Volume Table of Contents

Volume: 01
Title: MI MAPs 0000-02A0
Machine Type: 4331-2/4331-11
Power Design Level: 5
B/M Number 4331-2: 5683205
B/M Number 4331-11: 4687167

13SEP82 PN 4687015

EC 366582 PEC EC366493

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AFA0020

001
(Entry Point A)

REFERENCE CODE DIRECTORY

Reference Code	Title	Goto MAP
00000000	INTRODUCTION, HOW TO USE THE MAPs	INTR
00000001	Start MAP	0000
00000101	Exit MAP	0001
00001001	Intermittent problems	0010
00002001	Reference code evaluation	0020
00005001	Power problems	0050
00006001	I/O problems	0060
00007001	Lamp indicators trouble	0070
00008001	CA/LA problems	0080
02XXXXXX	Directory (power)	02XX
04000001	Dead system (Errors during IML)	0400
04000101	Dead system (Errors hang address table)	0401
04000201	Dead system (Ref. code table)	0402
04000301	Processor bus problems	0403
06000001	Operator console trouble	0600
08000001	Dead system (Errors after IML)	0800
0C000001	Test chain MAP	0C00
0E000001	Problems of DCA attached Devices	0E04
0E542401	EREP 5424	0E02
0E354001	EREP I/O Diskette	0E03
0EXXXX01	Operating System MAP	0E00

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INTRODUCTION
****

How to Use the MAP Charts

1. The MAPs include the IRECA
   (Integrated Reference Code Analysis) program.

   This program is stored on the diagnostic diskette
   (DD1 for 4321 and 4331-1, DD2 for 4331-2 and 4331-11) and
   reduces a certain number of hard copy MAP's.

   In all cases where suspected FRU's can be identified by
   a reference code, the suspected FRU's, and
   verification hints as well as the needed documentation
   is displayed on the screen.

   Thus the IRECA program has to be used concurrently
   to the MAP package.

   In addition the IRECA program contains a communication
   tool (called Info Box), which has to be used for
   intermittent failures as a reminder or history for all
   repair actions performed, like: which FRU's were
   changed, etc.

2. When a MAP tells you to investigate a log, run a test,
   or invoke a tool, refer to Supplement to MAPs
   Section 4: Diagnostic Run Procedures.

   Important:
   Whenever a console printer is attached to the system, press
   the COPY key to save the LOG/TEST/TOOL pictures for
   use in case of support!

3. If any FRU (field replaceable unit) is indicated in any MAP
   or IRECA,
   do not forget to power down before any FRU replacement.
   Refer to Supplement to MAPs, Section 2:
   Removals and Replacements.
   When told to replace a card or a cable, visually check to see
   that the cable or the card is properly seated
   before replacing it.

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INTRODUCTION

4. When a repair action calls for multiple FRUs, replace one after the other and reinstall the non faulty-ones each time. Power down each time and always perform IML and/or run the respective tests in between.

5. If crossovers or top connectors of cables are on top of the cards, these should also be suspected.

6. On a 4321 or 4331-1 do not swap BSM cards, to avoid problems with the redundant bit control.

7. In any repair action, if there are FRUs suspected that are not installed, those FRUs may belong to a feature which is not involved in the system.

8. If a board is suspected, you may replace it in accordance with your support structure.

9. In case an adjustment has to be performed, the detail MAP will refer to the respective component manual.

10. Ignore all logs that come up when switching on any control unit while the system is running.

11. After each repair action or if the MAPs fail to provide any FRU, you have to enter the
EXIT MAP 0001, ENTRY POINT A
This is the central return point for all repair actions!

12. CAUTION
If you want to use the Diagnostic diskette or the backup CNTRL diskette make sure that the system configuration on this diskette and on the current CNTRL diskette matches.
Differences may be in the LOOP, DCA, CA area, since these areas can be configured by the customer himself.

START MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
C400	A	2	001
C500	A	2	001
C600	A	2	001
MLX	A	2	001
0XXX	A	2	001
0001	AA	3	001
0060	A	2	001
0070	Z	4	001
0200	A	2	001
0800	A	2	001
8000	A	2	001
8100	A	2	001
8400	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	001	FD82	A
10	017	0E00	A
10	015	0E00	A
10	014	0E00	A
5	001	0E04	A
10	012	0001	0
7	001	0010	A
4	001	0020	A
4	001	0020	A
10	019	0020	A
10	013	0020	A
5	001	0020	L
4	001	0050	A
5	001	0060	A
6	001	0060	A
10	018	0060	L
6	001	0060	M
6	001	0060	U
7	001	0070	A
5	001	0070	B
6	001	0080	H
6	001	0080	L
8	007	0400	A
5	001	0600	A
8	006	0800	A

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001

****
(Entry Point A)
****

```
>>> MAIN ENTRY FOR SYSTEM PROBLEMS <<<

*********************************************************
*                                                       *
* Vol.17, GSI, Section 2 contains a general description *
* of the system and its maintenance concept.            *
*                                                       *
* General instructions 'How to use the MAP charts'      *
* are given in the INTRODUCTION MAP (see MAP 'INTR',    *
* in front of this MAP).                                *
*                                                       *
*********************************************************
```

(Step 001 continues)

(Step 001 continued)
(Entry Point AA)
****

>>>> S T A R T A L L M A I N T E N A N C E <<<<

>>>> A C T I O N S H E R E . <<<<

Prerequisites

Before starting any maintenance action perform or check the following setup for the processor and the operator console.

1. Operator Console Setup

   o Turn power on at the display station.

   o Check that the security key (optional feature) is inserted and turned fully clockwise.

   o Set the brightness control to a comfortable viewing level.

   o Set the Normal/Test switch to Normal.

2. Processor Setup

   o If ROCF (Remote Operator Console Facility) is displayed on line 24 of the screen, disable the Auto-Answer mode (see page 11, Entry Point ZY).

   o Ensure that the correct control diskette (CNTRL FU1, with proper EC level and serial number) is installed.

     Note: This is an initial setup. Diskettes can be changed at any time if required or instructed by the MAPs.

   o Switch the processor power on (if necessary). If power on is not possible go to page 4, Entry Point Z and follow the MAP instructions.

   o Press the LAMP TEST key to check the control panel lights. (A defective indicator light should be repaired. See MAP 0070, Entry Point A.)

(Step 001 continues)

(Step 001 continued)
(Entry Point Z)
****

o From the Symptom Index, which follows below, choose the symptom that describes your problem (go through the index from top to bottom).
o Go to the MAP stated at the end of the choosen symptom.
o If your symptom is not described in the symptom index continue with the step-by-step procedure on page 8, Entry Point ZA.

==========

S Y M P T O M I N D E X

==========

REFERENCE CODE

A reference code is displayed (line 23 on the screen).
'CHECKSTOP' may also be displayed.
If no reference code is displayed on the screen it may be necessary to press first the CHG DPLY key.
Note: If the system recovers successfully from a machine failure the reference code will disappear from the screen.
It can be displayed again by pressing the CHG DPLY key.
Go To Map 0020, Entry Point A.

CHECKSTOP (no reference code displayed)

'CHECKSTOP' is displayed (line 23 on the screen) but no reference code is displayed.
Press the CHG DPLY key to display the reference code.
Go To Map 0020, Entry Point A.

POWER COMPLETE LIGHT OFF

The POWER COMPLETE light on the operator control panel does not turn on after the normal power on delay (about one minute).
A reference code is n o t displayed.
Go To Map 0050, Entry Point A.

(Step 001 continues)

(Step 001 continued)

==========

S Y M P T O M I N D E X

(continued)

==========

LOG PENDING

The LOG PENDING indication is on (line 23 on the screen).
Go To Map 0020, Entry Point L.

BASIC CHECK

The BASIC CHECK light on the operator control panel is on.
Go To Map 0070, Entry Point B.

OPERATOR CONSOLE PROBLEM

For a problem with the display station or the keyboard of the operator console,
Go To Map 0600, Entry Point A.

SYSTEM DISKETTE DRIVE PROBLEM

There is a problem associated with the system diskette drive. 'SYSDSK' may be indicated on the screen (line 21).
Go To Map FD82, Entry Point A.

I/O DISKETTE DRIVE PROBLEM

There is a problem associated with the I/O diskette drive. 'DISK'may be indicated on the screen (line 21).
Go To Map 0060, Entry Point A.

DISPLAY CLUSTER ADAPTER (DCA) and attached I/O DEVICE PROBLEM

For a problem with the DCA or any I/O device attached to the DCA, display station, or printer (except the operator's console),
Go To Map 0E04, Entry Point A.

(Step 001 continues)

(Step 001 continued)

==========

S Y M P T O M I N D E X

(continued)

==========

I/O PROBLEM

For a problem associated with any I/O device other than those devices listed previously in the Symptom Index above,
Go To Map 0060, Entry Point A.

ENTRY POINT FROM I/O DOCUMENTATION

The maintenance documentation of any I/O device attached to the processor refers to the START MAP of the host processor.
Go To Map 0060, Entry Point M.

I/O USE METER

For an I/O use meter problem,
Go To Map 0060, Entry Point U.

COMMUNICATION ADAPTER

For a problem associated with the Communication Adapter (CA),
Go To Map 0080, Entry Point H.

LOOP ADAPTER

There is a problem associated with the Loop Adapter (LA), or any device attached to the Loop Adapter.
'LOOP MSG' may be displayed on the screen (line 23).
Go To Map 0080, Entry Point L.

(Step 001 continues)

(Step 001 continued)

==========

S Y M P T O M I N D E X

(continued)

==========

OPERATOR CONTROL PANEL LIGHTS

When performing the Lamp Test any of the indicator lights is failing (BASIC CHECK, SYSTEM, WAIT, POWER IN PROCESS, POWER COMPLETE).

Go To Map 0070, Entry Point A.

INTERMITTENT ERROR

The customer is currently using the system. The reported problem appears to be intermittent.

Go To Map 0010, Entry Point A.

Go To Page 8, Step 002, Entry Point ZA.

002

(Entry Point ZA)
****

Did you find a description of your problem in the Symptom Index above?
Y N

003
There is no reference code displayed.

Press the CHG DPLY key.

Note: If the system recovers successfully from a machine failure the reference code will disappear from the screen. It can be displayed again by pressing the CHG DPLY key.

Is now a reference code displayed?
Y N

004
- Press the RESET key.
- Hold down the ALT key and press the MOD SEL/DIAG key.

This step is to check that the maintenance and service processor is operational.

Does the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION picture appear on the screen?
Y N

005
The maintenance and service processor may be not operational. This is called a 'Dead System' situation.

Does the problem occur during the IML operation?
Y N

The time period from pressing the IML key, or switching power on until the PROGRAM LOAD picture appears on the screen is called the IML operation.

006
The problem occured outside of the IML operation.
Go To Map 0800, Entry Point A.

007
Go To Map 0400, Entry Point A.

008
No hardware error symptom has been found so far.

Is there any message from the operating system (DOS/VSE, for example) that indicates a hardware problem?
Y N

Ask the system operator for help if necessary.

Examples of message text for hardware errors:
- 'HARD WAIT CODE=xxxx'
- 'UNRECOVERABLE I/O ERROR....'
- 'IRRECOVERABLE CHANNEL CHECK ERROR....'

009
On the operator control panel watch the SYSTEM and the WAIT lights (for about 30 seconds).

Is only the WAIT light on (and remains on) and no customer's job can be performed?
Y N

010
The problem may be caused by a loop/hang in the control program or in the machine language program.

Is there an unexpected program loop/hang?
Y N

A program loop/hang is indicated by:
- I/O operations do not continue when expected.
- I/O operations are repeating when not expected.
- Jobs do not come to an end.

011

(Entry Point ZB)
****

(Step 011 continues)

(Step 011 continued)
Select LAST DETAILED LOG.
If no last log has been stored the message 'NO LAST LOG STORED' is displayed.

For log selection see Vol.13, STM: 4180, 'Last Detailed Log Display'.

If there is an additional control diskette (CNTRL FU2) check this diskette also for a last log.

Is a log stored?
Y N

012
For a problem search
Go To Map 0001, Entry Point O.

013
Write down the reference code and its possible extension of the last log.

For a description of the detailed log see Vol.13, STM:
Section 4, 'Detailed Log Display'.

Go To Map 0020, Entry Point A.

014
Go To Map 0E00, Entry Point A.

015
Go To Map 0E00, Entry Point A.

016
Does the operating system message indicate an I/O error?
Y N

017
Go To Map 0E00, Entry Point A.

018
Go To Map 0060, Entry Point L.

019
Go To Map 0020, Entry Point A.

020

Go to the MAP stated in the choosen symptom description.

==========

(Entry Point ZY)
****

How to Enable/Disable Auto-Answer
==========

Before any maintenance action is started the Remote Operator Console Facility (ROCF) must be disabled first (Disable Auto-Answer). When the maintenance action has been finished ROCF can be enabled again if necessary (Enable Auto-Answer).

For a detailed description of ROCF refer to Remote Operator Facility Feature Description, GA33-1545.

Disable Auto-Answer

1. Ask the system operator of the host system for permission to disable Auto-Answer.

2. Check that the security key (optional feature) is inserted and turned fully clockwise.

3. Press MOD SEL. The 'Mode Selection' display will appear.

4. Type in selection code MR (fast selection for the 'Remote Operator Console Facility' display). Press ENTER.

5. Write down the indicated telecommunication line speed (see message on the screen 'AUTO-ANSWER IS ENABLED .... BPS'). The line speed is needed for a later Enable Auto-Answer.

6. Type in selection code D (Disable Auto-Answer) and press ENTER.

(Step 020 continues)

(Step 020 continued)

7. Follow the instructions appearing on the screen ('PRESS PF1....').

8. Wait until the message 'AUTO-ANSWER DISABLED' is displayed. You can now start your maintenance actions.

9. Continue with the 'Processor Setup' (see page 3).

Note:
To enable ROCF see 'Enable Auto-Answer' below. You will find this procedure also in MAP 0001 (Exit MAP) Entry Point TA.

Enable Auto-Answer

1. Inform the system operator of the host system that Auto-Answer will be enabled again.

2. Ensure that IML has been performed with the CNTRL diskette installed.

3. Press MOD SEL. The 'Mode Selection' display will appear.

4. Type in selection code MR (fast selection for the 'Remote Operator Console Facility' display). Press ENTER.

5. Type in the correct selection code for the telecommunication line speed wanted:

   H for 1200 BPS
   L for 600 BPS

   Press ENTER.

6. Wait until the message 'AUTO-ANSWER ENABLED' is displayed. The system operator of the host system can now establish the data link.

7. Activate the security keylock (optional feature) if wanted.

*** END ***

EXIT MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
ANY	A	1	001
ANY	K	3	011
ANY	M	3	012
ANY	O	7	020
ANY	P	18	076
ANY	T	5	017
ANY	U	9	027
ANY	X	16	064
ANY	Y	11	037
ANY	Z	11	039
0000	TA	5	017

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	029	E800	A
3	009	FE90	E
13	050	0000	AA
6	018	0070	A
11	038	0400	A
4	015	0400	R

001

(Entry Point A)
****

CENTRAL RETURN POINT

Entry from every repair action of any MAP.

Make sure that you did all necessary testing after having done the repair action, as instructed by the MAP you came from.

Is the system a 4331-2 or a 4331-11?
Y N

002
The system is a 4321 or a 4331-1.

Did you replace any BSM card?
Y N

003
Go to Page 3, Step 011, Entry Point K.

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004

Make sure that the redundant bits have been reset for the replaced BSM card(s).

Is the reset done?

Y N

005

To reset the redundant bits and check whether they have to be set for the new BSM card(s), use the array-tool, DM part.

Go to Vol. 13, STM, Section 4: Diagnostic Run Procedures, Array-Tool (Card Replacement Procedure) ENTRY POINT G.

Leave this page open

If no redundant bits have to be set for the new BSM card(s) the procedure in STM guides back to this EXIT MAP, ENTRY POINT A.

If redundant bits have to be set for the new BSM card(s) the procedure in STM guides to MAP FE90, ENTRY POINT E for copying the new redundant bits setting from the DIAG diskette to the CNTRL diskettes as well. And MAP FE90 will guide back to this EXIT MAP, ENTRY POINT A.

006

Was a new setting of redundant bits necessary with aid of the array-tool?

Y N

007

Go to Page 3, Step 011, Entry Point K.

008

Have you copied the new redundant bits setting to the CNTRL diskettes FU1 and FU2?

Y N

009
Go To Map FE90, Entry Point E.

010
Go to Step 011, Entry Point K.

011

(Entry Point K)
****

If the Remote support Feature is installed and the RLK cards 1 and 2 were removed, reinstall them now:
01A-A2W2 and X4.

Run the test chaining for verification (if not already done).

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Test Chaining Selection).

Any reference code?
Y N

012

(Entry Point M)
****

For problem tracking especially of intermittent failures you can use the INFO-BOX, that is included in the REFCODE ANALYSIS on the DIAG diskette.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (IRECA-Info Box Selection).

For example type in the date, reference code, FRU replacement etc. for a possible call-back.

Erase the log(s) that caused the repair action.

See Vol. 13, STM, Section 4: Diagnostic Run Procedure, (Reference Code Log).

(Step 012 continues)

(Step 012 continued)
Recommedation:
Check the air filters in the front and back cover for excessive dust.
Clean them, if needed to avoid possible intermittent errors.

Refer to Vol.17, GSI, Section 2: 'Preventive Maintenance'.

Perform LAMP TEST on the OCP (operator control panel) and ensure that the following indicators are on:

BASIC CHECK,
POWER COMPLETE,
POWER IN PROCESS,
WAIT,
SYSTEM.

Is any indicator failing?
Y N

013
Perform IML with the CNTRL diskette (FU1).

IML successful?
Y N

IML is completed successfully when the PROGRAM LOAD picture appears on screen.

014
Any reference code?
Y N

015
Go To Map 0400, Entry Point R.

016
Follow the reference code displayed.

017

(Entry Point T)
****

Ensure that all switches are returned to normal.

Close the machine.

Do all reporting.

RETURN SYSTEM TO CUSTOMER.
==========

In case of an intermittent error and you are not yet sure whether the repair action solved the problem, keep in contact with the customer to watch the system.

If the Remote Operator Console Facility (ROCF) feature is installed ROCF may be enabled now (if required).
A quick enable procedure follows below.

For a detailed description of ROCF refer to Remote Operator Console Facility Feature Description, GA33-1545.

(Entry Point TA)
****

How to Enable ROCF (Enable Auto-Answer)

1. Inform the system operator of the host system that Auto-Answer will be enabled again.

2. Ensure that IML has been performed with the CNTRL diskette installed.

3. Press MOD SEL. The 'Mode Selection' display will appear.

4. Type in selection code MR (fast selection for the 'Remote Operator Console Facility' display).
   Press ENTER.

5. Type in the correct selection code for the telecommunication line speed wanted:

   H for 1200 BPS
   L for 600 BPS

(Step 017 continues)

(Step 017 continued)
Press ENTER.

6. Wait until the message 'AUTO-ANSWER ENABLED' is displayed. The system operator of the host system can now establish the data link.

7. Activate the security keylock (optional feature) if wanted.

*** END ***

018
Go To Map 0070, Entry Point A.

019
Go to Page 14, Step 054, Entry Point J.

020

(Entry Point O)
****

Invoke your SUPPORT STRUCTURE for a Reference Code Search in the DATA BANK.

Use the REMOTE SUPPORT FACILITY, if installed.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Remote Support Facility).

Are there fixes (MAP updates) available?
Y N

If the REMOTE SUPPORT FACILITY is installed you may get a printout by using the COPY key or the FRIEND command PRINTLOG.

021
Are the diskettes used in the system updated according to the last *MCTF UPDATE DISKETTE*?
Y N

022
Transfer the MCTFs from the *MCTF UPDATE DISKETTE* to the diskettes of the system (FU1, FU2, DD1, DD2), as required!

See Vol.13, STM, Section 4: Diagnostic Run Procedures (MCTF Update via MCTF Diskette)

Run again the application which caused the trouble.

Does the error come up again.
Y N

023
Go to Page 3, Step 011, Entry Point K.

024
Go to Page 8, Step 025, Entry Point L.

(Entry Point L)
****

Initiate a problem search to see if there is any problem description/solution available which matches the existing problem.

Report about the suspected problem area for easier problem searching.

The Problem Number Assignment is as follows:

```
                 ___________________________________
                 |                                 |
               -----                               |
        P XXX A NNN                                V
        | --- | ---                          Problem Number
        |  |  |  |
        |  |  |  |
        |  |  |  Sequence number
        |  |  Area Code
        |  Last three digits of microcode EC number
        Problem identifier
```

Area Code	Problem Area
A	Support Processor (MSSS)
B	Diagnostics
C	Channels + att. I/O's
D	Diskette Drives (System + I/O
E	Disk Emulators (231X, 33XX)
F	FTA + att. I/O's
G	DCA + att. I/O's
I	PU only
H	ECA, FBM, FFBM
J	Installation
L	Loop Adapter
M	1400 Emulators
N	BBA
O	Performance
P	Power + Cooling
Q	Software
R	Remote Support

(Step 025 continues)

(Step 025 continued)

```
S   | Main storage + Control storage
T   | Communications Adapter, CA
U   | Miscellaneous
V   | 5424 MFCU
W   | MCTF-Disk. Update list
    |
```

Is there any problem description/solution available?

Y N

If the REMOTE feature is installed you may get a printout by using the COPY key or the FRIEND command PRINTLOG.

026

(Entry Point LK)
****

Is the ESD Card plugged in position 01A-A2A5?

Y N

027

(Entry Point U)
****

Write down all important facts about the problem and continue in accordance with your support structure.

028
Have you already done the ESD check according to MAP E800?

Y N

029
Go To Map E800, Entry Point A.

030
Check the air filters of the gate blowers for excessive dust.
Clean them, if needed.

Could it have caused the problem of this call?
Y N

031
Go to Page 9, Step 027, Entry Point U.

032
Go to Page 3, Step 011, Entry Point K.

033
Follow the problem description/solution and try to solve the existing problem.

Install MCTFs if available.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (Manual MCTF Installation).

Do they help to solve the existing problem?
Y N

034
Go to Page 9, Step 026, Entry Point LK.

035
Go to Page 3, Step 011, Entry Point K.

036

(Entry Point N)
****

Insert the fixes (MAP updates) into those MAPs you have used just before. Also add the fix numbers in the headers of the MAP's, then go through the MAPs once more.

037

(Entry Point Y)
****

We perform now a complete system checkout procedure!

Insert the DIAG diskette.
Perform IML.

IML is performed successfully when the 'IBM MAINTENANCE AND SERVICE PROGRAM SELECTION' picture appears on the screen.

IML successfull?
Y N

038
Go to MAP according to reference code if shown, otherwise
Go To Map 0400, Entry Point A.

039

(Entry Point Z)
****

Is the system a 4331-2 or a 4331-11?
Y N

040
The system is a 4321 or a 4331-1.

Run the Test Chaining.

See Supplement to MAPs. Chapter 4: Diagnostic Run Procedures (Test Chaining Selection).

For CA and MFCU tests see Vol.14, STM (FEAT.), Section CA or Section MFCU.
For LA see Vol.15, STM (FEAT.)

Run also the MFCU adapter test which is on the CNTRL diskette FU1, if the 5424 MFCU is attached.

Any error?
Y N

041
Run also ARRAY TOOL
(Diagnostic MS Test, Option 'DM' and Special control Storage Test, Option 'CT'

Any error?
Y N

042
Was a control program error suspected in the MAP where you came from?
Y N

043
Was an I/O or interface error suspected in the MAP where you came from?
Y N

044
Go to Page 13, Step 047, Entry Point H.

045
Run the interface (wrap) tests.

1.Standard Interface Test for BMPX1 and MPX.
2.CTLI1 and CTLI2 Test.

Run the wrap test especially for the interface to the device, which most probably is suspected.

Attention:

Power down the control units during the test run.

Start the tests by putting the wrap plugs in the first control unit after the processor, then in the most distant control unit.
By systematically putting the wrap plugs in the other control units the area in which the fault lies is approached.

Any error?
Y N

046

(Entry Point E)
****

Run I/O tests (for example OLTEP, Inline Tests etc.) especially for the device, which most probably is suspected.

Any error?
Y N

047

(Entry Point H)
****

Run system test 4300, if available.

See Vol.13, STM, Section 4: Diagnostic Run Procedures.
(System Test 4300).

Any error?
Y N

048

The cause of this call was probably an intermittent error and might come up again when the customer continues his job.

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

049

(Entry Point SV)
****

For system test evaluation proceed with the ST-370 Users Guide, D99-0370A.
After the repair action,
Go to Page 1, Step 001, Entry Point A.

050
Go To Map 0000, Entry Point AA.

051
Go to appropriate MAP via reference code directory.

052
Go to Page 7, Step 020, Entry Point O.

053
Follow Vol.13, STM, Section 4:
Diagnostic Run Procedures, Array Tool
(Diagnostic MS Test and Special CS Test)

054

(Entry Point J)
****

Attention!
If the test chain always comes to the same point, and the error cannot be isolated by the appropriate MAP, it is recommended to run the remaining tests in the test chain.
The error may be detected by any other test and isolated by its appropriate MAP.

Follow the indicated reference code!
==========

055
Run the Test Chaining.

See Supplement to MAPs. Chapter 4: Diagnostic Run Procedures (Test Chaining Selection).

For CA and MFCU tests see Vol.14, STM (FEAT.), Section CA or Section MFCU.
For LA see Vol.15, STM (FEAT.)

Run also the 5424 MFCU adapter test which is on CNTRL diskette FU1, if the MFCU is attached.

Any error?
Y N

056
Was a control program problem suspected in the MAP where you came from, or were you called for a reference code EAXXXX01?
Y N

057
Was an I/O or interface error suspected in the MAP where you came from?
Y N

058
Go to Page 13, Step 047, Entry Point H.

059
Run the interface (wrap) tests.

Attention:

Power down the control units during the test run.

Start the tests by putting the wrap plugs in the first control unit after the processor, then in the most distant control unit.
By systematically putting the wrap plugs in the other control units the area in which the fault lies is approached.

1.Standard Interface Test for
BMPX1, BMPX2, MPX and HSC.
2.CTLI1, CTLI2 and CTLI3 Test.

Run the wrap test especially for the interface to the device, which most probably is suspected.

Any error?
Y N

060
Go to Page 13, Step 046, Entry Point E.

061
Go to appropriate MAP via reference code directory.

062
Go to Page 7, Step 020, Entry Point O.

063
Go to Page 14, Step 054, Entry Point J.

064

(Entry Point X)
****

Return all switches to normal position.

Insert the CNTRL diskette again.
Select 'Reference Code Log Display', the 'Log Distribution Statistic'.

See Vol.13, STM, Section 4:
Diagnostic Run Procedures,
Reference Code Log (Log Distribution Statistics).

Note:
Log evaluation is continued because any other log may also be related to the problem.

Important Note:
Intermittent errors in the diskette/support subsystem area may originate from electromagnetic fields.
Therefore the machine covers should always be closed during any diskette operation.

Is there any row with multiple logs?
Y N

065
Go to Page 17, Step 069, Entry Point S.

066
Select row with multiple logs.
Did you come to this point the first time?
Y N

067
Go to Page 17, Step 069, Entry Point S.

068
Go to MAP according to that reference code of the multiple log with the highest priority.
It is the topmost reference code on the left-hand side of the display on screen.

069

(Entry Point S)
****

Select 'REFERENCE CODE LOG'.
(Press PF5 to display all reference codes.)

See Vol. 13, STM, Section 4: Diagnostic Run Procedure, Reference Code Log.

Are there some more reference codes?
Y N

070
Go to Page 7, Step 020, Entry Point O.

071
Suspect reference codes with high counts.

See Vol. 13, STM, Section 4: Diagnostic Run Procedure, Reference Code Log.

Have you already followed these reference codes?
Y N

072
Go to MAP according to the reference code(s) with a high count (see COUNT field).

073
Suspect reference codes with the latest 'Time of Day' indications.

See Vol. 13, STM, Section 4: Diagnostic Run Procedures, Reference Code Log.

Have you already followed these reference codes?
Y N

074
Go to MAP's according to reference code(s) with the latest 'Time of Day'.

075
Go to Page 7, Step 020, Entry Point O.

076

(Entry Point P)
****

When going through the MAPs have you ever been told to write down a reference code for later use?
Y N

077
Is the problem of this call a reference code Log (Reference Code .....01)?
Y N

078
Is it a problem of any test, IML, manual operation, customer manual operation (Reference Code .....81)?
Y N

079
It is any other problem.
Go to Page 7, Step 020, Entry Point O.

080

(Entry Point F)
****

Make sure that IML with the DIAG diskette (DD1) has been performed.

Check the configuration on the DIAG diskette or use the *copy configurator* program to copy the configuration from the CNTRL diskette FU1 to the DIAG diskette DD1

See Vol.13, STM, Section 6: Configure Procedures.

Run the test(s), or the function once more.

Any reference code?
Y N

081
Problem solved (for example Test End reached, etc.)
Y N

082
Invoke your support structure
Go to Page 7, Step 020, Entry Point O.

083
Go to Page 3, Step 011, Entry Point K.

084
Go to Page 14, Step 054, Entry Point J.

085
Select 'Reference Code Log Display' the 'Log Distribution Statistic.'

See supplement to MAPs, Section 4: Diagnostic Run Procedures, Reference Code Log (Log Distribution Statistics).

Is there more than one reference code displayed in row 01?
Y N

086
Go to Step 089, Entry Point Q.

If any other reference code has the same time stamp analyze this reference code also.

087
Have you already followed all reference codes display for row 01?
Y N

088
Follow the next reference code.
Go to Page 14, Step 054, Entry Point J.

089

(Entry Point Q)
****

The problem of this call is probably an intermittent error that cannot be found by the logs and might come up again.
Go to Page 7, Step 020, Entry Point O.

EXIT MAP

090

Follow it now

Go to Page 14, Step 054, Entry Point J.

INTERMITTENT PROBLEMS

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	031	FXXX	A
7	037	0E00	A
4	020	0001	0
7	036	0001	0
3	012	0020	A
6	029	0020	A
6	028	0020	A
6	027	0020	A
7	038	0060	A
7	040	0080	H
7	039	0080	L
2	006	0400	R

001
(Entry Point A)

I N T E R M I T T E N T P R O B L E M

D E T E R M I N A T I O N

The operator should have used Problem Determination Procedures for the system control program that he is using.
He should have defined the following types of problems, if not, have him initiate analysis.

1. IPL
2. Wait
3. I/O errors (included I/O diskette)
4. Communication Adapter (CA) or Loop Adapter (LA) errors
5. Program loop or hang
6. Micro loop or hang
7. Job failure (abnormal job end 'ABEND' etc.)

(Step 001 continues)

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(Step 001 continued)
8. Intermittent reference code failure.

If you are not sure answer the following question with *no*.

Any of the above problems?
Y N

002
The problem has not been located.
The next portion of this MAP runs all diagnostics attempting to find the problem.
Ask first for the customer's permission.

Do you have his permission?
Y N

003
Go to Page 3, Step 013, Entry Point B.

004
1. Press Power Off.
2. Press Power On.
(IML with Basic Assurance Test, BAT gets started automaticaly).
Wait approximately 3 minutes until the IPL picture appeares on screen.

IML successful?
Y N

005
Any reference code?
Y N

006
Go To Map 0400, Entry Point R.

007
Go to appropriate MAP.

008
Run Test chaining.

Any reference code?
Y N

009
Run system test ST 4300.

See Vol.13, STM Section 4: Diagnostic Run Procedures.
(System Test 4300).

Any error?
Y N

010
Go to Step 013, Entry Point B.

011
For error evaluation.
See ST 370 Users Guide D99-0370A.

012
Go To Map 0020, Entry Point A.

013
(Entry Point B)

You have reached a point where you have one or more of the following conditions:

1. Problem is intermittent.
2. Problem is a one time failure.
3. Failure is job dependent. Contact the operator for a precise report.

Was there any reference code on screen?
Y N

014
Go to Page 7, Step 032, Entry Point K.

015
Write down the reported reference code for possible later use.

You may use the CHANGE DISPLAY to see the reference code again, and press COPY key to get a printout.

Is it reference code F7XXXXXX?
Y N

016
Press DIAG key together with ALTER key.

See Supplement to MAPs, Section 4: Diagnostic Run Procedures. (Last Log Display).

Select last log.

Message NO LAST LOG STORED on screen?
Y N

017
The last detailed log picture shows you the last logged reference code.

See Supplement to MAPs, Section 4: Diagnostic Run Procedures (Detailed Log Display Selection).

Did the customer report a specific problem?
Y N

018
Write down the last logged reference code for possible later use or press COPY to get a printout from the last detailed log.
Go to Page 7, Step 032, Entry Point K.

019
Did the custormer get a reference code at this time?

Compare with the time stamp of the last log.

Y N

020
Write down the obvious symptoms which the customer describes to you. Evaluate all the printouts (e.g. EREP) and notes that you wrote down to determine the most suspected problem. Try to get more information by doing a problem search to the existing problem, therfore
Go To Map 0001, Entry Point O.

021
Compare the customer's report with the unit type of the last logged reference code:

IC-bus Subsystem	=2X
IC-bus Subsystem	=3X
PU/BSM	=4X
Channels and Commun. Adapter	=8X
I/O Subsystem	=AX
FTAs and Disk/Tape	=CX
Disk/Tape Inline Tests	=DX
System Related Problems	=EX
Support Subsystem	=FX

Does the last logged reference code match the customer's report?
Y N

See slso the time stamp of the reference code.

022
Write down the last logged reference code or press COPY key.

Select the REFERENCE CODE LOG.

See supplement to MAPs, Section 4: Diagnostic Run Procedures (Reference Code Log).

Is there any other reference code which matches the customer's report?
Y N

023
Use the last logged reference code.
Go to Step 025, Entry Point J.

024
Is the time stamp of another reference code about the same of the customer's report? (If in doubt follow the NO-leg).
Y N

See Supplement to MAPs, Section 4: Diagnostic Run Procedures (Reference Code Log). Press COPY key to get a printout.

025
(Entry Point J)

Does the time stamp of the last logged reference code match the time of error?
Y N

INTERMITTENT

PAGE 6 OF 7

026
Write down this reference code for possible later use, or press COPY key to get a printout.
Go to Page 7, Step 032, Entry Point K.

027
Go To Map 0020, Entry Point A.

028
Go To Map 0020, Entry Point A.

029
Go To Map 0020, Entry Point A.

030
Go to Page 7, Step 032, Entry Point K.

031
Go To Map FXXX, Entry Point A.

032
(Entry Point K)

Were you called for a problem of the CA (Communication Adapter) or device connected to it?
Y N

033
Were you called for a problem of the LA (loop adapter) or devices connected to it?
Y N

034
Were you called for an I/O problem?
Y N

Any I/O, except CA (Communication Adapter), as well as LA (loop adapter) attached devices.

035
Any operating system message?
Y N

036
Go To Map 0001, Entry Point O.

037
Go To Map 0E00, Entry Point A.

038
Go To Map 0060, Entry Point A.

039
Go To Map 0080, Entry Point L.

040
Go To Map 0080, Entry Point H.

REFERENCE CODE EVALUATION

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E680	A	2	001
E680	XZ	6	052
0E00	A	2	001
0000	A	2	001
0000	L	9	073
0010	A	2	001
0010	XZ	6	052
0050	A	2	001
0070	A	2	001
0080	A	2	001
0080	XZ	6	052
0600	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	045	C402	A
6	044	C502	A
5	043	C602	A
4	032	EA00	A
4	034	E400	A
5	036	E400	P
3	013	E680	A
4	033	E8XX	A
4	030	FD00	A
3	012	F7XX	A
4	031	F7XX	A
7	062	0C00	D
7	059	0C00	Q
3	014	0E00	A
6	046	0001	A
3	011	0001	A
6	049	2X00	B
6	047	4B00	TA
6	048	4900	TA

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001

(Entry Point A)
****

R E F E R E N C E C O D E

E V A L U A T I O N .

(Entry Point B)
****

Write down the reference code and its possible extension.
Also write down the first symptom codes (if available).

If there is more than one reference code shown, write them all down for possible later use.

The EXIT MAP will quide you to these reference code as well.

Is it a reference code from any error log (.....01)?
Y N

002
Is it any reference code (.....81)?

Reference codes (.....81) come from:

- o diagnostic tests
- o interface (wrap) tests
- o some tests running automatically during IML
- o manual operations
- o customer manual operations.

Y N

3 A B C

B C 0054 MAP 0020-2

003
It is any other reference code, for example a handling error, or abnormal condition.

Go to Page 3, Step 011, Entry Point ZA.

004

(Entry Point XM)
****

Is it a reference code 4.....81 (Error detected by PU/BSM test)?
Y N

005
Is it any reference code
88....81
A8....81
AA....81
D.....81
C1....81
C2....81
C3....81?
Y N

006
Is it a reference code
E6202081?
Y N

007
Is it a reference code
E6....81?
Y N

008
Is it a reference code
F7....81?
Y N

3 D 3 E 3 F 3 G 3 H 3 J

009
Is it a reference code FD....81 or FE....81?
Y N

010
Go to Page 8, Step 070, Entry Point XC.

011

(Entry Point ZA)
****

Go to appropriate MAP via respective REFERENCE CODE DIRECTORY (2XXX, 3XXX, 4XXX, 8XXX, AXXX, CXXX, DXXX, EXXX, FXXX, ENTRY POINT A).

After the repair
Go To Map 0001, Entry Point A.

012
Go To Map F7XX, Entry Point A.

013
Go To Map E680, Entry Point A.

014
Go To Map 0E00, Entry Point A.

015
Go to Step 011, Entry Point ZA.

016
Go to Page 6, Step 054, Entry Point W.

017
Is it reference code 2E131001?
Y N

018
Is it reference code 49E14X01?
Y N

019
Is it reference code 4B40XX01?
Y N

020
An I/O device address may be displayed together with the reference code on line 23 ('TIMEOUT ADDR:...', or 'I/O ERR.ADDR...').

Is an I/O device address displayed?
Y N

021
Is it a ref. code 2.....01 or 3.....01 (IC-Bus) ?
Y N

022
Is the reference code 49E4E401 or 4BE4E401 ?
Y N

023
Is the reference code 49....01 or 4B....01 (PU/BSM) ?
Y N

024
Is the reference code E4....01?
Y N

025
Is the reference code E8....01?
Y N

026
Is the reference code EA....01?
Y N

027
Is it F7....01?
Y N

028
Is it FD....01?
Y N

029
Go to Page 6, Step 050, Entry Point C.

030
Go To Map FD00, Entry Point A.

031
Go To Map F7XX, Entry Point A.

032
Go To Map EA00, Entry Point A.

033
Go To Map E8XX, Entry Point A.

034
Go To Map E400, Entry Point A.

035
Go to Page 8, Step 063, Entry Point SX.

036
Most probable error reason is a wrong condition on the IC-bus or any adapter.
Go To Map E400, Entry Point P.

037
Go to Page 8, Step 063, Entry Point SX.

038

(Entry Point M)
****

Is the indication (on line 23):

TIMEOUT ADDR:...., REF.CODE XXXXXXXX ?

Y N

039
The indication (on line 23) is:

I/O ERR. ADDR:...., REF.CODE XXXXXXXX

This indicates the address of a device in error, possibly a disk track error.

Is the reference code C4....01?
Y N

040
Is the reference code C5....01?
Y N

041
Is the reference code C6....01?
Y N

042
Any other reference code.
Go to appropriate MAP.

043
Go To Map C602, Entry Point A.

044
Go To Map C502, Entry Point A.

045
Go To Map C402, Entry Point A.

046
A device with the indicated address did not respond in time. Proceed with the I/O documentation of the indicated device.

Note:
If the address field points to a tape device, a tape reel with an empty (new or erased) tape may have been mounted. Ask the system operator to make sure that an initialized tape is used.

After the repair
Go To Map 0001, Entry Point A.

047
Go To Map 4B00, Entry Point TA.

048
Go To Map 4900, Entry Point TA.

049
Go To Map 2X00, Entry Point B.

050

(Entry Point C)
****

Perform IML with the DIAG diskette DD1 and run test chaining.

Refer to Vol.13, STM, Section 4:
'Test Chaining Selection'.

Did a reference code come up when running the test chaining?
Y N

051
Follow the last log.
Go to Page 8, Step 070, Entry Point XC.

052

(Entry Point XZ)
****

Write down the reference code and its possible extension, respectively the first three symptom codes (if available).

Is it a reference code 4.....81 (error detected by the PU/BSM test)?
Y N

053
Go to Page 8, Step 070, Entry Point XC.

054

(Entry Point W)
****

Is the system a 4331-2 or a 4331-11?
Y N

055
The system is a 4321 or a 4331-1.

Insert DIAG diskette DD1.

Select the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Select the REFCODE ANALYSIS.

Note: (for WT only)
Selfstudy material about the Integrated Reference Code Analysis you will find in Vol.11, behind the MAPINDEX.

Is the message CHECK THE INFO-BOX displayed on the screen?
Y N

056
Go to Step 057, Entry Point XV.

057
Select the INFO-BOX.
There might be important hints to this problem.
When you have read the information, select the reference code analysis (IRECA) again.

(Entry Point XV)
****

Key in the reference code from the PU/BSM test.

Is there a message displayed to proceed with the MAP 0C00, ENTRY POINT Q ?
Y N

058
Do the repair as indicated by the REFCODE ANALYSIS.

059
Don't replace any PU/BSM card.

Go To Map 0C00, Entry Point Q.

060
Is the symptom 'IC' indicated on screen?
Y N

061
Proceed with the reference code from the PU/ BSM test.
Go to Page 8, Step 070, Entry Point XC.

062
Go To Map 0C00, Entry Point D.

063

(Entry Point SX)
****

Select the reference code log, the LOG DISTRIBUTION STATISTICS.

Is (are) there any other log(s) shown?
Y N

064
Follow the last log.

Go to Step 070, Entry Point XC.

065
Are there logs from FTAs (C4....01, C5....01, C6....01)?
Y N

066
Follow the last log first.

Go to Step 070, Entry Point XC.

067
Compare the time stamp (date and time), if available, of the *last FTA log* and of the **last log**.

Is the time stamp available and have both logs about the same time stamp?
Y N

068
Follow the **last log** first.

Go to Step 070, Entry Point XC.

069
Follow the *last FTA log*.

Go to Step 070, Entry Point XC.

070

(Entry Point XC)
****

Insert DIAG diskette DD1, if system 4321 or 4331-1.

Insert DIAG diskette DD2, (DIAG overflow diskette) if system 4331-2 or 4331-11.

Invoke the IBM MAINTENANCE AND SERVICE PROGRAM SELECTION.

Select the REFCODE ANALYSIS program.

Note: (for WT only)
Selfstudy material about the Integrated Reference Code Analysis you will find in Vol.11, behind the MAPINDEX.

Is the message
CHECK THE INFO-BOX
displayed on the screen?
Y N

071
Go to Step 072, Entry Point XD.

072
Select the INFO-BOX.
There might be important hints to this problem.

When you have read the information, select the refcode analysis (IRECA) again.

(Entry Point XD)
****

Key in the reference code which you have to follow now, also the symptom code, if needed.

Before you replace any FRU consider first the PREREQUISITES, if demanded there.

(Step 072 continues)

(Step 072 continued)
After the repair follow the VERIFICATION instructions in the appropriate MAP or go directly to the EXIT MAP, if being told to do so by the REFCODE ANALYSIS.

