Honeywell

DPR180/DPR250

PCMCIA OPTION

MANUAL

Product of France Issue 4 - 05/00 US1I-6208

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FIGURES

1. OVERVIEW

Before running your PCMCIA option, please read the following explanations on how to install it.

1.1 Warning

➢ **If you received your optional PCMCIA board as a spare part:**

You are going to install your optional PCMCIA board.

To run properly, this application needs recorder firmware release 001AK or higher.

To determine the version of your recorder firmware, refer to your product manual (sub-section 3-2) or read it on the recorder in SERVICE / MISCELLANEOUS, SOFTWARE.

If your recorder firmware release is lower than 001AK (or if you wish to upgrade it), follow the procedure given in the **PC Configurator Kit Notice (CK 214)**:

1. Install the PC configurator software (included in this kit) on your PC.

The minimum PC configuration required is a 486 with 4 Mb of RAM and 10 Mb free on your hard disk.

The software is compatible with Windows 3.1, Windows 3.11 and Windows 95.

2. Install the new recorder firmware (included in this kit) on your PC.

3. Connect the PC - Recorder interface (Kit # 46190409-501 **not included**).

4. Upgrade the recorder firmware.

5. Install the optional PCMCIA board as described in this manual (refer to Section 2; sub-section 2.1)

6. Configure the PCMCIA option board as described in section 3 of the manual.

➢ **If you received your optional PCMCIA board with your recorder:**

The PCMCIA board is already installed.

However, you have to configure the PCMCIA option as described in Section 3 of this manual.

➢ **Note that you can only upgrade the recorder firmware from the front panel of the recorder (with a jack cable) using the PC Configurator Kit.**

1.2 Main functions

- Selectable start conditions of archiving
- Rollover recording capability to keep the more recent informations
- Recorded informations selectable among: trends, alarms, digital events and internal diagnostics with configurable file names
- Recorded trends may be analog inputs, math results (if Maths option present)
  or communication PV's
- Ten selectable trends login frequencies from 1 second up to 30 minutes
- Check of the PCMCIA memory card (can be done before storing process data)
- PCMCIA event selectable on a configurable filling level
- Displaying PCMCIA card status (with specific led)
- Activating relay or displaying message on "PCMCIA" event
- PCMCIA memory cards used are ATA type II compatible and are made with the flash technology
- Internal buffer (128 Kb) to store the data during the change of the PCMCIA memory card.

2. INSTALLATION

2.1 Installing the PCMCIA option board

➔ **WARNING**: Please use an antistatic ground strap to avoid possible electrostatic damage to the printed circuit boards.

1. Turn off the power to isolate the recorder from the main supply.
2. Open the recorder door and remove the chart cassette from the chassis.
3. Turn OFF the switch. (See Figure 2-1)

Recorder's main powerswitch located behind the chart cassette

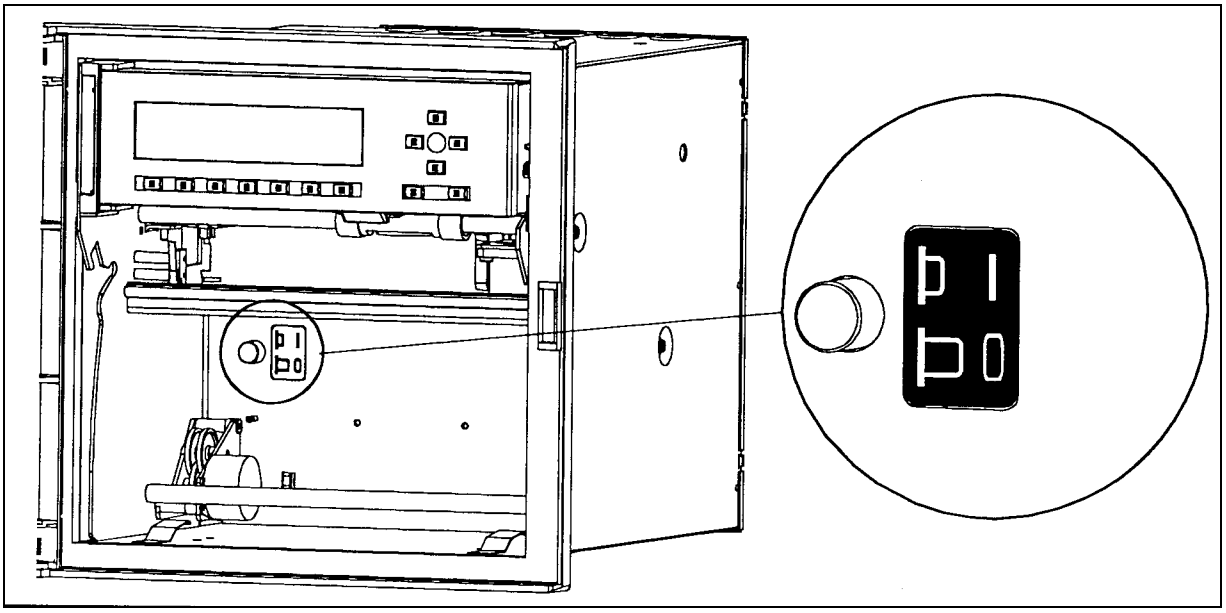


Figure 2-1

4. Remove the cover from the power supply terminal block. (See ref. E, Figure 2-15)
5. Disconnect the main supply from the power supply terminal block.
6. Unscrew the 3 fixing screws from the rear cover. (See ref. A, Figure 2-2)
7. Remove the rear cover. (See ref. B & C, Figure 2-2)

