1.5V sense -5.1V 01A-C2 A33'
(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

**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-A2A3-B12 '-1.5V sense -5.1V 01A-C2 A33'
(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

**015**
1.Press power-off key.
2.Connect CE-meter (range ohm x1) to any D08 pin and to 01A-A2A3-B12 '-1.5V sense -5.1V 01A-C2 A33'
(ALD-YB241).
3.Remove PC-sense card from position 01A-A2D2.

**Is the resistance below 200 ohm?**
Y N

4 4 4 4 4
G H J K L

**016**
**(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 5, Step 030, Entry Point Z.**

**017**
Do not disconnect the CE-meter.
1.Remove paddle card from position 01A-A2A3.

**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 -5.1V 01A-C2 A33'
(ALD-YB643)
(ALD-YB241)
and DC-GND.
Check and repair board wiring or replace board 01A-A2.
**Go to Page 5, Step 030, Entry Point Z.**

**020**
1.Press power-off key.
2.Repair sense wiring from 01A-A1D2-S03
'-1.5V sense -5.1V 01A-C2 A33'
(ALD-YB643)
to 01A-A2A3-B12
'-1.5V sense -5.1V 01A-C2 A33'
(ALD-YB241)
or replace board 01A-A2.
**Go to Page 5, Step 030, Entry Point Z.**

**021**
1.Press power-off key.
2.Replace paddle card with cable in position 01A-A2A3 (ALD-YB241).
**Go to Page 5, 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**
**(Entry Point Y)**

**Go To Map 0200, Entry Point A.**

**025**
**Is reference code F7D50801 displayed?**
Y N

**026**
1.Press power-off key.
2.Replace sense PC sense card in position 01A-A2C2.
**Go to Page 5, Step 030, Entry Point Z.**

**027**
Suspect power program error. Retry power on with the diagnostic diskette. If the reference code F7D50801 is displayed again,
**Go to Page 8, Step 050, Entry Point X.**

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 Page 4, Step 023, Entry Point H.

030
(Entry Point Z)

Go To Map 0204, Entry Point A.

031
(Entry Point C)

Go To Map 0287, Entry Point A.

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-C2 out of tolerance (Address 97, bit 5)?

Y N

8 8 7 7
N P Q R

**035**
Go to MAP for failing voltage shown in table after ENTRY POINT E.
**Go to Page 6, Step 032, Entry Point E.**

**036**
Connect CE-meter (range 15VDC)
-lead to 01A-C2W3-E01
'-5.1V sense PS1045 01A-C2 A33'
(ALD-YC871)
+Lead to any D08 pin
'DC-GND'

**Is -5.1VDC +/-1.0V present?**
Y N

**037**
Connect CE-meter (range 15VDC)
-lead to 01A-C2W4-E01
'-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 connector PS105-04-001
'-5.1V PS105 to 01A-C2 K/W CA'
+lead to connector PS105-04-002
'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 5, Step 031, Entry Point C.**

**040**
1.Press power-off key.
2.Repair or replace cable from connector PS105-04 to board 01A-C2W4-E01.
(ALD-YA461)
(ALD-YC871)
**Go to Page 5, Step 030, 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-C2W3-E01
'-5.1V sense PS1045 01A-C2 A33'
(ALD-YC871)
+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-C2.
Repair board wiring or replace board 01A-C2.
3.Press power-on switch and wait approximately one minute.
**Go to Page 6, Step 032, Entry Point E.**

**043**
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 key and observe your meter reading. 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 032, Entry Point E.**

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-A2D2-S03
'-1.5V sense -5.1V 01A-C2 A33'
+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 1.5V DC)
+lead to 01A-A2A3-B12.
'-1.5V sense -5.1V 01A-C2 A33'
+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 5, Step 030, Entry Point Z.**

047
1.Press power-off key.
2.Repair wiring or replace board 01A-A2.
**Go to Page 5, Step 030, 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 5 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 5, Step 030, Entry Point Z.**

050
(Entry Point X)

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

051
**Go to Page 5, Step 031, Entry Point C.**

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 6, 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 5, Step 030, Entry Point Z.**

**056**
Go to corresponding MAP.

**057**
1.Switch PS105-CP04 on.
2.Press power-on switch and wait approximately one minute.

**Is PS105-CP04 tripped?**
Y N

**058**
**Go to Page 1, Step 001, Entry Point A.**

**059**
**Go To Map 0282, Entry Point A.**

POWER PROBLEM



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 | F7BD | AA |
| 1 | 004 | 0200 | A |

**001**
Symptom:
PS105 -8.5V on 01A-C2 failing, A62

| Suspected errors or FRU's (including intermittent errors) | |
|---|---|
| 1 | -8.5V distribution. |
| 2 | PS105. |
| 3 | TR105. |

**(Entry Point A)**

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

**Is reference code F7A51001 displayed?**
Y N

**002**
**Is any other reference code displayed?**
Y N

**003**
**Is the power complete indicator on?**
Y N

**004**
**Go To Map 0200, Entry Point A.**

**005**
Suspect intermittent error. See hints in book Maintenance Information (MI) POWER.

**006**
Go to corresponding MAP.

**007**
**Go To Map F7BD, Entry Point AA.**