073

(Entry Point L)
****

This is the entry point when LOG PENDING is displayed (line 23).

Is the CNTRL (FU1) diskette installed?
Y N

074
Insert the CNTRL (FU1) diskette.
Go to Step 075, Entry Point LA.

075

(Entry Point LA)
****

Press CANCEL key to store the pending log onto the diskette ('LOG IN PROCESS' is displayed).

Go to Page 2, Step 001, Entry Point A.

Power Problems

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	028	0001	A
4	022	0001	T
3	015	0020	A
3	018	0020	A
4	023	0020	A
2	006	0200	A
2	008	0200	A
4	025	0200	A
4	024	0200	A
2	010	0200	A
5	029	0242	A
4	026	0400	A
3	014	0400	A
4	020	0400	R

001

(Entry Point A)

****

P O W E R P R O B L E M

D E T E R M I N A T I O N.

This MAP is entered when the POWER COMPLETE indicator does not turn on after the normal power on delay (about one minute) and no reference code is displayed.

Is PS104-CP02 tripped?

Y N

4 2
A B

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002
Is the POWER IN PROCESS indicator on?
Y N

003
Is the BASE POWER ON (POWER ACTIVE) indicator on?
Y N

The BASE POWER ON indicator is located next to the POWER ON switch.

004
Are the gate blowers running?
Y N

005

(Entry Point D)
****

Press and hold the POWER ON switch.

Are the gate blowers running as long as the POWER ON switch is pressed?
Y N

006
Go To Map 0200, Entry Point A.

007
Does the BASE POWER ON (POWER ACTIVE) indicator go on?
Y N

The BASE POWER ON indicator is located next to the POWER ON switch.

008
Go To Map 0200, Entry Point A.

009
Release the POWER ON switch and wait about 10 seconds.

Is the POWER IN PROCESS or the POWER COMPLETE indicator on?
Y N

010
Go To Map 0200, Entry Point A.

011
Wait about one minute.

Is the POWER COMPLETE indicator on?
Y N

012
Is a reference code displayed on the screen?
Y N

Be sure that the display station of the operator's console is active (the divider line must be on the screen).

013
Press CANCEL key.

Is now a reference code displayed?
Y N

014
Go To Map 0400, Entry Point A.

015
Go To Map 0020, Entry Point A.

016
Does the serial number on the diskette label match with the machine serial number?
Y N

A reference code, indicating a power problem, may be displayed if the serial numbers do not match.

017
Turn power off.
Insert the correct diskette.
Go to Page 2, Step 005, Entry Point D.

018
Go To Map 0020, Entry Point A.

019
IML has been completed successfully when the PROGRAM LOAD picture appears on the screen.

IML successfully completed?
Y N

020
Go To Map 0400, Entry Point R.

021
Select LAST DETAILED LOG.
If no last log has been stored the message 'NO LAST LOG STORED' is displayed.

If there is an additional control diskette (CNTRL FU2) check this diskette also for a last log.

For log selection see Vol.13, STM: 4180, 'Last Detailed Log Display'.

Is a last detailed log displayed?
Y N

022
Go To Map 0001, Entry Point T.

023
Write down the reference code and its possible extension.

For a description of the detailed log see Vol.13, STM:
Section 4, 'Detailed Log Display'.

Go To Map 0020, Entry Point A.

024
Go To Map 0200, Entry Point A.

025
Go To Map 0200, Entry Point A.

026
Go To Map 0400, Entry Point A.

027
1.Press power off switch.
2.Switch PS104-CP02 on.
3.Switch power on.

Does PS104-CP02 trip again?
Y N

028
Go To Map 0001, Entry Point A.

029
Go To Map 0242, Entry Point A.

I/O PROBLEMS

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0E00	L	4	031
0000	A	1	001
0000	L	4	031
0000	M	5	036
0000	Q	2	008
0000	U	7	044
0010	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	014	AAAA	A
3	015	AA00	A
3	015	AXXX	A
3	022	DXXX	A
4	030	0E00	E
4	029	0E03	A
3	016	0E04	A
2	011	0000	A
2	004	0001	A
3	027	0001	A
7	040	0001	A
7	041	0001	A
7	046	0001	A
2	012	0080	L

001

(Entry Point A)
****

I/O PROBLEM

DETERMINATION

Is there any message from the operating system (DOS/VSE or SSX/VSE, for example) that indicates an I/O device problem?

Y N

Ask the system operator for help if necessary.

Examples of message text for I/O device problems:
'- UNRECOVERABLE I/O ERROR....'
'- INTERVENTION REQUIRED....'
'- DEVICE NOT OPERATIONAL....'

4 2
A B

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002

(Entry Point B)
****

Ask customer to run either EREP summary or EREP of a specific I/O device.

Is EREP possible?
Y N

003

(Entry Point C)
****

Check that all I/O devices are correctly configured and all device addresses are correct. Compare with the configurator.

See Vol.13, STM, Section 6: Configure Procedures.

Are all I/Os correctly configured?
Y N

004
Correct the configuration. Then,
Go To Map 0001, Entry Point A.

005
Is the indication 'DISK' shown on screen, or is the I/O diskette suspected?
Y N

006
Is suspected I/O connected to MPX, BMPX or HSC?
Y N

007
Is suspected I/O connected to FTA1, FTA2 or FTA3?
Y N

4 C 4 D 3 E 3 F G

008

(Entry Point Q)
****

Is the suspected I/O connected to the DCA (a display station or a printer, for example)?
Y N

009
Suspect 5424 MFCU if the error indication is for example:
missing print, bad print quality, missing punch, no NPRO possible etc.

Is the 5424 MFCU suspected?
Y N

010
Is the suspected I/O connected to the Loop Adapter?
Y N

011
You may have missed the proper symptom description. Restart from the beginning,

Go To Map 0000, Entry Point A.

012
Go To Map 0080, Entry Point L.

013
Run 5424 adapter test.

See Vol.14, STM FEAT CA, Section: 5424 MFCU.

Was test run error free?
Y N

014
Go To Map AAAA, Entry Point A.

3 H 3 J

015
Identify the problem in the directory e.g. missing Print, missing Punch, no NPRO possible, and go to indicated MAP.
Go To Map AXXX, Entry Point A.

If 5424 problem cannot be identified precisely,
Go To Map AA00, Entry Point A.

016
Go To Map 0E04, Entry Point A.

017
Is there at least one drive of the suspected FTA working correctly?
Y N

018
Run FTA test and Control Interface Wrap test for the appropriate FTA/CTLI.

See Vol.13, STM, Section 4: 'Control Interface Wrap Test' or 'FTA Test'.

Any error?
Y N

019

(Entry Point H)
****

Is the failing device an 8809 tape drive?
Y N

020
Run inline tests for the failing device.

See Vol.13, STM, Section 4: Diagnostic Run Procedures, (Inline tests)

Any Reference code?
Y N

021
Go to respective I/O documentation:
'Start of Call' or Start MAP.

022
Go To Map DXXX, Entry Point A.

023
Go to 8809 Start MIM, ENTRY POINT A.

024
Go to MAP according to the Reference code, via the directory.

025
Go to Step 019, Entry Point H.

026
Run MPX, BMPX or HSC adapter test and standard interface test.

See Vol.13, STM, Section 4: Diagnostic Run Procedures (MPX, BMPX or HSC adapter test, MPX, BMPX or HSC standard interface test).

Any Reference code?
Y N

027
Go to documentation of respective control unit. Repair as required, then
Go To Map 0001, Entry Point A.

028

(Entry Point K)
****

1.Insert Diagnostic diskette DD1 for 4321 or 4331-1.
Insert DIAG diskette DD2. (DIAG overflow diskette) for 4331-2 or 4331-11.
2.Select 'MAINTENANCE AND SERVICE PROGRAM SELECTION'.
3.Select 'REFCODE ANALYSIS'.
4.Key in the indicated reference code.

Attention:
Before you replace any FRU first follow the prerequisites given there.
After the repair action follow the verification instructions and return to the indicated MAP.

029
Go To Map 0E03, Entry Point A.

030
Go To Map 0E00, Entry Point E.

031

(Entry Point L)
****

Is the operating system message on screen: 'INTERVENTION REQUIRED', or 'DEVICE NOT OPERATIONAL'?
Y N

032
Is the message 'I/O interrupt' together with 'unit check'?
Y N

033
Go to Page 2, Step 002, Entry Point B.

034
The error which is detected by the I/O 'Unit check' could be caused by the processor.

Have you been sent to the START MAP 0000 by any I/O documentation?
Y N

035
Go to Page 2, Step 002, Entry Point B.

036

(Entry Point M)
****

Does the I/O documentation point to a control unit (native attachment) problem, or to a channel problem?
Y N

037
Suspect operator handling problem, if not, suspect software problem, call software specialist.

038
Suspect the following FRUs:

If I/O connected to	Action
BMPX-1	Suspect: 1.BMPX 1 card 1 ; 01A-B2B3 2.BMPX 1 card 2 ; 01A-B2C2 3.ACC card 2 ; 01A-B2D2
BMPX-2	Suspect: 1.BMPX 2 card 1 ; 01A-B2L2 2.BMPX 2 card 2 ; 01A-B2M2 3.ACC card 4 ; 01A-B2N2
MPX	Suspect: 1.MPX card 1 ; 01A-B2W2

(Step 038 continues)

(Step 038 continued)

	2.MPX card 2 ; 01A-B2U2
	3.ACC card 3 ; 01A-B2V2

If I/O connected to	Action
HSC	Suspect: 1.HSC card 1 ; 01A-B2P2 2.HSC card 2 ; 01A-B2Q2 3.HSC card 3 ; 01A-B2R2
FTA 1	In case of a format 0 error, the reason can be an operator handling problem, otherwise suspect: 1.FTA 1 card 3 ; 01A-B2G2 2.FTA 1 card 2 ; 01A-B2F2 3.FTA 1 card 1 ; 01A-B2E2
FTA 2 for system 4321 or 4331-1	1.FTA 2 card 3 ; 01A-B2M2 2.FTA 2 card 2 ; 01A-B2L2 3.FTA 2 card 1 ; 01A-B2K2
FTA 2 for system 4331-2 and 4331-11	1.FTA 2 card 3 ; 01A-B2N2 2.FTA 2 card 2 ; 01A-B2M2 3.FTA 2 card 1 ; 01A-B2L2
FTA 3	In case of a format 0 error, the reason can be an operator handling problem, otherwise suspect: 1.FTA 3 card 3 ; 01A-B2R2 2.FTA 3 card 2 ; 01A-B2Q2 3.FTA 3 card 1 ; 01A-B2P2
DCA (Display Printers)	DCA card 3 ; 01A-A2K2 DCA card 1 ; 01A-A2J4 DCA card 2 ; 01A-A2J2

After FRU replacement run the appropriate adapter test, for DCA perform IML with the

(Step 038 continues)

(Step 038 continued)
CNTRL diskette (FU1).

Any Reference code?
Y N

039
Run ST 4300
Run OLT's and available I/O tests.

Any error?
Y N

040
Go To Map 0001, Entry Point A.

041
Repair as required and
Go To Map 0001, Entry Point A.

042
Go to appropriate MAP or use Reference Code Analysis program,
Go to Page 4, Step 028, Entry Point K.

043
For I/O devices connected to a control unit that has a CE-mode switch and/or a meter Enable/Disable switch check the switch setting:
- CE-mode switch set to Normal.
- Meter switch set to Enable.

Go to Page 2, Step 003, Entry Point C.

044

(Entry Point U)
****

This is the entry point for I/O use meter problems.

Run the correct interface wrap test.
- For an I/O device attached to the File Tape Adapter (FTA) use the Control Interface Wrap Test.
- For an I/O device attached to the MPX/BMPX use the MPX/BMPX Standard Interface Test.

See Vol.13, STM, Section 4:
'Control Interface Wrap Test'
'MPX/BMPX Standard Interface Test'.

Any reference code?
Y N

045
Run inline tests, if available, for the I/O device.

Any reference code?
Y N

046
Proceed with I/O documentation, Main Entry.

After the repair,
Go To Map 0001, Entry Point A.

047
Refer to the Reference Code Directory to find the needed MAP.

048
Refer to the Reference Code Directory to find the needed MAP.

Indicator Lamp Problem

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0000	A	1	001
0000	B	3	006
0001	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	009	0000	Z
2	004	0001	A
2	005	0001	A
3	014	0020	A
1	003	0200	A
3	012	0200	A
3	013	0800	B

001

(Entry Point A)
****

I N D I C A T O R L A M P

P R O B L E M D E T E R M I N A T I O N

Is the WAIT indicator failing?
Y N

002
Is the SYSTEM indicator failing?
Y N

003
One of the following indicators is failing:

POWER COMPLETE,
POWER IN PROCESS,
BASIC CHECK.

Go To Map 0200, Entry Point A.

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004
Suspected FRUs:

1.SYSTEM lamp
2.Wire and connectors
3.SBA Card 1 ; 01A-A2Q2

For information about routing of signal lines from or to the Operator Control Panel, see 3278-2A/3279-2C Display Console Maintenance Information (located in the box under the keyboard).

When the problem is corrected
Go To Map 0001, Entry Point A.

005
Suspect FRUs:

1.Wait lamp
2.Wire and connectors
3.SBA Card ; 01A-A2Q2
4.PU Card ; 01A-B1E2

For information about routing of signal lines from or to the Operator Control Panel, see 3278-2A/3279-2C Display Console Maintenance Information (located in the box under the keyboard).

When the problem is corrected
Go To Map 0001, Entry Point A.

006

(Entry Point B)
****

Is the CE switch on the CE panel set to CE MODE?
Y N

007
Go to Step 010, Entry Point DD.

008
Set the CE switch to NORMAL.

Is the BASIC CHECK indicator still on.
Y N

009
For isolation of further problems,
Go To Map 0000, Entry Point Z.

010

(Entry Point DD)
****

Press CANCEL key.

Is now a reference code displayed?
Y N

011
Is the BASE POWER ON (POWER ACTIVE) indicator on?
Y N

012
Go To Map 0200, Entry Point A.

013
Go To Map 0800, Entry Point B.

014
Go To Map 0020, Entry Point A.

The BASE POWER ON indicator is located next to the POWER ON switch.

CA/LA Problems

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0000	H	2	007
0000	L	2	002
0010	H	2	007
0010	L	2	002
0060	L	2	002

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	A8A0	A
2	006	A8XX	A
2	005	A8XX	A
4	017	0001	A
3	011	0001	0
3	014	0001	0
4	018	0020	A
4	016	0020	XZ
4	019	8XXX	A
3	015	8XXX	A

001

(Entry Point A)
****

C O M M U N I C A T I O N A D A P T E R

O R

L O O P A D A P T E R

P R O B L E M D E T E R M I N A T I O N

Is there a problem in the Communication Adapter (CA) or devices connected to it?

Y N

2 2
A B

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002

(Entry Point L)
****

There is a problem associated with the Loop Adapter (LA) or any device attached to the LA.

Is a reference code A8xxxxxx displayed?
Y N

003
Is a loop adapter log (A8xxxx01) stored?
Y N

004
For further LA problem determination
Go To Map A8A0, Entry Point A.

005
Refer to the Reference Code Directory to find the corresponding MAP.
Go To Map A8XX, Entry Point A.

For log display see Vol.13, STM: 4050, 'Detailed Log Display'.

006
Refer to the Reference Code Directory to find the corresponding MAP.
Go To Map A8XX, Entry Point A.

007

(Entry Point H)
****

Is a reference code 88xxxxxx displayed?
Y N

008

1. Look for a CA UNIT CHECK LOG in the DETAILED LOG DISPLAY.
2. Look for a CA-C (CA Channel Check) log in the REFERENCE CODE LOG display.

For log display see Vol.13, STM: 4042, 'Reference Code Log' and 4050, 'Detailed Log Display'.
For the CA log description see Vol.14, STM FEAT CA: 'CA Unit Check Log' and 'CA Channel Check Log-Layout'.

Is any CA log stored?
Y N

009
I/O sense data available?
Y N

Sense data can be abtained from the EREP and/or from operating system messages (DOS/VSE, for example).

010
Does the customer report a telecommunication line problem?
Y N

011
Go To Map 0001, Entry Point O.

012
Run test chaining.

For test selection see Vol.13, STM: 4325, 'Test Chaining Selection'.

Any error?
Y N

013
Insert CNTRL diskette.
Perform IML.

Run inline test for CA.

See Vol.14, STM FEAT CA: 'CA Inline Test'.

Any error?
Y N

014
Go To Map 0001, Entry Point O.

015
Refer to the Reference Code Directory to find the corresponding MAP,
Go To Map 8XXX, Entry Point A.

016
Go To Map 0020, Entry Point XZ.

017
Go to Vol.14, STM FEAT CA:
'CA Unit Check Log'.
After the repair,
Go To Map 0001, Entry Point A.

018
Go To Map 0020, Entry Point A.

019
Refer to the Reference Code Directory to find the corresponding MAP.
Go To Map 8XXX, Entry Point A.

REF.CODE DIRECTORY

001

```
#################################################################
#              4 3 3 1   P R O C E S S O R                      #
#                                                               #
#              M O D E L   G R O U P   2 / 11                   #
#                                                               #
#              P O W E R  D E S I G N  L E V E L  5             #
#################################################################
```

REFERENCE CODE DIRECTORY
==========

Reference Code	SYMPTOM	Go to MAP
02A00201	Before calling for assistance	0202
02A00401	Final check after repairs	0204
02A00901	PCC-CB01 tripped	0209
02A01001	Line voltage distribution problem	0210
02A01401	Convenient outlet problem	0214
02A01501	Blower (AMD) problem	0215
02A07001	SPI panel check procedure	0270
02A07801	IPS test station check procedure	0278
02A07901	IPS voltage adjustment procedure	0279
02A08101	PS105-CP03 tripped (+6V to A1 via PS105-K01)	0281
02A08201	PS105-CP06 tripped (+8.5V to A1, C2-CA, B2-ACA)	0282
02A08301	PS105-CP05 tripped (-8.5V to A1, C2-CA, B2-ACA)	0283
02A08501	PS105-CP02 tripped (+5.1V to board 01A-A1)	0285
02A08601	PS105-CP01 tripped (+5.1V to board 01A-C2-CA)	0286
02A08701	TR105/PS105 power problem	0287
02C09201	TR102 line voltage problem	0292
02C09301	TR102-F01 blown (TR102 primary fuse)	0293
02C09401	PS102-CP07 or CP08 or CP09 tripped (IPS-Bias)	0294
02C09501	PS102-CP05 tripped (+7.1V bulk to PS112)	0295
02C09601	PS102-CP04 tripped (+9.5V bulk to PS113)	0296
02C09701	PS102-CP06 tripped (+6.8V bulk to PS114)	0297
02C09901	PS102-CP02 tripped (+5.1V to boards B2 and B1)	0299
02C0A001	PS102-CP03 tripped (+10.1V bulk to PS111, 01A-B2)	02A0

(Step 001 continues)

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REF.CODE DIRECTORY

(Step 001 continued)

Reference Code	SYMPTOM	Go to MAP
02D00001	Power MAP main entrance (Part1)	0200
02D00101	Power MAP main entrance (Part2)	0201
02D01101	PCC-K02 problem	0211
02D01201	PCC-K03 problem	0212
02D01301	PCC-K04 not picked	0213
02D02001	PS104 +24V on board 01A-A2 fail. H01	0220
02D03201	PS104 -5.1V on board C2 fail. H05	0232
02D03301	PS104 +8.5V on board C2 fail. H06	0233
02D03401	PS104 +12V on board A2 fail. H02	0234
02D03501	PS104 -12V on board A2 fail. H03	0235
02D03601	Power off control problem	0236
02D04001	PS104-CP05 trip. (+24V to A2,diskettes,IPS-teststt)	0240
02D04201	PS104-CP02 trip. (+5.1V to diskettes, IPS-teststt)	0242
02D04301	PS104-CP03 trip.(-5.1V to A1,A2,C2,C2-CA,diskett.)	0243
02D04401	PS104-CP07 tripped (+8.5V to A2,C2,C2-CA,B2-ACA)	0244
02D04501	PS104-CP06 tripped (+12V to board A1,A2 via C2)	0245
02D04601	PS104-CP04 tripped (-12V to A2,C2-CA and B2-ACA)	0246
02D05001	TR104/PS104 power problem	0250
02D06001	PS104 -5.1V more than one sense point failing	0260
02D08001	IPS service check	0280
02D08401	PS105-CP04 tripped (-5.1V to board C2-CA)	0284
02F03101	PS104 +5.1V on 01A-B1 fail. H04	0231
02F04101	PS104-CP01 tripped (+5.1V to A2,B1,C2 and C2-CA)	0241
02F07501	Voltage measurements	0275

POWER PROBLEM.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E8F0	A	4	001
FD80	A	4	001
F7AA	A	4	001
F7A0	A	4	001
F7A1	A	4	001
F7A2	A	4	001
F7A3	A	4	001
F7A4	A	4	001
F7A5	A	4	001
F7A6	A	4	001
F7A7	A	4	001
F7A8	A	4	001
F7A9	A	4	001
F7BA	A	4	001
F7BB	A	4	001
F7BC	A	4	001
F7BD	A	4	001
F7B1	A	4	001
F7B2	A	4	001
F7B3	A	4	001
F7B4	A	4	001
F7B5	A	4	001
F7B6	A	4	001
F7B7	A	4	001
F7B8	A	4	001
F7B9	A	4	001
F7C1	A	4	001
F7C3	A	4	001
F7EA	A	4	001
F7EB	A	4	001
F7ED	A	4	001
F7EF	A	4	001
F7E2	A	4	001
F7E5	A	4	001
F7E7	A	4	001
F7E9	A	4	001
F7F2	A	4	001
F7F3	A	4	001
F7F4	A	4	001

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F70A	A	4	001
F70B	A	4	001
F70C	A	4	001
F70D	A	4	001
F70E	A	4	001
F700	A	4	001
F701	A	4	001
F702	A	4	001
F703	A	4	001
F704	A	4	001
F705	A	4	001
F706	A	4	001
F707	A	4	001
F708	A	4	001
F709	A	4	001
F712	A	4	001
F713	A	4	001
F73A	A	4	001
F73C	A	4	001
F73D	A	4	001
F73E	A	4	001
F73F	A	4	001
F733	A	4	001
F735	A	4	001
F737	A	4	001
F742	A	4	001
F743	A	4	001
F744	A	4	001
F76A	A	4	001
F76B	A	4	001
F76C	A	4	001
F76D	A	4	001
F766	A	4	001
F767	A	4	001
F768	A	4	001
F769	A	4	001
F79A	A	4	001
F79B	A	4	001
F79C	A	4	001

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F79D	A	4	001
F79E	A	4	001
F79F	A	4	001
F796	A	4	001
F797	A	4	001
F798	A	4	001
F799	A	4	001
IMAN	A	4	001
IMAN	B	7	026
0000	A	4	001
0050	A	4	001
0070	A	4	001
02A0	A	4	001
02XX	A	4	001
0201	A	4	001
0201	C	16	085
0201	L	7	020
0210	A	4	001
0211	A	4	001
0212	A	4	001
0213	A	4	001
0214	F	5	007
0215	A	4	001
0215	B	7	026
0230	A	4	001
0236	A	4	001
0236	J	17	100
0250	A	4	001
0270	A	4	001
0275	B	7	026
0279	A	4	001
0280	A	4	001
0281	A	4	001
0282	A	4	001
0283	A	4	001
0284	A	4	001
0285	A	4	001
0286	A	4	001
0294	A	4	001

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0295	A	4	001
0296	A	4	001
0297	A	4	001
0299	A	4	001
0400	A	4	001
0800	A	4	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
17	104	F7AA	C
14	067	F7A3	B
17	100	F7A6	A
14	065	F7C3	A
17	105	0201	A
18	111	0201	A
17	102	0201	D
17	108	0201	G
19	134	0201	H
5	003	0201	X
6	013	0204	A
17	098	0209	A
7	020	0210	A
19	130	0214	A
10	036	0220	A
10	040	0231	A
7	027	0232	A
10	044	0233	A
11	048	0234	A
11	051	0235	A
14	063	0236	A
16	086	0240	A
16	088	0241	A
16	090	0242	A
16	092	0243	A
16	094	0244	A
17	096	0245	A
17	097	0246	A
7	026	0250	A
11	052	0250	A

001
POWER MAP MAIN ENTRANCE.

Note:
Read carefully the *Hints For Power Maintenance* in book Maintenance Information (MI) POWER, section *Repair Information* and follow each of them.

Enter here if no reference code is displayed on the screen of the display unit.

	Suspected errors or FRU's (including intermittent errors)
1	BPC card 01A-A2B2.
2	TR104/PS104.
3	PS104 DC distribution.
4	Line voltage distribution.
5	Diskette drive problems.
6	Power on/off switch failing.
7	OCP interface.
8	CEP interface.
9	PC sense card 1 in pos. 01A-A2D2.
10	PS104 sense wiring.
11	PCC-K04 problem.

(Entry Point A)

Press power-off key.

Is the *BASE POWER ON* (*POWER ACTIVE*) indicator on?
(The *BASE POWER ON* (*POWER ACTIVE*) indicator is located next to the power on switch. On machines installed in the U.S., there is a label *POWER ACTIVE* on the right hand side of the indicator).

Y N

1
9 5
A B

002
Wait approximately 30 seconds.

Are the blowers slowing down or stopped?
Y N

003
Go To Map 0201, Entry Point X.

004
(Entry Point E)

1. Switch all tripped CP's including PCC-CB01 on (if applicable).
2. Ensure that the line cord is connected to the mains.
3. Ask the customer to ensure that line voltage is present at the mains.

Is there a convenience outlet problem?
Y N

005
1. Ensure that CE-mode is switched to normal, because the basic check indicator is switched on in CE-mode.
2. Ensure that diskette(s) are inserted.
3. Press power on switch for approximately 2 seconds.
4. Release the power on switch.

Does the *BASE POWER ON* (*POWER ACTIVE*) indicator stay on?
Y N

006
Remove diskette(s) from diskette drive(s) (if applicable).

(Entry Point K)

Is the problem area known?
Y N

1 1 1
9 7 7
C D E F

F 0100 MAP 0200-5

007
(Entry Point F)

Press and hold the power on switch.
NOTE: The *BASE POWER ON* (*POWER ACTIVE*) indicator is located next to the power on switch. On machines installed in the U.S., there is a label *POWER ACTIVE* on the right hand side of the indicator.

Is the *BASE POWER ON* (*POWER ACTIVE*) indicator on at least as long as the power on switch is pressed?
Y N

008
Is PCC-CB01 tripped?
Y N

009
Press and hold the power on switch.

Did blowers start moving?
Y N

010

```
|----------------------|
| DANGER               |
| High voltage present |
| during following     |
| measurement.         |
|----------------------|
```

1. Ask the customer to remove power from the mains where the processor is connected.
2. Switch PCC-CB01 off.
3. Connect your CE-meter (range 500VAC) to PCC-CB01 line voltage input side (upper terminals).
4. Ask the customer to switch power on for the processor.

(Step 010 continues)

1 1
7 7 7
G H J

(Step 010 continued)
Is line voltage present?
Y N

011
Is there a pluggable connection of the line cord to the mains?
Y N

012
Ask the customer to measure the line voltage at the mains.

Is line voltage present?
Y N

013
The customer must provide power at the mains.
1. Close the PCC-box.
2. Switch PCC-CB01 on.
If line voltage is present at the mains,

(Entry Point Z)

Go To Map 0204, Entry Point A.

014
1. Ask the customer to remove power from the mains where the processor is connected.
2. Use your CE-meter (range ohm X1) and check the wiring from PCC-CB01 via the line filter to the line cord for continuity. (ALD-YA321)
3. Replace the failing parts.
4. After part replacement ask the customer to reconnect the line cord to the mains.
5. Close the PCC-box.
6. Ask the customer to provide power for the processor.
Go to Step 013, Entry Point Z.

015
1. Disconnect the line cord from the wall outlet.
2. Use your CE-meter (range ohm X1) and check the wiring from PCC-CB01 via the line filter to the wall plug for continuity.

Was any error detected?
Y N

016
Suspect power problem of the customer's wall outlet.
1. Ask the customer to provide power at wall outlet.
2. Close the PCC-box.
3. Reconnect the line cord to the wall outlet if line voltage is present.
Go to Step 013, Entry Point Z.

017
1. Replace the line filter assembly (this FRU includes the line cord).
2. Close the PCC-box.
3. Reconnect the wall plug to the wall outlet.
Go to Step 013, Entry Point Z.

018
1. Ask the customer to remove power from the mains where the processor is connected.
2. Connect your CE-meter (range 500VAC) to PCC-CB01 load side (lower terminals).
3. Switch PCC-CB01 on.
4. Ask the customer to provide power for the processor.

Is line voltage present?
Y N

019

1. Ask the customer to remove power from the mains where the processor is connected.
2. Replace the PCC-CB01.
3. Close the PCC-box.
4. Ask the customer to provide power for the processor.

Go to Page 6, Step 013, Entry Point Z.

020

(Entry Point L)

Suspect line voltage distribution problem.
Go To Map 0210, Entry Point A.

021

Is any CP of PS104 tripped?

Y N

022

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

Do not touch components in the PCC-box.

1. Switch PCC-CB01 off.
2. Open PCC-box.
3. Switch PCC-CB01 on.
4. Observe PCC-K04.
5. Press and hold the power on switch.

Is PCC-K04 picked?

Y N

023

1. Press power-off switch.
2. Check primary fuse of TR104.

Is TR104-F01 blown?

Y N

024

1. Reinstall TR104-F01.
2. Connect CE-meter (range 5VDC)
   +lead to any D08 pin.
   'DC-Gnd'
   -lead to 01A-A2B2-P13
   '-5.1V sense PS104 A-C2 A45/H05'
   (ALD-YB423)
3. Observe the CE-meter, press and hold the power-on switch.

Is -5.1VDC +/-15% at least momentarily present?

Y N

025

1. Release the power on switch.
2. Connect CE-meter (range 5VDC)
   +lead to PS104-TB01-001
   'DC-Gnd'
   -lead to PS104-05-001
   '-5.1V PS104 to 01A-A2 MSSS'
   (ALD-YA451)
3. Press and hold the power on switch.

Is -5.1VDC +/-15% at least momentarily present?

Y N

026

Release the power on switch.

(Entry Point B)

Suspect TR104/PS104 problem.
Go To Map 0250, Entry Point A.

027

Release the power on switch.
Suspect -5.1VDC distribution problem.
Go To Map 0232, Entry Point A.

028

1.Press power off key.
2.Connect CE-meter (range 5VDC) to
01A-A2B2-D03
'+5.1V PS104 to cards'
(ALD-YB421)
and to any D08 pin.
3.Observe your meter and press the power on key.

Is 5.1VDC +/-15% present as long as the power on switch is pressed?

Y N

029

Go to Page 10, Step 038, Entry Point R.

030

1.Press the power off key.
2.Do not disconnect the +lead of your meter and connect the -lead of your meter to
01A-A2B2-J13
'-Power on reset'
(ALD-YB421)
3.Observe your meter and press and hold the power on switch.

Was there a meter reading of more than 1.0VDC and was this voltage removed approximately 600 ms after the power on switch was pressed?

Y N

031

1. Release the power on switch.
2. Connect CE-meter according to following table (use correct meter range).
3. Press and hold the power switch for each measurement.

+ lead	- lead	voltage
01A-A2B2-U11	any D08 pin	+24V PS104
01A-A2B2-J09	any D08 pin	+5.1V PS104
01A-A2B2-P06	any D08 pin	+8.5V PS104
01A-A2B2-U04	any D08 pin	+12V PS104
any D08 pin	01A-A2B2-U09	-12V PS104

The previously listed points are the sense line inputs to the BPC card (ALD-YB421/423)

Were all voltages at least momentarily present within a tolerance limit of +/-15% ?

Y N

032

Are all measured voltages below their nominal value?

Y N

033

Was +24VDC PS104 +/-15% present?

Y N

034
Connect CE-meter (range 50VDC)
+lead to PS104-05-003
'+24V PS104 to 01A-A2'
(ALD-YA451)
-lead to PS104-05-006
'DC-GND'
(ALD-YA451)
Observe your meter, press and hold the power on switch.

Is 24VDC +/-15% at least momentarily present?
Y N

035
Go to Page 7, Step 026, Entry Point B.

036
Go To Map 0220, Entry Point A.

037
Was +5.1VDC PS104 +/-15% present?
Y N

038
(Entry Point R)

Connect CE-meter (range 5VDC)
+lead to PS104-TB02-001
'+5.1V PS104 to 01A-A2 MSSS'
(ALD-YA451)
-lead to PS104-TB01-001
'DC-GND'
(ALD-YA451)
Observe your meter, press and hold the power on switch.

Is +5.1VDC +/-15% at least momentarily present?
Y N

039
Go to Page 7, Step 026, Entry Point B.

040
Go To Map 0231, Entry Point A.

041
Was +8.5VDC +/-15% present?
Y N

042
Connect CE-meter (range 15VDC)
+lead to PS104-05-008
'+8.5V PS104 to 01A-A2 MSSS'
(ALD-YA451)
-lead to PS104-05-009
'DC-GND'
(ALD-YA451)
Observe your meter, press and hold the power on switch.

Is +8.5VDC +/-15% at least momentarily present?
Y N

043
Go to Page 7, Step 026, Entry Point B.

044
Go To Map 0233, Entry Point A.

045
Was +12VDC PS104 +/-15% present?
Y N

046
Connect CE-meter (range 15VDC)
+lead to PS104-06-008
'+12V PS104 to 01A-C2 B/J UC'
(ALD-YA451)
-lead to PS104-06-005
'DC-GND'
(ALD-YA451)
Observe your meter, press and hold the power on switch.

(Step 046 continues)

(Step 046 continued)
Is +12VDC +/-15% at least momentarily present?
Y N

047
Go to Page 7, Step 026, Entry Point B.

048
Go To Map 0234, Entry Point A.

049
Connect CE-meter (range 15VDC)
+lead to PS104-05-011
'DC-GND'
(ALD-YA451)
-lead to PS104-05-004
'-12V PS104 to 01A-A2 PC'
(ALD-YA451)
Observe your meter, press and hold the power on switch.

Is -12VDC +/-15% at least momentarily present?
Y N

050
Go to Page 7, Step 026, Entry Point B.

051
Go To Map 0235, Entry Point A.

052
Go To Map 0250, Entry Point A.

053
1. Connect CE-meter (range 5VDC)
   -lead to 01A-A2B2-G11
   '-TP base power off'
   (ALD-YB243)
   +lead to any D03 pin.
2. Press and hold the power on switch for at least 5 seconds.

Does your meter show a voltage of more than 1.0VDC approximately 2 seconds after pressing the power on switch.

Y N

054
Connect CE-meter (range ohm X1) to
01A-A2B2-S02
'-Time delay 500ms'
(ALD-YB423)
and 01A-A2B2-P12
'-Time delay 500ms'
(ALD-YB423)

Is the resistance less than 10 ohm?
Y N

055
Repair wiring between the previously listed pins.
Go to Page 4, Step 001, Entry Point A.

056

(Entry Point Q)

1. Press the power off key.
2. Connect your CE-meter (range 50VDC) to any D08 pin and to 01A-A2B2-M07
   '+24V PS104 CTRLD'
   (ALD-YB423)
3. Observe your meter, press the power on switch and wait approximately 2 seconds.

(Step 056 continues)

(Step 056 continued)
Is 24VDC +/-15% present?
Y N

057
1.Press the power off switch.
2.Switch PCC-CB01 off.
3.Remove the BPC card from 01A-A2B2.
4.Measure the resistances of the relay coils according to the table below.
Compare the measured resistances with resistances given in the table.
Connect the leads of your CE-meter (range ohm X10) to the pins listed in the following table:

RELAY	LEAD 1	LEAD 2	RESISTANCE +/- 10%	NOTE
PCC-K02	01A-A2B2-B12	01A-A2B2-M07	935 ohm	FEAT.
PCC-K03	01A-A2B2-B11	01A-A2B2-M07	935 ohm	
PCC-K04	01A-A2B2-M03	01A-A2B2-M07	288 ohm	
PS105-K01	01A-A2B2-B07	01A-A2B2-M07	2200 ohm	FEAT.
SPI-P00-K01	01A-A2B2-B06	01A-A2B2-M07	2200 ohm	FEAT.

NOTE:
There is a diode wired parallel to the relay coils.
If your meter shows a low resistance for all relays, exchange the leads of your meter and repeat the measurements.
Your meter should now show the correct resistances of the relay coils.

Are all measured resistances ok?
Y N

058
1.Replace the defective relay.
2.Replace the BPC card in position 01A-A2B2.
Go to Page 4, Step 001, Entry Point A.

059
Go to Page 13, Step 060, Entry Point U.

060
(Entry Point U)

1.Press power off switch.
2.Replace the BPC card in position 01A-A2B2.
Go to Page 4, Step 001, Entry Point A.

061
1.Press power off switch.
2.Connect the general logic probe (GLP2) power leads to 01A-A2B2-D03 (+lead) and to 01A-A2B2-D08 (-lead)
3.Connect the GLP2 +gating input to 01A-A2B2-P12 '-time delay 500ms' (ALD-YB243)
4.Set the GATE REF switch of the probe to +1.4V.
5.Connect probe input to the pins listed in the following table. For each measurement press the power-on switch for several seconds and write down the name of the signal which was on a down level during the measurement.

Pin	Signal name	ALD
01A-A2B2-S09	'-Power off OCP/CPU'	(ALD-YB421)
01A-A2B2-J10	'-Thermals failed D18'	(ALD-YB423)
01A-A2B2-M04	'-TR104 TH failed D03'	(ALD-YB423)
01A-A2B2-P02	'-Power off progr C27'	(ALD-YB423)
01A-A2B2-G11	'-TP Base power off'	(ALD-YB421)

6.Remove the +gating probe input from 01A-A2B2-P12 after all measurements have been terminated.

Was the *up* indicator of the probe on at each measured pin (at least as long as the power on switch was pressed)?

Y N

062
Press power off switch.

Was the *up* indicator of the probe on for signal
'Power off OCP/CPU'?
Y N

063
(Entry Point N)

Signal '-Power off OCP/CPU' failed
Go To Map 0236, Entry Point A.

064
Was the *up* indicator of the probe on for signal
***-Thermals failed D18*?**
Y N

065
Go To Map F7C3, Entry Point A.

066
Was the *up* indicator of the probe on for signal
***-TR104 TH failed D03*?**
Y N

067
Go To Map F7A3, Entry Point B.

068
Was the *up* indicator of the probe on for signal
'-Power off progr C27'?
Y N

069
1.Press power-off switch.
2.Remove PC sense card 1 from 01A-A2D2 and BPC card from 01A-A2B2.
3.Connect CE-meter (range ohm X1) to 01A-A2B2-P02
'-Power off progr C27'
(ALD-YB423)
and to any D08 pin.

Is the resistance below 100 ohm?
Y N

070
Suspect faulty PC sense card or faulty BPC card. Replace cards step by step and retry power on after each card replacement.
Go to Page 4, Step 001, Entry Point A.

071
There is a short circuit from 01A-A2B2-P02
'-Power off progr C27'
(ALD-YB423)
to ground. Check and repair board wiring or replace board 01A-A2.
Go to Page 4, Step 001, Entry Point A.

072
1.Press power-off switch.
2.Remove BPC card from position 01A-A2B2.
3.Connect CE-meter (range ohm X1) to any D08 pin and to 01A-A2B2-G11
'-TP Base power off'
(ALD-YB421)

Is the measured resistance below 100 ohm?
Y N

073
Replace the BPC card which was previously removed from position 01A-A2B2 by a new one.
Go to Page 4, Step 001, Entry Point A.

074
There is a short circuit from
01A-A2B2-G11
'-TP Base power off'
(ALD-YB421)
to ground Check for bent or broken pins. If no error detected replace board 01A-A2.
Go to Page 4, Step 001, Entry Point A.

075
1.Press power off switch.
2.Replace BPC card in position 01A-A2B2.
Go to Page 4, Step 001, Entry Point A.

076
Go to Page 11, Step 056, Entry Point Q.

077
Suspect TR104 overload problem.
Go to Page 7, Step 026, Entry Point B.

078
Suspect *BASE POWER ON* (*POWER ACTIVE*) indicator problem.
1.Connect CE-meter (range 50VDC)
+lead to connector CCP-03-001
'+24V PS104 CTRLD'
(ALD-YA351)
-lead to connector CCP-03-003
-base power on ind
(ALD-YA351)
2.Press and hold the power on switch.

Is 24VDC +/-15% present?
Y N

079
1.Do not disconnect the +lead of your meter.
2.Connect -lead of your meter to any D08 pin DC-GND
3.Press and hold the power on switch.

Is 24VDC +/-15% present?
Y N

080
Perform wiring check for the following net. Apply the *Wiring Check Procedure* shown in book Maintenance Information (MI) POWER.

```
|-------|  | 01A-A2B2-M07
| Card  |*| (ALD-YB423)
|-------|  |
           | Board wiring
           |
|-------|  | 01A-A2C1-A08
| Conn  |=| (ALD-YB221)
|-------|  |
           | Cable
           |
|-------|  | CCP-01-003
| Conn  |=| (ALD-YA351)
|-------|  |
           | Cable
           |
|-------|  | CCP-03-001
| Conn  |=| (ALD-YA351)
|-------|
```

*'+24V PS104 CTRLD'

Go to Page 4, Step 001, Entry Point A.

081

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

```
|-------| | 01A-A2B2-M05
| Card  |*| (ALD-YB423)
|-------| |
          | Board wiring
          |
|-------| | 01A-A2A1-D08
| Conn  |=| (ALD-YB221)
|-------| |
          | Cable
          |
|-------| | CCP-01-002
| Conn  |=| (ALD-YA351)
|-------| |
          | Cable
          |
|-------| | CCP-03-003
| Conn  |=| (ALD-YA351)
|-------|
```

* '-Base power on ind'

```
|-------| | 01A-A2B2-M03
| Card  |*| (ALD-YB423)
|-------| |
          | Board wiring
          |
|-------| | 01A-A2B2-M06
| Card  |=| (ALD-YB423)
|-------|
```

*'-Base power on ind'

Any error detected and repaired?

Y N

082

Replace the BPC card in position 01A-A2B2.

Go to Page 4, Step 001, Entry Point A.

083

Go to Page 4, Step 001, Entry Point A.

084

1.Switch PCC-CB01 off.

2.Replace the *BASE POWER ON* (*POWER ACTIVE*) indicator.

Go to Page 4, Step 001, Entry Point A.

085

(Entry Point C)

Is PS104-CP05 (+24V) still on?

Y N

086

Go To Map 0240, Entry Point A.

087

Is PS104-CP01 (+5.1V) still on?

Y N

088

Go To Map 0241, Entry Point A.

089

Is PS104-CP02 (+5.1V) still on?

Y N

090

Go To Map 0242, Entry Point A.

091

Is PS104-CP03 (-5.1V) still on?

Y N

092

Go To Map 0243, Entry Point A.

093

Is PS104-CP07 (+8.5V) still on?

Y N

094

Go To Map 0244, Entry Point A.