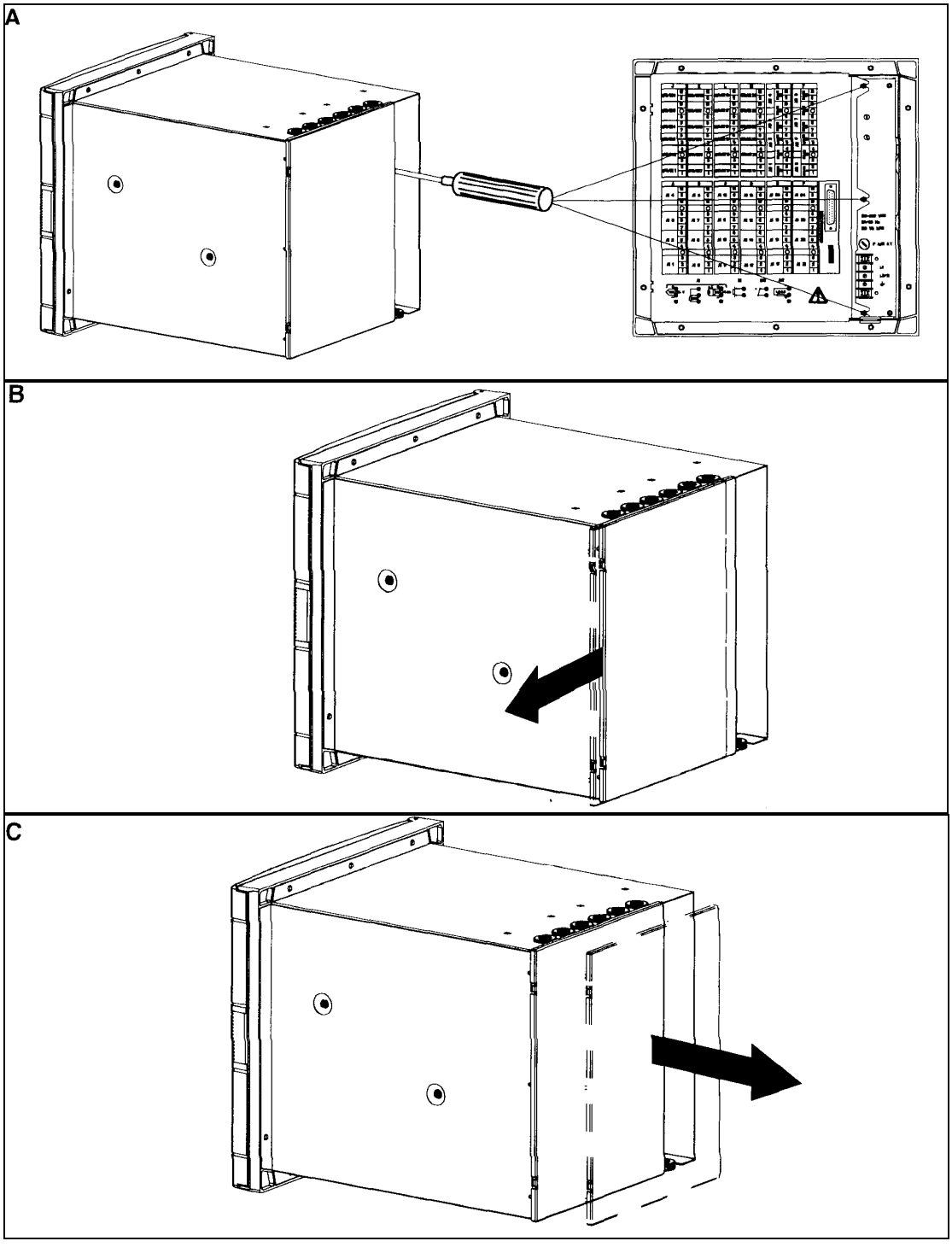
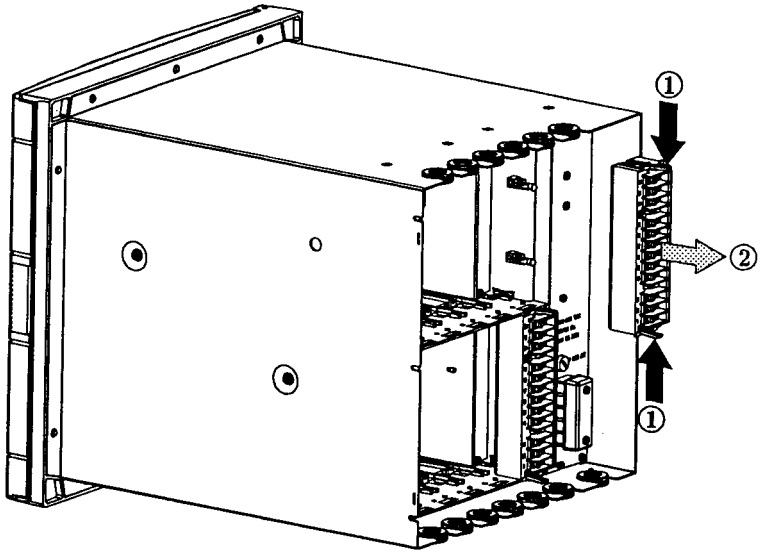


Figure 2-2

8. Remove all the terminal blocks. (See Figure 2-3)



1) Press down on the terminal block clips.
2) Pull to release the terminal block.

Figure 2-3

9. Remove all the grommets. (See ref. A, Figure 2-4)
10. Unscrew the 4 fixing screws (M4) and remove from the chassis with the Torx key T20. (See ref. B, Figure 2-4)