095
Is PS104-CP06 (+12V) still on?
Y N

096
Go To Map 0245, Entry Point A.

097
PS104-CP04 (-12V) is tripped.
Go To Map 0246, Entry Point A.

098
Go To Map 0209, Entry Point A.

099
1.Press power-off switch.
2.Connect CE-meter (range 15VDC) to
01A-A2A2-D10 (-)
'-5.1V sense PS104 01A-B1 A63'
(ALD-YB241)
and to any D08 pin (+)
3.Observe your meter and press the power on switch.

Is -5.1VDC +/-15% present as long as the power-on switch is pressed?
Y N

100
(Entry Point J)

Go To Map F7A6, Entry Point A.

101
Is board A1 installed?
Y N

102
Go To Map 0201, Entry Point D.

103
1.Press power-off switch.
2.Connect CE-meter (range 15VDC) to
01A-A1H6-B02 (-)
'-5.1V sense PS104 01A-A1 A01'
(ALD-YC823)
and to any D08 pin
'DC-GND'
3.Observe your meter and press the power-on switch.

Is -5.1VDC +/-15% present as long as the power-on switch is pressed?
Y N

104
Go To Map F7AA, Entry Point C.

105
(Entry Point G)

Go To Map 0201, Entry Point A.

106
Is there any power off problem?
Y N

107
Go to Page 5, Step 006, Entry Point K.

108
1.Insert diskette(s) into diskette drive(s).
2.Press power-on switch and wait until the initial picture of the CRT-test is displayed.
Go To Map 0201, Entry Point G.

109
Is the *power in process* indicator at the OCP on?
Y N

110

1.Press power-off switch.
2.Press power-on switch.

Is the *power-on* indicator switched on without a delay of approximately 30-40 seconds after the power on switch was pressed?

Y N

111

Press power-off switch.
Go To Map 0201, Entry Point A.

112

1.Press power-off switch.
2.Remove PC sense card from 01A-A2D2.
3.Remove the diskette(s) from the diskette drive(s).
4.Press power-on switch.

Is the *power-complete* indicator on?

Y N

113

1.Press power-off switch.
2.Replace the already removed PC sense card by a new one.
Go to Page 4, Step 001, Entry Point A.

114

Probe 01A-A2B2-J05
'-PWR complete C26'
(ALD-YB421)

Is the *down* indicator of the probe on?

Y N

115

1.Press power-off switch.
2.Replace the BPC card in position 01A-A2B2.
3.Install the previously removed PC sense card in position 01A-A2D2 and the top-connectors.
Go to Page 4, Step 001, Entry Point A.

116

1.Press power-off switch.
2.Suspect a short circuit to GND on signal '-power complete C26'
3.Check and repair or replace wiring of the following net. Apply *Wiring Check Procedure* shown in book MI POWER.

```
|------|
| CARD |*| 01A-A2D2-J07
|------| |
        |
|------| |
| CARD |=| 01A-A2B2-J05
|------|
```

* '-power complete C26'

Go to Page 4, Step 001, Entry Point A.

117

Are both the *power complete* indicator and the *power in process* indicator on at the same time?

Y N

118

Wait approximately 2 minutes.

Is any reference code displayed?

Y N

119

Is machine power switched off?

Y N

120

(Entry Point H)

1.Press power off switch.
2.Remove diskette(s) from diskette drive(s).
3.Press power-on switch.
Go to Page 17, Step 105, Entry Point G.

121
1.Connect CE-meter (range 5VDC) to
01A-A2D2-U09 (-)
'-1.5V sense -5.1V 01A-B1 A63'
(ALD-YB643)
and to any D08 pin (+)
2.Observe your meter and press the power on switch.

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

122
Go to Page 17, Step 100, Entry Point J.

123
Press power on switch and wait until the machine power is switched off.

Is machine power switched off approximately 10 to 15 seconds after the power on switch was pressed?
Y N

124
Go to Page 18, Step 120, Entry Point H.

125
1.Connect probe to 01A-A2B2-S09
'-Power off OCP/CPU'
(ALD-YB423)
2.Press power on switch and wait approximately one minute.

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

126
1.Press power-off switch.
2.Replace BPC card in position 01A-A2B2.
Go to Page 4, Step 001, Entry Point A.

127
Suspect power off control problem.
Go to Page 14, Step 063, Entry Point N.

128
Go to MAP for displayed reference code.

129
1.Press power-off switch.
2.Replace the BPC card in position 01A-A2B2
Go to Page 4, Step 001, Entry Point A.

130
Go To Map 0214, Entry Point A.

131
Is any reference code displayed on the screen?
Y N

132
Is the *basic check* indicator on?
Y N

133
Press the power off switch and wait approximately 1 minute.

Is the machine powered down?
Y N

134
(Entry Point D)

Go To Map 0201, Entry Point H.

135
Remove diskette(s) from diskette drive(s).
Go to Page 5, Step 007, Entry Point F.

136
Press the cancel key at the keyboard and wait approximately one minute.

Is any reference code displayed on the screen?
Y N

137
Press the power off switch and wait approximately 1 minute.

Is the machine powered down?
Y N

138
Go to Page 19, Step 134, Entry Point D.

139
Remove diskette(s) from diskette drive(s).
Go to Page 5, Step 007, Entry Point F.

140
Go to corresponding MAP.

141
Go to corresponding MAP.

Power problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
FD72	S	9	034
FD72	T	11	038
FD74	T	11	038
FD76	T	11	038
FD80	T	11	038
FD82	S	9	034
FD82	T	11	038
FD84	T	11	038
FD86	T	11	038
IMAN	B	14	075
0236	J	15	078

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
18	110	0000	A
4	011	0200	A
13	050	0200	C
3	004	0200	L
8	026	0202	A
15	080	0202	A
16	090	0204	A
3	003	0213	A
18	097	0236	A
18	103	0275	A
12	047	0400	A

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001
POWER MAP MAIN ENTRANCE.

Note:
Read carefully the "Hints For Power Maintenance" in book Maintenance Information (MI) POWER, section "Repair Information" and follow each of them.

Enter MAP 0200 at Entry Point A if no reference code is displayed on the screen of the display unit.

	Suspected errors or FRU's (including intermittent errors)
1	BPC card 01A-A2B2.
2	TR104/PS104.
3	PS104 DC distribution.
4	Line voltage distribution.
5	Diskette drive problems.
6	Power on/off switch failing.
7	OCP interface.
8	CEP interface.
9	PC sense card 1 in pos. 01A-A2D2.
10	PS104 sense wiring.
11	PCC-K04 problem.

(Entry Point A)

1. Press power-off switch.
2. Press the power-on switch.
3. Release the power-on switch and observe the "base power on" indicator.

Is the "base power on" indicator still on?

Y N

3 3
A B

002

```
|-------------------------------|
| 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 the PCC-box.
5. Switch PCC-CB01 on.
6. Observe the PCC-K04.
7. Press and hold the power on switch.

Is PCC-K04 picked?

Y N

003

Release the power on switch.

Go To Map 0213, Entry Point A.

004

Release the power on switch.

Go To Map 0200, Entry Point L.

005

Is the "basic check" indicator on?

Y N

006

Is any reference code displayed?

Y N

007

Press lamp test key at OCP.

Is any indicator at OCP on when key pressed?

Y N

008

1.Connect CE-meter (range 50VDC) +lead to
01A-A2B2-J02
'+lamp test'
(ALD-YB421)
-lead to any D08 pin.
2.Observe meter and press lamp test key.

Is 24VDC present when key pressed?

Y N

009

Open the OCP keyboard and connect
CE-meter (range 50VDC)
+lead to connector KEYB-01-015.
'+24V PS104 to OCP'
(ALD-YA633)
-lead to connector KEYB-01-006.
'DC-GND'
(ALD-YA633)

Is 24VDC +/- 15% present?

Y N

010

Connect CE-meter (range 50VDC)
+lead to 01A-A2E1-E13
'+24V PS104 to OCP'
(ALD-YB223)
-lead to 01A-A2E1-A11
'DC-GND'
(ALD-YB223)

Is 24VDC +/- 15% present?

Y N

011

1.Press power off switch.
2.Check and repair +24V wiring on
board 01A-A2
(ALD-YB223)
or replace board 01A-A2.

(Entry Point Y)

Go To Map 0200, Entry Point A.

012

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

```
|-------|
| Card  |*| 01A-A2E1-E13 (ALD-YB223)
|-------| |
          | Cable
|-------| |
| Conn  |=| OCP-01-015 (ALD-YA911)
|-------| |
          | Cable
|-------| |
| Conn  |=| DISP-03-024 (3278-2A) or DISP-01-024 (3279-2C)
|-------| |                                    (ALD-YA631)
          | Wiring
|-------| |
| Conn  |=| DISP-02-015 (ALD-YA631)
|-------| |
          | Cable
|-------| |
| Conn  |=| KEYB-01-015 (ALD-YA633)
|-------|
```

*'+24V PS104 to OCP'

Go to Page 4, Step 011, Entry Point Y.

013
Perform wiring check for the following net.
Apply "Wiring Check Procedure" shown in book
Maintenance Information (MI) Power.

```
|-------|
| Conn  |*| KEYB-01-010 (ALD-YA633)
|-------| |
          | Cable
|-------| |
| Conn  |=| DISP-02-010 (ALD-YA631)
|-------| |
          | Wiring
|-------| |
| Conn  |=| DISP-03-004 (3278-2A) or DISP-01-004 (3279-2C)
|-------| |                                      (ALD-YA631)
          | Cable
|-------| |
| Conn  |=| OCP-01-010 (ALD-YA911)
|-------| |
          | Cable
|-------| |
| Card  |=| 01A-A2E1-E11 (ALD-YB223)
|-------| |
          | Board wiring
|-------| |
| Card  |=| 01A-A2B2-J02 (ALD-YA421)
|-------|
```

* '+lamp test to BPC'

If no wiring error found, replace lamp test key including printed OCP board.

Go to Page 4, Step 011, Entry Point Y.

014
1.Press power off switch.
2.Connect CE-meter (range ohm X1)
 to 01A-A2B2-B10 and
 to 01A-A2B2-B09
 '(-lamp test OCP)'

Is the resistance below 100 ohm?
Y N

015
Repair the printed wire between both pins.
Go to Page 4, Step 011, Entry Point Y.

016
Ensure that the following connectors are seated correctly:
Keyboard connector 01 (ALD-YA633)
Display unit connector 02 (ALD-YA631)
Display unit connector 03 (ALD-YA631) (3278-2A)
Display unit connector 01 (ALD-YA631) (3279-2C)
OCP connector 01 (ALD-YA911)
Paddle card 01A-A2YK (ALD-YB223)
If no error detected replace the BPC card in position 01A-A2B2.
Go to Page 4, Step 011, Entry Point Y.

017
Press lamp test key at OCP and check if the following indicators at OCP are on:
°Basic-check°
°Power complete°
°Power in process°

Are all indicators on when lamp test key depressed?
Y N

018
1. Press power off switch.
2. Check lamp test wiring to failing indicator(s).
   Lamp test circuit:
   BPC (ALD-YB421)
   CONN (ALD-YB223)
   Indicator circuits:
   (ALD-YA633)

Is the lamp test wiring ok?
Y N

019
Repair or replace the failing wiring.
Go to Page 4, Step 011, Entry Point Y.

020
1.Replace the BPC card in position 01A-A2B2.
2.Press power on switch.
3.Press the lamp test key at the OCP.

Are the indicators
"Basic check"
"Power complete"
"Power in process"
on when key pressed?
Y N

021
1.Press power off switch.
2.Replace the OCP panel.
Go to Page 4, Step 011, Entry Point Y.

022
(Entry Point D)

The first part of the power on sequence controlled by the BPC-card is completed approximately 600ms after the power on key was pressed. The support processor performed also the basic assurance test (BAT).
1.Insert diskette(s) into diskette drive(s).

(Entry Point E)

2.Press the IML key at OCP. The SP tests the console disk file adapter and the adapter of the display unit. During these adapter tests, the initial picture of the display unit adapter test will appear on the screen.

(Entry Point G)

Is the initial picture of the display unit adapter test shown on the screen approximately 1 minute after pressing of the power-on key or IML-key?
Y N

1
3
P Q

023
1.Press power off key.
2.Connect CE-meter (range 5VDC)
-lead to 01A-A2B2-J13
'-power on reset'
(ALD-YB421)
+lead to 01A-A2B2-D03
'(+5.1V)'
Observe meter and press the power-on switch.

Was there any needle deflection on your CE-meter?
Y N

024
Is +5.1VDC +/- 15% permanent present?
Y N

025
1.Press power off switch.
2.Replace BPC card in position 01A-A2B2.
Go to Page 4, Step 011, Entry Point Y.

026
Suspect short circuit to ground of signal
'-power on reset'
(ALD-YB421)
1.Press power off switch.
2.Replace SBA card in position 01A-A2Q2.
3.Retry power on.
If problem still exists
Go To Map 0202, Entry Point A.

027
Is the "power-on" indicator of the display unit on?
Y N

028
Is display unit power switched on?
Y N

9 9 9
R S T

029
Switch display unit power on and wait approximately 10 seconds.
Go to Page 8, Step 022, Entry Point E.

030
1. Ensure that walloutlet for display unit has power on.
2. Check line cord of display unit visually for any damage or loose connection.

Any problem found and repaired?
Y N

031
Suspect problem on display unit. Go to display unit MAP, to ensure proper function after repair action
Go to Page 4, Step 011, Entry Point Y.

032
Go to Page 8, Step 022, Entry Point E.

033
Is the motor of the system diskette drive running?
Y N

034
(Entry Point S)

1. Press power off key.
2. Disconnect line voltage connector of failing diskette drive(s).
3. Connect CE-meter (range 500VAC) to system diskette drive line voltage connector pins 001 and 003.
4. Observe the CE-meter and press power-on switch.

Is the line voltage present?
Y N

035

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

Suspect connector problem of connector
PCC-07
(system diskette drive)
or connector PCC-11
(I/O diskette drive)
(ALD-YA321)
if no error detected, check and repair or
replace wiring from PCC-K04 via
connector PCC-07 or PCC-11
(ALD-YA321)
to diskette drive power connector.
After any repair on the AC line voltage
wiring or cable replacement, ensure that
the ground connectors have correct
contact.
Go to Page 4, Step 011, Entry Point Y.

036
Suspect diskette drive motor problem.
Go to diskette drive service documentation.

037
Press the IML key.

Is there any mechanical movement of system diskette drive read/write head mechanics?

Y N

038
(Entry Point T)

Check all CP's of PS104 for on.
Is any CP of PS104 tripped?
Y N

039
Check the DC-voltages for both diskette drives at connector PS104-02 and PS104-03 for both diskette drives according to the following table:

Voltage	+	-
+24	PS104-02-006	PS104-02-003
+5.1	PS104-02-001	PS104-02-002
-5.1	PS104-02-005	PS104-02-004
+24	PS104-03-006	PS104-03-003
+5.1	PS104-03-001	PS104-03-002
-5.1	PS104-03-005	PS104-03-004

Note:
If only one diskette drive is installed, the connector PS104-03 is unused. No measurement is required at this connector if the I/O diskette drive is not installed.

Are all three voltages present?
Y N

040
Is +24VDC +/-15% present?
Y N

041
Check and repair or replace +24VDC wiring from connector PS104-02 (used for system diskette drive)
or connector PS104-03
(used for I/O diskette drive)
(ALD-YA441)
to DC connector 2 of failing diskette drive.
Go to Page 4, Step 011, Entry Point Y.

042
Check and repair or replace wiring for +5.1V/-5.1V from connector PS104-02 (for system diskette drive)
or from connector PS104-03 (for I/O diskette drive)
(ALD-YA451)
to DC connector 02 of failing diskette drive.
Go to Page 4, Step 011, Entry Point Y.

043
1. Remove diskette(s) from diskette drive(s).
2. Connect CE-meter to the test points of the diskette drive control card(s) according to the table below.
   The physical locations of the test points are shown in VOL.14, STM, Section 5 under "Discette Drive Control Card".

Voltage	Testpoint
+24V	TP A8
+5.1V	TP B15
-5.1V	TP A9

Are all three voltages +/-15% present?
Y N

A A
D E

044
1. Disconnect the diskette drive interface connector (accessible from the bottom of the diskette drive)
2. Connect the CE-meter (range 50VDC)
   -lead to connector PS104-02-002 'DC-GND' (ALD-YA441)
   +lead to the disconnected connector according to the following table:

Voltage	Diskette interf.conn.
+24V	pin B10
+5.1V	pin B03
-5.1V	pin B11

Are all three voltages +/- 15% present?
Y N

045
Check and repair or replace cable from PS104-02 to the system diskette drive or from PS104-03 to the I/O diskette drive 2.
Go to Page 4, Step 011, Entry Point Y.

046
Suspect connector problem of the diskette drive interface connector.
Check for bent or broken pins.
If no error detected, replace the diskette drive control card.
Go to Page 16, Step 090, Entry Point Z.

047
(Entry Point F)

Suspect IML problem.
Go To Map 0400, Entry Point A.

048
1. Press the power off switch.
2. Switch the tripped CP of PS104 on.
3. Press the power on switch.

Is any CP of PS104 tripped?
Y N

049
Go to Page 11, Step 038, Entry Point T.

050
Go To Map 0200, Entry Point C.

051
Go to Page 12, Step 047, Entry Point F.

052
Is the °power complete° indicator on?
Y N

053
Is the °basic check° indicator on?
Y N

054
Is any reference code displayed?
Y N

055
Is the °power in process° indicator permanently on?
Y N

056
1. Connect probe to 01A-A2B2-G10
'-Power off progr D35'
(ALD-YB421)
2. Press power-on key.

Is the °down° indicator of the probe on approximately 2 seconds after power-on key was pressed?
Y N

057
1. Press power off key.
2. Replace PC-sense card in position 01A-A2D2.
Go to Page 4, Step 011, Entry Point Y.

058
1. Press power off key.
2. Remove PC sense card 1 from 01A-A2D2 and BPC card from 01A-A2B2.
3. Connect CE-meter (range ohm X1) to 01A-A2B2-G10
'-Power off progr D35'
(ALD-YB421)
and to any D08 pin.

Is the resistance below 100 ohm?
Y N

059
Replace BPC-card in position 01A-A2B2.
Go to Page 4, Step 011, Entry Point Y.

060
Suspect short circuit to ground. Repair wiring or replace board 01A-A2.
Go to Page 4, Step 011, Entry Point Y.

061
Is any reference code displayed?
Y N

062
Probe 01A-A2D2-J07
'-power complete C26'
(ALD-YB641)

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

063
1.Press power off switch.
2.Insert diagnostic diskette into diskette drive 1.
3.Press power-on switch and wait 1 minute.

Is the "power complete" indicator on?
Y N

064
Is any reference code displayed?
Y N

065
Go to Page 12, Step 047, Entry Point F.

066
Go to corresponding MAP.

067
Go to Step 074, Entry Point K.

068
Probe 01A-A2B2-J05
'-Power complete C26'
(ALD-YB421)

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

069
1.Press power off key.
2.Check and repair wiring from 01A-A2D2-J07 to 01A-A2B2-J05 '-power complete C26' (ALD-YB641/YB421) or replace board 01A-A2.
Go to Page 2, Step 001, Entry Point A.

070
1.Press power off key.
2.Replace BPC-card in position 01A-A2B2.
Go to Page 2, Stop 001, Entry Point A.

071
(Entry Point P)

Go to MAP for displayed reference code.

072
Go to Page 18, Step 112, Entry Point M.

073
Go to MAP for displayed reference code.

074
(Entry Point K)

Is the "basic check" indicator on?
Y N

075
(Entry Point B)

1.Switch to CE-mode at the CE-panel.
2.Press power off key at OCP.
Note:
The power-off sequence takes approximately 8 seconds.

Is the power off sequence successfully executed?
Y N

076
Is any reference code displayed?
Y N

077
(Entry Point H)

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

078
(Entry Point J)

Is the °power in process° indicator still on?
Y N

079
Was machine power switched off immediately after pressing the power off key (without power-off sequence)?
Y N

080
(Entry Point C)

Go To Map 0202, Entry Point A.

081
1.Press power-on key.
2.Probe 01A-A2D2-J13
'-PC ready C32'
(ALD-YB641)

Is the °down° indicator of the probe on after the °power complete° indicator is switched on?
Y N

082
1.Press power off key.
2.Replace PC-sense card 1 in position 01A-A2D2.
3.Press power-on switch.
Go to Page 14, Step 075, Entry Point B.

083
1.Probe 01A-A2B2-J06
'-PC ready C32'
(ALD-YB421)

Was the °down° indicator of the probe on?
Y N

A A A
V W X

084
1.Switch PCC-CB01 off.
2.Check and repair wiring of signal
'-PC ready C32'
from 01A-A2D2-J13 to
01A-A2B2-J06
(ALD-YB641)
(ALD-YB421)
Go to Page 14, Step 075, Entry Point B.

085
1.Press power off switch.
2.Replace BPC card in position 01A-A2B2.
Go to Page 14, Step 075, Entry Point B.

086
1.Press power off switch.
2.Press power-on key and wait until °power complete° Indicator is switched on.
Probe 01A-A2B2-P02
'-Power off progr C27'
(ALD-YB423)
3.Press power off key at OCP and observe the probe indicators.

Was the °down° indicator of the probe at least momentarily on?
Y N

087
1.Press power off switch.
2.Press power-on key and wait until °power complete° indicator is switched on.
Probe 01A-A2D2-J11
'-Power off progr C27'
(ALD-YB641)
3.Press power off key.

Was the °down° indicator of the probe at least momentarily on?
Y N

088

1.Switch PCC-CB01 off.
2.Remove diskette from the diskette drive and insert the diagnostic diskette.
3.Switch PCC-CB01 on.
4.Press power-on switch and wait until the "power complete" indicator is switched on.
5.Press power off switch.

Is the power off sequence successfully executed?

Y N

089

1.Press power off key.
2.Replace PC sense card 1 in position 01A-A2D2.
Go to Page 4, Step 011, Entry Point Y.

090

Replace the previously used control diskette.

(Entry Point Z)

Go To Map 0204, Entry Point A.

091

1.Switch PCC-CB01 off.
2.Check and repair wiring from
01A-A2B2-P02
'-Power off progr C27'
(ALD-YB423)
to 01A-A2D2-J11
(ALD-YB641)
Go to Page 2, Step 001, Entry Point A.

092

Is the "base power-on" indicator still on?

Y N

093
(Entry Point X)

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

1. Switch PCC-CB01 off.
2. Remove power from customer's wall outlet.
3. Check PCC-K04 for burnt contacts and correct mechanical movement of the contacts.

Was any PCC-K04 problem detected?
Y N

094

```
|-----------------------------------|
|-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.                      |
|-----------------------------------|
```

Suspect a defective power on/power-off switch at the CCP. Replace the power-on/power-off switch.
Go to Page 16, Step 090, Entry Point Z.

095
Replace the PCC-K04.
Go to Page 16, Step 090, Entry Point Z.

096
1. Switch PCC-CB01 off.
2. Replace BPC card in position 01A-A2B2.

Go to Page 4, Step 011, Entry Point Y.

097
Suspect power off control problem.
Go To Map 0236, Entry Point A.

098
Go to MAP for displayed reference code.

099
Press power-on switch and wait approximately one minute.

Is the °power complete° indicator on?
Y N

100
Is any reference code displayed?
Y N

101
Go to Page 4, Step 011, Entry Point Y.

102
Go to MAP for displayed reference code.

103
Go To Map 0275, Entry Point A.

104
Is any reference code displayed?
Y N

105
Press the cancel key and wait one minute.

Is any reference code displayed?
Y N

106
Go to Page 4, Step 011, Entry Point Y.

107
Go to Page 4, Step 011, Entry Point Y.

108
Go to Page 14, Step 071, Entry Point P.

109
Press the lamp test key at the OCP and check if the °SYS° and °WAIT° indicators at the OCP are on.

Are both indicators on?
Y N

110
Go To Map 0000, Entry Point A.

111
Go to Page 8, Step 022, Entry Point D.

112
(Entry Point M)

Probe 01A-A2D2-G12
'-power check C29'
(ALD-YB641)

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

113
Suspect operation control program problem.
Use diagnostic diskette and retry power on.
Go to Page 4, Step 011, Entry Point Y.

114
Probe 01A-A2B2-J04
'-power check C29'
(ALD-YB421)

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

115
Check and repair wiring from
01A-A2D2-G12
(ALD-YB641)
to 01A-A2B2-J04
(ALD-YB421)
'-power check C29'
or replace board 01A-A2.
Go to Page 4, Step 011, Entry Point Y.

116
1.Press power off key.
2.Replace BPC card in position 01A-A2B2.
Go to Page 4, Step 011, Entry Point Y.

117
Is any reference code displayed?
Y N

118
Connect probe to 01A-A2B2-B04
'-CE mode on D10'
(ALD-YB421)

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

119
Connect probe to 01A-A2B2-J04
'-Power check C29'
(ALD-YB421)

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

120
1.Press power off switch.
2.Replace BPC card in position 01A-A2B2.
Go to Page 4, Step 011, Entry Point Y.

121
1.Press power off switch.
2.Remove PC sense card from position 01A-A2D2 and BPC card from position 01A-A2B2.
3.Connect CE-meter (range ohm X1) to 01A-A2B2-J04
'-Power check C29'
(ALD-YB421)
and to any D08 pin.

Is the resistance below 100 ohm?
Y N

122
Suspect faulty PC-sense card or faulty BPC card. Replace cards step by step.
Go to Page 4, Step 011, Entry Point Y.

123
Check and repair board wiring for signal
'-power check C29'
from 01A-A2D2-G12 to 01A-A2B2-J04
or replace board 01A-A2.
Go to Page 4, Step 011, Entry Point Y.

124
1.Ensure that CE-mode switch is switched to normal.
Connect probe to 01A-A2B2-D10
'-CE mode on D10'
(ALD-YB421)

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

125
Suspect card connector problem of pin 01A-A2B2-D10.
If no error detected, replace BPC card 01A-A2B2.
Go to Page 4, Step 011, Entry Point Y.

126
1.Remove cover of the CE-panel.
2.Do not disconnect the cable from CE-panel connector 3.
3.Connect CE-meter (range 50VDC)
+lead to connector CEP-03-D13
'+24V PS104 to CEP'
(ALD-YA621)
-lead to connector CEP-03-D08
'DC-GND'

Is +24VDC +/- 15% present?
Y N

127
1.Press power off switch.
2.Check and repair or replace wiring of the following net.
Apply *Wiring Check Procedure* shown in book Maintenance Information (MI) POWER.

```
|-------|
| Conn  |*| CEP-03-B13 (ALD-YA621)
|-------| |
          | Cable
|-------| |
| Conn  |=| 01A-A2F1-A08 (ALD-YB221)
|-------| |
          | Board wiring
|-------| |
| Conn  |=| 01A-A2B3-E14 (ALD-YC831)
|-------|
```

*'+24V PS104 to CEP.'

Go to Page 4, Step 011, Entry Point Y.

128
Connect CE-meter (range 5.0VDC)
+lead to connector CEP-03-D10
'-CE mode on to PC D10'
(ALD-YA621)
-lead to connector CEP-03-D08

Is 5.1VDC +/- 15% present?
Y N

129
1.Press power off switch.
2.Replace CE-panel.
Go to Page 4, Step 011, Entry Point Y.

130
Check and repair or replace wiring of following net.
Apply "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER.

```
|-------|
| Conn  |*| CEP-03-D10 (ALD-YA621)
|-------| |
        | Cable
|-------| |
| Conn  |=| 01A-A2E1-C06 (ALD-YB221)
|-------| |
        | Board
|-------| |
| Card  |=| 01A-A2B2-D10 (ALD-YB421)
|-------|
```

*'-CE mode on to PC D10'

Go to Page 4, Step 011, Entry Point Y.

131
Go to MAP for displayed reference code.

Power problem

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E8F0	A	3	001
F7A0	A	3	001
F7A1	A	3	001
F7A2	A	3	001
F7A3	A	3	001
F7A4	A	3	001
F7A5	A	3	001
F7BA	A	3	001
F7BB	A	3	001
F7BC	A	3	001
F7BD	A	3	001
F7BE	A	3	001
F7BF	A	3	001
F7B1	A	3	001
F7B2	A	3	001
F7B4	A	3	001
F7B6	A	3	001
F7B7	A	3	001
F7B8	A	3	001
F7B9	A	3	001
F7C0	A	3	001
F7C1	A	3	001
F7C2	A	3	001
F7EB	A	3	001
F7EC	A	3	001
F7EE	A	3	001
F7EF	A	3	001
F7E1	A	3	001
F7E4	A	3	001
F7E7	A	3	001
F7E8	A	3	001
F7F0	A	3	001
F7F1	A	3	001
F7F2	A	3	001
F7F3	A	3	001
F7F4	A	3	001
F70A	A	3	001
F70B	A	3	001
F70C	A	3	001

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F70D	A	3	001
F70E	A	3	001
F700	A	3	001
F701	A	3	001
F702	A	3	001
F703	A	3	001
F704	A	3	001
F705	A	3	001
F706	A	3	001
F707	A	3	001
F708	A	3	001
F709	A	3	001
F712	A	3	001
F713	A	3	001
F73C	A	3	001
F73D	A	3	001
F733	A	3	001
F735	A	3	001
F737	A	3	001
F739	A	3	001
F742	A	3	001
F743	A	3	001
F745	A	3	001
F746	A	3	001
F747	A	3	001
F748	A	3	001
F76A	A	3	001
F76B	A	3	001
F76C	A	3	001
F76D	A	3	001
F76E	A	3	001
F766	A	3	001
F767	A	3	001
F768	A	3	001
F79B	A	3	001
F79F	A	3	001
F796	A	3	001
F797	A	3	001
F798	A	3	001

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F799	A	3	001
02XX	A	3	001
0201	A	3	001
0236	A	3	001
0240	A	3	001
0242	A	3	001
0280	A	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	005	0001	0
3	002	0204	A

Power problem

001
SYMPTOM:
BEFORE CALLING FOR ASSISTANCE.
Note:
This MAP should only be entered, after other MAPs failed.

(Entry Point A)

Is there any power problem which could not be solved by the repair instructions given by other MAPs.

Y N

002
(Entry Point Z)

Go To Map 0204, Entry Point A.

003

Verify all listed points contained in the following check list.

1. Ensure that the correct diskette is installed in your machine. Compare the machine serial number on the diskette label with the machine label.

2. Ensure that the POWER CONFIGURATOR on the diskettes is correct. To check the power configurator, carry out the following steps:
   > Call M/S PROGRAM SELECTION.
   > Key in the selection for UTILITIES
   > Select DISKETTE IDENTIFICATION
   > Key in the subselection for DISPLAY CONFIGURATOR

   The bits of the power configurator have the following meaning:
   Bit 0 = Y ...PDL4 (Power Design Level 4)
   Bit 0 = N ...PDL5 (Power Design Level 5)
   Bit 1 = Y ...CEC (must always be on)
   Bit 2 = Y ...ACA (Auto Call Adapter)
   Bit 3 = Y ...LA (Loop Adapter)
   Bit 4 = Y ...MFCU (5424)
   Bit 5 = Y ...CA 1-3 lines (Communication Adapter)
   Bit 6 = Y ...CA 4-8 lines (Communication Adapter)
   Bit 7 = Y ...SPI (Standard Power Interface)

(Step 003 continues)

(Step 003 continued)

3. Read carefully the *Hints For Power Maintenance* in book MI POWER, section Repair Information in Vol.16 and verify that you have followed each of them.

4. Special care should be taken to check for correct card and connector seating, proper plugging, bent or broken pins.

ATTENTION: The power controller top connectors are not interchangeable and must be installed as shown in book MI POWER, section *Reference Information*.

5. Transformer and power supply outputs often use parallel wires and connector pins. If one voltage is out of tolerance (minus signs displayed), ensure that all parallel wired connectors have good electrical connection. Use ALD reference given in the Maps.

6. Ensure that all blowers are running correctly and that all airfilters are clean.

7. If any measured signal that is supposed to change its level, remains up or down, even after cards have been replaced or after the wiring has been checked, suspect a short circuit to the failing net. (See ALD references given in the MAP). Use your CE-meter to isolate the short circuit according to the *Wiring Check Procedure* shown in book MI POWER.

8. Retry power on/power off using the diagnostic-diskette.

9. Call your branch office and ask for MAP-chart updates via the Reference Code Data Bank. (The reference code of your failure is required.)

10. If all previous actions are not successful, replace the power controller cards in positions 01A-A2C2, 01A-A2D2 and 01A-A2E2 and retry power on.

(Step 003 continues)

(Step 003 continued)

11. At the beginning of each power Map your find a list of FRU's, which might cause the error. Check those listed FRU's for correct plugging, seating and good connections.

12. If there is an undervoltage or out of tolerance condition of voltages generated by a ferro resonant power supply and the corresponding maps failed, suspect a defective capacitor in the transformer unit of the failing voltage. Replace the transformer unit and retry power on.

13. If there is an intermittent error, read the *Hints For Trouble Shooting Intermittent Power Problems* in book MI POWER and follow those hints.

14. If no error could be detected, invoke your Support Structure.

Does your power problem still exist?

Y N

004
Go to Page 3, Step 002, Entry Point Z.

005
Go To Map 0001, Entry Point O.

Power problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
D7DF	A	3	001
E8B0	A	3	001
E8E0	A	3	001
E8F0	A	3	001
F7AA	A	3	001
F7A0	A	3	001
F7A1	A	3	001
F7A2	A	3	001
F7A3	A	3	001
F7A4	A	3	001
F7A5	A	3	001
F7A7	A	3	001
F7A8	A	3	001
F7A9	A	3	001
F7BA	A	3	001
F7BB	A	3	001
F7BC	A	3	001
F7BD	A	3	001
F7BE	A	3	001
F7BF	A	3	001
F7B0	A	3	001
F7B1	A	3	001
F7B2	A	3	001
F7B4	A	3	001
F7B6	A	3	001
F7B7	A	3	001
F7B8	A	3	001
F7B9	A	3	001
F7C0	A	3	001
F7C1	A	3	001
F7C2	A	3	001
F7C3	A	3	001
F7D0	A	3	001
F7D1	A	3	001
F7EA	A	3	001
F7EB	A	3	001
F7EC	A	3	001
F7EE	A	3	001
F7EF	A	3	001

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7E0	A	3	001
F7E1	A	3	001
F7E2	A	3	001
F7E3	A	3	001
F7E4	A	3	001
F7E5	A	3	001
F7E6	A	3	001
F7E7	A	3	001
F7E8	A	3	001
F7E9	A	3	001
F7F1	A	3	001
F7F2	A	3	001
F7F4	A	3	001
F70A	A	3	001
F70B	A	3	001
F70C	A	3	001
F70D	A	3	001
F70E	A	3	001
F700	A	3	001
F701	A	3	001
F702	A	3	001
F703	A	3	001
F704	A	3	001
F705	A	3	001
F706	A	3	001
F707	A	3	001
F708	A	3	001
F709	A	3	001
F712	A	3	001
F713	A	3	001
F73A	A	3	001
F73C	A	3	001
F73D	A	3	001
F73E	A	3	001
F73F	A	3	001
F733	A	3	001
F734	A	3	001
F735	A	3	001
F736	A	3	001

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F737	A	3	001
F738	A	3	001
F739	A	3	001
F741	A	3	001
F742	A	3	001
F743	A	3	001
F744	A	3	001
F745	A	3	001
F746	A	3	001
F747	A	3	001
F748	A	3	001
F76A	A	3	001
F76B	A	3	001
F76C	A	3	001
F76D	A	3	001
F76E	A	3	001
F764	A	3	001
F766	A	3	001
F767	A	3	001
F768	A	3	001
F769	A	3	001
F79B	A	3	001
F79D	A	3	001
F79E	A	3	001
F79F	A	3	001
F796	A	3	001
F797	A	3	001
F798	A	3	001
F799	A	3	001
02XX	A	3	001
0200	A	3	001
0201	A	3	001
0202	A	3	001
0209	A	3	001
0210	A	3	001
0211	A	3	001
0212	A	3	001
0213	A	3	001
0214	A	3	001

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0215	A	3	001
0220	A	3	001
0230	A	3	001
0231	A	3	001
0232	A	3	001
0233	A	3	001
0234	A	3	001
0235	A	3	001
0236	A	3	001
0240	A	3	001
0241	A	3	001
0242	A	3	001
0243	A	3	001
0244	A	3	001
0245	A	3	001
0246	A	3	001
0250	A	3	001
0270	A	3	001
0278	A	3	001
0280	A	3	001
0281	A	3	001
0282	A	3	001
0283	A	3	001
0284	A	3	001
0286	A	3	001
0287	A	3	001
0292	A	3	001
0293	A	3	001
0294	A	3	001
0295	A	3	001
0296	A	3	001
0297	A	3	001
0299	A	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	009	0200	A
3	006	0275	A

001
SYMPTOM:
FINAL CHECK AFTER REPAIRES.

(Entry Point A)

1. Ensure that the processor is connected to customer's wall outlet and that line voltage is present.
2. Switch PCC-CB01 on (if applicable).
3. If machine is powered on, press the power off key.
4. Ensure that the CE-mode switch at the CE-panel is switched to normal.
5. Inset dignostic diskette into diskette drive.
6. Press power-on switch and wait approximately one minute.

Was any IPS control card in positions 01A-C1C2, 01A-C1C4, 01A-C1D2, 01A-C1D4 replaced before?
Y N

002
Is the *basic check* indicator on?
Y N

003
Is any reference code displayed?
Y N

4
A B C D

B C D 0110 MAP 0204-3

004
Is the *power complete* indicator on?
Y N

005
Go to Step 009, Entry Point Z.

006
(Entry Point B)

Run voltage measurement program.
Go To Map 0275, Entry Point A.

007
Go to MAP for displayed referencecode.

008
Is any reference code displayed?
Y N

009
(Entry Point Z)

Go To Map 0200, Entry Point A.

010
1. Press power-off key.
2. Switch to CE-mode at CE-panel.
3. Press power-on switch and wait approximately one minute.

Is any reference code displayed?
Y N

011
Is machine switched off automatically after the power on sequence was started?
Y N

012
Go to Step 006, Entry Point B.

013
Go to Step 009, Entry Point Z.

014
Go to MAP for displayed reference code.

015
Go to Page 3, Step 006, Entry Point B.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
7	023	0204	A

001
Symptom:
PCC-CB01 tripped.

Suspected errors or FRU's (including intermittent errors)	
1	PPC-line voltage distribution.
2	PCC-K04,PCC-K02,PCC-K03.
3	PCC-CB01.
4	AMD101, AMD102, AMD103.
5	Diskette drives.
6	Power-on switch.
7	Meter power pack (if installed).
8	Reactive Power Compensator (RPC) (if installed).
9	Line voltage distribution to: TR102, TR104, TR105, AMD101, AMD102, AMD103, diskette drives, power-on-switch, meter power pack (if installed), RPC (if installed)

(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.

(Step 001 continues)

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(Step 001 continued)
1.Press power-off switch.
2.Disconnect connectors
PCC-03 (to TR105)
PCC-04 (to TR104)
PCC-07 (to system diskette drive)
PCC-11 (to I/O diskette drive)
PCC-21 (to AMD101)
PCC-22 (to AMD102)
PCC-23 (to AMD103)
PCC-26 (to TR102)
PCC-09 (to RPC if installed)
3.Switch PCC-CB01 on.

Is PCC-CB01 tripped?
Y N

002
Press and hold the power on switch.

Is PCC-CB01 tripped?
Y N

003
1.Press power-off switch.
2.Reconnect connectors
PCC-21 (to AMD101)
PCC-22 (to AMD102)
PCC-23 (to AMD103)
4.Press and hold the power on switch.

Is PCC-CB01 tripped?
Y N

004
1.Press power-off switch.
2.Reconnect connectors
PCC-07 (to system diskette drive)
PCC-11 (to I/O diskette drive)
3.Press and hold the power on switch.

Is PCC-CB01 tripped?
Y N

E 0120 MAP 0209-2

005
1.Press power-off switch.
2.Reconnect connector
PCC-04 (to TR104)
3.Press and hold the power on switch for approximately 30 seconds.

Is PCC-CB01 tripped?
Y N

006
1.Press power-off switch.
2.Reconnect connector
PCC-26 (to TR102)
3.Press and hold the power on switch.

Is PCC-CB01 tripped?
Y N

007
The RPC is a set of capacitors located at the back of the PCC box.

Is a Reactive Power Compensator (RPC) installed?

Y N

008
(Entry Point B)

Suspect a short circuit in wiring from connector PCC-03
(ALD-YA331)
to TR105
(ALD-YA461)
Check and repair or replace wiring.
Go to Page 7, Step 023, Entry Point Z.

009
1.Press power off switch.
2.Reconnect connector PCC-03
(to TR105).
3.Press and hold the power on switch.

Is PCC-CB01 tripped?
Y N

010
Suspect a defective RPC.
1.Press power-off switch.
2.Replace the RPC.
(ALD-YA342)

Go to Page 7, Step 023, Entry Point Z.

011
Go to Page 2, Step 008, Entry Point B.

012
Suspect a short circuit in wiring from
connector PCC-26
(ALD-YA331)
to TR102. Check and repair or replace
wiring.
Go to Page 7, Step 023, Entry Point Z.

013
Was PCC-CB01 tripped immediatelly after pressing the power on switch?
Y N

014

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

1.Press power-off switch.
2.Switch PCC-CB01 off (if not already off)
3.Make a visual inspection for damaged parts (PCC-K02 or PCC-K03 including ARC Suppressors)
4.If no damage was detected check wiring from PCC-K04 to PCC-K02, to PCC-K03 and to connector PCC-26.
Repair or replace failing parts.
Go to Page 7, Step 023, Entry Point Z.

015

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

1.Switch PCC-CB01 off.
Suspect a short circuit in wiring from connector
PCC-04
(ALD-YA321)
to TR104
(ALD-YA451)
Check and repair or replace wiring.
Go to Page 7, Step 023, Entry Point Z.

018
Suspect a short circuit in wiring from connector PCC-07 to system diskette drive or from connector PCC-11 to I/O diskette drive.
Check wiring.
If no wiring error found, suspect motor problem of any diskette drive. Repair or replace failing parts.
Go to Page 7, Step 023, Entry Point Z.

017
Suspect a short circuit in wiring from connector
PCC-21 to AMD101 or
PCC-22 to AMD102 or
PCC-23 to AMD103
(ALD-YA331) (ALD-YA341)
Check wiring.
If no wiring error found, suspect a blower motor problem. Isolate the failing blower by disconnecting the blowers step by step.
Repair or replace failing parts.
Go to Page 7, Step 023, Entry Point Z.

018

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

1. Ensure that PCC-CB01 is off.
2. Disconnect wiring from power-on switch CCP-SW01-C01 and CCP-SW01-D01 (ALD-YA351)
3. Switch PCC-CB01 on.
4. Press and hold the power on switch.

Is PCC-CB01 tripped?

Y N

019
1.Switch PCC-CB01 off.
2.Suspect a short circuit in wiring from power on/off switch to meter power pack (if installed)
(ALD-YA351)
or from power on/off switch to PCC-box via connector PCC-06.
3.Make a visual inspection for damaged parts including ARC suppressor next to PCC-K04.
Repair or replace failing parts.
Go to Page 7, Step 023, Entry Point Z.

020
1.Switch PCC-CB01 off.
2.Replace the power on/off switch assembly.
Go to Page 7, Step 023, Entry Point Z.

021
1.Disconnect connector PCC-06.
2.Switch PCC-CB01 on.

Is PCC-CB01 tripped?
Y N

022

```
|-----------------------------------|
| DANGER                            |
| Line voltage is present inside of |
| the PCC-box and at the power      |
| on/off switch.                    |
| Always remove line voltage from   |
| customer's wall outlet before     |
| part replacement in the PCC-box.  |
|-----------------------------------|
```

There is a short circuit in the wiring from connector PCC-06
(ALD-YA321)
to the power on/off switch or the power on/off switch is defective
(ALD-YA351)
Repair or replace failing part.
Go to Page 7, Step 023, Entry Point Z.

023

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

1.Suspect a short circuit in wiring from PCC-CB01 to PCC-K04 or to connector PCC-06.
2.Suspect defective PCC-K04.
3.Suspect defective PCC-CB01.
Repair or replace failing parts.

(Entry Point Z)

1.Close the PCC-box and switch PCC-CB01 on.
2.Ensure that the processor is connected to the line voltage.

Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001
0211	A	1	001
0212	A	1	001
0215	A	1	001
0250	A	1	001
0292	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
8	026	0200	A
3	007	0204	A
5	013	0213	A

001
Symptom:
Line voltage distribution problem.

Suspected errors or FRU's (including intermittent errors)	
1	PCC-K04.
2	PCC-CB01.
3	Line filter.
4	PCC line voltage wiring.
5	Line cord.

(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.Ensure that line voltage is present at the wall outlet and that your machine is connected to
(Step 001 continues)

(Step 001 continued)
the wall outlet.
wall outlet.
2.Ensure that PCC-CB01 is switched on.
3.Observe the gate blowers and press power-on switch.

Did blowers start moving?
Y N

002
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Connect CE-meter (range 500VAC) to PCC-CB01-001 (input side) 'Power line 50/60HZ PH L1' and to PCC-CB01-002 (input side) 'Power line 50/60HZ neutral/PH L2' (ALD-YA321)
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.

Is line voltage present?
Y N

003
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.

Line cord is defective.
2.Check the connections inside of the wall plug (if applicable).
3.If no error detected, replace line cord.
Go to Page 3, Step 007, Entry Point Z.

8
A B

B 0130 MAP 0210-2

004
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Connect CE-meter (range 500VAC) to PCC-K04-005 'Power line 50/60HZ PH L1' and to PCC-K04-006 'Power line 50/60HZ neutral/PH L2' (ALD-YA321)
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
4.Ensure that PCC-CB01 is switched on.

Is line-voltage present?
Y N

005
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Connect CE-meter (range 500VAC) to PCC-CB01 output terminals.
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.

Is line voltage present?
Y N

006
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Replace PCC-CB01.
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 3, Step 007, Entry Point Z.

3 3
C D

007
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage form the mains.
2.Check and repair or replace wiring from PCC-CB01 terminals to PCC-K04-005 and PCC-K04-006.
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.

(Entry Point Z)

Go To Map 0204, Entry Point A.

008
(Entry Point B)

1.Press power-off switch.
2.Observe PCC-K04 and press and hold the power on switch.

Is PCC-K04 picked?
Y N

009
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Connect CE-meter (range 500VAC) to connector PCC-04-001 'Power line PCC to TR104' (ALD-YA331) and to connector PCC-04-004 '(N or L2)'
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
4.Press and hold the power on switch.

Is line voltage present as long as switch is operated?
Y N

010

1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Switch PCC-CB01 off.
3.Perform wiring check for the following nets. Apply "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER.