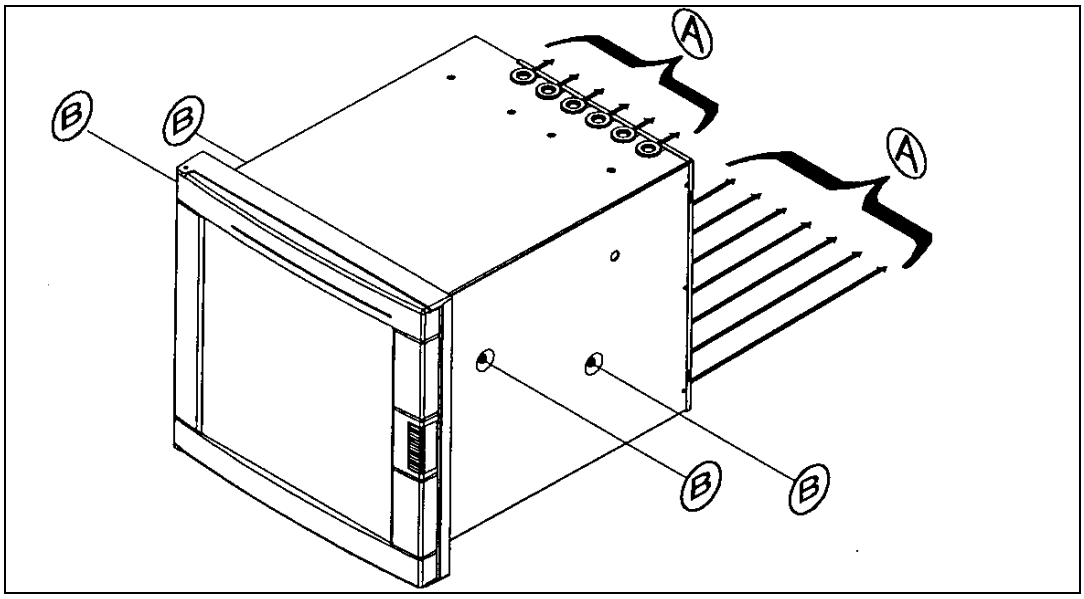


Figure 2-4

11. Slide the recorder chassis out of the case. (See Figure 2-5).

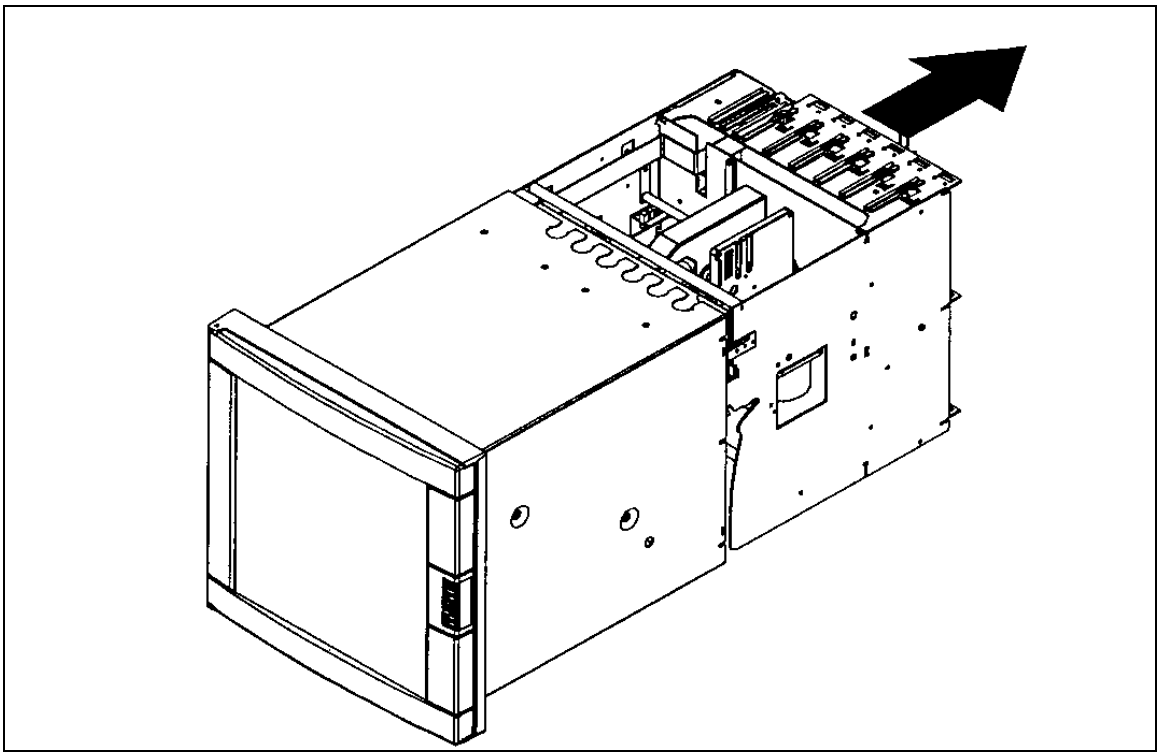


Figure 2-5

12. Unscrew the 2 fixing screws from the power supply.
13. Remove the power supply. (See Figure 2-6)

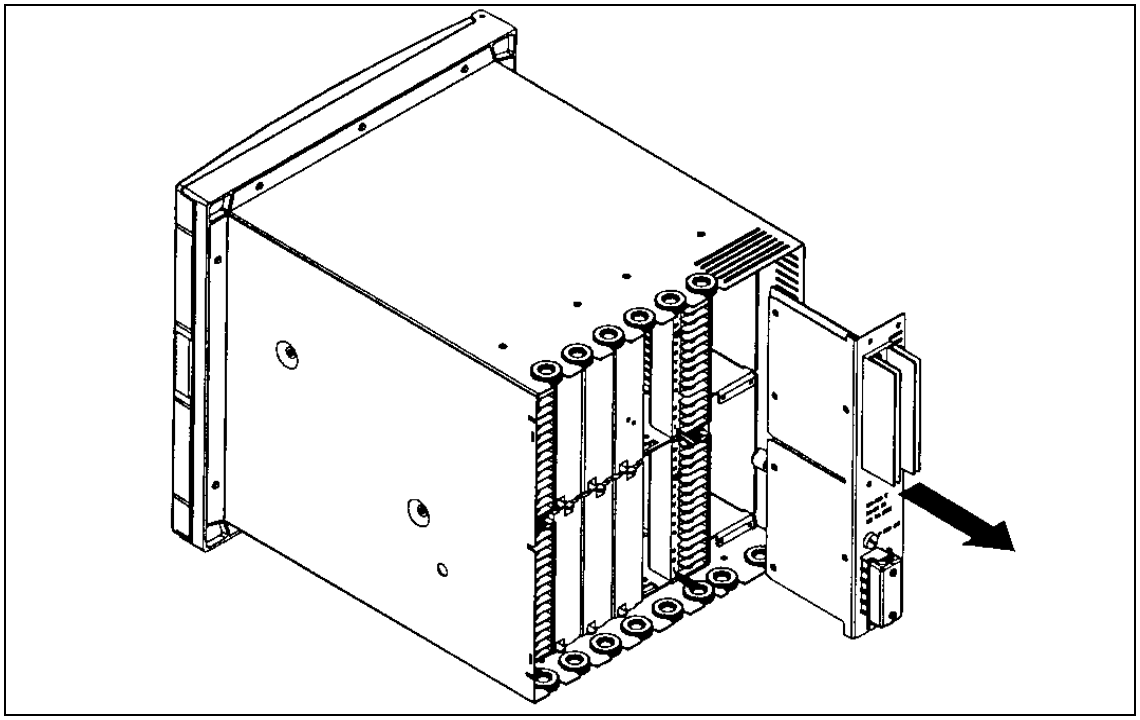


Figure 2-6

14. Remove the slot covers in the rightest location.

15. Remove the cover which protects the CPU board. Unscrew the 3 fixing screws. (See Figure 2-7).

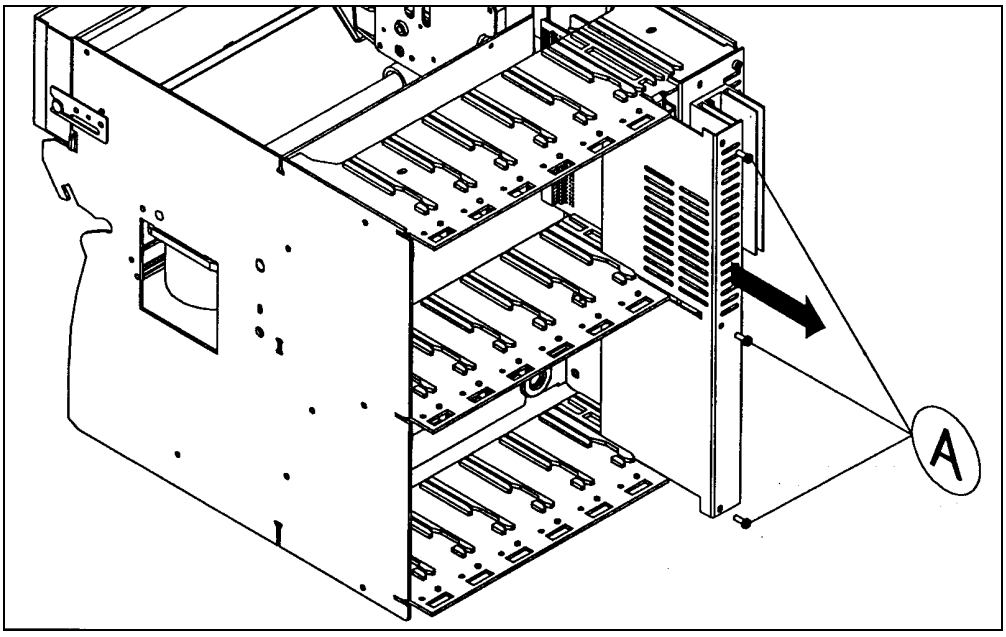


Figure 2-7

16. Ensure your antistatic ground strap is connected to earth before proceeding to avoid possible electrostatic damage to the CPU board or PCMCIA board.
17. Disconnect the flat cable from the CPU board. (See Figure 2-8)

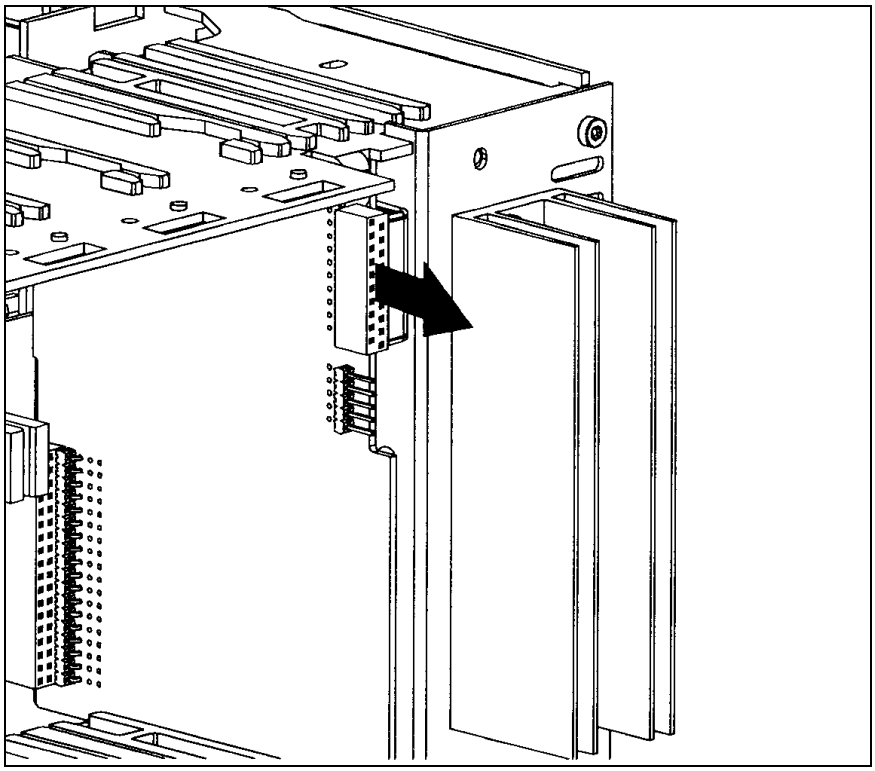


Figure 2-8

18. Remove the MMI flat cable plastic protection.

19. Remove the 3 flat cable clips. (See ref. A, Figure 2-9)
20. Remove the ink ribbon cartridge thrust (see ref. B, Figure 2-9). Unscrew the fixing screw.
21. Remove the shaft (see ref. C, Figure 2-9) by unscrewing the 2 screws.
22. Replace it with the new shaft according to the recorder width. Place the small diameter on the PCMCIA side.
23. Replace the 2 screws.

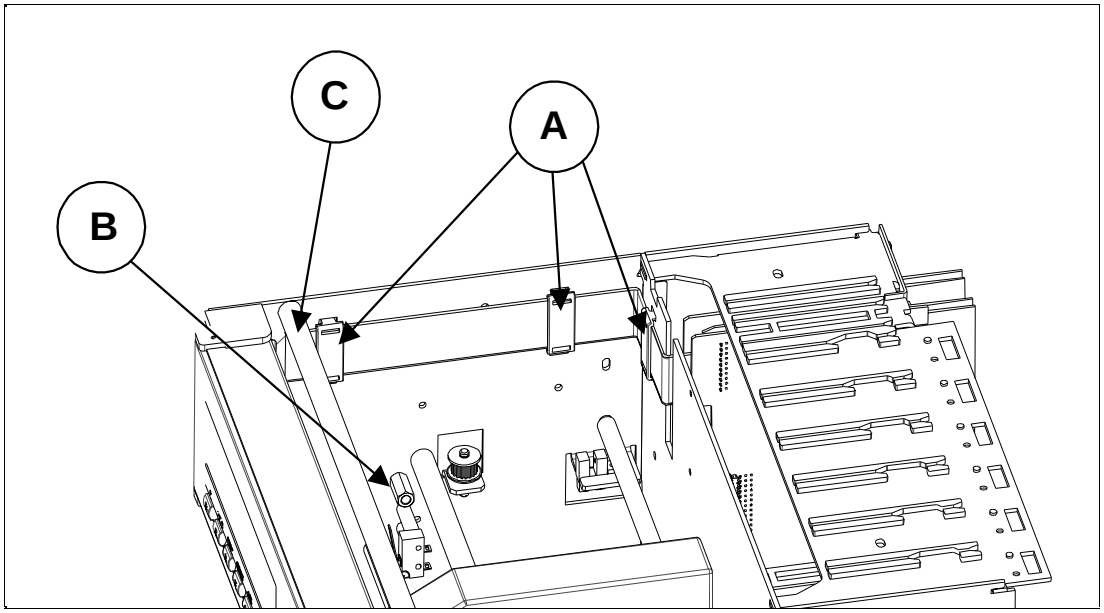


Figure 2-9

24. Unscrew the 3 fixing screws from the PCMCIA sub-assembly. (See Figure 2-10).

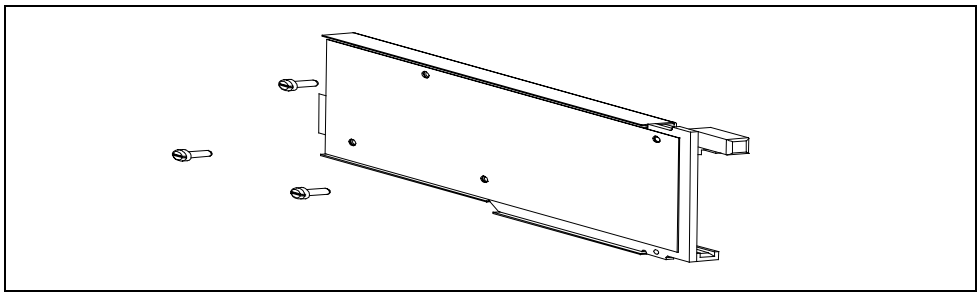


Figure 2-10

25. Put in place the PCMCIA sub-assembly on the left hand printer chassis side plate. (See Figure 2-11)
26. Fix the PCMCIA sub-assembly with the 3 screws M3. (See ref. A, Figure 2-11)
    WARNING: The 3 PCMCIA board fixing holes may have a wrong diameter (2.2 mm) but only on the very first 180 mm units.
    In this case, you have to enlarge them to 3+ 0.5/0 mm.
    - Insert fully your memory card (not supplied) in the card guides.
    - Fix the memory card guides with the 2 screws M2. (See ref. B, Figure 2-11)

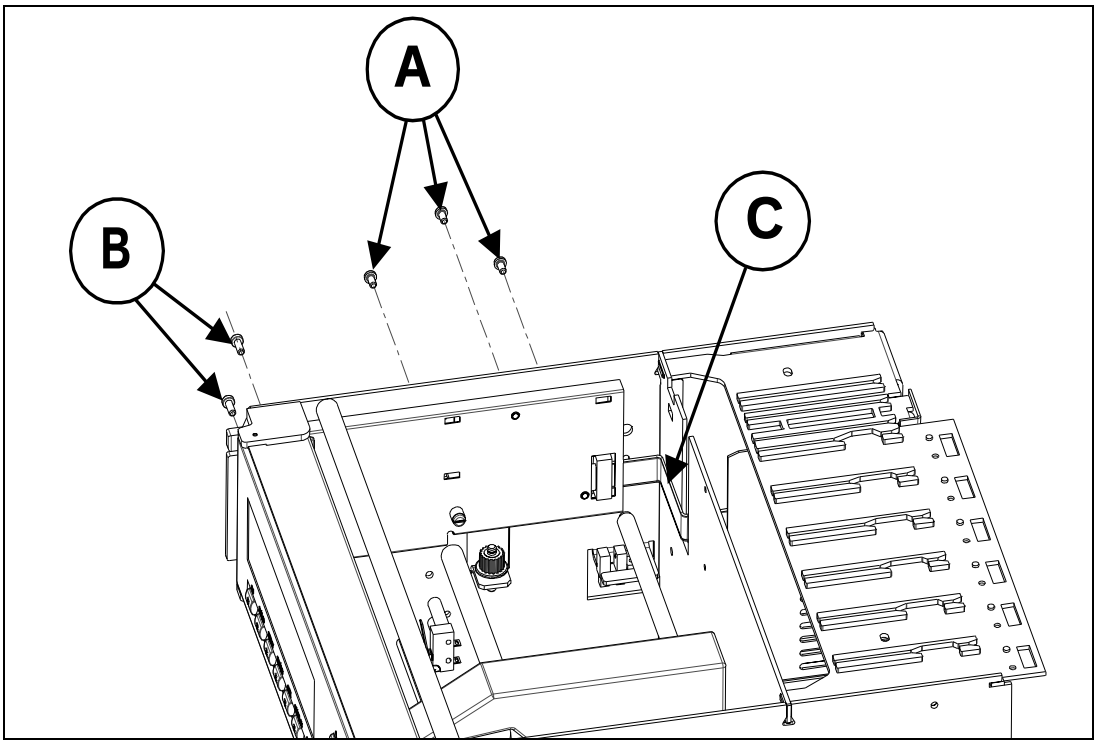


Figure 2-11

27. Pass the PCMCIA flat cable through the opening at the rear of the printer chassis.
    - Fix the PCMCIA flat cable on the rear metal sheet with the double-side adhesive tape. (See ref. C, Figure 2-11). The adhesive tape is located on the flat cable.
    - Ensure the printer carriage can move properly.
28. Replace the MMI flat cable plastic protection.
29. Connect the PCMCIA flat cable to the CPU board (see Figure 2-12). Ensure the connectors are located correctly.