```
|-------|
| CONN  |*| PCC-06-001 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-SW01-C02 (ALD-YA351)
|-------|

*'Power line PCC to SW01 PWR ON'(PH L1)

|-------|
| CONN  |*| PCC-06-003 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-SW01-D02 (ALD-YA351)
|-------|

*'Power line PCC to SW01 PWR ON'(N or L2)

|-------|
| CONN  |*| PCC-06-007 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-SW01-C01 (ALD-YA351)
|-------|

*'Power line to CCP '(PH L1)
```

(Step 010 continues)

(Step 010 continued)

```
|-------|
| CONN  |*| PCC-06-009 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-SW01-D01 (ALD-YA351)
|-------|
```

*'Power line to CCP' (N or L2)

Any wiring error found?
Y N

011
1.Replace the power on/off switch (CCP-SW01).
2.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 1, Step 001, Entry Point A.

012
1.Repair or replace the failing wiring.
2.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 1, Step 001, Entry Point A.

013
Go To Map 0213, Entry Point A.

014
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Connect CE-meter (range 500VAC) to PCC-K04-003 '(PH L1 switched by PCC-K04)' and to PCC-K04-004 '(Neutral/L2 switched by PCC-K04)' (ALD-YA321)
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
4.Observe CE-meter and press power-on switch.

Is line voltage present when PCC-K04 is picked?
Y N

015
1.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
2.Replace PCC-K04.
3.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 3, Step 007, Entry Point Z.

016
1.Press power-off switch.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Connect CE-meter (range 500VAC) to PCC-K04-004 '(Neutral/L2 switched by PCC-K04)' and to PCC-K02-00A '(PH L1 switched by PCC-K04)' (ALD-YA321)
4.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
5.Press power-on switch.

(Step 016 continues)

(Step 016 continued)
Is line voltage present when PCC-K04 is picked?
Y N

017
1.Press power-off switch.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Switch PCC-CB01 off.
4.Repair wiring from PCC-K04-003 to PCC-K02-00A '(PH L1 switched by PCC-K04)' (ALD-YA321)
5.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 3, Step 007, Entry Point Z.

018
1.Press power-off switch.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Do not disconnect your meter from PCC-K04-004.
4.Connect the second lead of your CE-meter to PCC-K03-00A '(PH L1 switched by PCC-K04)' (ALD-YA321)
5.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
6.Press power-on switch.

Is line voltage present when PCC-K04 is picked?
Y N

019
1.Press power-off switch.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Repair wiring from PCC-K03-00A to PCC-K04-003
4.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 3, Step 007, Entry Point Z.

020
1.Press power-off switch.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Connect CE-meter (range 500VAC)
to PCC-K04-004
'(N or L2 switched by PCC-K04)'
(ALD-YA321)
the second lead of your meter must be connected step by step to the following listed connector pins.
Line voltage must be removed from the machine before the meter is connected to the next pin.
Line voltage must be present at each listed connector pin.
PCC-06-007
PCC-06-012
PCC-04-001
PCC-07-001
PCC-09-001
PCC-11-001
PCC-21-001
PCC-22-001
PCC-23-001
'(PH L1 switched by PCC-K04)'
(ALD-YA331)
4.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.

Is line voltage present at each measured pin?
Y N

K L

021
1.Switch PCC-CB01 off.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Repair failing wiring according to (ALD-YA331).
4.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 3, Step 007, Entry Point Z.

022
1.Press power-off switch.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Connect CE-meter (range 500VAC)
to PCC-K04-003
'(PH L1 switched by PCC-K04)'
(ALD-YA321)
the second lead of your meter must be connected step by step to the following listed connector pins.
Line voltage must be removed from the machine before the meter is connected to the next pin.
Line voltage must be present at each listed connector pin.
PCC-06-009
PCC-06-011
PCC-04-004
PCC-07-005
PCC-09-002
PCC-11-005
PCC-21-005
PCC-22-005
PCC-23-005
'(N or L2 switched by PCC-K04)'
(ALD-YA331)
4.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.

Is line voltage present at each measured pin?
Y N

023
1.Switch PCC-CB01 off.
2.Disconnect wall plug from the wall outlet or ask the customer to remove line voltage from the mains.
3.Repair failing wiring according to (ALD-YA331)
4.Reconnect wall plug to the wall outlet or ask the customer to provide power at the mains.
Go to Page 3, Step 007, Entry Point Z.

024
Is any reference code displayed?
Y N

025
Is the "power complete" indicator on?
Y N

026
The line voltage distribution is ok.
Suspect other power problem.
Go To Map 0200, Entry Point A.

027
Go to Page 3, Step 007, Entry Point Z.

028
Go to MAP for displayed reference code.

029
Go to Page 3, Step 008, Entry Point B.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0287	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	0200	A
4	007	0204	A
6	014	0210	A

001

Symptom:
PCC-K02 problem.

	Suspected errors or FRU's (including intermittent errors)
1	PCC-K02.
2	BPC card in position 01A-A2B2.
3	C02 wiring.
4	+24V from PS104 missing.
5	PC interface card.

(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.

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.Connect CE-meter (range 50VDC)
+lead to PCC-K02-001
'+24V PS104 CTRLD'
-lead to PCC-K02-002
'-Pick PCC-K02 C02'
(ALD-YA321)'
(Step 001 continues)

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(Step 001 continued)
5.Switch PCC-CB01 on.
6.Press power-on switch and wait approximately one minute.

Is 24VDC at least momentarily present?
Y N

002
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Connect CE-meter (range 5VDC)
+lead to PCC-K02-001
'+24V PS104 CTRLD'
(ALD-YA321).
-lead to PCC-ground bus.
4.Switch PCC-CB01 on.
5.Press power-on switch.

Is +24VDC present?
Y N

003
Press power-on switch.

Is the "base power on" indicator on?
(located next to the power on switch)
Y N

004
Go To Map 0200, Entry Point A.

6 3 3
A B C

005

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Reform wiring check for the following net according to the "Wiring Check Procedure" shown in book Maintenance Information (MI) POWER.

```
|-------|
| K02   |*| PCC-K02-001 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| PCC-08-002 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2C1-B08 (ALD-YB221)
|-------| |
          | Board wiring
|-------| |
| Card  |=| 01A-A2B2-M07 (ALD-YB423)
|-------|
```

* '+24V PS104 CTRLD'

Go to Page 4, Step 007, Entry Point Z.

006

1.Press power-off key.
Probe 01A-A2E2-J09
'-Pick PCC-K02 C02'
(ALD-YB661)
2.Press power-on switch and wait approximatley one minute.

Was the down indicator at least momenterily on?

Y N

007
1.Press power-off key.
2.Replace PC-interface card in position 01A-A2E2 by a new one.
(ALD-YB661)

(Entry Point Z)

1.Ensure that PCC-box is closed and PCC-BC01 is switched on.
2.Ensure that the processor is connected to the line voltage.

Go To Map 0204, Entry Point A.

008
1.Press power-off key.
2.Probe 01A-A2B2-D11
'-Pick PCC-K02 C02'
(ALD-YB421)
3.Press power-on switch and wait approximately one minute.

Was the down indicator at least momentarily on?
Y N

009
1.Press power-off key.
2.Repair board wiring or replace board 01A-A2.
'-Pick PCC-K02 C02'
(ALD-YB661)
Go to Step 007, Entry Point Z.

010
1.Press power-off key.
2.Connect CE-meter (range 50VDC)
+lead to 01A-A2B2-M07
'+24V PS104 CTRLD'
(ALD-YB423)
-lead to 01A-A2B2-B12
'-Pick PCC-K02 C02'
(ALD-YB421)
3.Press power-on switch.

Is 24VDC at least momentarily present?
Y N

011
1.Press power-off key.
2.Replace BPC card in
position 01A-A2B2.
Go to Page 4, Step 007, Entry Point Z.

012
1.Press power off switch.
2.Switch PCC-CB01 off.
3.Perform wiring check for the following net.
Apply *Wiring Check Procedure* shown in
book Maintenance Information (MI) POWER.

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

*'-Pick PCC-K02 C02'

Go to Page 4, Step 007, 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-XB01 off (if not already off).
3.Switch PCC-SW01 off (if not already off).
4.Connect CE-meter (range 300VAC) to
PCC-K04 and to PCC-K02-00A
(ALD-YA321)
5.Switch PCC-CB01 on.
6.Press power-on switch.

Is line voltage at least momentarily present?

Y N

014

Go To Map 0210, Entry Point A.

015

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Connect CE-meter (range 300VAC)
to PCC-K02-00B
and to PCC-K04-004.
4.Switch PCC-CB01 on.
5.Press power-on switch.

Is line voltage at least momentarily present?

Y N

016

1.Switch PCC-CB01 off.
2.Replace PCC-K02 by a new one.
(ALD-YA321)
Go to Page 4, Step 007, Entry Point Z.

017

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Connect CE-meter (range 300VAC)
to connector PCC-03-005
and to PCC-03-002.
'Power line PCC to TR105'
(ALD-YA331)
4.Switch PCC-CB01 on.
5.Press power-on switch.

Is line voltage at least momentarily present?

Y N

018

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

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.Check and repair or replace cable from
PCC-K02 to connector PCC-03.
Go to Page 4, Step 007, Entry Point Z.

019

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

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.Suspect connector problem of PCC-03.
Repair or replace connector PCC-03.
Go to Page 4, Step 007, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F76A	A	1	001
F76B	A	1	001
F76C	A	1	001
F76D	A	1	001
F766	A	1	001
F767	A	1	001
F768	A	1	001
F769	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	0200	A
4	007	0204	A
6	014	0210	A

001

Symptom:

PCC-K03 problem.

	Suspected errors or FRU's (including intermittent errors)
1	PCC-K03.
2	BPC card in position 01A-A2B2.
3	C34 wiring.
4	+24V from PS104 missing.
5	PC interface card.

(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.

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).
(Step 001 continues)

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(Step 001 continued)
4.Connect CE-meter (range 50VDC)
+lead to PCC-K03-001
'+24V PS104 CTRLD'
-lead to PCC-K03-002
'-Pick PCC-K03 C34'
(ALD-YA321)'
5.Switch PCC-CB01 on.
6.Press power-on switch and wait approximately one minute.

Is 24VDC at least momentarily present?
Y N

002
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Connect CE-meter (range 5VDC)
+lead to PCC-K03-001
'+24V PS104 CTRLD'
(ALD-YA321).
-lead to PCC-ground bus.
4.Switch PCC-CB01 on.
5.Press power on switch and wait approximately one minute.

Is +24VDC present?
Y N

003
Press power-on switch.

Is the "base power on" indicator on?
(located next to the power on switch)
Y N

004
Go To Map 0200, Entry Point A.

005

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Reform wiring check for the following net according to the "Wiring Check Procedure" shown in Maintenance Information (MI) POWER.

```
|-------|
| K03   |*| PCC-K03-001 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| PCC-10-005 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| PCC-10-003 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| PCC-08-002 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2C1-B08 (ALD-YB221)
|-------| |
          | Board
|-------| |
| Card  |=| 01A-A2B2-M07 (ALD-YB423)
|-------|
```

* '+24V PS104 CTRLD'

Go to Page 4, Step 007, Entry Point Z.

006
1.Press power-off key.
Probe 01A-A2D2-M02
'-Latch byte 1 bits 6/7'
(ALD-YB643)
2.Press power-on switch and wait approximately one minute.

Is the down indicator at least momentarily on?
Y N

007
1.Press power-off key.
2.Replace PC-sense card 1 in position 01A-A2D2 by a new one.
(ALD-YB643)

(Entry Point Z)

1.Ensure that PCC-box is closed and PCC-CB01 is switched on.
2.Ensure that the processor is connected to the line voltage.

Go To Map 0204, Entry Point A.

008
1.Press power-off key.
2.Probe 01A-A2B2-D09
'-Pick PCC-K03 C34'
(ALD-YB421)
3.Press power-on switch and wait approximately one minute.
Is the down indicator at least momentarily on?
Y N

009
1.Press power-off key.
2.Repair board wiring or replace board 01A-A2.
'-Pick PCC-K03 C34'
(ALD-YB641)
Go to Step 007, Entry Point Z.

010
1.Press power-off key.
2.Connect CE-meter (range 50VDC)
+lead to 01A-A2B2-M07
'+24V PS104 CTRLD'
(ALD-YB423)
-lead to 01A-A2B2-B11
'-Pick PCC-K03 C34'
(ALD-YB421)
3.Press power-on switch and wait approximately one minute.

Is 24VDC at least momentarily present?
Y N

011
1.Press power-off key.
2.Replace BPC card in position 01A-A2B2.
Go to Step 007, Entry Point Z.

012

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

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

* '-Pick PCC-K03 C34'

Go to Page 4, Step 007, 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.Connect CE-meter (range 300VAC)
to PCC-K04-004 and to
PCC-K03-00A.
(ALD-YA321)
5.Switch PCC-CB01 on.
6.Press power-on switch and wait
approximately one minute.

(Step 013 continues)

(Step 013 continued)
Is line voltage at least momentarily present?
Y N

014
Go To Map 0210, Entry Point A.

015
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Connect CE-meter (range 300VAC)
to PCC-K03-00B
and to PCC-K04-004.
4.Switch PCC-CB01 on.
5.Press power-on switch and wait
approximately one minute.

Is line voltage at least momentarily present?
Y N

016
1.Switch PCC-CB01 off.
2.Replace PCC-K03 by a new one.
(ALD-YA321)
Go to Page 4, Step 007, Entry Point Z.

017
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Connect CE-meter (range 300VAC)
to connector PCC-26-001
and to PCC-26-003.
'Power line PCC to TR102'
(ALD-YA331)
4.Switch PCC-CB01 on.
5.Press power-on switch and wait
approximately one minute.

Is line voltage at least momentarily present?
Y N

018

```
|-----------------------------------|
| DANGER                            |
| Line voltage is present inside of |
| the PCC-box. Always remove line   |
| voltage from customer's wall      |
| outlet pefore part replacement in |
| 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.Check and repair or replace cable from PCC-K03
to connector PCC-26.
Go to Page 4, Step 007, Entry Point Z.

019

```
|-----------------------------------|
| DANGER                            |
| Line voltage is present inside of |
| the PCC-box. Always remove line   |
| voltage from customer's wall      |
| outlet pefore part replacement in |
| 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.Suspect connector problem of PCC-26.
Repair or replace connector PCC-26.
Go to Page 4, Step 007, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001
0210	A	1	001
0250	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	0200	A
5	009	0204	A

001
Symptom:
PCC-K04 not picked when power-on key pressed.

Suspected errors or FRU's (including intermittent errors)	
1	PCC-K04.
2	+24 PS104 controlled wiring.
3	-Pick PCC-K04 wiring.

(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.

Press power-on switch.

Is the "base power-on" indicator (next to power-on switch) on as long as the power on switch is pressed?

Y N
2 2
A B

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002
Go To Map 0200, Entry Point A.

003

```
|-------------------------------|
| 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.Connect CE-meter (range 50VDC)
+lead to PCC-K04-001
'+24V PS104 CTRLD'
(ALD-YA321)
-lead to PCC-K04-002
'-Pick PCC-K04'
(ALD-YA321)
5.Switch PCC-CB01 on.
6.Press power-on switch.

Is 24VDC at least momentarily present?
Y N

004

```
|-------------------------------|
| 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.Do not disconnect the +lead of your meter.
5.Connect -lead of your meter to PCC-ground bus.
6.Switch PPC-CB01 on.
7.Press power-on switch.

Is 24VDC at least momentarily present?
Y N

005

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

```
|-------|
| CONN  |*| PCC-08-002 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2C1-B08 (ALD-YB221)
|-------| |
          | Board wiring
|-------| |
| Card  |=| 01A-A2B2-M07 (ALD-YB423)
|-------|
```

* '+24V PS104 CTRLD'

Go to Page 5, Step 009, Entry Point Z.

006

```
|--------------------------------|
| 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.Perform wiring check for the following net.Apply the wiring check procedure shown in book Maintenance Information (MI) POWER.

```
|-------|
| Card  |*| 01A-A2B2-M03 (ALD-YB423)
|-------| |
          | Board wiring
|-------| |
| CONN  |=| 01A-A2B1-A08(ALD-YB221)
|-------| |
          | Cable
|-------| |
| CONN  |=| PCC-10-004 (ALD-YA321)
|-------| |
          | Cable
|-------| |
| CONN  |=| PCC-K04-002 (ALD-YA321)
|-------|
```

* '-Pick PCC-K04'

Any error found and repaired?
Y N

007
Replace the BPC-card in position 01A-A2B2.
Go to Page 5, Step 009, Entry Point Z.

008
Go to Page 5, Step 009, 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.                      |
|-----------------------------------|
```

1.Switch PCC-CB01 off.
2.Replace PCC-K04.

(Entry Point Z)

3.Ensure that the PCC-box is closed and PCC-CB01 is switched on.
4.Ensure that the processor is connected to the line voltage.
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	2	001
0200	A	2	001
0201	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	003	0200	F
5	014	0204	A

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001
Symptom:
Convenience outlet problem

Suspected errors or FRU's (including intermittent errors)	
1	PCC-CP01.
2	PCC-SW01.
3	PCC-F01 or PCC-F02.
4	PCC-TR01.
5	PCC-wiring.

(Entry Point A)

```
|-----------------------------------------|
| ********   D A N G E R   ************|
|            ===========                  |
| * Line voltage is present at PCC-CP01 |
|   or PCC-F01 and PCC-F02 if PCC-CB01  |
|   is switched off.                    |
| * 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).

Note: PCC-CP01 is the small circuit protector used for the convenience outlet.

Is PCC-CP01 installed in your machine?

Y N

6 3
A B

002

1. Switch PCC-SW01 or PCC-CP01 off (if not already off).
2. Ensure that the convenience outlet is unused.
3. Ensure that line voltage is present at customer's wall outlet.
4. Connect your CE-meter (range 500VAC) to PCC-CB01 line voltage output side (lower terminals).
5. Ensure that machine is connected to the wall outlet.
6. Switch PCC-CB01 on.

Is line voltage present?

Y N

003

Suspect line voltage problem.

Go To Map 0200, Entry Point F.

004

1003

(Entry Point E)

1. Connect CE-meter (range 500VAC) to convenience outlet.
2. Switch PCC-SW01 or PCC-CP01 on.

Is 115VAC or line voltage present?

Y N

005

1. Switch PCC-SW01 off.
2. Check fuses PCC-F01 and PCC-F02.

Are both fuses ok?

Y N

006

1. Replace the defective fuse(s). Use fuses with correct rating as shown on the label at the PCC door.
2. Connect CE-meter (range 500VAC) to convenience outlet.
3. Switch PCC-SW01 on.

Is 115VAC or line voltage present?

Y N

007

(Entry Point B)

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

1. Disconnect line cord or ask the customer to remove line voltage from wall outlet.
2. Check wiring from fuses PCC-F01 and and PCC-F02 to convenience outlet transformer PCC-TR01 and from the transformer PCC-TR01 to the convenience outlet. (ALD-YA321)

Any wiring error detected?

Y N

008

Connect your CE-meter (range ohm X1 kilo-ohm) to one of the two line voltage connectors of the convenience outlet and to frame ground.

Is the resistance below 100 kilo-ohm?

Y N

009
Connect your CE-meter (range ohm X1 kilo-ohm) to the second line voltage female connector of the convenience outlet and to frame ground.

Is the resistance below 100 kilo-ohm?
Y N

010
1. Replace convenience outlet transformer PCC-TR01.
2. Replace defective fuse(s) PCC-F01 and/or PCC-F02 if required.

Go to Page 3, Step 004, Entry Point E.

011
(Entry Point D)

There is a short circuit to ground from the convenience outlet wiring or convenience outlet socket. Repair or replace the failing parts.
Go to Page 3, Step 004, Entry Point E.

012
Go to Step 011, Entry Point D.

013
1. Replace defective fuse(s) PCC-F01 and/or PCC-F02 if required.
2. Repair wiring or replace defective parts.

Go to Page 2, Step 001, Entry Point A.

014
(Entry Point C)

1. Ensure that PCC-box is closed and PCC-CB01 is switched on.
2. Ensure that the processor is connected to the line voltage.

Convenience outlet is ok.
Go To Map 0204, Entry Point A.

015

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

1. Disconnect line cord from wall outlet or ask the customer to remove line voltage from wall outlet.
2. Use your CE-meter and check convenience outlet switch PCC-SW01 for correct operation.

Is the switch PCC-SW01 ok?

Y N

016

Replace the switch PCC-SW01.

Go to Page 2, Step 001, Entry Point A.

017

Go to Page 4, Step 007, Entry Point B.

018

Go to Page 5, Step 014, Entry Point C.

019

1. Press power off key.
2. Disconnect the line cord from the wall outlet or ask the customer to remove power from the wall outlet.
   If the power was removed from the wall outlet by the customer, ensure that power can not be switched on again while you are working on the machine.
3. Use your CE-meter (range ohm X1) and check the wiring between the convenience outlet and PCC-CP01 load side.
4. Use your CE-meter (range ohm X1) and check the wiring between PCC-CB01 line input and PCC-CP01 line input.

Was any failure detected ?

Y N

020
Connect your CE-meter (range ohm X1 kilo-ohm) to one of the two line voltage connectors of the convenience outlet and to frame ground.

Is the resistance below 100 kilo-ohm?
Y N

021
Connect your CE-meter (range ohm X1 kilo-ohm) to the second line voltage female connector of the convenience outlet and to frame ground.

Is the resistance below 100 kilo-ohm?
Y N

022
1. Replace PCC-CP01.
2. Plug the machine to the wall outlet and return power to the wall outlet.

Go to Page 3, Step 004, Entry Point E.

023
Go to Page 5, Step 011, Entry Point D.

024
Go to Page 5, Step 011, Entry Point D.

025
1. Repair or replace the failing wiring.
2. Plug the machine to the wall outlet or return power to the wall outlet.

Go to Page 3, Step 004, Entry Point E.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
E8F0	A	1	001
F7C3	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
7	024	0200	A
2	006	0200	B
5	016	0204	A
2	004	0210	A
3	010	0210	A
4	015	0210	A
6	020	0210	A

001
Symptom:
Blower (AMD) problem

Suspected errors or FRU's (including intermittent errors)	
1	AMD101 or AMD102 or AMD103.
2	AC distribution to blowers .
3	Connector problem.

(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 and hold power on switch.

(Step 001 continues)

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(Step 001 continued)

Are all 3 blowers running?

Y N

002

Is any blower running?

Y N

003

Is the diskette drive motor running?

Y N

004

(Entry Point B)

Suspect line voltage distribution problem.

Go To Map 0210, Entry Point A.

005

```
|--------------------------------|
| 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.Connect CE meter (range 500VAC) to connector PCC-11-001 and to connector PCC-11-005 '(line voltage to AMD's)' (ALD-YA331).
5.Switch PCC-CB01 on.
6.Press and hold the power on switch.

Is line voltage present?

Y N

006

Go To Map 0200, Entry Point B.

007

```
|--------------------------------|
| 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.Check and repair wiring
from connector PCC-11
to connector PCC-21
'(line voltage to AMD's)'
(ALD-YA331)
Go to Page 5, Step 016, Entry Point Z.

008
Is AMD101 running?
(AMD101 is located on top of the power supplies)
Y N

009
1.Press power off key.
2.Connect CE meter (range 500VAC) to connector PCC-21-001 and PCC-21-005.
3.Press power on switch.

Is line voltage present?
Y N

010
Suspect line voltage distribution problem in PCC-box.
Go To Map 0210, Entry Point A.

011
1.Press power off key.
2.Replace AMD101.
Go to Page 5, Step 016, Entry Point Z.

012
Is AMD102 running (gate 01A, col. A/B)?
Y N

013
1.Press power off key.
2.Connect CE meter (range 500AC) to connector AMD102-01-001 and to AMD102-01-003.
3.Press power on switch.

Is line voltage present?
Y N

014
1.Press power-off key.
2.Connect CE meter (Range 500VAC) to connector PCC-22-001 and to PCC-22-005 'Power line PCC to AMD102'
(ALD-YA331).
3.Press power-on switch.

Is line voltage present?
Y N

015
Suspect line voltage distribution problem in PCC-box.
Go To Map 0210, Entry Point A.

016

Suspect connector problem of connectors AMD102-01 and/or PCC-22.
If no trouble found, perform wiring check for both following nets.
Apply the wiring check procedure shown in book Maintenance Information (MI) POWER.

```
|-------|
| Conn. |*| PCC-22-001 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| Conn. |=| AMD102-01-001 (ALD-YA341)
|-------|
* '(Ph L1 to AMD102)'

|-------|
| Conn. |*| PCC-22-005 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| Conn. |=| AMD102-01-003 (ALD-YA341)
|-------|
* '(Neutral to AMD102)'
```

Repair or replace defective wiring.

(Entry Point Z)

Go To Map 0204, Entry Point A.

017

1.Press power off key.
2.Replace AMD102.
Go to Step 016, Entry Point Z.

018

1.Press power off key.
2.Connect CE meter (range 500VAC) to connector AMD103-01-001 and to AMD 103-01-003.
3.Press power on switch.

Is line voltage present?

Y N

019

1.Press power-off key.
2.Connect CE meter (Range 500VAC) to connector PCC-23-001 and to PCC-23-005 'Power line PCC to AMD103' (ALD-YA331).
3.Press power-on switch.

Is line voltage present?

Y N

020

Suspect line voltage distribution problem in PCC-box.

Go To Map 0210, Entry Point A.

021
Suspect connector problem of connectors AMD103-01 and/or PCC-23.
If no trouble found, perform wiring check for both following nets.
Apply the wiring check procedure shown in book Maintenance Information (MI) POWER.

```
|-------|
| Conn. |*| PCC-23-001 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| Conn. |=| AMD103-01-001 (ALD-YA341)
|-------|
* '(Ph L1 to AMD103)'

|-------|
| Conn. |*| PCC-23-005 (ALD-YA331)
|-------| |
          | Cable
|-------| |
| Conn. |=| AMD103-01-003 (ALD-YA341)
|-------|
* '(Neutral to AMD103)'
```

Repair or replace defective wiring.
Go to Page 5, Step 016, Entry Point Z.

022
1.Press power off key.
2.Replace AMD103.
Go to Page 5, Step 016, Entry Point Z.

023
Is any blower running too slow?
Y N

024
No blower problem exists.
Go To Map 0200, Entry Point A.

025

1.Press power off key.
2.Replace defective blower assembly.
Go to Page 5, Step 016, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0204	A
2	004	0250	A

001

Symtom:

PS104 +24V on 01A-A2 failing, H01.

Suspected errors or FRU's (including intermittent errors)	
1	+24V DC distribution.
2	Connector PS104-05 problem.
3	H01 sense wiring error.

(Entry Point A)

1.Press power-off switch.
2.Ensure that PS104-CP05 is switched on.
3.Ensure that the following connectors are seated correctly:
Connector PS104-05.
(ALD-YA451)
Voltage connector on board
01A-A2B3-E14.
(ALD-YC831)
4.Ensure that a jumper is installed from PS104-05-010 to PS104-05-005.
Note:
If the jumper is not present, your machine may have a special feature installed. You can use this MAP if you install temporarily the jumper. If your machine works properly with the jumper, the error is caused by the special feature. In this case refer to the service documentation for those feature.

(Step 001 continues)

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(Step 001 continued)
Any error detected and repaired?
Y N

002
1.Disconnect voltage connector from 01A-A2B3-E14
2.Connect CE-meter (range 50VDC)
+lead to 01A-A2B3-E14
(Connector side)
'+24V PS104 to 01A-A2'
(ALD-YC831)
-lead to 01A-A2B4-E01
'DC-GND'
3.Observe meter, press and hold the power-on switch.
Was 24VDC at least momentarily present?
Y N

003
1.Press power-off key.
2.Reconnect connector to 01A-A2B3-E14.
3.Connect CE-meter (range 50VDC)
+lead to connector PS104-05-003
'+24V PS104 to 01A-A2'
(ALD-YA451)
-lead to connector PS104-05-006
'DC-GND'
4.Observe meter, press and hold the power-on switch.

Was 24VDC at least momentarily present?
Y N

004
Go To Map 0250, Entry Point A.

005
1.Press power-off key.
2.Check and repair or replace wiring for +24V from connector PS104-05-003
(ALD-YA451)
to board 01A-A2B3-E14.
(ALD-YC831)
Go to Step 006, Entry Point Z.

006
+24V sense wiring on board 01A-A2 is defective.
1.Press power-off switch.
2.Repair +24V wiring from 01A-A2B3-E14
(ALD-YC831)
to 01A-A2B2-U11
(ALD-YB423)
or replace board 01A-A2.
(Entry Point Z)
Go To Map 0204, Entry Point A.

007
Go to Step 006, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	007	0204	A
2	004	0250	A

001

Symtom:

PS104 +5.1V on 01A-B1 failing, H04

	Suspected errors or FRU's (including intermittent errors)
1	+5.1VDC distribution.
2	Connector problem (see list in this step).
3	H04 sense wiring.

(Entry Point A)

1. Ensure that PS104-CP01 is switched on.
2. Ensure that terminal screws at PS104-TB01 and PS104-TB02 are tight and that the following connectors are seated correctly:
   01A-A2YF (ALD-YC831)
   01A-A2ZC (ALD-YC831)
   01A-A2ZD (ALD-YC831)
   01A-A2YD (ALD-YC831)
   01A-A2YB (ALD-YC831)
   01A-A2ZF (ALD-YC831)
   01A-A2YG (ALD-YC831)
   01A-C2YB (ALD-YC871)
   01A-C2YF (ALD-YC871)
   01A-C2YC (ALD-YC871)
   01A-C2ZF (ALD-YC871)
   01A-C2ZB (ALD-YC871)
   01A-C2ZC (ALD-YC871)
   01A-B1C1 (ALD-YC843)
3. Ensure that sense line connector is connected

(Step 001 continues)

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(Step 001 continued)
to 01A-B1C1-B13.

Any fault detected and repaired?
Y N

002
1. Disconnect sense line connector from 01A-B1C1-B13
'+5.1V sense PS104 A-B1 A44/H04'
(ALD-YC843)
2. Connect CE-meter (range 5VDC)
+lead to 01A-B1C1-B13
-lead to any D08 pin.
3. Press and hold the power-on switch.

Is 5.1VDC +/-15% present as long as the power-on switch is pressed?
Y N

003
1. Press power-off key.
2. Reconnect sense line connector to 01A-B1C1-B13.
3. Connect CE-meter (range 5VDC)
+lead to PS104-TB02-001
'(+5.1V)'
-lead to PS104-TB01-001
'DC-GND'
(ALD-YA451)
4. Observe meter and press and hold the power-on switch.

Is 5.1VDC +/-15% present as long as the power-on switch is pressed?
Y N

004
Go To Map 0250, Entry Point A.

4 4 3
A B C

005

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

```
|-------|
| PS104 |*| PS104-TB02-001 (ALD-YA451)
|-------| |
          | 2 FDS
|-------| |
| CONN  |=| 01A-A2YF and 01A-A2ZC (ALD-YC831)
|-------| |
          | Board plane
|-------| |
| CONN  |=| 01A-A2YB (ALD-YC831)
|-------| |
          | FDS
|-------| |
| CONN  |=| 01A-C2YB (ALD-YC871)
|-------| |
          | Board plane
|-------| |
| CONN  |=| 01A-C2ZC (ALD-YC871)
|-------| |
          | FDS
|-------| |
| CONN  |=| 01A-B1C1 (ALD-YC843)
|-------|
```

* '+5.1V PS104 to 01A-B1 PU'

Go to Page 4, Stop 007, Entry Point Z.

006

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

```
|-------|
| CONN  |*| 01A-B1C1-B13 (ALD-YC843)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2B4-A14 (ALD-YC831)
|-------| |
          | Board wiring
|-------| |
| Card  |=| 01A-A2B2-J09 (ALD-YB421)
|-------|
```

* '+5.1V sen PS104 -C2/B1 A44/H04'

Go to Step 007, Entry Point Z.

007
(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
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	007	0204	A
2	004	0250	A

001

SYMTOM:

PS104 -5.1V ON 01A-C2 FAILING, H05.

	Suspected errors or FRUs (including intermittent errors)
1	PS104-CP03 tripped.
2	-5.1VDC distribution via board 01A-A2 to 01A-C2.
3	Connector problem of PS104-05 or PS104-09.
4	H05 sense wiring from 01A-C2 to 01A-A2.

(Entry Point A)

1. Ensure that PS104-CP03 is switched on.
2. Ensure that the following connectors are seated correctly:
   connector PS104-05 and PS104-09
   and voltage connectors:
   01A-A2W3-E01 (ALD-YC831)
   01A-A2W3-E14 (ALD-YC831)
   01A-C2B4-E01 (ALD-YC871)
   01A-C2B3-E01 (ALD-YC871) and
   01A-C2W5-E01 (ALD-YC871) and
   01A-A2W5-E01 (ALD-YC831)
   if 01A-C2 col. K/W are powered by PS104.

Any fault detected and repaired?

Y N

4 2
A B

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Power problem

002

1.Disconnect sense line connector from
01A-C2B3-E01
'-5.1V sense PS104 A-C2 A45/H05'
(ALD-YC871)

3.Connect CE-meter(range 5VDC)
-lead to 01A-C2B3-E01
'-5.1V sense PS104 A-C2 A45/H05'
+lead to any D08 pin.
'DC-GND'
(ALD-YC871)

4.Observe meter and press and hold the power on switch.

Was -5.1VDC +/-15% at least momentarily present?

Y N

003

1.Press power-off key.

2.Reconnect sense line connector.

3.Connect CE-meter (range 5VDC)
+lead to connector
PS104-05-002
'DC-GND'
-lead to connector PS104-05-001
'-5.1V PS104 to 01A-A2 MSSS'
(ALD-YA451)

4.Observe meter and press and hold the power on switch.

Was -5.1VDC +/-15% at least momentarily present?

Y N

004

Go To Map 0250, Entry Point A.

005
Perform wiring check for the following net.
Apply "Wiring Check Procedure" shown in book
Maintenance Information (MI) POWER.

```
|-------|
| CONN  |*| PS104-05-001 (ALD-YA451)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2W3-E14 (ALD-YC831)
|-------| |
          | Board wiring
|-------| |
| CONN  |=| 01A-A2W3-E01 (ALD-YC831)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-C2B4-E01 (ALD-YC871)
|-------| |
          | Board wiring
|-------| |
| CONN  |=| 01A-C2B3-E01 (ALD-YC871)
|-------|
```

* '-5.1V PS104 to 01A-A2 MSSS'

Go to Page 4, Step 007, Entry Point Z.

006

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

```
|-------|
| CONN  |*| 01A-C2B3-E01 (ALD-YC871)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2B5-A01 (ALD-YC831)
|-------| |
          | Board wiring
|-------| |
| CARD  |=| 01A-A2B2-P13 (ALD-YB423)
|-------|
```

* '-5.1V sense PS104 A-C2 A45/H05'

Go to Step 007, Entry Point Z.

007

(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
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	007	0204	A
2	004	0250	A

001

Symptom:
PS104 +8.5V on 01A-C2 failed, H06

	Suspected errors or FRU's (including intermittent errors)
1	+8.5VDC distribution via board 01A-A2 to 01A-C2.
2	Connector problem PS104-05 or PS104-09.
3	H06 sense wiring from 01A-C2 to 01A-A2.

(Entry Point A)

1.Ensure that PS104-CP07 is switched on.
2.Ensure that the following connectors are seated correctly:
Connector PS104-05 and PS104-09 (ALD-YA451)
Voltage connectors:
01A-A2B3-A14 (ALD-YC831)
01A-A2W3-A14 (ALD-YC831)
01A-C2B3-A14 (ALD-YC871)
01A-C2B2-A14 (ALD-YC871)
01A-A2B4-E14 (ALD-YC831)

Any fault dedected and repaired?

Y N

4 2
A B

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Power problem

002

1.Disconnect sense line connector from
01A-C2B2-A14
'+8.5V sense PS104 A-C2 A46/H06'
(ALD-YC871)
2.Connect CE-meter(range 15VDC).
+lead to 01A-C2B2-A14
'+8.5V sense PS104 A-C2 A46/H06'
-lead to any D08 pin.
'DC-GND'
(ALD-YC871)
3.Observe meter and press and hold the power on switch.

Is 8.5V at least momentarily present?

Y N

003

1.Press power-off switch.
2.Reconnect sense line connector.
3.Connect CE-meter (range 15VDC)
+lead to connector PS104-05-007
'+8.5V PS104 to 01A-A2 MSSS'
(ALD-YA451)
-lead to connector PS104-05-012
'DC-GND'
4.Observe meter and press and hold the power-on switch.

Is +8.5VDC at least momentarily present?

Y N

004

Go To Map 0250, Entry Point A.

005
Perform wiring check for the following net.
Apply "Wiring Check Procedure" shown in
book Maintenance Information (MI) POWER.

```
|-------|
| CONN  |*| PS104-05-007 (ALD-YA451)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2B3-A14 (ALD-YC831)
|-------| |
          | Board wiring
|-------| |
| CONN  |=| 01A-A2W2-A14 (ALD-YC831)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-C2B3-A14 (ALD-YC871)
|-------| |
          | Board wiring
|-------| |
| CONN  |=| 01A-C2B2-A14 (ALD-YC871)
|-------|
```

* '+8.5V PS104 to 01A-A2 MSSS'

Go to Page 4, Step 007, Entry Point Z.

Power problem

006

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

```
|-------|
| CONN  |*| 01A-C2B2-A14 (ALD-YC871)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2B4-E14 (ALD-YC831)
|-------| |
          | Board wiring
|-------| |
| Card  |=| 01A-A2B2-P06 (ALD-YB423)
|-------|
```

* '+8.5V sense PS104 A-C2 A46/H06'

Go to Step 007, Entry Point Z.

007
(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
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	010	0204	A
2	004	0250	A

001

Symtom:
PS104 +12V on 01A-A2 failing, H02.

	Suspected errors or FRU's (including intermittent errors)
1	+12VDC distribution.
2	Connector problem of PS104-09 or PS104-06.
3	H02 sense wiring error.

(Entry Point A)

Ensure that PS104-CP06 is switched on.
Ensure that the following connectors are seated correctly:
Connector PS104-06.
Connector PS104-09.
(ALD-YA451)
Voltage connectors
01A-C2B3-E14 (+12V) (ALD-YC871)
01A-C2B4-A01 DC-GND (ALD-YC871)
01A-C2B3-A01 (+12V) (ALD-YC871)
01A-A2B5-E01 (+12V) (ALD-YC831)

Any error detected and repaired?

Y N

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Power problem

002

1.Disconnect voltage connector from
01A-A2B5-E01
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2B5-E01
(Connector side)
'+12V PS104 to 01A-A2 PC'
(ALD-YC831)
-lead to any D08 pin
'DC-GND'
3.Observe meter and press and hold the
power-on switch.

Was 12VDC at least momentarily present?

Y N

003

1.Press power-off key.
2.Reconnect connector to 01A-A2B5-E01.
3.Connect CE-meter (range 15VDC)
+lead to connector PS104-06-008
' +12V PS104 to 01A-C2 B/J UC'
(ALD-YA451)
-lead to connector PS104-06-005
'DC-GND'
4.Observe meter and press and hold the
power-on switch.

Was 12VDC at least momentarily present?

Y N

004

Go To Map 0250, Entry Point A.

005
1.Press power-off switch.
2.Disconnect connector 01A-C2B3/B4
3.Connect CE-meter (range15VDC) to
connector side
01A-C2B3-E14 (+)
'+12V PS104 to 01A-C2 B/J UC'
(ALD-YC871)
and to 01A-C2B4-A01 (-)
'DC-GND'
4.Observe meter, press and hold the power-on
switch.

Was 12VDC at least momentarily present?
Y N

006
1.Press power-off switch.
2.Check and repair or replace +12V wiring
from connector PS104-06-008
'+12V PS104 to 01A-C2 B/J UC'
(ALD-YA451)
to 01A-C2B3-E14
(ALD-YC871)
3.Check and repair or replace the DC-GND
wiring from connector PS104-06-005
(ALD-YA451)
to 01A-C2B4-A01
(ALD-YC871)
Go to Page 4, Step 010, Entry Point Z.