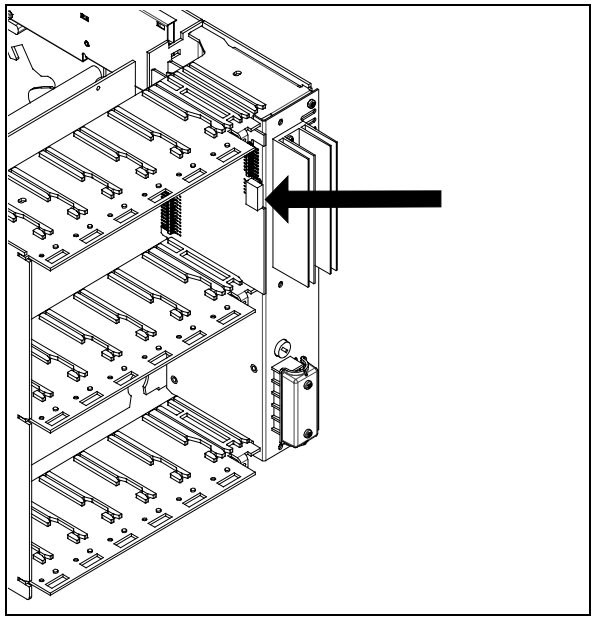


Figure 2-12

30. Put in place the MMI flat cable on the PCMCIA cover.
31. Fix it with the 2 flat cable clips supplied (with foam). (See ref. A, Figure 2-13)

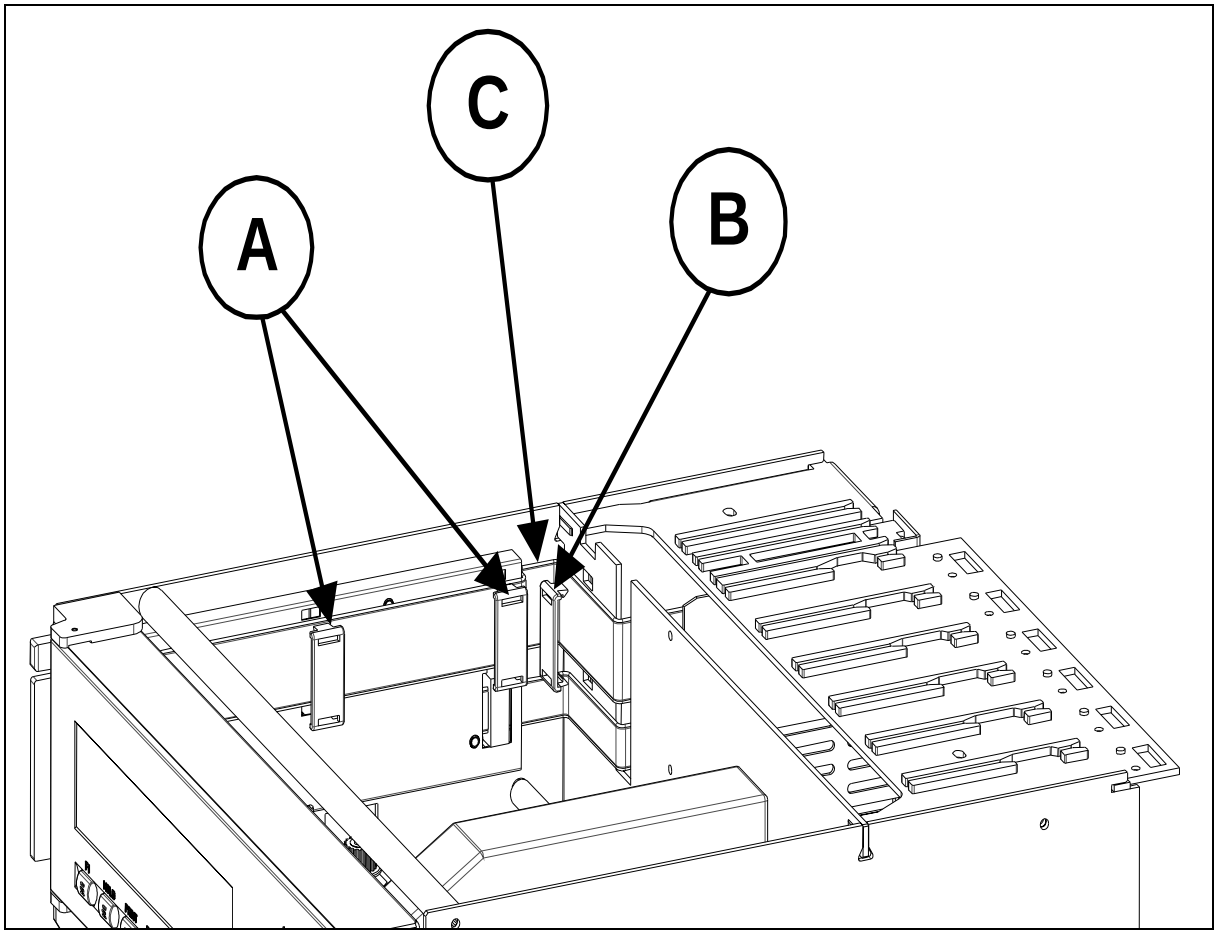


Figure 2-13

32. Ensure the MMI can open properly.
    - Open the MMI fully.
    - Remove the protection of the double-side adhesive tape located on the PCMCIA cover.
    - Fix the MMI flat cable.
    - Put in place the MMI flat cable at the rear of the PCMCIA cover. (See ref. C, Figure 2-13)
33. Put in place the third MMI flat cable clip (not supplied) at the rear of the printer chassis. (See ref. B, Figure 2-13).
34. Connect the MMI flat cable to the CPU Board (see Figure 2-14). Ensure the connectors are located correctly.