007
1.Press power-off switch.
2.Reconnect connector to 01A-C2B3/B4.
3.Disconnect connector 01A-C2B3-A01.
4.Connect CE-meter (range 15VDC) to
01A-C2B3-A01 (+)
'+12V PS104 to 01A-A2 PC'
(ALD-YC871)
and to any D08 pin (-)
5.Observe meter, press and hold the power-on
switch.

Was 12VDC at least momentarily present?
Y N

4 E 4 F

008
+12V wiring on board 01A-C2 is defective.
1.Press power-off switch.
2.Replace board 01A-C2.
Go to Step 010, Entry Point Z.

009
+12V wiring from 01A-C2B3-A01
(ALD-YC871)
to 01A-A2B5-E01
(ALD-YC831)
is defective.
'+12V PS104 to 01A-A2 PC'
1.Press power-off switch.
2.Check and repair or replace the +12V wiring.
Go to Step 010, Entry Point Z.

010
+12V wiring on board 01A-A2 is defective.
1.Press power-off key.
2.Repair +12V wiring from 01A-A2B5-E01
(ALD-YC831)
to 01A-A2B2-U04
(ALD-YB423)
or replace board 01A-A2.

(Entry Point Z)

Go To Map 0204, Entry Point A.

011
Go to Step 010, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0204	A
2	004	0250	A

001
Symtom:
PS104 -12V on 01A-A2 failing, H03

	Suspected errors or FRU's (including intermittent errors)
1	-12VDC distribution.
2	Connector problem of PS104-05 or PS104-09.
3	H03 sense wiring error.

(Entry Point A)

Ensure that PS104-CP04 is switched on.
Ensure that the following connectors are seated correctly:
Connector PS104-05.
Connector PS104-09
(ALD-YA451)
Voltage connector
01A-A2B3-E01
(ALD-YC831)

Any error detected and repaired?
Y N

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002
1.Disconnect voltage connector
from 01A-A2B3-E01
2.Connect CE-meter (range 15VDC)
+lead to 01A-A2B2-E14
'DC-GND'
-lead to 01A-A2B3-E01
'-12V PS104 to 01A-A2 PC'
(ALD-YC831)
3.Observe meter and press and hold the
power-on switch.

Is 12VDC at least momentarily present?
Y N

003
1.Press power-off key.
2.Reconnect connector to 01A-A2B3-E01.
3.Connect CE-meter (range 15VDC)
+lead to connector PS104-05-011
'DC-GND'
-lead to connector PS104-05-004
'-12V PS104 to 01A-A2 PC'
4.Observe meter and press and hold the
power on switch.
(ALD-YA451)

Is 12VDC at least momentarily present?
Y N

004
Go To Map 0250, Entry Point A.

005
1.Press power-off key.
2.Check and repair or replace wiring for
-12V from
connector PS104-05
(ALD-YA451)
to board 01A-A2.
(ALD-YC831).
Go to Step 006, Entry Point Z.

006
-12VDC wiring on board 01A-A2 is
defective.
1.Press power-off switch.
2.Repair -12VDC wiring from
01A-A2B3-E01
(ALD-YC831)to
01A-A2B2-U09
(ALD-YB423)
or replace board 01A-A2.

(Entry Point Z)

Go To Map 0204, Entry Point A.

007
Go to Step 006, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	008	0200	A
8	030	0200	AD
7	023	0202	A
7	028	0204	A

001

Symptom:

Power off control problem.

```
|-------------------------------------|
|    Suspected errors or FRU's        |
| (including intermittent errors)     |
|-------------------------------------|
| 1 | BPC-card in pos. 01A-A2B2.      |
| 2 | PC sense card in pos. 01A-A2D2. |
| 3 | Power off keys and their wiring. |
| 4 | D35 wiring.                     |
| 5 | +24V wiring from PS104.         |
|-------------------------------------|
```

(Entry Point A)

1.Press power-on switch.

Is the *Base power on* indicator on?

Y N

002

1.Connect CE-meter (range 50VDC)
 +lead to 01A-A2B2-J11
 '-Power off OCP/CPU'
 (ALD-YB421)
 -lead to any D08 pin.
2.Press and hold the power on switch.

Is 24VDC present as long as the power on switch is pressed?

Y N

6 5 2
A B C

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003

1. Ensure that the power-off key at the operator console panel (OCP) is not locked in its down position.
2. Connect CE-meter (range 50VDC)
   +lead to 01A-A2E1-E13
   '+24V PS104'
   (ALD-YB223)
   -lead to any D08 pin.
3. Press and hold the power on switch.

Is 24VDC at least momentarily present?

Y N

004

1. Press power-off switch.
2. Check and repair wiring from
   01A-A2B3-E14
   to 01A-A2E1-E13
   '+24V PS104'
   (ALD-YB223)

Go to Page 7, Step 028, Entry Point Z.

005

1. Connect CE-meter (range 50VDC).
   +lead to 01A-A2C1-E11
   '-Power off OCP'
   (ALD-YB223)
   -lead to any D08 pin.
2. Press and hold the power on switch.

Is 24VDC at least momentarily present?

Y N

006

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

```
|-------|
| CONN  |*| 01A-A2C1-E11 (ALD-YB223)
|-------| |
          | Cable
|-------| |
| CONN  |=| OCP-01-001 (ALD-YA911)
|-------| |
          | OCP interface cable
|-------| |
| CONN  |=| DISP-03-013 for 3278-2A or DISP-01-013 for 3278-2C
|-------| |                                           (ALD-YA631)
          | Display unit wiring
|-------| |
| CONN  |=| DISP-02-001 (ALD-YA631)
|-------| |
          | Display OCP interface cable
|-------| |
| CONN  |=| KEYB-01-001 (ALD-YA633)
|-------| |
          | Cable
|-------| |
| SW02  |=| OCP-SW02-NCL (ALD-YA633)
|-------|
```

* '-Power off OCP'

(Step 006 continues)

(Step 006 continued)

```
|-------|
| SW02  |*| OCP-SW02-C (ALD-YA633)
|-------| |
          |
|-------| |
| CONN  |=| KEYB-01-15 (ALD-YA633)
|-------| |
          |
|-------| |
| CONN  |=| DISP-02-15 (ALD-YA631)
|-------| |
          |
|-------| |
| CONN  |=| DISP-03-24 for 3278-2A or DISP-01-024 for 3279-2C
|-------| |                                          (ALD-YA631)
          |
|-------| |
| CONN  |=| OCP-01-15 (ALD-YA911)
|-------| |
```

* '+24V PS103 to OPC

Repair or replace failing parts.

Go to Page 7, Step 028, Entry Point Z.

007
Perform wiring check for the following nets.
Apply *Wiring Check Procedure* shown in
book Maintenance Information (MI) POWER.

```
|-------|
| CONN  |*| 01A-A2A1-C08 (ALD-YB221)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-02-001 (ALD-YA351)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-SW01-A01 (ALD-YA351)
|-------| |

* '-Power off OCP'

|-------| |
| CONN  |=| CCP-SW01-A02 (ALD-YA351)
|-------| |
          | Cable
|-------| |
| CONN  |=| CCP-01-001 (ALD-YA351)
|-------| |
          | Cable
|-------| |
| CONN  |=| 01A-A2A1-B08 (ALD-YB221)
|-------|

* '-Power off OCP/CPU'
```

CCP = Customer Console Panel.

Repair or replace failing parts.
Go to Page 7, Step 028, Entry Point Z.

008
Suspect connection problem of
01A-A2B2-J11.
If no error detected.
Go To Map 0200, Entry Point A.

009
1.Wait until the *power complete* indicator is switched on.
2.Press power-off key at OCP.

Is the *power complete* indicator switched off?
Y N

010
Press power-off switch at the CCP.

Is the *power complete* indicator switched off?
Y N

011
1.Connect CE-meter (range 50VDC).
+lead to 01A-A2B2-J11
'-Power off OCP/CPU'
(ALD-YB421)
-lead to any D08 pin.
2.Press power-off switch at CCP.

Is 24VDC switched off when key pressed?
Y N

012
Suspect a short circuit from pin
01A-A2B2-J11
'-Power off OCP/CPU'
(ALD-YB421)
to +24VDC.
Repair board wiring.
(ALD-YC831)
If no error detected replace BPC card in position 01A-A2B2.
Go to Page 7, Step 028, Entry Point Z.

013
1.Connect probe input to 01A-A2B2-G10
'-Power off progr D35'
(ALD-YB421)
2.Press power-off switch at CCP.

Is the down indicator of the probe on?
Y N

014
1.Connect probe input to 01A-A2B2-S09.
'-Power off OCP/CPU'
(ALD-YB423)
2.Press power-off switch at CCP.

Is the down indicator of the probe on?
Y N

015
1.Switch PCC-CB01 off.
2.Ensure that electrical continuity exists between
01A-A2B2-G08 and
01A-A2B2-S09
(ALD-YB423)
3.Check for bent pins in position 01A-A2B2.
If no error detected, replace BPC card in position 01A-A2B2.
Go to Page 7, Step 028, Entry Point Z.

016
1.Switch PCC-CB01 off.
2.Replace BPC card in position 01A-A2B2.
Go to Page 7, Step 028, Entry Point Z.

017
1.Connect probe input to 01A-A2D2-P07
'-Power off progr D35'
(ALD-YB643)
2.Press power-off switch at CCP.

Is the down indicator of the probe on?
Y N

018
1.Switch PCC-CB01 off.
2.Check and repair wiring from
01A-A2B2-G10 to
01A-A2D2-P07
'-Power off progr D35'
Go to Step 028, Entry Point Z.

019
1.Switch PCC-CB01 off.
2.Remove the control diskette from the diskette drive.
3.Insert the diagnostic diskette into the diskette drive.
4.Switch PCC-CB01 on.
5.Press the power on switch and wait until the power complete indicator is switched on.
6.Press power-off switch.

Is the power off sequence successfully executed?
Y N

020
Is any reference code displayed?
Y N

021
1.Switch PCC-CB01 off.
2.Replace the PC sense card in position 01A-A2D2.
3.Switch PCC-CB01 on.
4.Press power-on switch and wait approximately one minute.
5.Press power-off switch.

Is the power-off sequence successfully executed?
Y N

022
Is any reference code displayed?
Y N

023
Suspect operation control program problem or problem of support processor.
Go To Map 0202, Entry Point A.

024
Go to corresponding MAP.

025
Go to Step 028, Entry Point Z.

026
Go to corresponding MAP.

027
Replace the control diskette.
Go to Step 028, Entry Point Z.

028
The power-off key at the OCP is defective.
Check and repair or replace OCP assembly.
(ALD-YA633)

(Entry Point Z)

Go To Map 0204, Entry Point A.

029
Is any reference code displayed?
Y N

030
Go To Map 0200, Entry Point AD.

031
Go to MAP for displayed reference code.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	013	FD80	A
2	008	0202	A
7	059	0204	A

001
Symptom:
PS104-CP05 tripped
(+24V for both diskette drives,
01A-A2 and IPS teststation)

	Suspected errors or FRU's (including intermittent errors)
1	+24VDC distribution to diskette drives and IPS teststation.
2	Load fault on 01A-A2.
3	PS104.

(Entry Point A)

1. Press power-off key.
2. Switch PS104-CP05 on.
3. Disconnect connectors
   PS104-05 (to board 01A-A2)
   PS104-02 (to system diskette drive)
   PS104-04 (to IPS teststation)
   PS104-03 (to I/O diskette drive)
   (ALD-YA451)
4. Press and hold the power on switch.

Is PS104-CP05 tripped?

Y N

7 2
A B

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002
1.Press power-off key.
2.Reconnect connector PS104-05.
(ALD-YA451)
3.Press power-on switch.

Is PS104-CP05 tripped?
Y N

003
1.Press power-off key.
2.Reconnect connector PS104-04
'+24V PS104 to 01A-C1 IPS test'
(ALD-YA451)
3.Press power-on switch.

Is PS104-CP05 tripped?
Y N

004
1.Press power-off key.
2.Reconnect connector
PS104-02. (to system diskette drive)
3.Press power-on switch.

Is PS104-CP05 tripped?
Y N

005
Is a second diskette drive installed?
Y N

006
Go to Step 008,
Entry Point B.

007
1.Press power-off key.
2.Reconnect connector
PS104-03 (to I/O diskette drive)
3.Press power-on switch.

Is PS104-CP05 tripped?
Y N

008
(Entry Point B)

Suspect intermittent short circuit in wiring from PS104 to load.
Check cables visually. If no error detected,
Go To Map 0202, Entry Point A.

009
1.Press power-off key.
2.Switch PS104-CP05 on.
3.Disconnect power connector from I/O diskette drive.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

010
There is an overload condition caused by the I/O diskette drive.
Go to Page 3, Step 013, Entry Point D.

011
Check and repair wiring from connector PS104-03
(ALD-YA451)
to I/O diskette drive.
Go to Page 7, Step 059, Entry Point Z.

012
1.Press power-off key.
2.Switch PS104-CP05 on.
3.Disconnect power connector from system diskette drive.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

013
There is an overload condition caused by the system diskette drive.

(Entry Point D)

Go To Map FD80, Entry Point A.

014
Check and repair wiring from connector PS104-02
(ALD-YA451)
to system diskette drive.
Go to Page 7, Step 059, Entry Point Z.

015
1.Press power-off key.
2.Switch PS104-CP05 on.
3.Disconnect 01A-C1 IPS teststation power connector.
4.Press power-on switch.

Is PS104-CP05 tripped?
Y N

016
There is a short ciruit on the IPS teststation.
1.Press power-off key.
2.Replace the IPS teststation.
Go to Page 7, Step 059, Entry Point Z.

017
1.Press power-off key.
2.Repair or replace cable from PS104-04
(ALD-YA451)
to IPS teststation power connector
(ALD-YA591)
Go to Page 7, Step 059, Entry Point Z.

018
1.Press power off switch.
2.Switch PS104-CP05 on.
3.Disconnect connector 01A-A2B3-E14
'+24V PS104 to 01A-A2'
(ALD-YC831)
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

019
1.Press power off switch.
2.Reconnect connector 01A-A2B3-E14
(ALD-YC831)
3.Disconnect connectors
01A-A2YA (to PS102, PS104 and thermal loop)
(ALD-YB221)
01A-A2YB (to CE-panel)
(ALD-YB221)
01A-A2YK (to OCP)
(ALD-YB223)
01A-A2YJ (to PS105 if present)
01A-A2ZA (to SPI if present)
(ALD-YB231)
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

020
1.Press power off switch.
2.Reconnect connector 01A-A2JK (to OCP)
3.Press power on switch.
Is PS104-CP05 tripped?
Y N

021
1.Press power off switch.
2.Reconnect connector 01A-A2YB (to CE-panel)
3.Press power on switch.

Is PS104-CP05 tripped?
Y N

022
1.Press power off switch.
2.Reconnect connector 01A-A2YA (to PS102, PS104 and thermal loop)
3.Press power on switch.

Is PS104-CP05 tripped?
Y N

023
Is a cable disconnected from 01A-A2ZA ?
Y N

024
(Entry Point C)

Is a cable disconnected from 01A-A2YJ ?
Y N

025
Go to Page 2, Step 008, Entry Point B.

026
1.Press power off switch.
2.Reconnect connector 01A-A2YJ.
3.Press power on switch.

Is PS104-CP05 tripped?
Y N

027
Go to Page 2, Step 008, Entry Point B.

028
1.Press power off switch.
2.Switch PS104-CP05 on.
3.Disconnect connector PS105-01.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

029
1.Press power off switch.
2.Reconnect connector PS105-01.
3.Disconnect connector PS105-07.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

030
1.Press power off switch.
2.Suspect a short circuit in wiring from PS105-07 to TR105 thermal switch. Check and repair wiring (including connector PS105-07).
If no error detected, replace TR105.
Go to Page 7, Step 059, Entry Point Z.

031
1.Press power off switch.
2.Replace PS105.
3.Switch PS104-CP05 on.
Go to Page 7, Step 059, Entry Point Z.

032
1.Press power off switch.
2.Check and repair or replace cable from 01A-A2Y3 (ALD-YB223) to connector PS105-01.
Go to Page 7, Step 059, Entry Point Z.

033
1.Press power off switch.
2.Reconnect connector 01A-A2ZA.
3.Press power on switch.

Is PS104-CP05 tripped?
Y N

034
Go to Page 4, Step 024, Entry Point C.

035
1.Press power off switch.
2.Switch PS104-CP05 on.
3.Disconnect connector SPI-P00-00 (located on the small SPI panel).
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

036
1.Press power off switch.
2.Reconnect connector SPI-P00-00.
3.Disconnect connector SPI-P00-09.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

037
1.Press power off switch.
2.There is a short circuit on one of the installed SPI-panels (10, 20 or 30). Make a visual inspection for any damage. If no trouble found, replace panels step by step.
Go to Page 7, Step 059, Entry Point Z.

038
1.Press power off switch.
2.Replace panel SPI-P00.
3.Switch PS104-CP05 tripped.
Go to Page 7, Step 059, Entry Point Z.

039
1.Press power off switch.
2.Repair or replace cable from 01A-A2ZA to panel SPI-P00.
3.Switch PS104-CP05 on.
Go to Page 7, Step 059, Entry Point Z.

040
1.Press power off switch.
2.Switch PS104-CP05 on.
3.Disconnect connector PS102-06.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

041
1.Press power off switch.
2.Reconnect connector PS102-06.
3.Disconnect connector PS102-04.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

042
1.Press power off switch.
2.Suspect a short circuit in wiring from PS102-04 to TR102 thermal switch. Check and repair wiring (including connector PS102-04).
If no error detected, replace TR102.
Go to Page 7, Step 059, Entry Point Z.

043
1.Press power off switch.
2.Replace PS102.
3.Switch PS104-CP05 on.
Go to Page 7, Step 059, Entry Point Z.

044
1.Press power off switch.
2.Disconnect connector PS104-01.
3.Switch PS104-CP05 on.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

045
1.Press power off switch.
2.Reconnect connector PS104-09.
3.Press power on switch.

Is PS104-CP05 tripped?
Y N

046
1.Press power off switch.
2.Suspect a short circuit in wiring from PS104-09 to TR104. Check and repair wiring (including connector PS104-09). If no error detected, replace TR104.
Go to Page 7, Step 059, Entry Point Z.

047
1.Press power off switch.
2.Replace PS104.
3.Switch PS104-CP05 on.
Go to Page 7, Step 059, Entry Point Z.

048
1.Press power off switch.
2.Check and repair or replace cable from 01A-A2YA (ALD-YB221) to connector PS102-06 and to connector PS104-01.
Go to Page 7, Step 059, Entry Point Z.

049
1.Press power off switch.
2.Switch PS104-CP05 on.
3.Disconnect CE panel connector CEP-03.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

050
1.Press power off switch.
2.Replace CE-panel.
Go to Page 7, Step 059, Entry Point Z.

051
1.Press power off switch.
2.Replace cable from 01A-A2YB to CE-panel connector CEP-03.
3.Switch PS104-CP05 on.
Go to Page 7, Step 059, Entry Point Z.

052
1.Press power off switch.
2.Disconnect connector OCP-01 (located next to TR105).
3.Switch PS104-CP05 on.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

053
1.Press power off switch.
2.Suspect short circuit in cable from connector OCP-01 or on OCP panel. Repair or replace failing part.
Go to Page 7, Step 059, Entry Point Z.

054
1.Press power off switch.
2.Check and repair or replace cable from 01A-A2YK to connector OCP-01.
3.Switch PS104-CP05 on.
Go to Page 7, Step 059, Entry Point Z.

055
1.Press power on switch.
2.Remove BPC card from 01A-A2B2.
3.Switch PS104-CP05 on.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

056
1.Press power off switch.
2.Replace BCP-card (removed in previous step).
Go to Step 059, Entry Point Z.

057
1.Press power off switch.
2.Remove paddle card from 01A-A2A3.
3.Switch PS104-CP05 on.
4.Press power on switch.

Is PS104-CP05 tripped?
Y N

058
1.Press power off switch.
2.Replace paddle card with cable in position 01A-A2A3.
Go to Step 059, Entry Point Z.

059
1.Press power off switch.
2.Replace board 01A-A2.
3.Switch PS104-CP05 on.

(Entry Point Z)

Reconnect all previously disconnected connectors.
Go To Map 0204, Entry Point A.

060
1.Press power off switch.
2.Replace cable from connector PS104-05 (ALD-YA441) to board 01A-A2B3-E14 (ALD-YC831)
3.Switch PS104-CP05 on.
Go to Step 059, Entry Point Z.

061
There is a short circuit in PS104.
1.Switch PCC-CB01 off.
Replace PS104.
Go to Step 059, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	023	0204	A

001

Symptom:
PS104-CP01 tripped.
(+5.1V PS104 to 01A-A2,01A-C2,01A-B1
and to 01A-C2 CA)

	Suspected errors or FRU's (including intermittent errors)
1	+5.1VDC distribution to boards 01A-A2, 01A-C2 and 01A-B1.
2	Load fault on 01A-A2 or 01A-C2 or 01A-B1.
3	PS104.

(Entry Point A)

1.Press power-off key.
2.Disconnect FDS cables from
PS104-TB02-001 and PS104-TB02-002
(ALD-YA451)
3.Switch all tripped CP's of PS104 on.
4.Press power-on switch.

Is PS104-CP01 tripped?

Y N

4 2
A B

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002
1.Press power-off key.
2.Reconnect FDS cables to PS104-TB02-001 and PS104-TB02-002
(ALD-YA451)
3.Disconnect FDS connector 01A-A2YB
'+5.1V PS104 to 01A-C2 B/J UC'
(ALD-YC831)
4.Press power-on switch.

Is PS104-CP01 tripped?
Y N

003
1.Press power off key.
2.Reconnect voltage connector 01A-A2YB.
(ALD-YC831)
3.Disconnect voltage connector 01A-C2ZC.
'+5.1V PS104 to 01A-B1 PU'
(ALD-YC871)
4.Press power-on switch.

Is PS104-CP01 tripped?
Y N

004
1.Press power-off switch.
2.Reconnect voltage connector to 01A-C2ZC.
'+5.1V PS104 to 01A-B1 PU'
(ALD-YC871)
3.Disconnect voltage connector 01A-B1C1.
'+5.1V PS104 to 01A-B1 PU'
(ALD-YC843)
4.Press power-on switch.

Is PS104-CP01 tripped?
Y N

005
1.Press power-off switch.
2.Reconnect voltage connector to 01A-B1C1.
Suspect overload or short circuit on board 01A-B1.
3.Remove PU cards from board 01A-B1 column B and columns E to K.
4.Press power-on switch.

Is PS104-CP01 tripped?
Y N

006
Go to Page 3, Step 014, Entry Point D.

007
1.Press power-off switch.
2.Board 01A-B1 is defective. Replace board 01A-B1.
3.Switch PS104-CP01 on.
Go to Page 4, Step 023, Entry Point Z.

008
1.Press power-off switch.
There is a short circuit on the FDS wiring from
01A-C2ZC (ALD-YC871) to
01A-B1C1 (ALD-YC843)
'+5.1V PS104 to 01A-B1 PU'
2.Check and repair or replace the FDS cable(s).
3.Switch PS104-CP01 on.
Go to Page 4, Step 023, Entry Point Z.

009
1.Press power-off switch.
2.Switch PS104-CP01 on.
3.Reconnect voltage connector to 01A-C2ZC.

Is PS105 installed?
Y N

010
Is CA with 1-3 lines installed?
Y N

011
(Entry Point C)

1.Press power-off key.
2.Suspect overload or short circuit on board 01A-C2 col. B to J.
Go to Step 013, Entry Point B.

012
1.Press power-off key.
2.Disconnect FDS connector 01A-C2YF '+5.1V PS104 to 01A-C2 K/W CA' (ALD-YC871)
3.Press power on switch.

Is PS104-CP01 tripped?
Y N

013
1.Press power-off key.
2.Reconnect connector 01A-C2YF.
Suspect overload or short circuit on board 01A-C2 column K to W.

(Entry Point B)

3.Remove cards from board shown in previous step and press power on switch.

Is PS104-CP01 tripped?
Y N

014
(Entry Point D)

Suspect faulty card on board. Isolate faulty card by inserting cards step by step. After each card plugged in, press power on switch.
The card which was inserted prior to tripping of PS104-CP01 must be replaced.
NOTE:
After each try press power-off key, and check if any CP of PS104 is tripped.
Go to Page 4, Step 023, Entry Point Z.

015
Check cabling to failing board and check board for bent or broken pins. If no error detected, replace board.
Go to Page 4, Step 023, Entry Point Z.

016
1.Press power-off switch.
2.Reconnect connector 01A-C2YF.
3.Disconnect connector 01A-A2ZG '+5.1V PS104 to 01A-C2 K/W CA' (ALD-YC831)
4.Switch PS104-CP01 on.
5.Press power-on switch.

Is PS104-CP01 tripped?
Y N

017
1.Press power-off switch.
2.Check and repair or replace cable from 01A-A2ZG to 01A-C2YF.
'+5.1V PS104 to 01A-C2 K/W CA'
(ALD-YC831)
(ALD-YC871)
Go to Page 4, Step 023, Entry Point Z.

018
Go to Step 011, Entry Point C.

019
Go to Page 3, Step 011, Entry Point C.

020
1.Press power-off key.
2.Disconnect connector 01A-A2YF.
'+5.1V PS104 to 01A-A2 MSSS'
(ALD-YC831)
3.Switch on PS104-CP01.
4.Press power-on switch.

Is PS104-CP01 tripped?
Y N

021
Suspect overload or short circuit on board 01A-A2.
Go to Page 3, Step 013, Entry Point B.

022
1.Press power-off key.
2.Check and repair or replace cables from PS104-TB02 to 01A-A2YF and PS104-TB01 to 01A-A2ZD.
Go to Step 023, Entry Point Z.

023
1.Switch PCC-CB01 off.
2.Replace PS104.

(Entry Point Z)

3.Reconnect all disconnected connectors.
4.Ensure that all CP's of PS104 are switched on.
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7A2	A	1	001
0050	A	1	001
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	012	FD80	A
2	005	0202	A
2	007	0204	A

001

Symptom:
PS104-CP02 tripped
(+5.1V for both diskette drives and IPS)

	Suspected errors or FRU's (including intermittent errors)
1	+5.1VDC distibution to diskette drives and IPS.
2	Load faults on 01A-C1.
3	PS104.

(Entry Point A)

1. Press power-off key.
2. Switch PS104-CP02 on.
3. Disconnect connectors PS104-02 '+5.1V PS104 to PS104 to 53FD SYS' (ALD-YA451)
4. Disconnect connector PS104-03 '+5.1V PS104 to 53FD I/O'
5. Disconnect connector PS104-04 '+5.1V PS104 to 01A-C1 IPS Test'.
6. Press power on switch.

Is PS104-CP02 tripped?

Y N

4 2
A B

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002
1.Press power-off key.
2.Reconnect connector PS104-04
'+5.1V PS104 to 01A-C1 IPS Test'
(ALD-YA451)
3.Press power-on switch.

Is PS104-CP02 tripped?
Y N

003
1.Press power-off key.
2.Reconnect connector PS104-02.
3.Press power-on switch.

Is PS104-CP02 tripped?
Y N

004
Is a second diskette drive installed?
Y N

005
Suspect intermittent error.
1.Check all +5.1V cables from PS104 for any damage (ALD-YA451).
2.Check mechanical function of PS104-CP02.
If no error found and the problem still exists,
Go To Map 0202, Entry Point A.

006
1.Press power-off key.
2.Reconnect connector PS104-03.
3.Press power-on switch.

Is PS104-CP02 tripped?
Y N

007
Suspect an intermittent short circuit in the wiring from connector PS104-02 to the system diskette drive
or from connector PS104-03 to the I/O diskette drive.
Check the cables visually and repair or replace the failing parts.

(Entry Point Z)

Go To Map 0204, Entry Point A.

008
1.Press power-off key.
2.Switch PS104-CP02 on.
3.Disconnect the interface connector from the I/O diskette drive.
4.Press power on switch.

Is PS104-CP02 tripped?
Y N

009
There is an overload condition caused by diskette drive 2.
Go to Page 3, Step 012, Entry Point B.

010
1.Check and repair wiring from connector PS104-03
(ALD-YA421)
to the I/O diskette drive.
2.Switch PS104-CP02 on.
Go to Step 007, Entry Point Z.

011
1.Press power-off key.
2.Switch PS104-CP02 on.
3.Disconnect the power connector from the system diskette drive.
4.Press power on switch.

Is PS104-CP02 tripped?
Y N

012
There is an overload condition caused by the system diskette drive.
Press power-off switch.

(Entry Point B)

Go to MAP for diskette drive check out procedure.
Go To Map FD80, Entry Point A.

013
1. Press power-off switch.
2. Check and repair the wiring from connector PS104-02 (ALD-YA421) to the system diskette drive.
3. Switch PS104-CP02 on.

Go to Page 2, Step 007, Entry Point Z.

014
1. Press power-off key.
2. Switch PS104-CP02 on.
3. Disconnect 01A-C1A2.
4. Ensure that IPS test station is switched off.
5. Press power-on switch.

Is PS104-CP02 tripped?
Y N

015
1. Press power-off key.
2. Remove all control cards from IPS board 01A-C1.
3. Press power-on switch.

Is PS104-CP02 tripped?
Y N

016
There is a short ciruit on one IPS control card.
1. Press power-off key.
2. Reinstall the control cards step by step and retry power on after each step. Replace the failing card which was installed prior to tripping of PS104-CP02.
3. Reconnect all disconnected connectors.

Go to Page 2, Step 007, Entry Point Z.

017
1. Press power-off key.
2. Switch PS104-CP02 on.
3. Disconnect paddle card from 01A-C1B4.
4. Press power-on switch.

Is PS104-CP02 tripped?
Y N

018
1. Press power-off key.
2. Replace the paddle card with its cable which was previously disconnected from 01A-C1B4.
3. Reinstall all removed cards and reconnect all disconnected connectors.

Go to Page 2, Step 007, Entry Point Z.

019
1. Press power-off key.
2. Repair or replace board 01A-C1.
3. Switch PS104-CP02 on.

Go to Page 2, Step 007, Entry Point Z.

020
1. Press power-off key.
2. Repair or replace the cable from PS104-04 (ALD-YA441) to 01A-C1A2. (ALD-YA525)
3. Switch PS104-CP02 on.

Go to Page 2, Step 007, Entry Point Z.

021

There is a short circuit in PS104.

1.Switch PCC-CB01 off.

2.Replace PS104.

Go to Page 2, Step 007, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	018	FD80	A
5	031	0204	A

001
Symptom:
PS104-CP03 tripped.
(-5.1V PS104 to 01A-A1,01A-A2,01A-C2
and to 01A-C2 CA
and to system diskette drive and to I/O diskette
drive)

	Suspected errors or FRU's (including intermittent errors)
1	-5.1VDC distribution failure.
2	Load fault on 01A-A2,C2 or at one of both diskette drives.
3	A33 or A45 sense wiring.
4	PS104.

(Entry Point A)

Note:
This MAP advises you to disconnect some power feeding and some connectors from specified board pins. In those cases remove always the complete 4-pin connector and not only a single pin out of the four pin connector.
1.Press power-off key.
2.Disconnect connectors PS104-05, PS104-03, PS104-07 and PS104-02. (ALD-YA451)
3.Switch on PS104-CP03 on.
4.Press power-on switch.

(Step 001 continues)

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(Step 001 continued)
Is PS104-CP03 tripped?
Y N

002
Is board 01A-A1 installed?
Y N

003

(Entry Point E)

1.Press power-off key.
2.Reconnect connector PS104-02
'-5.1V PS104 to PS104 53FD SYS'
(ALD-YA451)
3.Press power-on switch.

Is PS104-CP03 tripped?
Y N

004
1.Press power-off key.
2.Reconnected connector PS104-05
(ALD-YA451)
3.Disconnect voltage
connector 01A-A2W3-E14
'-5.1V PS104 to C1A-A2 MSSS'
(ALD-YC831)
4.Switch all CP's of PS104 on.
5.Press power-on switch.

Is PS104-CP03 tripped?
Y N

005
1.Press power-off key.
2.Reconnect voltage
connector 01A-A2W3-E14.
(ALD-YC831)

Is CA with up to 3 lines installed
on board 01A-C2?
Y N

5 4 4 3 E F
A B C D

006
Go to Page 3, Step 011, Entry Point D.

007
1.Press power-off key.
2.Disconnect voltage
connector 01A-C2W4-E01
(ALD-YC871)
'-5.1V PS104 to 01A-C2 K/W CA'
3.Press power-on switch.

Is PS104-CP03 tripped?
Y N

008
1.Press power-off key.
2.Reconnect connector 01A-C2W4-E01
3.Disconnect -5.1V sense wiring from
01A-C2W3-E01
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

009
1.Press power-off key.
2.Check and repair or replace sense
wiring with paddle card from
01A-C2W3-E01
(ALD-YC851)
to 01A-A2A3
(ALD-YB241)
Go to Page 5, Step 031, Entry Point Z.

3 3
G H

010
(Entry Point C)

Suspect overload or short circuit on board 01A-C2 CA

(Entry Point B)

1.Press power-off key.
2.Remove all cards from board and press power-on key. If PS104-CP03 trips, check cabling to failing board and check board for bent broken pins. If no error detected, replace board.
3.If PS104-CP03 was not tripped in step 2 of this procedure, suspect faulty card on board. Isolate faulty card by inserting cards step by step. After each card plugged in, press power-on switch. The card which was inserted prior to tripping of PS104-CP03 must be replaced.
NOTE:
After each try press power-off key, and check if any CP of PS104 is tripped.
Go to Page 5, Step 031, Entry Point Z.

011
(Entry Point D)

1.Press power-off key.
2.Switch on PS104-CP03.
3.Disconnect 01A-A2W3-E01
'-5.1V PS104 to 01A-C2 B/J UC'
(ALD-YC831)
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

012
1.Press power-off key.
Reconnect 01A-A2W3-E01
'-5.1V PS104 to 01A-C2 B/J UC'
(ALD-YC831)
2.Disconnect -5.1V sense wiring from 01A-C2B3-E01
'-5.1V sense PS104 A-C2 A45/H05'
(ALD-YC871)
3.Press power-on switch.

Is PS104-CP03 tripped?
Y N

013
1.Press power-off key.
2.Check and repair or replace sense wiring with paddle card from
01A-C2B3-E01
(ALD-YC871)
to 01A-A2A3.
(ALD-YB241)
Go to Page 5, Step 031, Entry Point Z.

014
Suspect overload or short circuit on board 01A-C2 (MSSS).
Go to Step 010, Entry Point B.

015
Suspect overload or short circuit on board 01A-A2.
Go to Step 010, Entry Point B.

016
1.Press power-off key.
2.Check and repair or replace cable from connector PS104-05 to 01A-A2W3-E14.
Go to Page 5, Step 031, Entry Point Z.

017
1.Press power-off key.
2.Switch PS104-CP03 on.
3.Disconnect interface connector from system diskette drive.
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

018
Power problem of system diskette drive exists.

(Entry Point F)

If diskette drive power problem is solved, reconnect all disconnected connectors.
Go To Map FD80, Entry Point A.

019
Is a second diskette drive installed?
Y N

020
Check and repair cabling from connector PS104-02 to diskette drive 1.
Go to Page 5, Step 031, Entry Point Z.

021
1.Press power-off key.
2.Switch on PS104-CP03
3.Disconnect interface connector from I/O diskette drive.
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

022
Power problem of I/O diskette drive exists.
Go to Step 018, Entry Point F.

023
Check and repair cabling from connector PS104-03 to I/O diskette drive.
Go to Page 5, Step 031, Entry Point Z.

024
1.Press power-off switch.
2.Reconnect connector PS104-07 '(-5.1V and +12V to 01A-A1 CD ATT)' (ALD-YA461)
3.Press power-on switch.

Is PS104-CP03 tripped?
Y N

025
Go to Page 2, Step 003, Entry Point E.

026
1.Press power-off switch.
2.Switch PS104-CP03 on.
3.Disconnect voltage connector from 01A-A1B4-E14.
(ALD-YC821).
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

027
Suspect short circuit on board 01A-A1 or on a card plugged on board 01A-A1.
1.Press power-off switch.
2.Remove all cards from board 01A-A1.
3.Reconnect the previously disconnected voltage connector to board 01A-A1.
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

028

1.Press pwer-off switch.
2.Replug one card after the other.
3.After each card plugged in, press power-on key.
4.Replace defective card which was inserted prior to tripping of PS104-CP03.
Go to Stop 031, Entry Point Z.

029

1.Press power-off switch.
2.Repalce board 01A-A1 by a new one.
Go to Stop 031, Entry Point Z.

030

There is a short circuit on -5.1V cable '-5.1V PS101 to 01A-A1 CD ATT'
1.Press power-off switch.
2.Repair or replace cable from connector PS104-07 to 01A-A1.
(ALD-YA461)
3.Reconnect all previously disconnected connectors to board 01A-A1.
Go to Stop 031, Entry Point Z.

031

1.Switch PCC-CB01 off.
2.Replace PS104.

(Entry Point Z)

Go To Map 020A, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7A0	A	1	001
F7A4	A	1	001
F7A5	A	1	001
F79B	A	1	001
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	031	0204	A

001

Symptom:
PS104-CP07 tripped.
(+8.5V PS104 to 01A-A2, 01A-C2
and to 01A-C2 CA
and to 01A-B2 ACA)

	Suspected errors or FRU's (including intermittent errors)
1	+8.5V DC distribution to boards 01A-A2,01A-B2 and 01A-C2.
2	Load fault on board 01A-A2,B2,C2.
3	A31,A23,A46 sense wiring.
4	PS104.

(Entry Point A)

1. Press power-off key.
2. Disconnect connector PS104-05 (ALD-YA451)
3. Switch on PS104-CP07.
4. Press power-on switch.

Is PS104-CP07 tripped?

Y N

5 2
A B

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002
Is a Communication Adapter (CA) installed?
Y N

003
(Entry Point B)

1. Press power-off key.
2. Reconnect connector PS104-05. (ALD-YA451)
3. Disconnect voltage connector 01A-A2W2-A14 '+8.5V PS104 to 01A-C2 B/J UC' (ALD-YC831)
4. Switch all CP's of PS104 on.
5. Press power-on switch.

Is PS104-CP07 tripped?
Y N

004
(Entry Point D)

1. Press power off key.
2. Reconnect voltage connector 01A-A2W2-A14. (ALD-YC831)
3. Disconnect sense line connector 01A-C2B2-A14. '+8.5V sense PS104 A-C2 A46/H06' (ALD-YC871)
4. Press power-on switch.

Is PS104-CP07 tripped?
Y N

005
1. Press power-off key.
2. Reconnect sense line connector to 01A-C2B2-A14 (ALD-YC871)
3. Remove BPC card from 01A-A2B2.
4. Press Power-on switch.

Is PS104-CP07 tripped?
Y N

006
1. Press power-off key.
2. Replace BPC card which was previously removed from 01A-A2B2.

Go to Page 5, Step 031, Entry Point Z.

007
(Entry Point E)

1. Press power-off key.
2. Remove voltage divider card from position 01A-A2A3.
3. Connect ohmmeter to 01A-C2B2-A14. '+8.5V sense PS104 A-C2 A46/H06' (ALD-YC831) and to any D08 pin.

Is the measured resistance higher than 500 ohm?
Y N

008
There is a short circuit to ground of the sense wiring from 01A-C2B2-A14 to 01A-A2B2-P06.
Repair wiring or replace cable or board 01A-A2.
Go to Page 5, Step 031, Entry Point Z.

009
Replace voltage divider card with cable in position 01A-A2A3.
Go to Page 5, Step 031, Entry Point Z.

010
Suspect overload or short circuit on board 01A-C2 col.B to J.
Go to Page 4, Step 022, Entry Point G.

011
(Entry Point C)

1.Press power-off key.
2.Disconnect connectors
01A-A2B3-A14 and
01A-A2W3-A14
'+8.5V PS104 to 01A-A2 MSSS'
(ALD-YC831)
3.Switch on PS104-CP07.
4.Press power-on switch.

Is PS104-CP07 tripped?
Y N

012
Suspect overload or short circuit on board 01A-A2.
Go to Page 4, Step 022, Entry Point G.

013
1.Press power-off key.
2.Check and repair or replace cable from connector PS104-05 to 01A-A2B3-A14 and 01A-A2W3-A14.

Go to Page 5, Step 031, Entry Point Z.

014
Are more than 3 CA lines installed?
Y N

015
1.Press power-off key.
2.Reconnect connector PS104-05.
(ALD-YA451)
3.Disconnect voltage connector
01A-A2W2-A14.
'+8.5V PS104 to 01A-C2 B/J UC'
(ALD-YC831)
4.Disconnect voltage connectors
01A-A2W4-A14 and 01A-A2W5-A01.
(ALD-YC831)
'+8.5V PS104 to 01A-C2 K/W CA'
5.Press power on switch.

(Step 015 continues)

(Step 015 continued)
Is PS104-CP07 tripped?
Y N

016
1.Press power-off key.
2.Reconnect connectors 01A-A2W5-A01 and 01A-A2W4-A14.
3.Press power on switch.

Is PS104-CP07 tripped?
Y N

017
Go to Page 2, Step 004, Entry Point D.

018
Is ACA (Auto Call Adapter) installed in board 01A-B2?
Y N

019
1.Press power-off key.
2.Disconnect +8.5V sense wiring from 01A-C2W2-A14.
3.Press power-on switch.

Is PS104-CP07 tripped?
Y N

020
1.Press power-off key.
2.Check and repair or replace sense wiring with paddle card from
01A-C2W2-A14
(ALD-YC871)
to 01A-A2A3
(ALD-YB241)
Go to Page 5, Step 031, Entry Point Z.

021
1.Press power-off key.
2.Disconnect power input connectors from 01A-C2W4-A14 and 01A-C2W3-A14.
3.Switch PS104-CP07 on.
4.Press power-on switch.

Is PS104-CP07 tripped?
Y N

022
(Entry Point F)

Suspect overload or short circuit on board 01A-C2 CA.

(Entry Point G)

1.Press power-off key.
2.Remove all cards from board and press power on switch.
If PS104-CP07 trips, check cabling to failing board and check board for bent broken pins. If no error detected, replace board 01A-C2.
3.If PS104-CP07 was not tripped in step 2 of this procedure, suspect faulty card on board. Isolate faulty card by inserting cards step by step. After each card plugged in, press power on switch. The card which was inserted prior to tripping of PS104-CP07 must be replaced.
NOTE:
After each try press power-off key, and check if any CP of PS104 is tripped.
Go to Page 5, Step 031, Entry Point Z.

023
1.Press power-off key.
2.Check and repair or replace the cable from 01A-A2W4-A14 and 01A-A2W5-A01 (ALD-Y831)
to
01A-C2W4-A14 and 01A-C2W3-A14 (ALD-YC871).

Go to Page 5, Step 031, Entry Point Z.

024
1.Disconnect connector 01A-C2B4-A14. '+8.5V PS1045 to 01A-B2 ACA' (ALD-YC871)
2.Press power-on switch.

Is PS104-CP07 tripped?
Y N

025
1.Press power-off key.
2.Reconnect 01A-C2B4-A14.
3.Disconnect +8.5V sense wiring from 01A-B2B3-A01.
4.Press power-on switch.

Is PS104-CP07 tripped?
Y N

026
1.Press power-off key.
2.Check and repair or replace sense wiring with paddle card from 01A-B2B3-A01 (ALD-YC851)
to
01A-A2A2 (ALD-YB241)
Go to Page 5, Step 031, Entry Point Z.

027
Suspect short circuit on cable from
01A-C2B4-A14 (ALD-YC871)
to
01A-B2W4-A14 (ALD-YC851)
'+8.5V PS1045 to 01A-B2 ACA'
or suspect overload or short circuit
on board 01A-B2.
Go to Page 4, Step 022,
Entry Point G.

028
Go to Page 4, Step 022, Entry Point F.

029
Go to Page 3, Step 011, Entry Point C.

030
Go to Page 2, Step 003, Entry Point B.

031
1.Switch PCC-CB01 off.
2.Replace PS104.

(Entry Point Z)

Switch all tripped CP's of PS104 on.

Go To Map 0204, Entry Point A.

Power problem

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	039	0204	A

001
Symptom:
PS104-CP06 tripped. (+12V to 01A-A1, 01A-B1, and 01A-A2 via 01A-C2).

	Suspected errors or FRUs (including intermittent errors)
1	+12VDC distribution.
2	Load fault on 01A-A2, 01A-C2 or 01A-B1.
3	A13, A42 or A48 sense wiring.
4	PS104.

(Entry Point A)
1. Press power-off key.
2. Disconnect connector PS104-06. (ALD-YA451)
3. Press power-on switch.

Is PS104-CP06 tripped?

Y N

4 2
A B

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002
1.Press power-off key.
2.Reconnect connector PS104-06.
3.Disconnect voltage connector from 01A-A2B5-E01.
'+12V PS104 to 01A-A2 PC'
(ALD-YC831)
4.Press power-on switch.

Is PS104-CP06 tripped?
Y N

003
1.Press power off key.
2.Reconnect voltage connector 01A-A2B5-E01.
3.Remove PC-sense cards 1 and 2 from positions 01A-A2D2 and 01A-A2C2.
4.Press power on switch.

Is PS104-CP06 tripped?
Y N

004
There is a short circuit on PC-sense card 1 or 2.
1.Press power off key.
2.Plug one of the removed sense cards into position 01A-A2D2.
3.Press power on switch.

Is PS104-CP06 tripped?
Y N

005
1.Press power-off switch.
2.Replace the sense card which is currently removed and plug the new card into position 01A-A2C2.
Go to Page 6, Step 039, Entry Point Z.

006
1.Press power-off switch.
2.Replace the sense card which is currently plugged in position 01A-A2D2 and plug second sense card into position 01A-A2C2.
Go to Page 6, Step 039, Entry Point Z.

007
1.Press power-off key
2.Remove BPC card from position 01A-A2B2.
3.Disconnect voltage connector from 01A-A2B5-E01.
4.Connect CE-meter (range ohm x1) to pin 01A-A2B5-E01 and to any D08 pin 'DC-GND'
5.Remove paddle card from position 01A-A2A3 (voltage divider card).

Is the resistance measured between both pins higher than 500 ohm?
Y N

008
Suspect short circuit to DC-GND on board 01A-A2.
Make visual inspection for bent or broken pins.
If no error detected, replace board 01A-A2.
Go to Page 6, Step 039, Entry Point Z.

009
Insert the voltage divider card into position 01A-A2A3.

Is the resistance measured by your CE-meter higher than 500 ohm?
Y N

010
1. Replace voltage divider card in position 01A-A2A3.
2. Insert PC-sense cards 1 and 2 into positions 01A-A2D2 and 01A-A2C2.
3. Reconnect voltage connector to 01A-A2B2-A14.

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

011
1. Replace BPC-card which was previously removed from position 01A-A2B2.
2. Insert all previously removed cards and reconnect all connectors.

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

012
1. Press power-off switch.
2. Reconnect connector 01A-A2B5-E01.
3. Disconnect connector 01A-C2B3-A01 '+12V PS104 to 01A-A2 PC' (ALD-YC871)
4. Press power-on switch.

Is PS104-CP06 tripped?
Y N

013
1. Press power-off switch.
2. Check and repair or replace wiring from 01A-C2B3-A01 to 01A-A2B5-E01

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

014
1. Press power-off switch.
2. Disconnect connector 01A-C2B3-E14 '+12V PS104 to 01A-C2 B/J UC' (ALD-YC871)
3. Switch PS104-CP06 on.
4. Press power-on switch.

Is PS104-CP06 tripped?
Y N

015
1. Press power-off switch.
2. Reconnect connector 01A-C2B3-E14.
3. Remove all cards from board 01A-C2 columns B to J.
4. Press power-on switch.

Is PS104-CP06 tripped?
Y N

016
Suspect a faulty card on board 01A-C2 col. B to J.
Isolate the faulty card by inserting the removed cards step by step. After each card plugged in press the power on switch. The card which was inserted prior to tripping of PS104-CP06 must be replaced.
Note:
After each try press the power off key and check for any tripped CP of PS104.

Reconnect connector 01A-C2B3-A01.

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

017
1. Press power-off switch.
2. Switch PS104-CP06 on.
3. Replace board 01A-C2.

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

018
1. Press power-off switch.
2. Disconnect the small connector from 01A-B1L3-A14/B14/D14. '+12V PS104 to 01A-B1 PU/BSM' (ALD-YC841)
3. Press power-on switch.

Is PS104-CP06 tripped?
Y N

019
1.Press power-off switch.
2.Remove PU control store card from 01A-B1D2.
3.Press power-on switch.

Is PS104-CP06 tripped?
Y N

020
1.Press power-off switch.
2.Replace PU control store card 01A-B1D2.
Go to Page 6, Step 039, Entry Point Z.

021
1.Press power-off switch.
2.Disconnect paddle card from 01A-A2A2. '(Voltage dividers)' (ALD-YB241)
3.Press power-on switch.

Is PS104-CP06 tripped?
Y N

022
Voltage divider card in pos. 01A-A2A2 is defective.
Replace the paddle card 01A-A2A2.
Go to Page 6, Step 039, Entry Point Z.

023
1.Press power-off switch.
2.Reconnect paddle card to 01A-A2A2.
3.Disconnect cable connector 01A-A2ZC. (ALD-YB233)
4.Connect your CE-meter (range ohm x1) to 01A-A2F6-D04 (use the female cable connector) '+12V sense PS104 01A-B1 A48' (ALD-YB233)
and to 01A-A2F6-E04 (female connector) 'DC-GND'

Is the resistance less than 10 ohm?
Y N

M N

024
Suspect defective voltage divider card in 01A-A2A2. (ALD-YB241)
Replace paddle card 01A-A2A2.
Go to Page 6, Step 039, Entry Point Z.

025
Do not disconnect your CE meter.
Disconnect sense cable from 01A-B1L4.

Is the measured resistance still less than 10 ohm?
Y N

026
Suspect short circuit on board 01A-B1.
Replace board 01A-B1.
Go to Page 6, Step 039, Entry Point Z.

027
The sense cable has a short circuit to DC-GND.
Replace the sense cable from 01A-B1L4 to 01A-A2ZC
Go to Page 6, Step 039, Entry Point Z.

028
1.Press power-off switch.
2.Check and repair or replace wiring from connector PS104-06 (ALD-YA451) to board 01A-C2B3-E14 (ALD-YC871).
3.Switch PS104-CP06 on.
Go to Page 6, Step 039, Entry Point Z.

029
1.Press power-off switch.
2.Disconnect connector PS104-07.
3.Press power-on switch.

Is PS104-CP06 tripped?
Y N

6 5
P Q

030
1.Press power-off switch.
2.Reconnect connector PS104-07.
3.Disconnect 01A-A1B4-A14 and '+12V PS104 to 01A-A1 CD ATT'
(ALD-YC821)
01A-A1B5-E01.
'DC-GND'
4.Press power-on switch.

Is PS104-CP03 tripped?
Y N

031
1.Press power-off switch.
2.Reconnect 01A-A1B4-A14 and 01A-A1B5-E01
'+12V PS104 to 01A-A1 CD ATT'
(ALD-YC821)
3.Disconnect 01A-A1G6-C04
'+12V sense PS104 01A-A1 A13'
(ALD-YC821)
4.Press power-on switch.

Is PS104-CP06 tripped?
Y N

032
1.Press power-off switch.
2.Reconnect 01A-A1G6-C04
'+12V PS104 to 01A-A1 CD ATT'
(ALD-YC821)
3.Disconnect paddle card from 01A-A2A4
'(Voltage dividers)'
(ALD-YB243)
4.Press power-on switch.

Is PS104-CP06 tripped?
Y N

033
1.Press power-off switch.
2.Reconnect paddle card to 01A-A2A4.
(ALD-YC821)
3.Remove PC sense card 2 from 01A-A2C2.
4.Press power-on switch.

Is PS104-CP06 tripped?
Y N

034
1.Press power-off switch.
2.Replace PC sense card 2 in position 01A-A2C2.
Go to Page 6, Step 039, Entry Point Z.

035
Suspect sense wiring error.
1.Press power-off switch.
2.Replace voltage divider card with sense cable in position 01A-A2A4.
If the problem is not solved, replace board 01A-A2.
3.Switch PS104-CP06 on.
Go to Page 6, Step 039, Entry Point Z.

036
1.Press power-off switch.
2.Replace sense cable with voltage divider paddle card in position 01A-A2A4.
3.Switch PS104-CP06 on.
Go to Page 6, Step 039, Entry Point Z.

037

Suspect a faulty card on board 01A-A1 column F to H.

1. Press power-off switch.
2. Remove cards from column F to H.
3. Switch PS104-CP06 on.
4. Isolate the faulty card by inserting the removed cards step by step. After each card plugged in, press the power on switch and check if PS104-CP06 is tripped. The card which was inserted prior to tripping of PS104-CP06 must be replaced.

Note:
Cards are to be plugged only with machine power off.

Go to Step 039, Entry Point Z.

038

1. Press power-off switch.
2. Check and repair or replace wiring from PS104-07-007 and PS104-07-008 (ALD-YA451) to 01A-A1B4-A14 and 01A-A1B5-E01 (ALD-YC821) '+12V PS104 to 01A-A1 CD ATT'
3. Switch PS104-CP06 on.

Go to Step 039, Entry Point Z.

039

1. Press power off key.
2. Replace PS104.
3. Reconnect all connectors of PS104.

(Entry Point Z)

4. Reinstall all removed cards and reconnect all disconnected connectors.

Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001
0200	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	021	0204	A

001
Symptom:
PS104-CP04 tripped.
(-12V PS104 to 01A-A2
and to 01A-C2 CA
and to 01A-B2 ACA)

	Suspected errors or FRU's (including intermittent errors)
1	-12VDC distribution to boards 01A-A2, 01A-B2 and 01A-C2.
2	Load fault on 01A-A2,B2,C2.
3	A32,A64,A43 sense wiring.
4	PS104.

(Entry Point A)

1. Press power-off key.
2. Disconnect connector PS104-05 (ALD-YA451)
3. Switch on PS104-CP04.
4. Press power-on switch.

Is PS104-CP04 tripped?

Y N

4 2
A B

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002
1.Press power-off key.
2.Reconnected connector PS104-05.
(ALD-YA451)
3.Disconnect voltage connector
01A-A2B3-E01
'-12V PS104 to 01A-A2 PC'
(ALD-YC831)
4.Switch all CP's of PS104 on.
5.Press power-on switch.

Is PS104-CP04 tripped?
Y N

003
1.Press power-off key.
2.Reconnect voltage connector
01A-A2B3-E01
(ALD-YC831)

Is CA with not more than 3 lines installed in board 01A-C2?
Y N

004
1.Remove BPC card from 01A-A2B2 and PC-sense cards from positions 01A-A2D2 and 01A-A2C2.
2.Press power-on switch.

Is PS104-CP04 tripped?
Y N

005
1.Press power-off key.
2.Reinstall previously removed cards step by step. Retry power-on after each step. Replace failing card which was installed prior to tripping of PS104-CP04.
Go to Page 4, Step 021, Entry Point Z.

006
(Entry Point AA)

1.Press power-off key.
2.Remove voltage divider card from position 01A-A2A3 and voltage connector from 01A-A2B3-E01.
3.Connect CE-meter (range ohm X10) to
01A-A2B3-E01
'-12V PS104 to 01A-A2 PC'
(ALD-YC831)
and to any D08 pin.

Is the measured resistance higher than 500 ohm?
Y N

007
There is a short circuit between ground and the -12V wiring on board 01A-A2. Repair wiring or replace cable or board 01A-A2.
Go to Page 4, Step 021, Entry Point Z.

008
Replace voltage divider card with cable in position 01A-A2A3.
Go to Page 4, Step 021, Entry Point Z.

009
1.Press power-off key.
2.Disconnect voltage connector
01A-A2W4-E14
(ALD-YC831)
'-12V PS104 to 01A-C2 K/W CA'
3.Press power-on switch.

Is PS104-CP04 tripped?
Y N

010
1.Press power-off key.
2.Reconnect connector 01A-A2W4-E14

Is ACA (auto call adapter) installed in board 01A-B2?
Y N

011
1.Press power-off key.
2.Disconnect -12V sense wiring from 01A-C2W3-A01
3.Press power-on switch.

Is PS104-CP04 tripped?
Y N

012
1.Press power-off key.
2.Check and repair or replace sense wiring with paddle card from 01A-C2W3-A01 (ALD-YC871) to 01A-A2A3 (ALD-YB241)
Go to Page 4, Step 021, Entry Point Z.

013
(Entry Point AC)

Suspect overload or short circuit on board 01A-C2 CA.

(Entry Point AB)

1.Press power-off key.
2.Remove all cards from board and press power on switch. If PS104-CP04 trips, check cabling to failing board and check board for bent broken pins. If no error detected, replace board.
3.If PS104-CP04 was not tripped in step 2 of this procedure, suspect faulty card on board. Isolate faulty card by inserting cards step by step. After each card plugged in, press power on switch. The card which
(Step 013 continues)

(Step 013 continued)
was inserted prior to tripping of PS104-CP04 must be replaced.
NOTE:
After each try press power-off key, and check if any CP of PS104 is tripped.
Go to Page 4, Step 021, Entry Point Z.

014
1.Disconnect connector 01A-C2B5-E01 '-12V PS1045 to 01A-B2 ACA' (ALD-YC871)
2.Press power-on switch.

Is PS104-CP04 tripped?
Y N

015
1.Press power-off key.
2.Reconnect 01A-C2B5-E01
3.Disconnect -12V sense wiring from 01A-B2B3-E01.
4.Press power-on switch.

Is PS104-CP04 tripped?
Y N

016
1.Press power-off key.
2.Check and repair or replace sense wiring with paddle card from 01A-B2B3-E01 (ALD-YC851) to 01A-A2A2 (ALD-YB241)
Go to Page 4, Step 021, Entry Point Z.

017
Suspect short circuit on cable from 01A-C2B5-E01 (ALD-YC871) to 01A-B2W5-E01 (ALD-YC851) '-12V PS1045 to 01A-B2 ACA' or suspect overload or short circuit on board 01A-B2.
Go to Step 013, Entry Point AB.

018
Go to Page 3, Step 013, Entry Point AC.

019
Suspect overload or short circuit on board 01A-A2.
Go to Page 3, Step 013, Entry Point AB.

020
1.Press power-off key.
2.Check and repair or replace cable from connector PS104-05 to 01A-A2B3-E01
Go to Step 021, Entry Point Z.

021
1.Switch PCC-CB01 off.
2.Replace PS104

(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
F7AA	A	1	001
F7A4	A	1	001
F7A5	A	1	001
F7A8	A	1	001
F7F4	A	1	001
F79B	A	1	001
02XX	A	1	001
0200	A	1	001
0220	A	1	001
0231	A	1	001
0232	A	1	001
0233	A	1	001
0234	A	1	001
0235	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0200	A
2	008	0204	A
3	018	0210	A
3	017	0213	A

001
SYMPTOM:
TR104 OR PS104 POWER PROBLEM

	Suspected errors or FRUs (including intermittent errors)
1	Primary fuse TR104-F01.
2	Connector problem of PS104-08 or PS104-09.
3	AC distribution from PCC-box to TR104.
4	TR104.
5	PS104.
6	TR104 AC input jumpering (see ALD-YA021).

(Entry Point A)

1.Press power-off key.
2.Switch PCC-CB01 off.
(Step 001 continues)

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(Step 001 continued)
3.Check primary fuse of TR104.

Is the fuse TR104-F01 ok?
Y N

002
Was fuse TR104-F01 replaced before?
Y N

003
1.Replace fuse TR104-F01.
2.Switch PCC-CB01 on.
3.Press and hold the power-on switch.

Is the *base power on* indicator switched on as long as the power on switch is pressed?
Y N

004
Check fuse TR104-F01.

Is the fuse TR104-F01 blown again?
Y N

005
Go To Map 0200, Entry Point A.

006
Go to Step 010, Entry Point C.

007
Is any reference code displayed?
Y N

008
(Entry Point Z)

Ensure that the PCC-box is closed.

Go To Map 0204, Entry Point A.

009
Go to corresponding MAP.

010
(Entry Point C)

1.Press power-off key.
2.Disconnect connector PS104-09 (ALD-YA451)
3.Jumper PS104-09-005 and PS104-09-011 '(TR104 thermal switch)'
4.Replace TR104-F01.
5.Press power-on switch.

Is the fuse TR104-F01 blown again?
Y N

011
(Entry Point B)

1.Press power-off switch.
2.Replace PS104.
Go to Step 008, Entry Point Z.

012
1.Press power-off switch.
2.Remove jumper from connector PS104-09.
3.Reconnect connectors PS104-09 and PS104-09.
4.Disconnect connector PS104-08. (ALD-YA451)
5.Replace fuse TR104-F01.
6.Press power-on switch.

Is fuse TR104-F01 blown?
Y N

013
Go to Step 011, Entry Point B.

014
1.Press power-off key.
2.Check cables from TR104 to PS104 for any damage. If no error detected, replace TR104.
Go to Step 008, Entry Point Z.