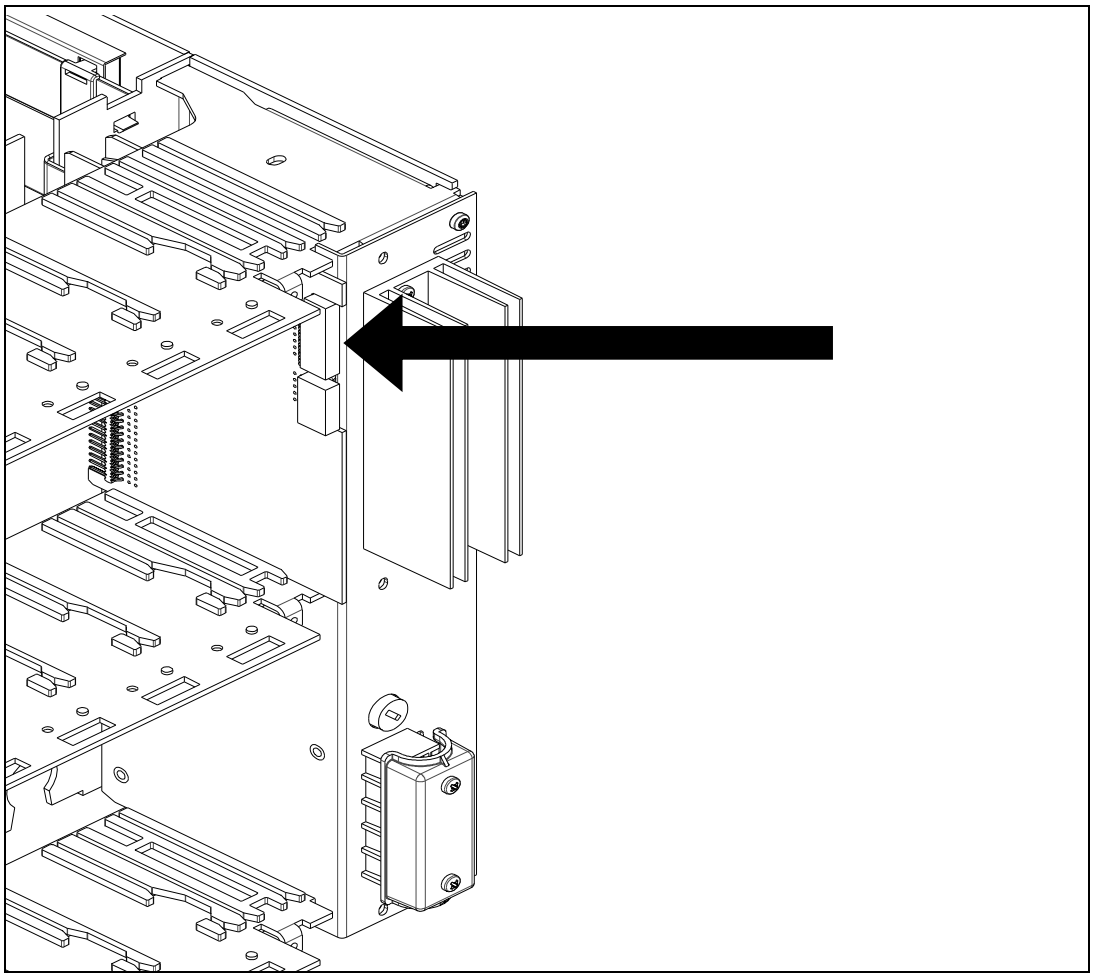
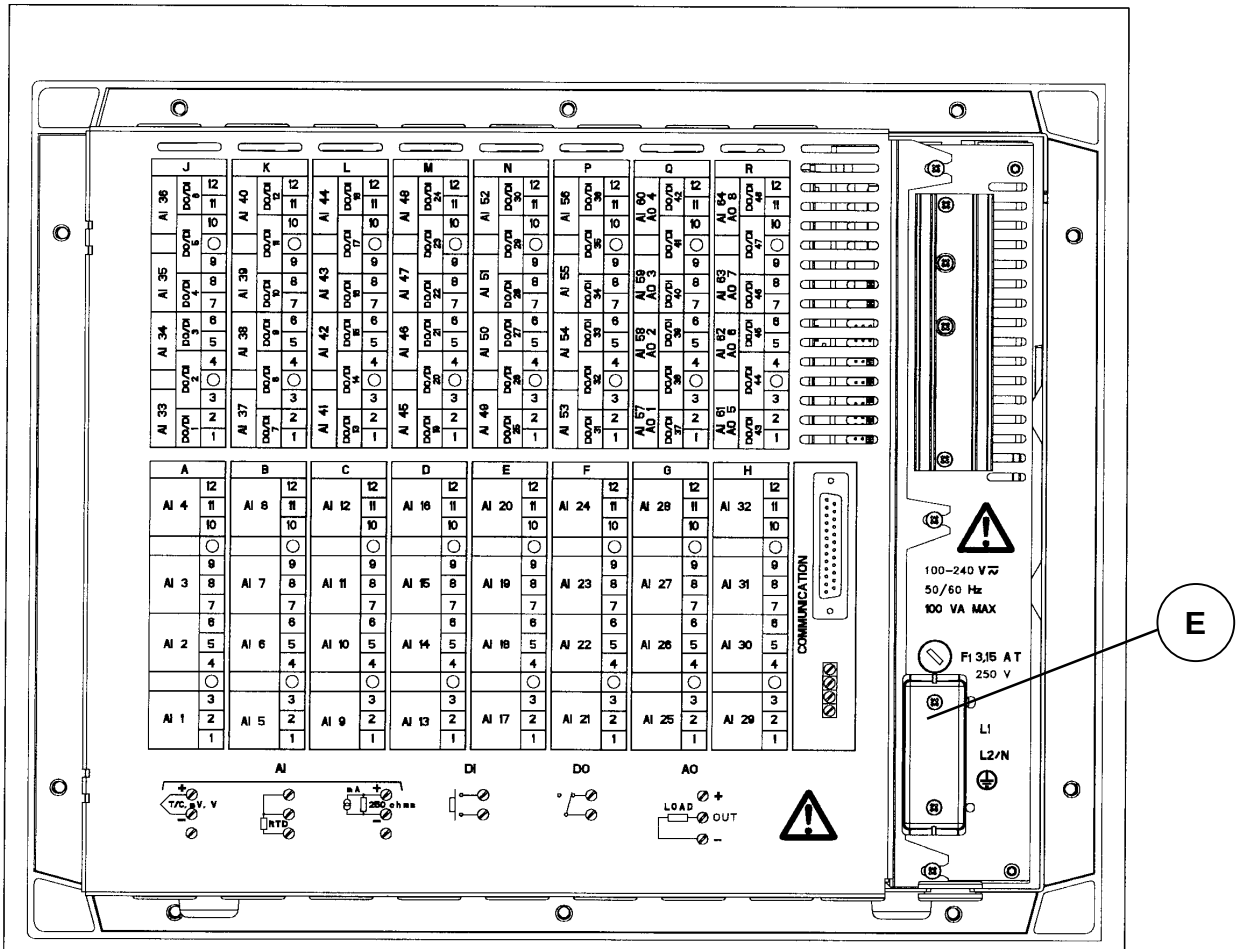


Figure 2-14

35. Replace the CPU board protection cover.
    Replace the 3 fixing screws.
36. Replace the slot covers.
37. Replace the power supply. Replace the 2 rightest fixing screws.
38. Slide the recorder chassis back into the outer case.
39. Replace the 4 fixing screws (M4) with the Torx key T20. (See ref. B, Figure 2-4)
40. Replace all terminal blocks and grommets.
41. Replace the rear cover. Replace the 3 fixing screws. (See ref. A, Figure 2-2)
42. Reconnect the main supply to the power supply terminal block.
43. Replace the power supply terminal block cover. (See ref. E, Figure 2-15)
44. Turn ON the switch. (See Figure 2-1).
45. Replace the chart cassette.
46. Switch ON the main supply.
47. Upgrade your recorder firmware if the revision is lower than 001AK. (See CK 214).



	Positions
AI = Analog input **AO** = Auxiliary output **DI** = Digital input **DO** = Digital output (relay)	From **A** to **H** (Lower rack) and from **J** to **R** (Upper rack) From **N** to **R** (Upper rack) From **J** to **R** (Upper rack) From **J** to **R** (Upper rack)
Note: Terminal blocks can be removed from the board for easier wiring and board replacement	

Figure 2-15

3. OPERATION

3.1 Overview

3.1.1 PCMCIA card standard compatibility

The embedded PCMCIA driver supports all **ATA flash card devices** with a size from 2Mb up to 75Mb and is compatible with the PC card format (type II).

The write-protected signal available on these cards is not tested and not used because of a lack of standard rules.

3.1.2 PCMCIA card handling

If your recorder is equipped with the PCMCIA option board, you can use a memory card to store the recorder information.

For this, proceed as indicated in the following figure to introduce the memory card:

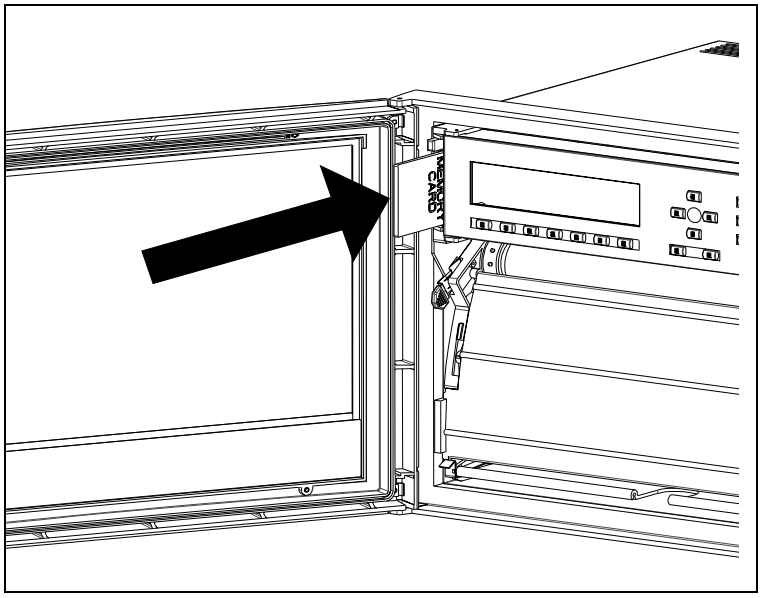


Figure 3-1: Card loading in the 180mm or 250mm recorder

Note: The recorder will automatically detect the card presence.