015

```
|-------------------------|
| 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 connect CE-meter (range 500VAC)
to connector PCC-04-001
and to connector PCC-04-004.
(ALD-YA331)
5.Switch PCC-CB01 on.
6.Observe meter and press power-on switch.

Is line voltage present?

Y N

016
Is PCC-K04 picked?

Y N

017
Close PCC-box.

Go To Map 0213, Entry Point A.

018
Close PCC-box.

Go To Map 0210, Entry Point A.

POWER PROBLEM

019

1. Press power-off key.
2. Disconnect connectors PS104-02, PS104-03, PS104-04, PS104-05, PS104-06, PS104-07 and all FDS cables from PS104-TB01 and PS104-TB02 (ALD YA451).
3. Connect CE-meter (range 50VAC) according to following table and check for correct AC-voltages from TR104.
4. Press and hold the power-on switch for each measurement.

NOTE:
Do not disconnect connectors PS104-08 and PS104-09.

Lead 1	Lead 2	Voltage
PS104-08-003	PS104-08-001	5.4VAC
PS104-08-006	PS104-08-004	5.4VAC
PS104-09-012	PS104-09-014	8.9VAC
PS104-09-015	PS104-09-014	8.9VAC
PS104-09-001	PS104-09-009	12.6VAC
PS104-09-003	PS104-09-009	12.6VAC
PS104-09-002	PS104-09-007	5.4VAC
PS104-09-002	PS104-09-004	5.4VAC
PS104-09-006	PS104-09-010	25.2VAC
PS104-09-006	PS104-09-013	25.2VAC

Are all voltages present within a tolerance limit of +20% / -10% ?

Y N

020

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Check transformer TR104-TB01 for correct connection according to customer's line voltage.
'Power line PCC to TR104'
(ALD-YA451)
Refer to line voltage conversion charts in ALD.
(ALD-YA021)

Is the line voltage connection correct for customer's line voltage?

Y N

021

1.Change line voltage connection according to customer's line voltage.
(ALD-YA451)
Refer to line voltage conversion charts in ALD.
(ALD-YA021)
Go to Page 2, Step 008, Entry Point Z.

022

1.Check that screws of transformer TR104-TB01 are tight (if present).
2.Check connector PCC-04 for correct seating.
3.Switch PCC-CB01 on.
4.Press power-on switch.

Is your power problem solved?

Y N

023

1. Press POWER-OFF key.
2. Disconnect connector PS104-08.
3. Do not disconnect connector PS104-09.
4. Connect CE-meter (range 50VAC) according to following table and check for correct AC-Voltage from TR104 (use the cable connector for the measurements).
5. Press and hold the POWER-ON switch for each measurement.

Lead 1	Lead 2	Voltage
PS104-08-003	PS104-08-001	5.4VAC
PS104-08-006	PS104-08-004	5.4VAC
PS104-09-012	PS104-09-014	8.9VAC
PS104-09-001	PS104-09-009	12.6VAC
PS104-09-002	PS104-09-007	5.4VAC
PS104-09-006	PS104-09-010	25.2VAC

Are all voltages present within a tolerance limit of +20% / -10% ?

Y N

024

1. Reconnect connector PS104-08.
2. Disconnect connector PS104-09.
3. Connect CE-meter (range 50VAC) according to following table and check for correct AC-Voltage from TR104 (use the cable connectors for the measurements).
4. Press and hold the POWER-ON switch for each measurement.

Lead 1	Lead 2	Voltage
PS104-08-003	PS104-08-001	5.4VAC
PS104-09-012	PS104-09-014	8.9VAC
PS104-09-015	PS104-09-014	8.9VAC
PS104-09-001	PS104-09-009	12.6VAC
PS104-09-003	PS104-09-009	12.6VAC
PS104-09-002	PS104-09-007	5.4VAC
PS104-09-002	PS104-09-004	5.4VAC
PS104-09-006	PS104-09-010	25.2VAC
PS104-09-006	PS104-09-013	25.2VAC

Are all voltages present within a tolerance limit of +20% / -10% ?

Y N

025

1. Switch PCC-CB01 off.
2. Replace TR104.

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

026

(Entry Point D)

1. Switch PCC-CB01 off.
2. Replace PS104.

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

027
Go to Page 2, Step 011, Entry Point B.

028
Go to Page 2, Step 008, Entry Point Z.

029

1. Ensure that all CP's of PS104 are on.
2. Connect CE-meter (range 50VDC) according to following table and check for correct DC-voltages from PS104.

plus	minus	DC Voltage
PS104-TB02-001	PS104-TB01-001	+5.1
PS104-TB02-002	PS104-TB01-002	+5.1
PS104-02-001	PS104-02-002	+5.1
PS104-04-002	PS104-04-003	+5.1
PS104-04-005	PS104-04-006	+5.1
PS104-03-001	PS104-03-002	+5.1
PS104-05-008	PS104-05-012	+8.5
PS104-02-005	PS104-02-004	-5.1
PS104-03-005	PS104-03-004	-5.1
PS104-05-002	PS104-05-001	-5.1
PS104-07-002	PS104-07-001	-5.1

(Step 029 continues)

(Step 029 continued)

plus	minus	DC Voltage
PS104-05-011	PS104-05-004	-12
PS104-04-002	PS104-04-003	+5.1
PS104-05-007	PS104-05-009	+8.5
PS104-06-007	PS104-06-004	+12
PS104-06-008	PS104-06-005	+12
PS104-07-007	PS104-07-005	+12

3. Reconnect connector PS104-05 and measure the following voltages.

plus	minus	DC Voltage
PS104-02-006	PS104-02-003	+24
PS104-03-006	PS104-03-003	+24
PS104-05-003	PS104-05-006	+24
PS104-04-001	PS104-04-004	+24

Are all voltages present within a tolerance limit of +15% / -10% ?

Y N

030
1.Press power-off key.
2.Replace PS104.
Go to Page 2, Step 008, Entry Point Z.

031
Suspect load fault or intermittent error. Retry power on and go to MAP according to displayed reference code.

Power problem

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7AA	A	2	002
F79E	A	2	002
02XX	A	2	002

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	025	F7AA	A
3	012	F7A6	A
3	015	F7B4	A
3	014	F79B	A
3	010	F79E	A
5	023	0204	A
2	003	0275	A

001

Symptom:
PS104 -5.1V at more than one sense point failing A01, A33, A45, A63.

Suspected errors or FRUs (including intermittent errors)	
1	Connector problem PS104-09 or PS104-07 or PS104-05.
2	TR104.
3	PS104.
4	-5.1VDC distribution from PS104-05 to 01A-A2.
5	Load fault on card on boards 01A-A2, 01A-C2, 01A-B1, A01-A1.
6	Noise on -5.1V from PS104.

W A R N I N G

Components can be damaged if -5.1V is removed while a positive voltage is still present.

Go to Page 2, Step 002, Entry Point A.

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002

(Entry Point A)

1. Switch to CE-Mode at CE panel.
2. Press power-on switch and wait approximately one minute.
3. Run voltage measurement program.

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

003
Go To Map 0275, Entry Point A.

004
Are more than one voltage out of tolerance?
Y N

005
Is address 97 bit 5 failing?
Y N

006
Is dddress 95 bit 1 failing?
Y N

007
Is address 97 bit 6 failing?
Y N

3 3 3 3 3
A B C D E

008
Is address 97 bit 1 failing?
Y N

009
Go to Page 2, Step 002, Entry Point A.

010
Go To Map F79E, Entry Point A.

011
Go to Page 5, Step 025, Entry Point E.

012
Go To Map F7A6, Entry Point A.

013
Is PS105 installed?
Y N

014
Go To Map F79B, Entry Point A.

015
Go To Map F7B4, Entry Point A.

016
Connect CE-meter (range 15VAC) to connector
PS104-09-004
'5.4VAC'
and to connector PS104-09-002
'Center'
(ALD-YA451)

Is 5.4VAC present?
Y N

017
(Entry Point C)

1.Press power-off key.
2.Check input line connection to TR104 according to customer's 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 2, Step 002, Entry Point A.

018
Connect CE-meter (range 15VAC) to connector
PS104-09-007
'5.4VAC'
and to connector PS104-09-002
'Center'
(ALD-YA451)

Is 5.4VAC present?
Y N

019
Go to Step 017, Entry Point C.

020
Connect CE-meter (range 15VDC)
-lead to connector PS104-05-001
'-5.1V PS104 to 01A-A2 MSSS'
+lead to PS104-05-002
'DC-GND'
(ALD-YA451)

Is -5.1VDC present?
Y N

021

Suspect a faulty card on the following listed boards:
01A-C2 col. K/W
(only if no PS105 inst.)
01A-C2 col. B/J
01A-A1
01A-B1
01A-A2
Isolate the faulty card(s) by removing or replacing cards step by step according to the following table.

TABLE A

CARDS WHICH CAN BE REMOVED FOR TEST:
1.All cards in 01A-C2 col. L to W.
2.All cards on board 01A-A1.
3.01A-A2W2 and 01A-A2X4.

TABLE B

CARDS WHICH MUST BE REPLACED FOR TEST
(the listed cards are part of the MSSS)
1.01A-C2 col. B to F.
2.01A-A2K2
01A-A2N2
01A-A2Q2
01A-A2R2

Is your problem solved?
Y N

022
(Entry Point D)

Suspect noise or excessive ripple on the -5.1V net.
1.Press power-off switch.
2.Replace PS104.
Go to Page 5, Step 023, Entry Point Z.

023
(Entry Point Z)

Go To Map 0204, Entry Point A.

024
1. Press power-off switch.
2. Connect CE-meter (range 15VDC) to
connector PS104-C7-001 (-)
'5.1V PS104 to 01A-A1 CD ATT'
(ALD-YA451)
and to PS104-07-002
'DC-GND'
Note:
Connector PS104-07 must not be
disconnected for the measurement.
3. Observe meter and press power-on switch.

Is 5.1VDC present?
Y N

025
(Entry Point E)

Go To Map F7AA, Entry Point A.

026
Go to Page 4, Step 022, Entry Point D.

Power problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7E2	A	1	001
F7E5	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	010	F7E2	A
2	007	0200	A
2	011	0204	A

001
Symptom:
SPI-panel check procedure.

Note:
Connector Numbering
The first digit of the connector numbering refers to the SPI panel position while the second digit identifies the connector location on the SPI panel.
Example 1:
Connector 29 is the connector number 9 on SPI panel 2.
Example 2:
Connector 10 is the connector number 0 on SPI panel 1.
On the SPI panel the connectors are labeled 0 through 9.
Connector locations and SPI-panel interconnections are shown in book Maintenance Information POWER in Vol.16.

(Entry Point A)

Are three SPI-panels installed in your machine?
Y N

002
Are two SPI-panels installed in your machine?
Y N

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003

1. Plug connector SPI-99 of the SPI end jumper into connector SPI-19 and connector SPI-98 into the first unused SPI interface connector position.
2. Press power-on switch and wait approximately one minute.

Is the "power complete" indicator switched on?

Y N

004
(Entry Point F)

1. Press power-off key.
2. Disconnect all SPI interface cables from connector SPI-11 to SPI-18.
3. Plug connector SPI-98 into connector SPI-11.
4. Press power-on key and wait approximately one minute.

Is the "power complete" indicator switched on?

Y N

005
Is reference code F7AE8001 or F7AE8101 displayed?

Y N

006
(Entry Point C)

Is any other referene code displayed?

Y N

007
Reinstall all previously disconnected cables.
Go To Map 0200, Entry Point A.

008
Reinstal all previoulsy disconnected cables.
Go to corresponding Map.

009

1. Disconnet connector SPI-98 from connector SPI-11.
   Connect CE-meter (range 50VDC)
   +lead to connector SPI-10-003
   '+Syst Source to P10'
   (ALD-YA731)
   -lead to connector SPI-10-002.
   'DC GND'

Is +24VDC +/-15% present?

Y N

010
Reconnect all previously disconnected cables.
Go To Map F7E2, Entry Point A.

011
(Entry Point B)

1. Press power-off key.
2. Replace SPI panel 10.
3. Reconnect all disconneted cables.

(Entry Point Z)

Go To Map 0204, Entry Point A.

012
1. Disconnect jumper assembly from connector SPI-11 and SPI-19.
2. Connect CE meter (range Ohmx1) to connector SPI-11-005 and SPI-11-006.
'+CU11 power hold 'and
'+CU11 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

013
Go to Page 2, Step 011, Entry Point B.

014
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper pin 003 and pin 004 of connector SPI-11 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

015
Go to Page 2, Step 011, Entry Point B.

016
Connect CE-meter (range 50VDC)
+lead to connector SPI-12-003
'+CU12 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

017
Go to Page 2, Step 011, Entry Point B.

018
Connect CE-meter (range Ohm x1) to connector SPI-12-002 and SPI-12-006
'+CU12 IPO Control' and
'+CU12 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

019
Go to Page 2, Step 011, Entry Point B.

020
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper SPI-12-003 and SPI-12-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

021
Go to Page 2, Step 011, Entry Point B.

022
Connect CE-meter (range 50VDC)
+lead to connector SPI-13-003
'+CU13 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

023
Go to Page 2, Step 011, Entry Point B.

024
Connect CE-meter (range Ohm x1) to connector
SPI-13-002 and SPI-13-006
'+CU13 IPO Control' and
'+CU13 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

025
Go to Page 2, Step 011, Entry Point B.

026
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-13-003 and SPI-13-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

027
Go to Page 2, Step 011, Entry Point B.

028
Connect CE-meter (range 50VDC)
+lead to connector SPI-14-003
'+CU14 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

029
Go to Page 2, Step 011, Entry Point B.

030
Connect CE-meter (range Ohm x1) to connector
SPI-14-002 and SPI-14-006
'+CU14 IPO Control' and
'+CU14 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

031
Go to Page 2, Step 011, Entry Point B.

032
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-14-003 and SPI-14-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

033
Go to Page 2, Step 011, Entry Point B.

034
Connect CE-meter (range 50VDC)
+lead to connector SPI-15-003
'+CU15 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

035
Go to Page 2, Step 011, Entry Point B.

036
Connect CE-meter (range Ohm x1) to connector
SPI-15-002 and SPI-15-006
'+CU15 IPO Control' and
'+CU15 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

037
Go to Page 2, Step 011, Entry Point B.

038
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-15-003 and SPI-15-004.

Is the measured resistance higher than 100 kiloohm?
Y N

039
Go to Page 2, Step 011, Entry Point B.

040
Connect CE-meter (range 50VDC)
+lead to connector SPI-16-003
'+CU15 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

041
Go to Page 2, Step 011, Entry Point B.

042
Connect CE-meter (range Ohm x1) to connector
SPI-16-002 and SPI-16-006
'+CU16 IPO Control' and
'+CU16 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

043
Go to Page 2, Step 011, Entry Point B.

044
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-16-003 and SPI-16-004.

Is the measured resistance higher than 100 kiloohm?
Y N

045
Go to Page 2, Step 011, Entry Point B.

046
Connect CE-meter (range 50VDC)
+lead to connector SPI-17-003
'+CU17 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

047
Go to Page 2, Step 011, Entry Point B.

048
Connect CE-meter (range Ohm x1) to connector
SPI-17-002 and SPI-17-006
'+CU17 IPO Control' and
'+CU17 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

049
Go to Page 2, Step 011, Entry Point B.

050
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-17-003 and SPI-17-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

051
Go to Page 2, Step 011, Entry Point B.

052
Connect CE-meter (range 50VDC)
+lead to connector SPI-18-003
'+CU18 System source'
(ALD-YA731)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

053
Go to Page 2, Step 011, Entry Point B.

054
Connect CE-meter (range Ohm x1) to connector
SPI-18-002 and SPI-18-006
'+CU18 IPO Control' and
'+CU18 power pick'
(ALD-YA731)

Is the measured resistance approximately zero ohm?
Y N

055
Go to Page 2, Step 011, Entry Point B.

056
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-18-003 and SPI-18-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

057
Go to Page 2, Step 011, Entry Point B.

058
Connect CE-meter (range 50VDC)
+lead to connector SPI-19-003
'+Syst source to P20'
(ALD-YA731)
-lead to connector SPI-19-002
'DC-GND.'

Is +24VDC +/-15% present?
Y N

059
Go to Page 2, Step 011, Entry Point B.

060
Connect CE-meter (range 50VDC)
+lead to connector SPI-19-003
'+Syst source to P20'
(ALD-YA731)
-lead to connector SPI-19-002
'DC-GND.'

Is +24VDC +/-15% present?
Y N

061
Go to Page 2, Step 011, Entry Point B.

062
Connect CE-meter (range Ohm x1) to connector SPI-19-006 and SPI-19-005
'+CU21 unit source out' and
'+CU21 unit source in.'
(ALD-YA731)

Is the resistance approximately zero ohm?
Y N

063
Go to Page 2, Step 011, Entry Point B.

064
(Entry Point E)

The SPI-panel is ok.
Suspect a failing control unit or a defective SPI interface cable.
Isolate the failing unit by connecting the control units step by step to the SPI panel(s). The SPI end jumper connector SPI-98 must always be connected to the first unused interface connector position.
Try power on after each step and wait approximately one minute.
The control unit which does not generate "power complete" is failing and must be repaired according to the maintenance concept of those units.
Reconnect all previously disconnected cables.
Go to Page 2, Step 011, Entry Point Z.

065
There is no SPI problem.
Go to Page 2, Step 011, Entry Point Z.

066
1. Plug connector SPI-99 of the SPI end jumper into connector SPI-29 and connector SPI-98 in the first unused SPI interface connector position. If all connectors SPI-21 to SPI-28 are used, the connector SPI-98 keeps unused.
2. Press power-on key and wait approximately one minute.

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

067
1. Press power-off key.
2. Disconnect SPI interface cable from connector SPI-21.
3. Plug connector SPI-98 of the SPI end jumper into connector position SPI-21.
4. Press power-on key and wait approximately one minute.

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

068
Is reference code F7AE8001 or F7AE8101 displayed?
Y N

069
Go to Page 2, Step 006, Entry Point C.

070
1. Disconnect SPI interface cable from connector SPI-18.
2. Plug connector SPI-98 of the SPI end jumper into connector SPI-18.

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

071
Go to Page 2, Step 004, Entry Point F.

072
Disconnect cable from connector SPI-19.
Connect CE-meter (range 50VDC)
+lead to connector SPI-19-003
'+Syst source to P20'
(ALD-YA731)
-led to connector SPI-19-002
'DC-GND'

Is +24VDC +/-15% present?
Y N

073
Go to Page 2, Step 011, Entry Point B.

074
Connect CE-meter (range Ohm x1) to connector SPI-19-006 and SPI-19-005
'+CU21 Unit source out' and
'+CU21 Unit source in'
(ALD-YA731)

Is the resistance approximately zero ohm?
Y N

075
Go to Page 2, Step 011, Entry Point B.

076
1. Reconnect the disconnected cable to connector SPI-19.
2. Disconnect cable from connector SPI-20.
Connect CE-meter (range 50VDC)
+lead to the disconnected cable connector SPI-20-003
'+Syst source to P20'
(ALD-YA741)
-lead to the disconnected cable connector SPI-20-002
'DC-GND'

Are 24VDC present?
Y N

077
(Entry Point D)

1. Replace cable from connector SPI-19 to connector SPI-20.
2. Reconnect all disconnected cables.

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

078
Connect CE-meter (range Ohm x1) to the disconnected cable connector SPI-20-005 and SPI-20-006.
'+CU21 unit source in' and
'+CU21 unit source out'
(ALD-YA741)

Is the resistance approximately zero ohm?
Y N

079
Go to Step 077, Entry Point D.

080

1. Press power-off key.
2. Ensure that continuity exists between the diconnected cable connector SPI-20-004 and SPI-19-004.

If no error detected, suspect a connector problem of connector SPI-19 to SPI-20.
After repairs reconnect all disconnected cables.
Go to Page 2, Step 011, Entry Point Z.

081

1. Press power-off key.
2. Disconnect connector SPI-28 from connector position SPI-21.

(Entry Point H)

3. Disconnect all SPI interface cables from connectors SPI-21 to SPI-28.
4. Press power-on key and wait approximately one minute.
5. Connect CE-meter (range Ohm x1) to connector SPI-21-002 and SPI-21-006 '+CU21 IPO Control' and '+CU21 power pick' (ALD-YA741).

Is the measured resistance approximately zero ohm?

Y N

082

(Entry Point G)

1. Press power-off key.
2. Recplace the SPI pannel 20.
3. Reconnect all disconnected cables.

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

083

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-21-003 and SPI-21-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

084

Go to Step 082, Entry Point G.

085

Connect CE-meter (range 50VDC)
+lead to connector SPI-22-003
'+CU22 System source'
(ALD-YA741)
-lead to any DC-GND.

Is +24VDC +/-15% present?

Y N

086

Go to Step 082, Entry Point G.

087

Connect CE-meter (range Ohm x1) to connector SPI-22-002 and SPI-22-006
'+CU22 IPO Control' and
'+CU22 power pick'
(ALD-YA741)

Is the measured resistance approximately zero ohm?

Y N

088

Go to Step 082, Entry Point G.

089
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-22-003 and SPI-22-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

090
Go to Page 9, Step 082, Entry Point G.

091
Connect CE-meter (range 50VDC)
+lead to connector SPI-23-003
'+CU23 System source'
(ALD-YA741)
-lead to any DC GND.

Is +24VDC +/-15% present?
Y N

092
Go to Page 9, Step 082, Entry Point G.

093
Connect CE-meter (range Ohm x1) to connector
SPI-23-002 and SPI-23-006
'+CU23 IPO Control' and
'+CU23 power pick'
(ALD-YA741)

Is the measured resistance approximately zero ohm?
Y N

094
Go to Page 9, Step 082, Entry Point G.

095
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-23-003 and SPI-23-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

096
Go to Page 9, Step 082, Entry Point G.

097
Connect CE-meter (range50 VDC)
+lead to connector SPI-24-003
'+CU24 System source.'
(ALD-YA741)
-lead to any DC GND.

Is +24VDC +/-15% present?
Y N

098
Go to Page 9, Step 082, Entry Point G.

099
Connect CE-meter (range Ohm x1) to connector
SPI-24-002 and SPI-24-006
'+CU24 IPO Control' and
'+CU24 power pick'
(ALD-YA741)

Is the measured resistance approximately zero ohm?
Y N

100
Go to Page 9, Step 082, Entry Point G.

101
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-24-003 and SPI-24-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

102
Go to Page 9, Step 082, Entry Point G.

103
Connect CE-meter (range 50VDC)
+lead to connector SPI-25-003
'+CU25 System source'
(ALD-YA741)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

104
Go to Page 9, Step 082, Entry Point G.

105
Connect CE-meter (range Ohm x1) to connector SPI-25-002 and SPI-25-006
'+CU25 IPO Control' and
'+CU25 power pick'
(ALD-YA741)

Is the measured resistance approximately zero ohm?
Y N

106
Go to Page 9, Step 082, Entry Point G.

107
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-25-003 and SPI-25-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

108
Go to Page 9, Step 082, Entry Point G.

109
Connect CE-meter (range 50VDC)
+lead to connector SPI-26-003
'+CU26 System source'
(ALD-YA741)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

110
Go to Page 9, Step 082, Entry Point G.

111
Connect CE-meter (range Ohm x1) to connector SPI-26-002 and SPI-26-006
'+CU26 IPO Control' and
'+CU26 power pick'
(ALD-YA741)

Is the measured resistance approximately zero ohm?
Y N

112
Go to Page 9, Step 082, Entry Point G.

113

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-26-003 and SPI-26-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

114

Go to Page 9, Step 082, Entry Point G.

115

Connect CE-meter (range 50VDC)
+lead to connector SPI-27-003
'+CU27 System source'
(ALD-YA741)
-lead to any DC-GND.

Is +24VDC +/-15% present?

Y N

116

Go to Page 9, Step 082, Entry Point G.

117

Connect CE-meter (range Ohm x1) to connector SPI-27-002 and SPI-27-006
'+CU27 IPO Control' and
'+CU27 power pick'
(ALD-YA741)

Is the measured resistance approximately zero ohm?

Y N

118

Go to Page 9, Step 082, Entry Point G.

119

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-27-003 and SPI-27-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

120

Go to Page 9, Step 082, Entry Point G.

121

Connect CE-meter (range 50VDC)
+lead to connector SPI-28-003
'+CU28 System source'
(ALD-YA741)
-lead to any DC-GND.

Is +24VDC +/-15% present?

Y N

122

Go to Page 9, Step 082, Entry Point G.

123

Connect CE-meter (range 50VDC)
+lead to connector SPI-29-003
'+Syst Source to P30'
(ALD-YA741)
-lead to connector SPI-29-002
'DC-GND.

Is +24VDC +/-15% present?

Y N

124

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

125
Connect CE-meter (range Ohm x1) to connector SPI-29-006 and SPI-29-005 '+CU31 Unit source out' and '+CU31 Unit source in' (ALD-YA741).

Is the resistance approximately zero ohm?
Y N

126
Go to Page 2, Step 011, Entry Point B.

127
Go to Page 7, Step 064, Entry Point E.

128
There is no SPI problem.
Go to Page 2, Step 011, Entry Point Z.

129
1. Plug connector SPI-99 of the SPI and jumper connector SPI-39 and connector SPI-98 into the first unused SPI interface connector position. If all connectors SPI-31 to SPI-38 are used, the connector SPI-98 keeps unused.
2. Press power-on key and wait approximately one minute.

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

130
1. Press power-off key.
2. Disconnect SPI interface cable from connector SPI-31.
3. Plug connector SPI-98 into connector SPI-31.
4. Press power-on key and wait approximately one minute.

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

131
Is reference code F7AE8001 or F7AE8101 displayed?
Y N

132
Go to Page 2, Step 006, Entry Point C.

133
1. Press power-off key.
2. Disconnect SPI interface cable from connector SPI-21.
3. Plug connector SPI-98 into connector SPI-21.
4. Press power-on key and wait approximately one minute.

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

134
Is reference code F7AE8001 or F7AE8101 displayed?
Y N

135
Go to Page 2, Step 006, Entry Point C.

136
Go to Page 2, Step 004, Entry Point F.

137

1. Press power-off key.
2. Disconnect SPI interface cable from connector SPI-28.
3. Move connector SPI-98 from connector SPI-21 to connector SPI-28.
4. Reconnect SPI interface cable to connector SPI-21.
5. Press power-on key and wait approximately one minute.

Is the "power complete" indicator switched on?

Y N

138

1. Press power-off key.
2. Disconnect connector SPI-98 from connector SPI-28.

Go to Page 9, Step 081, Entry Point H.

139

1. Remove connector SPI-98 from connector SPI-28.
2. Plug the disconnected SPI interface cable to connector SPI-28.
3. Disconnect cable from connector SPI-29.
4. Connect CE-meter (range 50VDC)
   +lead to connector SPI-29-003
   '+Syst source to P30'
   (ALD-YA741)
   -lead to connector SPI-29-002
   'DC-GND'

Is +24VDC +/-15% present?

Y N

140

Go to Page 9, Step 082, Entry Point G.

141

Connect CE-meter (range Ohm x1) to connector SPI-29-006 and SPI-29-005
'+CU31 Unit source out' and
'+CU31 Unit source in'
(ALD-YA741)

Is the resistance approximately zero ohm?

Y N

142

Go to Page 9, Step 082, Entry Point G.

143

1. Reconnect the disconnected cable to connector SPI-29.
2. Disconnect cable from connector SPI-30.
   Connect CE-meter (range 50VDC)
   +lead to the disconnected cable connector SPI-30-003.
   '+Syst Source to P30'
   (ALD-YA751)
   -lead to the disconnected cable connector SPI-30-002
   'DC-GND'

Are 24VDC present?

Y N

144

(Entry Point L)

1. Replace cable from connector SPI-29 to connector SPI-30.
2. Reconnect all disconnected cables.

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

145
Connect CE-meter (range Ohm x1) to the disconnected cable connector SPI-30-005 and SPI-30-006.
'+CU31 unit source in' and
'+CU31 unit source out'
(ALD-YA751).

Is the resistance approximately zero ohm?
Y N

146
Go to Page 14, Step 144, Entry Point L.

147
1. Press power-off key.
2. Ensure that continuity exists between the disconnected cable connector SPI-30-004 and SPI-29-004.

If no error detected, suspect a connector problem of connector SPI-29 or SPI-30.
After repairs reconnect all disconnected cables.
Go to Page 2, Step 011, Entry Point Z.

148
(Entry Point K)

1. Press power-off key.
2. Disconnect connector SPI-98 from connector position SPI-31.
3. Disconnect all SPI interface cables from connectors SPI-31 to SPI-38.
4. Press power-on key and wait approximately one minute.
5. Connect CE-meter (range Ohm x1) to connector SPI-31-002 and SPI-31-006
'+CU31 IPO control 'and
'+CU31 power pick'
(ALD-YA751).

Is the measured resistance approximately zero ohm?
Y N

A A
L M

149
(Entry Point M)

1. Press power-off key.
2. Replace the SPI panel 30.
3. Reconnect all disconnected cables.

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

150
1. Do not disconnect your ohmmeter.
2. Use a wire from your tools and jumper connector SPI-31-003 and SPI-31-004 for a short time.

Is the measured resistance higher than 100 kohm?
Y N

151
Go to Step 149, Entry Point M.

152
Connect CE-meter (range 50VDC)
+lead to connector SPI-32-003
'+CU32 system source'
(ALD-YA751)
-lead to any DC-GND.

Is +24VDC +/-15% present?
Y N

153
Go to Step 149, Entry Point M.

154
Connect CE-meter (range Ohm x1) to connector SPI-32-002 and SPI-32-006
'+CU32 IPO Control' and
'+CU32 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?
Y N

155
Go to Page 15, Step 149, Entry Point M.

156
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-32-003 and SPI-32-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

157
Go to Page 15, Step 149, Entry Point M.

158
Connect CE-meter (range 50VDC)
+lead to connector SPI-33-003
'+CU33 Syst source'
(ALD-YA751)
-lead to any DC GND.

Is +24VDC +/-15% present?
Y N

159
Go to Page 15, Step 149, Entry Point M.

160
Connect CE-meter (range Ohm x1) to connector
SPI-33-002 and SPI-33-006
'+CU33 IPO Control' and
'+CU33 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?
Y N

161
Go to Page 15, Step 149, Entry Point M.

162
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-33-003 and SPI-33-004 for a short time.

Is the measured resistance higher than 100 kiloohm?
Y N

163
Go to Page 15, Step 149, Entry Point M.

164
Connect CE-meter (range 50VDC)
+lead to connector SPI-34-003
'+CU34 System source'
(ALD-YA751)
-lead to any DC GND.

Is +24VDC +/-15% present?
Y N

165
Go to Page 15, Step 149, Entry Point M.

166
Connect CE-meter (range Ohm x1) to connector
SPI-34-002 and SPI-34-006
'+CU34 IPO Control' and
'+CU34 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?
Y N

167
Go to Page 15, Step 149, Entry Point M.

168

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-34-003 and SPI-34-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

169
Go to Page 15, Step 149, Entry Point M.

170

Connect CE-meter (range 50VDC)
+lead to connector SPI-35-003
'+CU35 System source'
(ALD-YA751)
-lead to any DC GND.

Is +24VDC +/-15% present?

Y N

171
Go to Page 15, Step 149, Entry Point M.

172

Connect CE-meter (range Ohm x1) to connector SPI-35-002 and SPI-35-006
'+CU35 IPO Control' and
'+CU35 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?

Y N

173
Go to Page 15, Step 149, Entry Point M.

174

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-35-003 and SPI-35-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

175
Go to Page 15, Step 149, Entry Point M.

176

Connect CE-meter (range 50VDC)
+lead to connector SPI-36-003
'+CU36 System source'
(ALD-YA751)
-lead to any DC GND.

Is +24VDC +/-15% present?

Y N

177
Go to Page 15, Step 149, Entry Point M.

178

Connect CE-meter (range Ohm x1) to connector SPI-36-002 and SPI-36-006
'+CU36 IPO Control' and
'+CU36 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?

Y N

179
Go to Page 15, Step 149, Entry Point M.

180

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-36-003 and SPI-36-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

181

Go to Page 15, Step 149, Entry Point M.

182

Connect CE-meter (range 50VDC)
+lead to connector SPI-36-003
'+CU36 System source'
(ALD-YA751)
-lead to any DC GND.

Is +24VDC +/-15% present?

Y N

183

Go to Page 15, Step 149, Entry Point M.

184

Connect CE-meter (range Ohm x1) to connector SPI-37-002 and SPI-37-006
'+CU37 IPO Control' and
'+CU37 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?

Y N

185

Go to Page 15, Step 149, Entry Point M.

186

1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-37-003 and SPI-37-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

187

Go to Page 15, Step 149, Entry Point M.

188

Connect CE-meter (range 50VDC)
+lead to connector SPI-38-003
'+CU38 System source'
(ALD-YA751)
-lead to any DC GND.

Is +24VDC +/-15% present?

Y N

189

Go to Page 15, Step 149, Entry Point M.

190

Connect CE-meter (range Ohm x1) to connector SPI-38-002 and SPI-38-006
'+CU38 IPO Control' and
'+CU38 power pick'
(ALD-YA751)

Is the measured resistance approximately zero ohm?

Y N

191

Go to Page 15, Step 149, Entry Point M.

192
1. Do not disconnect your Ohmmeter.
2. Use a wire from your tools and jumper connector SPI-38-003 and SPI-38-004 for a short time.

Is the measured resistance higher than 100 kiloohm?

Y N

193
Go to Page 15, Step 149, Entry Point M.

194
Connect CE-meter (range 50VDC)
+lead to connector SPI-39-003
'+Syst source to P40'
(ALD-YA751)
-lead to any DC ground.

Is +24VDC +/-15% present?

Y N

195
Go to Page 15, Step 149, Entry Point M.

196
Do not disconnect connector SPI-99 from connector SPI-39.
Connect CE-meter (range 50VDC)
+lead to connector SPI-39-004
'-Power I/O incomplete'
(ALD-YA751)
-lead to connector SPI-39-002.
'DC-GND'.

Are 24VDC present?

Y N

A W A X

197
Press power-off key.
Suspect a connector problem of connector SPI-39 or connector SPI-99.
If no error detected, replace SPI end jumper (with connector SPI-98 and SPI-99) or SPI panel 30.
Reconnect all disconnected cables.
Go to Page 2, Step 011, Entry Point Z.

198
Suspect a connector problem of connector SPI-39.
If no error detected, replace SPI panel 30.
Reconnect all disconnected cables.
Go to Page 2, Step 011, Entry Point Z.

199
There is no SPI problem.
Go to Page 2, Step 011, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7A5	A	2	001
F7A8	A	2	001
F7F3	A	2	001
F70D	A	2	001
F702	A	2	001
F706	A	2	001
F73A	A	2	001
F73C	A	2	001
F73D	A	2	001
F73E	A	2	001
F73F	A	2	001
F733	A	2	001
F734	A	2	001
F735	A	2	001
F736	A	2	001
F737	A	2	001
F738	A	2	001
F739	A	2	001
F741	A	2	001
F742	A	2	001
F743	A	2	001
F744	A	2	001
F76D	A	2	001
F79D	A	2	001
F79E	A	2	001
F797	A	2	001
02A0	A	2	001
02XX	A	2	001
0201	A	2	001
0260	A	2	001
0279	A	2	001
0285	A	2	001
4B00	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	009	0001	A
3	007	0200	AA
6	017	0279	A
4	013	0279	G

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001
SYMPTOM:
VOLTAGE MEASUREMENTS.

Suspected errors or FRUs (including intermittent errors)	
1	No FRUs required for this MAP.

(Entry Point A)

1. Switch to CE-mode at CE-panel.
2. Run voltage measurement program according to book MI Power in Vol.16.

Is any of the displayed voltages out of tolerance?
Y N

002

Addr.	Bit	Voltage	PS	Sense line	Sense point
87	0	+4.26V	111	A05	01A-B1E4-E01
95	2	-6.54V	112	A06	01A-B1E4-A01
95	3	-4.34V	113	A07	01A-B1B4-A12,A13
95	4	-1.52V	114	A08	01A-B1B4-A10,A11

Are more than two + or - signs displayed for any of the previous listed IPS voltages?
Y N

003
Are opposite signs displayed for Addr. 95 bit 2 (-6.54V PS112) and for Addr. 95 bit 3 (-4.34V PS113)?
Y N

4 4 4 3
A B C D

004
(Entry Point B)

Switch the CE-mode switch at the CE-panel to normal.

Is any reference code displayed?
Y N

005
Press power-off key.
Note: The power off sequence takes approximately 8 seconds.

Is the power off sequence successfully executed?
Y N

006
Is any reference code displayed?
Y N

007
Go To Map 0200, Entry Point AA.

008
Go to MAP for displayed reference code.

009
1.Close gate and all covers.
2.Store all machine documentation in the correct place.
Go To Map 0001, Entry Point A.

010
Go to MAP for displayed reference code.

011

Add the number of all displayed + and - signs of both addresses
95 bit 2 and 95 bit 3.

Is the combined number of displayed + and - signs of BOTH addresses (95-2 and 95-3) greater than 4 ?

Y N

012

Go to Page 3, Step 004, Entry Point B.

013

The following listed voltages must be adjusted as close as possible to nominal value.
Addr. 95 bit 3 (-4.34V, PS113)
Addr. 95 bit 2 (-6.54V, PS112)
No + or - sign should be displayed for both voltages after adjustment.
The adjustment procedure is shown in MAP 0279 .

Go To Map 0279, Entry Point G.

014

Go to Page 6, Step 017, Entry Point C.

015

Addr.	Bit	Voltage	PS	Sense line	Sense point
87	0	+4.26V	111	A05	01A-B1E4-E01
95	2	-6.54V	112	A06	01A-B1E4-A01
95	3	-4.34V	113	A07	01A-B1B4-A12,A13
95	4	-1.52V	114	A08	01A-B1B4-A10,A11

Is any of the previous listed IPS voltages out of tolerance?

Y N

016

Go to ENTRY POINT A of the MAP for the out of tolerance voltage according to the following table or switch CE-mode off and press power on switch and go to MAP for the displayed reference code.

Addr.	Bit	Voltage	PS	Sense location	Go to MAP
85	0	+6.0	105	A52 01A-A1	F7B7
	1	+24	104	A41 01A-A2	F796
	2	+12	104	A42 01A-A2	F797
	3	+5.1	104	A44 01A-B1	F798
	4	+8.5	104	A46 01A-C2	F799
	5	+8.5	105	A02 01A-A1	F7B1
	6	+10.1	102	A39 01A-B2	F76B
	7*	+8.5	104	A23 01A-B2	F79F
	7*	+8.5	105	A23 01A-B2	F7BB
87	0	+4.26	111	A05 01A-B1	F736
	1	+7.1	102	A57 01A-C1	F76C
	2*	+5.1	104	A30 01A-C2	F7A0
	2*	+5.1	105	A30 01A-C2	F7B7
	3	+12.3	102	A56 01A-C1	F766
	4	+12.3	102	A58 01A-C1	F767
	5	+12.3	102	A60 01A-C1	F768
	6	+9.5	102	A59 01A-C1	F769
	7	+6.8	102	A61 01A-C1	F76A
95	0*	-12	104	A32 01A-B2	F7A1
	0*	-8.5	105	A32 01A-B2	F7B9
	1	-5.1	104	A63 01A-B1	F7A6
	2	-6.54	112	A06 01A-B1	F73A
	3	-4.34	113	A07 01A-B1	F73F
	4	-1.52	114	A08 01A-B1	F744
	5*	-12	104	A64 01A-C1	F79C
	5*	-8.5	105	A62 01A-C2	F7B5
	6	-8.5	105	A38 01A-A1	F7B6
	7	-12	104	A64 01A-C2	F79C

(Step 016 continues)

(Step 016 continued)

Addr.	Bit	Voltage	PS	Sense location	Reference code
97	0	-12	104	A43 01A-A2	F79D
	1	-5.1	104	A45 01A-A2	F79E
	2	+5.1	102	A54 01A-B1	F76D
	3	+5.1	104	A22 01A-C1	F7A2
	4	+5.1	105	A03 01A-A1	F7BA
	5*	-5.1	104	A33 01A-C2	F79B
	5*	-5.1	105	A33 01A-C2	F7B4
	6	-5.1	104	A01 01A-A1	F7AA
	7*	+8.5	104	A31 01A-C2	F79A
	7*	+8.5	105	A31 01A-C2	F7B3
A5	0	+12	104	A13 01A-A1	F7A7
	1	+12	104	A48 01A-B1	F7A8
	2	spare	---	A17 ------	----
	3	spare	---	A18 ------	----
	4	spare	---	A20 ------	----
	5	spare	---	A21 ------	----
	6	spare	---	A16 ------	----
	7	spare	---	A09 ------	----

*NOTE: Board 01A-C2 col.K to W is powered by PS105 if PS105 is installed.
ACA (Auto Call Adapter) in board 01A-B2 is powered by the same power supply as the CA in board 01A-C2 col.K to W.

017
(Entry Point C)

Adjust IPS voltage.
Go To Map 0279, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7A0	A	1	001
02XX	A	1	001
0280	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	019	0204	A

001

SYMPTOM:

IPS TEST STATION CHECK PROCEDURE.

Suspected errors or FRU's (including intermittent errors)	
1	IPS test station.

(Entry Point A)

One control card and one power module without any fault are required for this check procedure.
You may use a power module and a control card of your spare part set for testing.
The test station's "OV" indicator can not be tested with each control card. New control cards have smaller adjustment ranges.

1. Press power-off switch.
2. Remove diskette from diskette drive.
3. Remove power module and control card from one power supply PS111 to PS114 according to the following table if no new spare parts are available.

(Step 001 continues)

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(Step 001 continued)

PS	Control card	Pwr.Mod.4321/4331-1	Pwr.Mod.4331-2/4331-11
111	01A-C1C2	01A-C1E4	01A-C1E4
112	01A-C1C4	01A-C1H4	01A-C1H4
113	01A-C1D2	01A-C1F3/G3	01A-C1E3*/F3/G3/H3
114	01A-C1D4	01A-C1F5/G5	01A-C1F5/G5/H5

Note: This table shows the maximum number of power modules.
Some power modules are used for special features only.
*If storage size larger than 2 MB.

Do not use parts of a power module and a control card of a power supply which might be defective according to displayed reference code (see symptom shown in Reference code directory F7XX).

4. Insert previously removed or new control card and power module into IPS test station.
5. Press power-on switch.

(Entry Point E)

Switch IPS test station *PWR* switch on.
(Switch at bottom of test station)

Is the *UV* indicator and any additional ERROR indicator on?

Y N

4 3
A B

002
(Entry Point D)

Switch the IPS *REG* switch on.

Is any ERROR indicator at IPS test station on?
Y N

003
(Entry Point C)

1. Connect CE-meter (range 1.5VDC) to test station meter terminals (for reference see *Integated Power System* in book MI POWER, Vol.16.)
2. Turn adjustment potentiometer of the control card counterclockwise until the CE-meter reading is 1.2VDC.

Are only the *UV* indicator and the *PWR ON* indicator at the test station on?
Y N

004
1. Press power-off switch.
2. Replace IPS test station.
Go to Page 4, Step 019, Entry Point Z.

005
Turn adjustment potentiometer of the control card clockwise until the CE-meter reading is 1.75VDC.
Note: The *OV* indicator may be switched on.

Is the *OC* indicator on?
Y N

006
The *OC* indicator must be on at this time.
Go to Page 4, Step 011, Entry Point F.

007
1. Turn adjustment potentiometer of the control card counterclockwise until the CE-meter reading is 1.6VDC.
2. Switch *REG* switch off.
3. Switch teststation power-off.
4. Switch teststation power-on.
5. Switch *REG* switch on.

Are all ERROR indicators of the test station off?
Y N

008
All ERROR indicators must be off at this time.
Go to Page 4, Step 011, Entry Point F.

009
1. Turn adjustment potentiometer of control card counterclockwise until the CE-meter reading is 1.5VDC.
2. Switch *REG* switch and *PWR* switch of IPS test station off.
3. Return control card and power module from test station to board 01A-C1. Your IPS test station is ok.

010
(Entry Point B)

1. Connect the CE-meter (range 1.5VDC) to test station terminals (for reference see *Integrated Power System* in book MI POWER, Vol.16.).
2. Turn adjustment potentiometer of the control card until the CE-meter reading is between 1.4 and 1.6VDC. In this range all ERROR indicators should be off.

Are all ERROR indicators switched off?
Y N

011
(Entry Point F)

Are you the second time at this point of the MAP?
Y N

012
1.Switch IPS test station power off.
2.Remove power module and control card from IPS test station and insert an other power module and control card from board 01A-C1 into IPS test station.
Go to Page 2, Step 001, Entry Point E.

013
Replace IPS test station.
Go to Step 019, Entry Point Z.

014
Go to Page 3, Step 003, Entry Point C.

015
1.Switch IPS test station power off.
2.Remove power module and control card from IPS test station and insert another power module and control card from board 01A-C1.
3.Switch IPS test station power switch on.

Is the *UV* indicator on?
Y N

016
Replace IPS test station.
Go to Step 019, Entry Point Z.

017
Is any ERROR indicator except *UV* indicator on?
Y N

018
Go to Page 3, Step 002, Entry Point D.

019
Replace IPS test station.

(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
F70D	A	1	001
F702	A	1	001
F706	A	1	001
F708	A	1	001
F73A	B	2	001
F73C	A	1	001
F73E	B	2	001
F73F	B	2	001
F733	A	1	001
F734	B	2	001
F735	A	1	001
F736	B	2	001
F738	B	2	001
F739	A	1	001
F741	B	2	001
F742	A	1	001
F744	B	2	001
02XX	A	1	001
0275	A	1	001
0275	G	5	033
0280	H	2	005

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	025	F73A	A
4	024	F73F	A
4	026	F736	A
4	023	F744	A
2	003	0200	A
4	014	0275	A

001

Symptom:
IPS voltage adjustment procedure.
Any IPS voltage out of tolerance.

Suspected errors or FRU's (including intermittent errors)	
1	No FRU's required for this MAP

(Entry Point A)

Switch to CE-mode at CE-panel.

(Step 001 continues)

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(Step 001 continued)
(Entry Point B)

Press power-on switch and wait approximately one minute.

Is the "power complete" indicator on?

Y N

002
Is any reference code displayed?

Y N

003
Go To Map 0200, Entry Point A.

004
Go to MAP for displayed reference code.

005
(Entry Point H)

Run voltage measurement program.

Are opposite signs displayed for
Addr. 95 bit 2 (-6.54V) and for
Addr. 95 bit 3 (-4.34V)?

Y N

006
(Entry Point F)

Is address 95 bit2 (-6.54V, PS112) out of tolerance?

Y N

5 A 5 B 3 C

Power Problem

007
(Entry Point E)

Use expanded display for the voltage which has to be adjusted. A table of IPS generated voltages and their corresponding control cards is shown below.

Addr.	Bit	Voltage	PS	Control card
87	0	+4.26V	111	01A-C1C2
95	2	-6.54V	112	01A-C1C4
95	3	-4.34V	113	01A-C1D2
95	4	-1.52V	114	01A-C1D4

(Entry Point C)

Are plus (+) signs displayed for the voltage which has to be adjusted?

Y N

008
Are minus (-) signs displayed for the voltage which has to be adjusted?

Y N

009
The voltage is adjusted correctly.

Is any other IPS generated voltage out of tolerance?

Y N

010
Is any other system voltage out of tolerance?

Y N

4D 4E 4F 4G 4H

011
Switch CE-mode switch to normal.

Is any reference code displayed?
Y N

012
Power complex is ok. Return machine to customer.

013
Go to MAP for displayed reference code.

014
Go To Map 0275, Entry Point A.

015
Go to Page 3, Step 007, Entry Point C.

016
1.Observe the expanded display of the voltage and turn the voltage adjustment potentiometer on the control card of the power supply in clockwise direction until no minus sign (-) is displayed any more. The IPS power supplies and their corresponding control cards are listed in a table on the previous page of this MAP.
Go to Step 017, Entry Point D.

017
Observe the expanded display of the voltage and turn the voltage adjustment potentiometer on the control card in counter-clockwise direction until no plus sign (+) is displayed anymore. The IPS power supplies and their corresponding control cards are listed listed in a table after ENTRY POINT E of this MAP.

(Entry Point D)

Was your adjustment procedure successful?
Y N

018
Address 87 bit 0 (+4.26V, PS111) failing?

Y N

019
Address 95 bit 2 (-6.54V, PS112) failing?

Y N

020
Address 95 bit 3 (-4.34V, PS113) failing?

Y N

021
Address 95 bit 4 (-1.52V, PS114) failing?

Y N

022
Go to Page 1, Step 001, Entry Point A.

023
Go To Map F744, Entry Point A.

024
Go To Map F73F, Entry Point A.

025
Go To Map F73A, Entry Point A.

026
Go To Map F736, Entry Point A.

027
Go to Page 3, Step 007, Entry Point C.

028
Is address 95 bit 3 (-4.34V,PS113) out of tolerance?
Y N

029
Adjust address 95 bit 2 (PS112).
Go to Page 3, Step 007, Entry Point E.

030
Adjust address 95 bit3 (PS113).
Go to Page 3, Step 007, Entry Point E.

031
Is the number of displayed signs of BOTH addresses larger than 4?
Y N

032
Go to Page 2, Step 006, Entry Point F.

033
(Entry Point G)

You have to adjust first
Addr. 95 bit 3 (-4.34V, PS113) and then
Addr. 95 bit 2 (-6.54V, PS112)
as close as possible to nominal value.
To do this:
Go to Page 3, Step 007, Entry Point E.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F70A	A	2	001
F70D	A	2	001
F700	A	2	001
F701	A	2	001
F702	A	2	001
F704	A	2	001
F705	A	2	001
F706	A	2	001
F708	A	2	001
F709	A	2	001
F73A	A	2	001
F73C	A	2	001
F73D	A	2	001
F73E	A	2	001
F73F	A	2	001
F733	A	2	001
F734	A	2	001
F735	A	2	001
F736	A	2	001
F739	A	2	001
F741	A	2	001
F742	A	2	001
F743	A	2	001
F744	A	2	001
F745	A	2	001
F746	A	2	001
F747	A	2	001
F748	A	2	001
F76A	A	2	001
F76C	A	2	001
F766	A	2	001
F767	A	2	001
F768	A	2	001
F769	A	2	001
02A0	A	2	001
02XX	A	2	001
0295	A	2	001
0296	A	2	001
0297	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	020	0200	A
4	006	0202	A
5	022	0204	A
8	057	0204	A
7	047	0278	A

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001
SYMPTOM:
IPS SERVICE CHECK.

Suspected errors or FRUs (including intermittent errors)	
1	IPS power module.
2	IPS control card.
3	IPS test station.

(Entry Point A)

Note:
If more than one power module is present for a single power supply (PS113 and PS114) the control card has to be tested together with each power module.

1. Press power-off key.
2. Remove power modules and corrresponding control card to be tested from board 01A-C1 according to the following table:

PS	Output Voltage	Control Card Position	Power Modules 4321/4331-1	Power Modules 4331-2/4331-11
111	+4.26V	01A-C1C2	01A-C1E4	01A-C1E4
112	-6.54V	01A-C1C4	01A-C1H4	01A-C1H4
113	-4.34V	01A-C1D2	01A-C1F3/G3	01A-C1E3*/F3/G3/H3
114	-1.52V	01A-C1D4	01A-C1G5/F5	01A-C1F5/G5/H5

* If storage size is larger than 2 MB.

(Step 001 continues)

(Step 001 continued)

BOARD 01A-C1 PHYSICAL LAYOUT

```
     P O W E R     M O D U L E S         CONTROL CARDS
  |   H    |   G    |   F    |   E    ||   D    |   C    | B |
-----------|--------|--------|--------||--------|--------|-------
  | PS113  | PS113  | PS113  | PS113  ||        |        |   |2
 3| -4.34V | -4.34V | -4.34V | -4.34V ||        |        |   |
  | (C1H3) | (C1G3) | (C1F3) | (C1E3) || PS113  | PS111  | C ---
  | 4331-2 |        |        | >2 MB  || -4.34V | +4.26V |   |
  | 4331-11|        |        |        || (C1D2) | (C1C2) | A |3
-------------------------------------||        |        |   |
  | PS112  |        |        | PS111  ||        |        |   |
 4| -6.54V |        |        | +4.26V ||------------------ B ---
  | (C1H4) |        |        | (C1E4) ||        |        |   |
  |        |        |        |        ||        |        | L |4
-------------------------------------|| PS114  | PS112  |   |
  | PS114  | PS114  | PS114  |        || -1.52V | -6.54V | E ---
 5| -1.52V | -1.52V | -1.52V |        || (C1D4) | (C1C4) |   |
  | (C1H5) | (C1G5) | (C1F5) |        ||        |        | S |5
  | 4331-2 |        |        |        ||        |        |   |
  | 4331-11|        |        |        ||        |        |   |
-----------------------------------------------------------------
  |   H    |   G    |   F    |   E    ||   D    |   C    | B |
```

(Entry Point D)

2. Plug one of the previously removed power modules and the control card into the IPS test station sockets.
   (if not already in test station)
3. Connect CE-meter (range 5VDC) to IPS test station meter terminals.

(Entry Point F)

4. Remove diskette(s) from diskette drive(s).
5. Press power-on switch.
6. Ensure that the *REG* switch is in off
(Step 001 continues)

(Step 001 continued)
position.
7.Switch only the test station *PWR* switch on. Only the *UV* ERROR indicator is expected to be on.

Is the *UV* indicator on and is the meter reading below 0.5VDC?
Y N

002
1.Switch test station power off.
2.Replace control card in test station.
3.Switch test station power on.

Is the *UV* indicator on and is the meter reading below 0.3VDC?
Y N

003
Is the *OC* and/or *OV* indicator on?
Y N

004
(Entry Point G)

Perform IPS test station check procedure according to procedure shown in MAP 0278 and return to this point.

Is your IPS test station ok?
Y N

005
Replace IPS test station.

006
Go To Map 0202, Entry Point A.

007
Have you already replaced the power module in the test station?
Y N

A B C D

A B C D

008
Suspect defective power module in test station.
1.Switch test station power-off.
2.Replace power module in the test station.
Go to Page 3, Step 001, Entry Point F.

009
Have you already replaced the control card in the test station?
Y N

010
Suspect defective control card.
1.Switch test station power-off.
2.Replace the control card in the test station.
Go to Page 3, Step 001, Entry Point F.

011
Go to Step 004, Entry Point G.

012
Go to Step 013, Entry Point E.

013
(Entry Point E)

Is any additional ERROR indicator at test station on?
NOTE:
The power-on indicator is no ERROR indicator.
Y N

014
1.Switch the *REG* switch at test station on.

Is any ERROR indicator at IPS test station on?
Y N

7 5 5
E F G

015
1.Adjust the potentiometer on the IPS control card to a meter reading of 1.5VDC.
Is the voltage adjustment possible?
Y N

016
1.Switch both test station switches off.
2.Replace control card in test station.
Go to Page 3, Step 001, Entry Point D.

017
(Entry Point H)

Is any additional power module to be tested?
Y N

018
1.Switch test station switches *PWR* and *REG* off
2.Press power-off switch.
3.Switch to CE-mode at CE-panel.
4.Return power module and control card to the original plug position in board 01A-C1.
5.Insert diagnostic diskette DD1 into diskette drive.
6.Press power-on switch and wait approximately one minute.

Is the *power complete* indicator on?
Y N

019
Is any reference code displayed?
Y N

020
Go To Map 0200, Entry Point A.

021
Return to the specified ENTRY POINT of the MAP you came from.
If no ENTRY POINT was specified, go to MAP F7XX (Directory) and go to the MAP for the displayed reference code.

022
(Entry Point C)
Go To Map 0204, Entry Point A.

023
Remove power module from the test station and plug the next module into the test socket.
Go to Page 3, Step 001, Entry Point F.

024
Was the control card already replaced before?
Y N

025
(Entry Point N)

Is the *UV* indicator at test station on?
Y N

026
Is the *OV* indicator at test station on?
Y N

027
Is the *OC* indicator at test station on?
Y N

028
You have answered one or more questions wrong.
Go to Page 2, Step 001, Entry Point A.

029
(Entry Point K)

1.Switch both test station switches off.
2.Turn adjustment potentiometer on control card approximately 10 rotations counterclockwise.
3.Switch test station *PWR* switch on.
4.Switch test station *REG* switch on.
5.Adjust control card potentiometer until your CE-meter which ist connected to test station, shows 1.5VDC.

(Entry Point L)

Is the 1.5VDC adjustment possible and are all ERROR indicators off?
Y N

030
1.Switch *REG* switch off.
2.Switch test station power off.
3.Replace control card in the test station.
Go to Page 3, Step 001, Entry Point F.

031
Go to Page 5, Step 017, Entry Point H.

032
Go to Step 029, Entry Point K.

033
Is the *OV* indicator also on?
Y N

034
Go to Step 038, Entry Point M.

035
1.Switch the *REG* switch at the test station off.
2.Turn the adjustment potentiometer approximately 15 rotations counterclockwise.
3.Switch the *REG* switch on.

Is the *OV* or the *OC* indicator on?
Y N

036
Is the *UV* indicator on?
Y N

037
Go to Page 5, Step 017, Entry Point H.

038
(Entry Point M)

Turn the adjustment potentiometer on the control card clockwise until the CE-meter, which is connected to the test station, shows 1.5VDC.
Go to Step 029, Entry Point L.

039
1.Switch both test station switches off.
2.Replace the control card in the test station.
Go to Page 3, Step 001, Entry Point F.

040
Did you try to adjust the new control card in the test station before?
Y N

041
Adjust the potentiometer on the control card to a meter reading of 1.5VDC.

Is the 1.5VDC adjustment possible and are all ERROR indicators off?
Y N

042
(Entry Point P)

1.Switch both test station switches off.
2.Replace power module in test station.
Go to Page 3, Step 001, Entry Point F.

043
Go to Page 5, Step 017, Entry Point H.

044
Go to Step 042, Entry Point P.

045
(Entry Point B)

1.Turn both test station switches off.
2.Replace control card in test station by a new one.
3.Turn test station *PWR* switch on.

Is only the *UV* error indicator of the test station on?
Y N

046
1.Switch test station power off.
2.Replace power module in test station.
3.Switch test station power on.

Is only the *UV* ERROR indicator at the test station on?
Y N

047
(Entry Point J)

Suspect test station problem.
Go To Map 0278, Entry Point A.

048
Go to Page 3, Step 001, Entry Point F.

049
Turn test station *REG* switch on.

Is any ERROR indicator of test station on?
Y N

050
Previously removed control card is defective.
Turn both test station switches off.
Go to Page 3, Step 001, Entry Point F.

051
1.Turn both test station switches off.
2.Replace power module in test station by a new one.
3.Turn test station *PWR* switch on.
4.Turn test station *REG* switch on.

Is any ERROR indicator on test station on?
Y N

052
Previously removed power module is defective.
Go to Page 5, Step 017, Entry Point H.

053
Is the *OV* indicator on?
Y N

054
(Entry Point R)

1.Connect CE-meter (range 5VDC) to IPS test station. The connection points for the meter are shown on the test station
2.Adjust the potentiometer on the IPS control card to a meter reading of 1.5VDC.

Is any ERROR indicator at the test station on?
Y N

055
Go to Page 5, Step 017, Entry Point H.

056

One or both of your spare parts may be defective. If spare parts are ok, suspect test station problem. Ensure that +24V and +5V are present on your test station.

1. Connect CE-meter
   (range 15VDC)
   +lead to IPS test station power connector pin 002
   '+5.1V PS104 to 01A-C1 IPS test' and to pin 003
   '+24V PS104 to 01A-C1 IPS test'
   Connect the minus lead to pin 001 or to pin 004
   'DC-GND'.
   (ALD-YA591)

Are both voltages present?

Y N

057

Check and repair wiring of failing voltage from PS104 to IPS test station.

Go To Map 0204, Entry Point A.

058

Go to Page 7, Step 047, Entry Point J.

059

1. Switch both switches at the IPS teststation off.
2. Turn the adjustment potentiometer approximately 15 rotations counterclockwise.
3. Switch teststation power-on.
4. Switch the *REG* switch on.

Go to Page 7, Step 054, Entry Point R.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7B7	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0200	A
2	011	0204	A

001
Symptom:
PS105-CP03 tripped.
(+6.0V to 01A-A1 via PS105-K01)

	Suspected errors or FRU's (including intermittent errors)
1	+6.0VDC distribution to 01A-A1.
2	Load fault on 01A-A1.
3	PS105.

(Entry Point A)

1. Switch on PS105-CP03.
2. Disconnect voltage connectors from board 01A-A1B4-E01 and 01A-A1W4-E01 '+6.0V PS105 to 01A-A1 CD ATT' (ALD-YC821)
3. Press power-on switch and wait approximately one minute.

Is PS105-CP03 tripped?

Y N

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002
Suspect short circuit on board 01A-A1 or on a card plugged on board 01A-A1.
1.Press power-off key.
2.Remove all cards from board 01A-A1.
3.Reconnect previously disconnected voltage connectors to board 01A-A1.
4.Press power-on switch and wait approximately one minute.

Is PS105-CP03 tripped?
Y N

003
1.Press power-off key.
2.Replug one card after the other.
3.After each card plugged in, press power-on switch.
4.Replace defective card by a new one which was plugged in prior to tripping of PS105-CP03.
Go to Step 007, Entry Point Z.

004
1.Press power-off key.
Replace board 01A-A1 by a new one.
Go to Step 007, Entry Point Z.

005
1.Press power-off key.
2.Switch on PS105-CP03.
3.Disconnect connector PS105-02.
(ALD-YA461)
3. Press power-on switch and wait approximately one minute.

Is PS105-CP03 tripped?
Y N

006
Short circuit on cable
'+6.0V PS105 to 01A-A1 CD ATT.'
1.Press power-off key.
2.Repair or replace cable from connector PS105-02 to board 01A-A1.
(ALD-YA461)
Go to Step 007, Entry Point Z.

007
1.Press power-off key.
2.Replace PS105.
3.Reconnect connector PS105-02 and voltage connectors to board 01A-A1B4-E01 and 01A-A1W4-E01.

(Entry Point Z)

3.Press power-on switch.

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

Y N

008
Is any ref.code displayed?
Y N

009
Go To Map 0200, Entry Point A.

010
Go to MAP for displayed ref.code.

011
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7BA	A	1	001
F7BC	A	1	001
F7BD	A	1	001
F7B1	A	1	001
F7B2	A	1	001
F7B4	A	1	001
F7B6	A	1	001
F7B8	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0200	A
2	007	0204	A

001
Symptom:
PS105-CP06 tripped
(+8.5V to 01A-A1,01A-B2 and 01A-C2)

	Suspected errors or FRU's (including intermittent errors)
1	+8.5VDC distribution to boards A1,B2 or C2.
2	Load faults on board 01A-A1, 01A-B2 or 01A-C2.
3	PS105.

(Entry Point A)

1.Switch on PS105-CP06.
2.Disconnect voltage connector from board 01A-B2W4-A14 '+8.5V PS105 to 01A-B2 ACA' (ALD-YC851).
3.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?

Y N

2 2
A B

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002
Suspect short circuit on board 01A-B2 or on a card plugged on board 01A-B2.
1. Press power-off key.
2. Remove all cards from board 01A-B2.
3. Reconnect previously disconnected voltage connector to board 01A-B2.
4. Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

003
(Entry Point B)

1. Press power-off key.
2. Replug one card after the other.
3. After each card plugged in, press power-on switch. After successful power-on sequence, press power-off key.
4. Replace defective card which was inserted prior to tripping of PS105-CP06.

(Entry Point Z)

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

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

Y N

004
Is any ref.code displayed?
Y N

005
Go To Map 0200, Entry Point A.

006
Go to MAP for displayed ref.code.

007
Go To Map 0204, Entry Point A.

008
1. Press power-off key.
2. Replace board 01A-B2 by a new one.
Go to Step 003, Entry Point Z.

009
1. Press power-off key.
2. Switch on PS105-CP06.
3. Reconnect previously disconnected voltage connector to board 01A-B2W4-A14.
4. Disconnect voltage connector from board 01A-C2B4-A14
'+8.5V PS105 to 01A-B2 ACA'
(ALD-YC871).
5. Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

010
Short circuit on cable
'+8.5V PS105 to 01A-B2 ACA'
1. Press power-off key.
2. Repair or replace cable from board 01A-C2 to board 01A-B2
(ALD-YC871).
Go to Step 003, Entry Point Z.

011
1. Press power-off key.
2. Switch on PS105-CP06.
3. Disconnect voltage connector from board 01A-C2W3-A14 01A-C2W4-A14
'+8.5V PS105 to 01A-C2 K/W CA'
(ALD-YC871).
4. Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

012
Suspect short circuit on board 01A-C2 or on a card plugged on board 01A-C2.
1.Press power-off key.
2.Remove all cards form board 01A-C2 columns K thru W.
3.Reconnect all previously disconnected voltage
connectors to board 01A-C2.
4.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

013
Go to Page 2, Step 003, Entry Point B.

014
1.Press power-off key.
2.Replace board 01A-C2 by a new one.
Go to Page 2, Step 003, Entry Point Z.

015
1.Press power-off key.
2.Switch on PS105-CP06.
3.Disconnect connector PS105 (ALD-YA461)
4.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

016
Short circuit on cable
'+8.5V PS105 to 01A-C2 K/W CA'
1.Press power-off key.
2.Repair or replace cable from connector PS105-04
to board 01A-C2.
(ALD-YA461).
Go to Page 2, Step 003, Entry Point Z.

017
1.Press power-off key.
2.Switch on PS105-CP06.
3.Disconnect voltage connector from board 01A-A1B3-A14 01A-A1W3-A14
'+8.5V PS105 to 01A-A1 CD ATT'
(ALD-YC821).
4.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

018
1.Press power-off key.
Suspect short circuit on board 01A-A1 or on a card plugged on board 01A-A1.
2.Reconnect connector PS105-04 and previously disconnected
voltage connectors to board 01A-C2.
3.Remove all cards from board 01A-A1.
4.Reconnect previously disconnected voltage connectors to board 01A-A1.
5.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

019
Go to Page 2, Step 003, Entry Point B.

020
1.Press power-off key.
2.Switch on PS105-CP06.
3.Replace board 01A-A1 by a new one.
Go to Page 2, Step 003, Entry Point Z.

021
1.Press power-off key.
2.Switch on PS105-CP06.
3.Disconnect connector PS105 (ALS-YA461)
3.Press power-on switch and wait approximately one minute.

Is PS105-CP06 tripped?
Y N

022
Short circuit on cable
'+8.5V PS105 to 01A-A1 CD ATT'
1.Press power-off key.
2.Repair or replace cable from connector PS105-02 to board 01A-A1 (ALD-YA461).
3.Reconnect previously disconnected connector PS105-04 and all voltage connectors to board 01A-A1 and board 01A-C1.
Go to Page 2, Step 003, Entry Point Z.

023
1.Press power-off key.
2.Replace PS105.
3.Reconnect al previously disconnected connectors to PS105 and all voltage connectors to board 01A-A1 and board 01A-C1.
Go to Page 2, Step 003, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0200	A
2	007	0204	A

001
Symptom:
PS105-CP05 tripped.
(-8.5V to 01A-A1,01A-B2
and 01A-C2,CA)

	Suspected errors or FRU's (including intermittent errors)
1	-8.5VDC distribution to boards 01A-A1, 01A-B2, 01A-C2.
2	PS105.

(Entry Point A)

1.Switch on PS105-CP05.
2.Disconnect voltage connector from board
01A-B2W5-E01
'-X.XV PS1045 t0 01A-B2 ACA'
(ALD-YC851).
3.Press power-on switch and wait
approximately one minute.

Is PS105-CP05 tripped?

Y N

2 2
A B

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002
Suspect short circuit on board 01A-B2 or on a card plugged on board 01A-B2.
2. Press power off switch.
3.Remove all cards from board 01A-B2.
2.Reconnect previously disconnected voltage connector to board 01A-B2.
4.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

003
(Entry Point B)

1.Press power-off key.
2.Replug one card after the other.
3.After each card plugged in Press power-on switch, and after successful power-on sequence Press power-off key.
4.Replace defective card which was inserted prior to tripping of PS105-CP05.

(Entry Point Z)

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

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

Y N

004
Is any ref.code displayed?
Y N

005
Go To Map 0200, Entry Point A.

006
Go to MAP for displayed ref.code.

007
Go To Map 0204, Entry Point A.

008
Replace board 01A-B2 by a new one.
Go to Step 003, Entry Point Z.

009
1.Press power-off key.
2.Switch on PS105-CP05.
3.Reconnect previously disconnected voltage connector to board 01A-B2W5-E01
4.Disconnect voltage connector from board 01A-C2B5-E01
'-X.XV PS1045 to 01A-B2 ACA'
(ALD-YC871).
5.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

010
Short circuit on cable
'-X.XV PS1045 to 01A-B2 ACA'
1.Press power-off key.
2.Repair or replace cable from board 01A-C2 to board 01A-B2
(ALD-YC871).
Go to Step 003, Entry Point Z.

011
1.Press power-off key.
2.Switch on PS105-CP05.
3.Disconnect voltage connector from board 01A-C2W5-E01 '-X.XV PS1045 to 01A-C2 K/W CA'
(ALD-YC871).
4.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

012
Suspect short circuit on board 01A-C2 or on a card plugged on board 01A-C2.
1.Press power-off key.
2.Remove all cards form board 01A-C2 columns K thru W.
3.Reconnect all previously disconnected voltage connectors to board 01A-C2.
4.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

013
Go to Page 2, Step 003, Entry Point B.

014
1.Press power-off key.
2.Replace board 01A-C2 by a new one.
Go to Page 2, Step 003, Entry Point Z.

015
1.Press power-off key.
2.Switch on PS105-CP05.
3.Disconnect connector PS105 (ALD-YA461)
4.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

016
Short circuit on cable
'-8.5V PS105 to 01A-C2 K/W CA'
1.Press power-off key.
2.Repair or replace cable from connector PS105-04 to board 01A-C2 (ALD-YA461).
Go to Page 2, Step 003, Entry Point Z.

017
1.Press power-off key.
2.Switch on PS105-CP05.
3.Disconnect voltage connector from board 01A-A1B3-E14 '-8.5V PS105 to 01 -A1 CD ATT' .
(ALD-YC821).
4.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

018
Suspect short circuit on board 01A-A1 or on a card plugged on board 01A-A1.
1.Press power-off key.
2.Reconnect connector PS105-04 and previously disconnected voltage connector to board 01A-C2.
3.Remove all cards from board 01A-A1.
4.Reconnect previously disconnected voltage connector to board 01A-A1.
5.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

019
Go to Page 2, Step 003, Entry Point B.

020
1.Press power-off key.
2.Switch on PS105-CP05.
3.Replace board 01A-A1 by a new one.
Go to Page 2, Step 003, Entry Point Z.

021
1.Press power-off key.
2.Switch on PS105-CP05.
3.Disconnect connector PS105 (ALD-YA461)
4.Press power-on switch and wait approximately one minute.

Is PS105-CP05 tripped?
Y N

022
Short circuit on cable
'-8.5V PS105 to 01A-A1 CD ATT'
1.Press power-off key.
2.Repair or replace cable from connector PS105-02 to board 01A-A1 (ALD-YA461).
3.Reconnect connector PS105-04 and all previously disconnected voltage connectors to board 01A-A1 and to board 01A-C1.
Go to Page 2, Step 003, Entry Point Z.

023
1.Press power-off key.
2.Replace PS105.
3.Reconnect all previously disconnected connectors to PS105 and all voltage connectors to board 01A-A1 and board 01A-C1.
Go to Page 2, Step 003, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0200	A
2	008	0204	A

001
Symptom:
PS105-CP04 tripped .
(-5.1V to 01A-C2 , CA)

Suspected errors or FRU's (including intermittent errors)	
1	-5.1VDC distribution to board 01A-C2 CA.
2	Load fault on board 01A-C2 col. K to W.
3	PS105.

(Entry Point A)
Note:
This MAP advises you to disconnect some power feeding and sense connectors from specified board pins. In those cases remove always the complete 4 pin connector and not only a single pin out of the four pin connector.

1.Switch on PS105-CP04.
2.Disconnect voltage connectors from 01A-C2W3-E01 and 01A-C2W4-E01 (ALD-YC871)
3.Press power-on switch and wait approximately one minute.

Is PS105-CP04 tripped?

Y N

2 2
A B

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002
Suspect short circuit on board 01A-C2 or on a card plugged on board 01A-C2.
1.Remove all cards from board 01A-C2 columns K thru W.
2.Reconnect voltage connectors to 01A-C2W3-E01 and 01A-C2W4-E01
(ALD-YC871)
3.Press power-on switch and wait approximately one minute.

Is PS105-CP04 tripped?
Y N

003
(Entry Point B)

1.Press power-off key.
2.Replug one card after the other.
3.After each card plugged in, press power-on key and after a successful power-on sequence press power-off key.
4.Replace defective card which was inserted prior to tripping of PS105-CP04.
Go to Step 004, Entry Point Z.

004
1.Press power-off key.
2.Replace board 01A-C2 by a new one.

(Entry Point Z)

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

Is the °power complete° indicator on?

Y N

005
Is any reference code displayed?
Y N

006
Go To Map 0200, Entry Point A.

007
Go to MAP for displayed reference code.

008
Go To Map 0204, Entry Point A.

009
1.Press power-off key.
2.Switch on PS105-CP04.
3.Disconnect connector PS105-04.
(ALD-YA461)
4.Press power-on switch and wait approximately one minute.

Is PS105-CP04 tripped?
Y N

010
Short circuit on cable
'-5.1V PS105 to 01A-C2 K/W CA'
1.Press power-off key.
2.Repair or replace cable from connector PS105-04 to board 01A-C2.
(ALD-YA461)
3.Reconnect all previously disconnected voltage connectors to board 01A-C2.
Go to Step 004, Entry Point Z.

011
1.Press power-off switch.
2.Replace PS105.
3.Reconnect all previously disconnected connectors to PS105 and board 01A-A1.
Go to Step 004, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7C4	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0200	A
2	011	0275	A

001
Symptom:
PS105-CP02 tripped.
(+5.1V to 01A-A1)

Suspected errors or FRU's (including intermittent errors)	
1	+5.1V distribution to board A1.
2	Load faults on board A1.
3	PS105.

(Entry Point A)

1. Switch on PS105-CP02.
2. Disconnect connector from
   01A-A1ZD
   (ALD-YC821)
3. Press power-on switch and wait
   approximately one minute.

Is PS105-CP02 tripped?

Y N

2 2
A B

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002
Suspect short circuit on board 01A-A1 or on a card plugged on board 01A-A1.
1.Remove all cards from board 01A-A1.
2.Reconnect connector to 01A-A1ZD (ALD-YC821)
4.Press power-on switch and wait approximately one minute.

Is PS105-CP02 tripped?
Y N

003
1.Press power-off key.
2.Replug one card after the other.
3.After each card plugged in, press power-on switch and wait approximately one minute.
After successful power-on sequence, press power-off key.
4.Replace defective card which was inserted prior to tripping of PS105-CP02.
Go to Step 007, Entry Point Z.

004
1.Press power-off key.
2.Replace board 01A-A1 by a new one.
Go to Step 007, Entry Point Z.

005
1.Press power-off key.
2.Switch on PS105-CP02.
3.Disconnect FDS cables from PS105-TB02-001 and PS105-TB02-002 (ALD-YA461)
4.Press power-on switch and wait approximately one minute.

Is PS105-CP02 tripped?
Y N

006
1.Press power-off key.
There is a short circuit on FDS cable for 5.1V.
'+5.1V PS105 to 01A-A1 CD ATT'
2.Repair or replace cable from PS105-TB02-001 and PS105-TB02-002 to board 01A-A1. (ALD-YA461)
Go to Step 007, Entry Point Z.

007
1.Press power-off key.
2.Replace PS105.
3.Reconnect all previously disconnected FDS cables to PS105-TB02-001 and PS105-TB02-002 and FDS connectors to board 01A-A1.

(Entry Point Z)

4.Press power-off key.

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

008
Is any referencecode displayed?
Y N

009
Go To Map 0200, Entry Point A.

010
Go to MAP for displayed referencecode.

011
Go To Map 0275, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7C4	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0200	A
2	011	0204	A

001

Symptom:
PS105-CP01 tripped
(+5.1V to 01A-C2, CA)

	Suspected errors or FRU's (including intermittent errors)
1	+5.1V distribution to board C2.
2	Load faults on board C2.
3	PS105.

(Entry Point A)

1. Switch on PS105-CP01.
2. Disconnect voltage connectors from 01A-C2YF and 01A-C2ZF (ALD-YC871)
3. Press power-on switch and wait approximately one minute.

Is PS105-CP01 tripped?

Y N

2 2
A B

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002
Suspect short circuit on board 01A-C2 or on a card plugged on board 01A-C2.
1. Remove all cards from board 01A-C2 columns K thru W.
2. Reconnect voltage connectors to 01A-C2YF and 01A-C2ZF. (ALD-YC871)
3. Press-power on switch and wait approximately one minute.

Is PS105-CP01 tripped?
Y N

003
1. Press power-off key.
2. Replug one card after the other.
3. After each card plugged in, press power-on key. After a successful power-on sequence, press the power-off key.
4. Replace defective card which was inserted prior to tripping of PS105-CP01.

Go to Step 007, Entry Point Z.

004
1. Press power-off key.
2. Replace board 01A-C2 by a new one.

Go to Step 007, Entry Point Z.

005
1. Press power-off key.
2. Switch on PS105-CP01.
3. Disconnect FDS cable from PS105-TB01-001 and PS105-TB01-002. (ALD-YA461)
4. Press power-on switch and wait approximately one minute.

Is PS105-CP01 tripped?
Y N

006
There is a short circuit on FDS cable for +5.1V.
'+5.1V PS105 to 01A-C2 K/W CA.'
1. Repair or replace FDS cable from PS105-TB01-001/002 to board 01A-C2. (ALD-YA461)

Go to Step 007, Entry Point Z.

007
1. Press power-off key.
2. Replace PS105.
3. Reconnect all previously disconnected FDS-cables to PS105-TB01-001 and PS105-TB01-002 and FDS connector to board 01A-C2.

(Entry Point Z)

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

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

008
Is any referencecode displayed?
Y N

009
Go To Map 0200, Entry Point A.

010
Go to MAP for displayed referencecode.

011
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7BA	A	1	001
F7BC	A	1	001
F7BD	A	1	001
F7B1	A	1	001
F7B2	A	1	001
F7B4	A	1	001
F7B6	A	1	001
F7B7	A	1	001
F7B8	A	1	001
F7C4	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0204	A
3	014	0211	A

001
SYMPTOM:
TR105/PS105 POWER PROBLEM

	Suspected errors or FRU's (including intermittent errors)
1	TR105 primary fuse.
2	AC distribution from TR105 to PS105.
3	AC distribution from PCC-box to TR105.
4	TR105.
5	TR105 jumpering (see ALD-YA021).

(Entry Point A)

1.Switch PCC-CB01 off.
2.Check primary fuse TR105-F01.

Is the fuse TR105-F01 ok?

Y N

3 2
A B

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002
Was the primary fuse TR105-F01 replaced before?
Y N

003
1.Replace primary fuse TR105-F01.
2.Switch PCC-CB01 on.
3.Press power-on switch.
4.Wait two minutes.
5.Press power-off key.
6.Check primary fuse TR105-F01.

Is the primary fuse TR105-F01 blown again?
Y N

004
Is any reference code displayed?
Y N

005
(Entry Point Z)

Ensure that the PCC-box is closed and all disconnected connectors are reconnected.
Go To Map 0204, Entry Point A.

006
Go to corresponding MAP.

007
Go to Step 008, Entry Point C.

008

(Entry Point C)

1.Press power-off key.
2.Disconnect connector PS105-06. (ALD-YA461)
3.Replace primary fuse TR105-F01.
4.Press power-on switch and wait approximately one minute.
5.Press power-off switch.

Is the fuse TR105-F01 blown again?
Y N

009
(Entry Point D)

1.Press power-off key.
2.Check cables from TR105 to PS105 for any damage. If no error detected, replace TR105.
Go to Step 005, Entry Point Z.

010
1.Press power-off switch.
2.Reconnect connector PS105-06.
3.Disconnect connector PS105-07.
4.Jumper connector PS105-07-005 and PS105-07-008 '(TR105 TH-Switch)' (ALD-YA461)
5.Replace fuse TR105-F01.
6.Press power on switch and wait approximately one minute.
7.Press power-off switch.

Is fuse TR105-F01 blown?
Y N

011
Go to Step 009, Entry Point D.

012

1.Press power-off key.
2.Check cables from TR105 to PS105 for any damage. If no error detected, replace TR105.

Go to Page 2, Step 005, Entry Point Z.

013