The recorder indicates the writing status by lighting a led located under the display (see Figure 3-2).
This led must be off when removing the memory card (this can be done with the remove or stop function), if not, some data may be lost.

To remove the memory card press the button located above it.

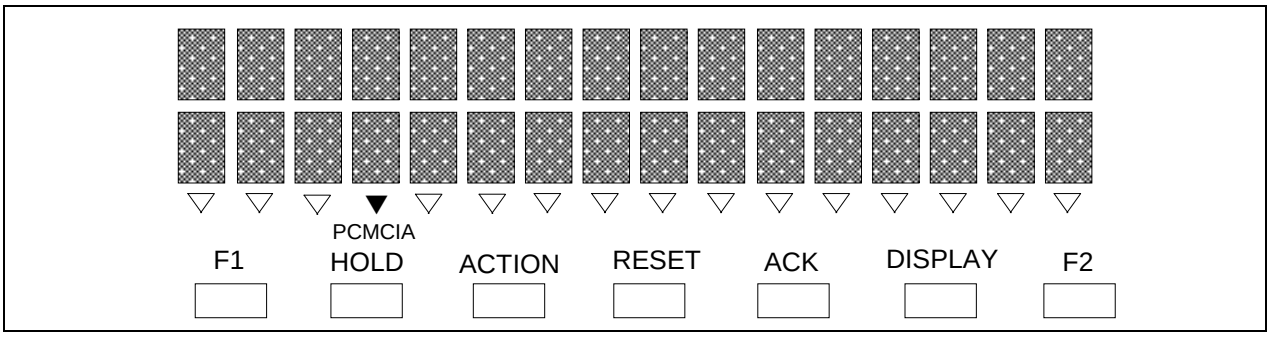


Figure 3-2: PCMCIA led in the 180mm or 250mm recorder

3.1.3 Archives summary

Archived data on a PCMCIA memory card may be:

- **charts** i.e analog inputs, math results or communication data,
- analog **alarms,**
- **digital** events,
- recorder **events**: (no paper, end of paper, burnout ...)

3.1.4 DOS compatibility

Those data are stored in several DOS files (DOS version 4.0 or higher) and are secured by several checksums to prevent any data corruption.

To read those memory cards, your computer must be equipped with an appropriate reader.
An internal reader is recommended for a faster operation, but if it is linked to the computer by the printer port, use the file manager to copy the information on the hard disk and then read them from this hard disk, this to speed up the data analysis.

Note: The only operations available with the DOS file manager are those who do not modify the PCMCIA memory card content. Other operations must be done by the recorder.

WARNING ➔ With Windows 3.1x, only the use of the referenced card readers 089435 or 089439 is recommended to read the memory cards.

3.1.5 S.D.A. software compatibility

These PCMCIA archive files are readable with the **SDA** software (**S**oftware **D**ata **A**nalysis) Ref: 045501.

This software allows analysis and printing of TRENDS, ALARMS, EVENTS and DIAGNOSTIC information stored in the different files. It also provides the possibility to convert these different files into spreadsheets in the following formats: DIF (Data Interchange Format) and CSV (Comma Separated Value).

The recorder TREND files size is limited to 24Mb, the size of other files is limited to 64Kb.
The special characters "Σ", "Ω" and "√" are replaced by the character " ".
The following characters: "≠","≥" and "≤" are respectively transformed to "!=",">=" and "<=".
For more informations on SDA see the SDA product manual ref.: 51-52-25-51.

3.1.6 Recorder firmware compatibility

The PCMCIA option is compatible with the **001AK recorder firmware or higher**. Older firmware revisions will not allow your recorder to recognize the PCMCIA option board, the recorder will need to be updated (see the OVERVIEW section of this manual).

3.2 SETUP

3.2.1 PCMCIA communication interface configuration

The PCMCIA option board is detected at power up during the recorder's initialization time but, to be able to use it, the INTERFACE parameter of the MISCELLANEOUS configuration matrix must be set to PCMCIA.

The default configuration of this parameter is JACK, which allows to configure the recorder with the PC Configurator software.

When the option board has been detected, the PCMCIA configuration matrices (READ-WRITE, PRINT CONF and SERVICE) appear and this option becomes TRUE in recorder's hardware configuration (see the CARD USED service in the MISCELLANEOUS matrix).

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
MISCEL	**INTERFACE**	♦ ♦ ♣ ♣
Definition:	Determines which of the PCMCIA option board or the JACK board is connected to the recorder.	
How to modify it:	Select a new value.	
Possible choices:	**JACK** **PCMCIA**	
Default value:	**JACK**	
Note:	This parameter cannot be modified by the PC Configurator software.	

Note: The PCMCIA service functions are only available when the interface parameter is set to PCMCIA.

3.2.2 PCMCIA card initialization

When using a memory card for the first time or when changing the file structure of that memory card (example: adding a file to it), it must be formatted by the recorder.

The recorder formats the memory card in a DOS compatible way and creates ALARMS, EVENTS and DIAGNOSTIC files if needed, the remaining space is used to create the TREND files.

To archive TRENDS on the memory cards, the DESTINATION parameter of the READ-WRITE\CHART matrix must be configured (see the chart configuration paragraph).

The storage frequency must also be programmed (see FREQUENCY parameter in the READ-WRITE\PCMCIA matrix).

The INITIALIZATION service is located in SERVICE\PCMCIA matrix. During its completion, "PCMCIA INIT" will be displayed and the PCMCIA led will light ON.

Note: All the created files are empty at the initialization time.

3.2.3 PCMCIA card test

The recorder has an internal function that enables to test the memory card. This test takes about 1 minute per Megabyte (4 minutes for a 4Mb memory card).

During the test the recorder checks the possibility to erase, write and read the entire memory space.

Previous data are temporarily stored in a buffer and then re-written after the test so that this PCMCIA TEST function can be done on DOS formatted cards or not.

In case of error, the PCMCIA status is set to PCMCIA BAD, another status displayed means that the test has succeeded. (Refer to PCMCIA status § 4.2.2).

During the test the PCMCIA led lights on indicating that data are written on the card.

To stop this test at any time without damaging the card, press the SETUP key.

For more details see the TEST function in the PCMCIA\SERVICE matrix.

Note: Do not remove the card during the test function progress, this may damage the recorded data.

3.2.4 Charts selection

The TREND storage configuration is done in two steps:

☑ Select TRACE choice in the TRACE parameter of the READ-WRITE\CHART matrix.
☑ Select a value for the DESTINATION parameter, in the same matrix. See the following table:

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
CHART	**DESTINATION**	♦ ♦ ♣ ♣
Definition:	Determines where to print or copy charts.	
How to modify it:	Select a new value.	
Possible choices:	**ON PAPER**: trends are printed on paper only **ON FILE**: trends are stored on PCMCIA only **PAPER & FILE**: trends are both printed and stored in TRENDS file	
Default value:	**ON PAPER**	
Note:	24 trends can be stored in the PCMCIA card TREND files with a 180 mm recorder. 32 trends can be stored in the PCMCIA card TREND files with a 250 mm recorder.	

3.3 Archive management

The archive management is detailed in the configuration chapter of this manual.
Archiving on the PCMCIA memory card may be continuous or event driven depending on the START condition (see § 4.1.3).