```
|-------------------------|
| 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.                |
|-------------------------|
```

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.Insert fuse TR105-F01.
5.Open PCC-box and observe PCC-K02.
6.Press power on switch and wait approximately one minute.

Is PCC-K02 picked?

Y N

014

Go To Map 0211, Entry Point A.

015

(Entry Point B)

```
|-------------------------|
| 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.Connect CE-meter outside PCC-box (range 500VAC)
to connector PCC-03-002
and to connector PCC-03-005
(ALD-YA321)
5.Switch PCC-CB01 on.
6.Observe meter and press power-on switch and wait approximately one minute.

Was line voltage at least momentarily present?

Y N

016

```
|---------------------------|
| 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 and perform wiring check for the following nets. Apply *Wiring Check Procedure* shown in book MI POWER.

```
|-------| |  PCC-K04-004
|  K04  |*|  (ALD-YA321)
|-------| |
          |  wiring
          |
|-------| |  PCC-03-002
| CONN  |=|  (ALD-YA331)
|-------|
* 'Power line to TR105'

|-------| |  PCC-K04-003
|  K04  |*|  (ALD-YA321)
|-------| |
          |  wiring
          |
|-------| |  PCC-K02-00A
|  K02  |=|  (ALD-YA321)
|-------|
* '(Ph L1 to PCC-K02)'

|-------| |  PCC-K02-00B
|  K02  |*|  (ALD-YA321)
|-------| |
          |  wiring
          |
|-------| |  PCC-03-005
| CONN  |=|  (ALD-YA331)
|-------|
* 'Power line to TR105'
```

(Step 016 continues)

(Step 016 continued)
Is the wiring ok?
Y N

017
Repair or replace the failing wiring.
Go to Page 2, Step 005, Entry Point Z.

018
1.Connect CE-meter (range 500VAC) to PCC-K02-00B and to connector PCC-003-002
2.Switch PCC-CB01 on.
3.Press power-on switch and wait approximately one minute.

Was line voltage at least momentarily present?
Y N

019

```
|---------------------------|
| DANGER                    |
| Line voltage present      |
| inside 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.Replace PCC-K02.
Go to Page 2, Step 005, Entry Point Z.

020
Go to Page 3, Step 015, Entry Point B.

021

1.Press power-off key.
2.Close PCC-box.
3.Switch PCC-CB01 off.
4.Check Transformer TR105-TB01 for correct connection according to customers line voltage 'Power line PCC to TR105' (ALD-YA461).
Refer to line voltage conversion charts on (ALD-YA021).

Is the line voltage connection correct for customers line voltage?

Y N

022

Change line voltage connection according to customers line voltage.
Go to Page 2, Step 005, Entry Point Z.

023

```
|----------------------------|
| DANGER                     |
| Line voltage present during|
| following measurement.     |
|----------------------------|
```

1.Check that screws of transformer TR105-TB01 are tight, (if present) or cable connectors are tight.
2.Connect CE-meter (range 500 VAC to TR105-TB01-001 and to TR105-TB01-002, or 003, or 004, or 005 according customers line voltage. (ALD-YA461)
3.Switch PCC-CB01 on.
4.Press power-on switch and wait approximately one minute.

Was line voltage at least momentarily present?

Y N

6 6
H J

024

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Repair or replace cable 'Power line PCC to TR105'

Go to Page 2, Step 005, Entry Point Z.

025

1.Press power-off key.
2.Disconnect connectors PS105-02, PS105-04 and PS105-06 and all FDS cables from PS105-TB01 to PS105-TB03. (If not already done before.)
NOTE: Cable to connector PS105-02 and PS105-TB02 is only plugged if Board 01A-A1 is installed.
3.Do not disconnect connector PS105-07.
4.Install a jumper from 01A-A2B2-B12 '-Pick PCC-K02 C02' (ALD-YB421) to any D08 pin 'DC-GND'.
5.If 5424 is installed, install a jumper from 01A-A2B2-B07 '-Pick PS105-K01 C24' (ALD-YB421) to any D08 pin 'DC-GND'.
6.Connect CE-meter (range 15VAC) according to following table and check for correct AC-voltages from TR105. (Use cable connectors for measurements). (ALD-YA461)
7.Press power-on switch.

Normal Voltage	Lead 1	Lead 2	Lower Limit
5.4 VAC	PS105-06-002	PS105-06-001	4.9 VAC
5.4 VAC	PS105-06-011	PS105-06-010	4.9 VAC
8.9 VAC	PS105-07-001	PS105-07-003	8.0 VAC
6.3 VAC	PS105-07-004	PS105-07-010	5.7 VAC
5.4 VAC	PS105-07-012	PS105-07-006	4.9 VAC
8.9 VAC	PS105-07-015	PS105-07-013	8.0 VAC

Is any AC-voltage below the lower limit?

Y N

026

Go to Page 8, Step 028, Entry Point E.

027

1. Press power-off key.
2. Reconnect connector PS105-06.
3. Disconnect connector PS105-07.
4. Jumper connector on PS105 from PS105-07-005 to PS105-07-008. 'TR105 TH' (ALD-YA461)
5. Connect CE-meter (range 15 VAC) according to following table and check for correct AC-voltage from TR105. (Use cable connectors for each measurement.) (ALD-YA461)
6. Press power-on switch.

Normal Voltage	Lead 1	Lead 2	Lower Limit
5.4 VAC	PS105-06-002	PS105-06-001	4.9 VAC
8.9 VAC	PS105-07-001	PS105-07-003	8.0 VAC
8.9 VAC	PS105-07-002	PS105-07-003	8.0 VAC
6.3 VAC	PS105-07-004	PS105-07-010	5.7 VAC
6.3 VAC	PS105-07-007	PS105-07-010	5.7 VAC
5.4 VAC	PS105-07-012	PS105-07-006	4.9 VAC
5.4 VAC	PS105-07-009	PS105-07-006	4.9 VAC
8.9 VAC	PS105-07-015	PS105-07-013	8.0 VAC
8.9 VAC	PS105-07-014	PS105-07-013	8.0 VAC

Is any AC-voltage below its lower limit?

Y N

028
(Entry Point E)

1. Press power-off key.
2. Reconnect connectors PS105-06 and PS105-07.
3. Connect CE-meter (range 15VDC) according to following table and check for correct DC-voltage from PS105. FDS cables and connectors PS105-02 and PS105-04 must be disconnected. (ALD-YA461).
4. Press power-on switch.

Normal Voltage	+ Lead	- Lead	Lower Limit
+5.1 VDC	PS105-TB01-001	PS105-TB03-001	+4.6 VDC
+5.1 VDC	PS105-TB02-001	PS105-TB03-001	+4.6 VDC
+8.5 VDC	PS105-02-003	PS105-02-007	+7.7 VDC
-5.1 VDC	PS105-02-004	PS105-02-012	-4.6 VDC
-8.5 VDC	PS105-02-009	PS105-02-005	-7.7 VDC
-5.1 VDC	PS105-04-002	PS105-04-001	-4.6 VDC
+8.5 VDC	PS105-04-013	PS105-04-003	+7.7 VDC
-8.5 VDC	PS105-04-010	PS105-04-007	-7.7 VDC
+6.0 VDC*	PS105-02-001	PS105-02-008	+5.5 VDC

* only if 5424 is installed

Is any DC-voltage below the lower limit?
Y N

029
1. Press power-off key.
2. Reconnect all cables.
3. Disconnect jumper from 01A-A2B2-B12 and 01A-A2B2-B07 to any D08 pin (previously installed).
4. Suspect load fault or intermittent error.

Go to Page 2, Step 005, Entry Point Z.

030

1. Press power-off key.
2. Disconnect jumpers from 01A-A2B2-B12 and 01A-A2B2-B07 to any D08 pin (previously installed).
3. Replace PS105.

Go to Page 2, Step 005, Entry Point Z.

031

1. Press power-off key.
2. Disconnect jumpers from 01A-A2B2-B12 and 01A-A2B2-B07 to any D08 pin (previously installed).
3. Replace TR105.
4. Reconnect all cables.

Go to Page 2, Step 005, Entry Point Z.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F7XX	A	2	001
F76B	A	2	001
F76D	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	017	0204	A
5	009	0210	A

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001
Symptom:
TR102 line voltage problem.

Suspected errors or FRU's (including intermittent errors)	
1	TR102 line voltage jumpering.
2	Customer's line voltage.
3	PS102 connector problem.
4	PS102.
5	TR102.

(Entry Point A)

1. Switch to CE Mode at CE panel.
2. Run voltage measurement program.
3. Check the following voltages for out of tolerance.

Addr	Bits	Voltages	from board	sense No.	Go to MAP
87	3	+12.3V PS102	01A-C1	A56	F766
87	1	+ 7.3V PS102	01A-C1	A57	F76C
87	4	+12.3V PS102	01A-C1	A58	F767
87	6	+ 9.5V PS102	01A-C1	A59	F769
87	5	+12.3V PS102	01A-C1	A60	F768
87	7	+ 6.8V PS102	01A-C1	A61	F76A
85	6	+10.1V PS102	01A-B2	A39	F76B
97	2	+ 5.1V PS102	01A-B1	A54	F76D

Are all voltages below maximum limit?

Y N

6 3
A B

002
Is more than one voltage out of tolerance?
Y N

003
Go to MAP for failing voltage according to table after Entry point A of this MAP.
Go to Page 2, Step 001, Entry Point A.

004
Are minus signs (-) displayed for all voltages?
Y N

005
Are plus signs (+) displayed for all voltages?
Y N

006
Check all connectors of PS102 for correct seating.

Any trouble found and repaired?
Y N

Power Problem

007

```
|-----------------------------------|
| 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 ensure that connections to PCC-K03 are tight.
5.Connect CE-meter (range 500VAC) to PCC-26-001 and to PCC-CB01-02 load (output) side.
(ALD-YA321)
6.Switch PCC-CB01 on.
7.Press power-on switch and wait approximately one minute.

Is line voltage present within tolerance limits of +8%/-15%?

Y N

6 5
G H

008

1.Press power-off key.

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

2.Press power-off switch (if not already done).
3.Switch PCC-CB01 off (if not already off).
4.Switch PCC-SW01 off (if not already off).
5.Connect CE-meter (range 500VAC) to PCC-23-001 and to PCC-CB01-02 (load side). (ALD-YA321/YA331/YA341)
6.Switch PCC-CB01 on.

Is line voltage present within tolerance limits of +8%/-15%.

Y N

009

Go To Map 0210, Entry Point A.

010

```
|-----------------------------------|
| 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.                      |
|-----------------------------------|
```

1.Switch PCC-CB01 off.
2.Replace PCC-K03.
3.Switch PCC-CB01 on.
Go to Page 2, Step 001, Entry Point A.

011
Go to MAP for failing voltage according to table after ENTRY POINT A of this MAP.
Go to Page 2, Step 001, Entry Point A.

012
Go to Step 017, Entry Point Z.

013
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Check transformer TR102-TB01 for correct connection according to customer's line voltage.
'Power line PCC to TR102'
(ALD-YA431/YA433)
Refer to line voltage conversion tables.
(ALD-YA021).

Is the line voltage connection correct for customer's line voltage?

Y N

014
1.Change the line voltage connections according to customer's line voltage. Refer to line voltage conversion tables.
(ALD-YA021)
2.Switch PCC-CB01 on.
3.Press power-on switch and wait approximately one minute.
Go to Page 2, Step 001, Entry Point A.

015
1.Switch PCC-CB01 on.
2.Press power-on switch and wait approximately one minute.
3.Run voltage measurement program according to MAP 0275.

Are all voltages in tolerance?
Y N

J K

016
(Entry Point B)

1.Press power-off key.
2.Switch PCC-CB01 off.
3.Replace transformer TR102.
Go to Step 017, Entry Point Z.

017
1.Ensure that the PCC-box is closed.

(Entry Point Z)

Go To Map 0204, Entry Point A.

018
1.Press power-off key.
2.Switch PCC-CB01 off.
3.Check that screws of transformer TR102-TB01 are tight.
4.Check TR102-TB01 for correct jumpering according to customer's line voltage.
(ALD-YA021)
5.Check all connectors of PS102 for correct seating.
6.Check connector PCC-26 for correct seating.
7.Switch PCC-CB01 on.
8.Press power-on switch and wait approximately one minute.
Go to Page 2, Step 001, Entry Point A.

019
Are all voltages below call CE-limit?
Y N

020
Go to MAP for failing voltage according to table after ENTRY POINT A of this MAP.
Go to Page 2, Step 001, Entry Point A.

021
Go to Step 017, Entry Point Z.

Power Problem

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F76A	A	1	001
F76B	A	1	001
F76F	A	1	001
F766	A	1	001
F767	A	1	001
F768	A	1	001
F769	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	014	0204	A

001

Symptom:

TR102-F01 blown (primary fuse)

	Suspected errors or FRU's (including intermittent errors)
1	TR102-F01.
2	Cabling from TR102 to PS102.
3	PS102.
4	TR102.
5	Mismatch between TR102 input strapping and customer's line voltage.

(Entry Point A)

Was fuse TR102-F01 replaced before?

Y N

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002
1.Replace fuse TR102-F01.
2.Switch PCC-CB01 on.
3.Press power-on switch and wait approximately one minute.

(Entry Point B)

Is any reference code displayed?
Y N

003
Go to Page 3, Step 014, Entry Point Z.

004
1.Press power off switch.
2.Check fuse TR102-F01.

Is fuse TR102-F01 blown?
Y N

005
Go to MAP for displayed reference code.

006
1.Switch PCC-CB01 off.
2.Check the TR102 input strapping. Ensure that the TR102 input stapping fits to the customer's line voltage. See (ALD-YA021) or (ALD-YA433)

Was the input stapping of TR102 ok?
Y N

007
1.Correct the input strapping of TR102 according to cutomer's line voltage (ALD-YA021).
2.Switch PCC-CB01 on.

Go to Page 3, Step 014, Entry Point Z.

008
1.Disconnect connectors PS102-01 and PS102-04.
(ALD-YA433)
2.Replace fuse TR102-F01.
3.Switch PCC-CB01 on.
4.Press power-on switch and wait approximately one minute.
5.Press power off switch.

Is fuse TR102-F01 blown again?
Y N

009
(Entry Point C)

1.Switch PCC-CB01 off.
2.Replace PS102.
Go to Page 3, Step 014, Entry Point Z.

010
1.Reconnect connectors PS102-01 and PS102-04.
2.Disconnect connector PS102-02, PS102-03 and PS102-05.
3.Replace fuse TR102-F01.
4.Press power on switch and wait approximately one minute.
5.Press power off switch.

Is fuse TR102-F01 blown again?
Y N

011
Go to Step 009, Entry Point C.

012
1. Reconnect connectors PS102-02 PS102-03 and PS102-05.
2. Disconnect connector PS102-06.
3. Jumper connector PS102-06-005 and PS102-06-009 (use connector socket on PS102).
4. Replace fuse TR102-F01.
5. Press power on switch and wait approximately one minute.
6. Press power off switch.

Is fuse TR102-F01 blown?
Y N

013
Go to Page 2, Step 009, Entry Point C.

014
1. Press power-off key.
2. Switch PCC-CB01 off.
3. Check cables from TR102 to PS102 for any damage. If no error detected, replace TR102.

(Entry Point Z)

Go To Map 0204, Entry Point A.

015
Press power on switch and wait approximately one minute.
Go to Page 2, Step 002, Entry Point B.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F766	A	1	001
F767	A	1	001
F768	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	014	0200	A
4	016	0204	A

001

Symptom:
PS102-CP07 or PS102-CP08 or PS102-CP09 tripped. Bias voltage problem (12.3V) for IPS.

	Suspected errors or FRU's (including intermittent errors)
1	PS111 control card 01A-C1C2.
2	PS112 control card 01A-C1C4.
3	PS113 control card 01A-C1D2.
4	PS114 control card 01A-C1D4.
5	Bias wiring.

(Entry Point A)

Is PS102-CP09 tripped?

Y N

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002

1.Press power-off key and wait approximately one minute.
2.Remove control card for failing power supply according to following table.

Tripped CP	Bias Volt. for PS #	Outp.Volt. of PS	PS-Control card Position
PS102-CP07	112	-6.54V	01A-C1C4
PS102-CP08	111	+4.26V	01A-C1C2

3.Switch all tripped CP's on.
4.Press power-on switch and wait approximatley one minute.

Is PS102-CP07 or PS102-CP08 tripped?

Y N

003

1.Press power-off key.
2.Replace previously removed control card by a new one.
Go to Page 3, Step 012, Entry Point Z.

004
(Entry Point D)

1.Press power-off key.
2.Disconnect connector PS102-07.
3.Switch all tripped CP's on.
4.Press power-on switch and wait approximately one minute.

Is PS102-CP07 or PS102-CP08 or PS102-CP09 tripped?

Y N

005
1.Press power-off key.
2.Reconnect connector PS102-07.
3.Disconnect connector 01A-C1A3 (ALD-YA525).
4.Press power-on switch and wait approximately one minute.

Is PS102-CP07 or PS102-CP08 or PS102-CP09 tripped?
Y N

006
1.Press power-off key.
2.Check for short circuit of the respective voltage wiring.
3.Repair or replace (if necessary) board 01A-C1 (ALD-YA525).
Go to Step 012, Entry Point Z.

007
1.Press power-off key.
2.Repair or replace cabeling from connector PS102-07 to connector 01A-C1A3.
Go to Step 012, Entry Point Z.

008
1.Press power-off key.
2.Replace PS102.
Go to Step 012, Entry Point Z.

009
1.Press power-off key.
2.Remove control cards for PS113 (-4.34V) and PS114 (-1.52V) from positions 01A-C1D2 and 01A-C1D4.
3.Switch PS102-CP09 on.
4.Press power-on switch and wait approximately one minute.

Is PS102-CP09 tripped?
Y N

4 E F

010
1.Press power-off key.
2.Plug previously removed control card of PS113 into position 01A-C1D2.
3.Press power-on switch and wait approximately one minute.

(Entry Point E)

Is PS102-CP09 tripped?
Y N

011
(Entry Point B)

1.Press Power-off key.
2.Install new control card for PS114 into position 01A-C1D4.
3.Press power-on switch and wait approximately one minute.

Is PS102-CP09 tripped?
Y N

012
(Entry Point Z)

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

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

013
Is any reference code displayed?
Y N

014
Go To Map 0200, Entry Point A.

015
Go to MAP for displayed reference code.

4 G 4 H 4 J

016
Go To Map 0204, Entry Point A.

017
Go to Page 3, Step 011, Entry Point B.

018
1.Press power-off key.
2.Replace control card for PS113 in position 01A-C1D2 by a new one.
3.Press power-on switch and wait approximately one minute.
Go to Page 3, Step 010, Entry Point E.

019
Go to Page 2, Step 004, Entry Point D.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F76C	A	1	001
F769	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0200	A
2	009	0204	A
2	002	0280	A

001
Symptom:
PS102-CP05 tripped (7.1V bulk to PS112).

	Suspected errors or FRU's (including intermittent errors)
1	PS112 power module 01A-C1H4.
2	PS112 control card 01A-C1C4.
3	PS113 power modules 01A-C1F3/G3/H3/E3 (if present).
4	PS113 control card 01A-C1D2.
5	Bulk distribution from PS102 to PS112.

(Entry Point A)

1.Press power-off key.
2.Switch PS102-CP05 on.
3.Remove PS112 control card from 01A-C1C4,
PS113 control card from 01A-C1D2,
PS112 power module from 01A-C1H4,
PS113 power modules from 01A-C1F3/G3/H3
and 01A-C1E3 if present.
4.Press power-on switch and wait
approximately one minute.

Is PS102-CP05 tripped?
Y N

2 2
A B

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002
Perform IPS service check for PS112 and PS113.
Go To Map 0280, Entry Point A.

003
1.Press power-off key.
2.Switch PS102-CP05 on.
3.Disconnect connector PS102-07. (ALD-YA433)
4.Press power-on switch and wait approximately one minute.

Is PS102-CP05 tripped?
Y N

004
Suspect short circuit on cable '+7.1V FL PS102 to 01A-C1 PS112'
1.Repair or replace cable from connector PS102-07 to 01A-C1. (ALD-YA433)
2.Reconnect all connectors and FDS cables.
3.Replug control card and power module.
Go to Step 005, Entry Point Z.

005
1.Press power-off key.
2.Replace PS102.
3.Reconnect all connectors and FDS cables.
4.Replug control card and power module.

(Entry Point Z)

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

Is the "power complete" indicator on?

Y N

006
Is any reference code displayed?
Y N

C D E

007
Go To Map 0200, Entry Point A.

008
Go to MAP for displayed reference code.

009
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0200	A
2	011	0204	A
2	002	0280	A

001

Symptom:

PS102-CP04 tripped (9.5V bulk to PS113).

	Suspected errors or FRU's (including intermittent errors)
1	PS113 power modules 01A-C1/F3/G3/H3 and E3 (if present).
2	PS113 control card 01A-C1D2.
3	Bulk distribution from PS102 to PS113.
4	PS112 power module 01A-C1H4.
5	PS112 control card 01A-C1C4.

(Entry Point A)

1.Press power-off key.
2.Switch PS102-CP04 on.
3.Remove control card and power module of PS113 from position 01A-C1D2 and 01A-C1/F3/G3/H3 and 01A-C1E3 if present. (ALD-YA561)
4.Press power-on switch and wait approximately one minute.

Is PS102-CP04 tripped?

Y N

2 2
A B

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002
Perform IPS Service check for PS113 and for PS112.
Go To Map 0280, Entry Point A.

003
1.Press power-off key.
2.Switch PS102-CP04 on.
3.Disconnect FDS cables from PS102-TB03 and PS102-TB04.
(ALD-YA433)
4.Press power-on switch and wait approximately one minute.

Is PS102-CP04 tripped?
Y N

004
1.Press power-off switch.
2.Reconnect FDS cables to PS102-TB03 and PS102-TB04.
3.Disconnect FDS cables from 01A-C1G2 and 01A-C1H1.
'+9.5V FL PS102 to 01A-C1 PS113'
(ALD-YA523)
4.Press power-on switch and wait approximatley one minute.

Is PS102-CP04 tripped?
Y N

005
1.Press power-off switch.
2.Repair or replace IPS board 01A-C1.

(Entry Point B)

3.Reconnect all connectors and FDS cables.
4.Replug control card and power modules.
Go to Step 007, Entry Point Z.

006
1.Press power-off switch.
2.Repair or replace FDS cables from PS102-TB03 and PS102-TB04 to 01A-C1G2 and 01A-C1H1.
'9.5V FL PS102 to 01A-C1 PS113'
(ALD-YA523)
Go to Step 005, Entry Point B.

007
1.Press power-off key.
2.Replace PS102.
3.Reconnect all connectors and FDS cables.
4.Replug control card and power modules.

(Entry Point Z)

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

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

Y N

008
Is any reference code displayed?
Y N

009
Go To Map 0200, Entry Point A.

010
Go to MAP for displayed reference code.

011
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F76A	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0200	A
2	011	0204	A
1	002	0280	A

001
Symptom:
PS102-CP06 tripped (6.8V bulk to PS114).

	Suspected errors or FRU's (including intermittent errors)
1	PS114 power module 01A-C1F5/G5/H5
2	PS114 control card 01A-C1D4.
3	Bulk distribution from PS102 to PS114.

(Entry Point A)

1.Press power-off key.
2.Switch on PS102-CP06.
3.Remove PS114 control card from 01A-C1D4.
Remove power modules from 01A-C1F5,
01A-C1G5 and 01A-C1H5.
4.Press power-on switch and wait
approximately one minute.

Is PS102-CP06 tripped?
Y N

002
Perform IPS Service check for PS114.
Go To Map 0280, Entry Point A.

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003
1.Press power-off key.
2.Switch PS102-CP06.
3.Disconnect FDS cables from PS102-TB07 and PS102-TB08.
(ALD-YA433)
4.Press power-on switch and wait approximatley one minute.

Is PS102-CP06 tripped?
Y N

004
1.Press power-off switch.
2.Reconnect FDS cables to PS102-TB07 and PS102-TB08.
3.Disconnect FDS cables from 01A-C1G7 and 01A-C1H6.
'+6.8V FL PS102 to 01A-C1 PS114'
(ALD-YA433)
4.Press power-on switch and wait approximatley one minute.

Is PS102-CP06 tripped?
Y N

005
1.Press power-off switch.
2.Repair or replace IPS board 01A-C1.

(Entry Point B)

3.Reconnect all connectors and FDS cables.
4.Replug control card and power module.
Go to Step 007, Entry Point Z.

006
1.Press power-off switch.
2.Repair or replace FDS cables from PS102-TB07 and PS102-TB08 to 01A-C1G7 and 01A-C1H6.
'6.8V FL PS102 to 01A-C1 PS114'
(ALD-YA433)
Go to Step 005, Entry Point B.

007
1.Press power-off key.
2.Replace PS102.
3.Reconnect all connectors and FDS cables.
4.Replug control card and power modules.

(Entry Point Z)

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

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

Y N

008
Is any reference code displayed?
Y N

009
Go To Map 0200, Entry Point A.

010
Go to MAP for displayed reference code.

011
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F76D	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0200	A
2	011	0204	A

001

Symptom:
PS102-CP02 tripped
(+5.1V to 01A-B2).

	Suspected errors or FRU's (including intermittent errors)
1	Load fault on 01A-B2.
2	DC distribution from PS102 to 01A-B2.
3	PS102.

(Entry Point A)

1.Press power-off key.
2.Switch on PS102-CP02.
3.Disconnect FDS cables from positions
01A-B2YF and 01A-B2ZC
'(+5.1V PS102)'
(ALD-YC851)
4.Press power-on switch and wait
approximatley one minute.

IS PS102-CP02 tripped?

Y N

2 2
A B

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002
Suspect short circuit on board 01A-B2 or on a card plugged on board 01A-B2.
1.Press power-off key.
2.Remove all cards from board 01A-B2.
3.Reconnect previously disconnected FDS cables to board 01A-B2.
4.Press power-on switch and wait approximatley one minute.

Is PS102-CP02 tripped?
Y N

003
1.Press power-off switch.
2.Replug one card after the other.
3.After each card plugged in, press power-on switch and wait approximately one minute.
4.Replace defective card which was plugged in prior to tripping of PS102-CP02 by a new one.
Go to Step 007, Entry Point Z.

004
1.Press power-off switch.
2.Replace board 01A-B2 by a new one.
Go to Step 007, Entry Point Z.

005
1.Press power-off key.
2.Switch on PS102-CP02.
3.Disconnect FDS cables from PS102-TB01 and PS102-TB02.
(ALD-YA433)
4.Press power-on switch and wait approximately one minute. .

Is PS102-CP02 tripped?
Y N

006
Suspect short circuit on +5.1V FDS cable.
'+5.1V PS102 to 01A-B2 IC-ADAPT'
1.Press power-off key.
2.Repair or replace FDS cable from PS102-TB01 and/or PS102-TB02 to board 01A-B2.
(ALD-YA433)
Go to Step 007, Entry Point Z.

007
1.Press power-off switch.
2.Replace PS102.
3.Reconnect FDS-cables to PS102-TB01 and PS102-TB02 and to board 01A-B2.

(Entry Point Z)

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

Is the "power complete" indicator on?
Y N

008
Is any reference code displayed?
Y N

009
Go To Map 0200, Entry Point A.

010
Go to MAP for displayed reference code.

011
Go To Map 0204, Entry Point A.

POWER PROBLEM

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
F76B	A	1	001
02XX	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0200	A
2	004	0275	A
2	008	0280	A

001
Symptom:
PS102-CP03 tripped
(10.1V bulk to PS111 and to board 01A-B2).

	Suspected errors or FRU's (including intermittent errors)
1	PS111 power module 01A-C1E4.
2	PS111 control card 01A-C1C2.
3	10.1VDC distribution.

(Entry Point A)

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

Is PS102-CP03 tripped?
Y N

002
Is any reference code displayed?
Y N

003
Is the "basic check" indicator on?
Y N

2A 2B 2C 2D

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004
Suspect intermittent error.

(Entry Point B)

Run voltage measurement program.
Go To Map 0275, Entry Point A.

005
Go To Map 0200, Entry Point A.

006
Go to MAP for displayed reference code.

007
1.Remove PS111 power module for +4.26V from position 01A-C1E4 and control card from position 01A-C1C2.
2.Press power-on switch and wait approximately one minute.

Is PS102-CP03 tripped?
Y N

008
Suspect defective power module or control card.
Go To Map 0280, Entry Point A.

009
1.Press power-off key.
2.Disconnect wire from 01A-C1E2-A/B.
3.Switch PS102-CP03 on.
4.Press power-on switch and wait approximately one minute.

Is PS102-CP0 tripped?
Y N

010
1.Disconnect wires from 01A-B2W3-E14 and 01A-B2B3-E14
'+10.1V PS102 to 01A-B2 IC-ADAPT'
(ALD-YC851)
2.Reconnect the previously disconnected wire to 01A-C1E2-A/B.
3.Press power-on switch and wait approximately one minute.

Is PS102-CP03 tripped?
Y N

011
1.Press power-off key.
2.Reconnect connector 01A-B2W3-E14 and 01A-B2B3-E14.
Suspect short circuit on board 01A-B2 or on a card plugged on board 01A-B2.
3.Remove all cards from board 01A-B2.
4.Press power-on switch and wait approximately one minute.

Is PS102-CP03 tripped?
Y N

012
1.Press power-off key.
2.Replug one card after the other.
3.After each card plugged in, press power-on switch and wait approximately one minute.
4.Replace that card which was inserted prior to tripping of PS102-CP03.
Go to Step 004, Entry Point B.

013
1.Switch PCC-CB01 off.
2.Replace board 01A-B2 by a new one.
Go to Step 004, Entry Point B.

014
1.Repair or replace cable from
01A-C1E2-A/B
(ALD-YA523)
to 01A-B2W3-E14 and
to 01A-B2B3-E14
'+10.1V PS102 to 01A-B2 IC-ADAPT.'
(ALD-YC851)
Go to Page 2, Step 004, Entry Point B.

015
1.Disconnect FDS cables from PS102-TB05.
(ALD-YA433)
2.Switch PS102-CP03 on.
3.Press power-on switch and wait
approximately one minute.

Is PS102-CP03 tripped?
Y N

016
1.Disconnect cables from board 01A-C1F1
and 01A-C1E2
'+10.1V PS102 to 01A-C1 PS1 `1'
(ALD-YA523)
2.Reconnect connector FDS cables to
PS102-TB05.
3.Press power-on switch and wait
approximately one minute.

Is PS102-CP03 tripped?
Y N

017
1.Make a visual inspection on board
01A-C1 for any short circuit or damage.
If no error detected or repair is
impossible, replace board 01A-C1.
2.Reconnect all previously disconnected
wires and cables.
Go to Page 2, Step 004, Entry Point B.

018
1.Press power-off key.
2.Repair or replace cable from PS102-TB05
(ALD-YA433)
to board 01A-C1F1 and to 01A-C1E2
(ALD-YA523)
3.Reconnect all previously disconnected
wires and cables.
Go to Page 2, Step 004, Entry Point B.

019
1.Press power-off key.
2.Replace PS102.
3.Reconnect all previously disconnected
connectors and cables.
Go to Page 2, Step 004, Entry Point B.