3.3.1 Continuous archiving

If the START parameter is configured to CONTINUOUSLY, the information are continuously stored on the memory card.
However the archiving is stopped each time the measures are stopped, this may happen when a parameter of the configuration is changed or when a service function is running (all configuration or service parameters with the "♦ ♦" classification stop the measures and so the archiving when they are modified).
The archiving may also be stopped and restarted with the keyboard when the recording is continuous. On the contrary, the recording may be started and stopped again if the START parameter is set to NO ARCHIVE.

Note: At the beginning of the archiving, the alarms, the digital events and the recorder events which are active are recorded in the corresponding file with a star (*), this to indicate that the event or the alarm may be former to the recording date.

3.3.2 Event driven archiving

The recording may also be driven by a logic input or an alarm: an alarm on or a digital input closed to start the recording and the same alarm off or the same logic input opened to stop it (see § 4.1.3)

As in the continuous archiving mode, the operator can start or stop the archiving with the keyboard (see § 3.4).

The recorder continuously stores the alarms and events status changes in an internal buffer. Therefore, when the archiving starts, the recorder stores the latest alarm or event status change.
Consequently the alarm or event dates may be prior to the archiving start date.

Note: When driving the archiving both with an event and with the keyboard, the latest action takes the priority.

3.4 Keyboard archive management

The archive may be managed automatically, but in addition some actions may be done with the keyboard.

3.4.1 START/STOP actions

By pressing the PRINT key it is possible to access to the "STOP ARCHIVE" or to the "START ARCHIVE" action depending whether the archiving is running or not.
When the storage is in progress, the "STOP ARCHIVE" message will be displayed, otherwise the "START ARCHIVE" message will be displayed.

The archiving can also be started or stopped by pressing F1 or F2 keys if the parameters F1 KEY or F2 KEY in the READ-WRITE\MMI matrix are configured to "START/STOP ARCH".

3.4.2 RESET PCMCIA files

The way to erase the files content (to start a new archive session) is to RESET the PCMCIA card by pressing RESET key and selecting the RESET PCMCIA choice. This is also an easy way to initialize a new PCMCIA card using.

WARNING ➔ The RESET PCMCIA action will delete all the data stored on the card!
There is no backup done by the recorder. Information must be saved if needed with an external PC by using a File manager for example.

3.4.3 REMOVE PCMCIA function

To prevent any loss of data when removing the memory card, the REMOVE PCMCIA function must be used if the archiving is running (PCMCIA triangle lit ON).

The "REMOVE PCMCIA" action is accessible through the PRINT key.

The "REMOVE PCMCIA" action is also accessible by pressing the F1 or F2 keys if the parameters F1 KEY or F2 KEY in the READ-WRITE\MMI matrix are configured to "REMOVE PCMCIA".
The system data is saved so that the card can be removed.
During this time, PCMCIA card status becomes CARD PENDING and possible data will be stored in a temporary buffer.

3.5 PCMCIA information

3.5.1 PCMCIA status

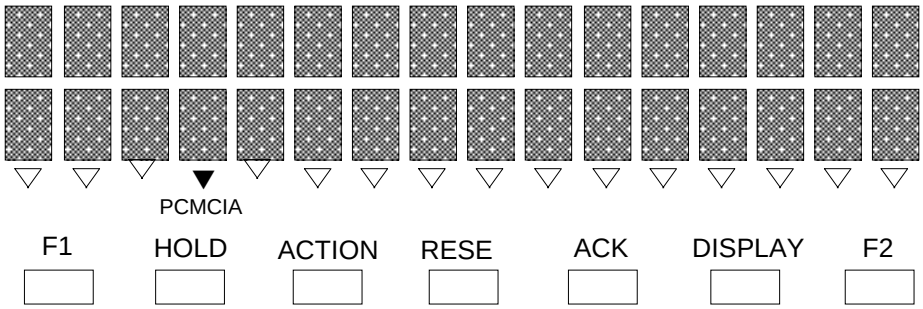
The recorder provides a memory card status (see § 4.2.2 STATUS service) to help in the card utilization. This status may be one of the following cases:

Status	Description	Solution
PCMCIA MISSING *	There is no PCMCIA memory card inside the recorder or the card has not been detected.	Insert a compatible PCMCIA memory card
PCMCIA NOT INIT***	Card has been recognized but it has not been initialized.	Initialize the memory card (see § 4.2.2)
PCMCIA PENDING**	Data cannot be stored on the PCMCIA card because the configuration stored on it does not match the recorder configuration or there is no memory card.	Insert a memory card, Initialize it or reset it.(see § 4.2.2)
PCMCIA BAD***	Some data could not have been stored on PCMCIA because of a physical problem on it.	Change the memory card
CARD PRESENT*	A PCMCIA card is present with no problem detected.	
PCMCIA CONF CHG**	There is a difference between the configuration of the recorder and the parameters stored on the memory card, the parameters may be one of the following: the Id number, the language, the trace, the destination, the tagname and the engineering unit.	Restore the same configuration on the recorder or RESET the memory card.
PCMCIA FULL***	One of the PCMCIA files is nearly full according to the EVENT definition (see the "%FULL" parameter in § 4.1.3).	Remove the PCMCIA card and save the files on your computer. Introduce it back and reset it (see § 4.2.2).
PCMCIA DATA LOST**	This message is displayed if data to be written on the PCMCIA card have not been stored and have been removed from the internal buffer. This appears when the recorder archiving has started data and no memory card is inserted for a long period.	See the PENDING case

* Information accessible through the STATUS service described in the paragraph 4.1.3.
** Information displayed in run mode, not visible with the STATUS service.
*** Information displayed in run mode and visible with the STATUS service.

3.5.2 PCMCIA card status display

If PCMCIA card attribute is STORING, then a triangle appears. This means that any card removal could cause data losses on the card.



This triangle is turned off during the recorder configuration.
"PCMCIA BAD", "PCMCIA NOT INIT", "PCMCIA FULL" or "PCMCIA PENDING" could be displayed on the lower display as blinking message, depending on the corresponding status.
Note: The PCMCIA led must be lit on, for the recorder to be able to store data on the PCMCIA card.

3.5.3 PCMCIA event

The PCMCIA EVENT located in the READ-WRITE\EVENTS matrix (refer to the product manual) is activated if the PCMCIA card or the driver is in one of the following conditions:

MESSAGE DISPLAYED	DESCRIPTION	SOLUTION
PCMCIA NOT INIT	The card has not been initialized by the recorder.	Initialize the memory card.
PCMCIA BAD	There is a failure in the card device.	Change the memory card.
PCMCIA FULL	At least one archive file (TRENDS, ALARMS, EVENTS or DIAGNOSTIC) has reached the user-defined %full threshold (see the % FULL parameter in the READ-WRITE\PCMCIA matrix).	Save the files on your computer and reset the memory card (see § 4.2.2).

Note: When the PCMCIA FULL message is displayed, the recording continues till the 100% full is reached then all additional informations to this file are lost except if the ROLLOVER option is set (see § 4.1.3). Other files continue to be normally updated.

3.6 PCMCIA file descriptions

All PCMCIA card files are PC-compatible and are readable by the Software Data Analysis (SDA) package.

3.6.1 File name conventions

PCMCIA files have a fixed extension according to their content: TRENDS (*.LNT), ALARMS (*.LNA), EVENTS (*.LNE) and DIAGNOSTICS (*.LND).

The content of each type of file is:

- **.LNT** files contain CHARTS records
- **.LNA** files contain ALARMS records (all analog alarms)
- **.LNE** files contain DIGITAL events records
- **.LND** files contain recorder EVENTS records.

The recorder stores data depending on its configuration: TRENDS (**charts** channels records) informations are sent to the PCMCIA driver at user-defined frequency, ALARMS (**alarms** records), EVENTS (**digital events** records) and DIAGNOSTIC (**recorder events** records) are asynchronous informations and so, are sent at each occurrence.

3.6.2 TRENDS file description

TREND files, in addition to the trace values and the corresponding time stamp, contain additional informations coming from the recorder configuration:

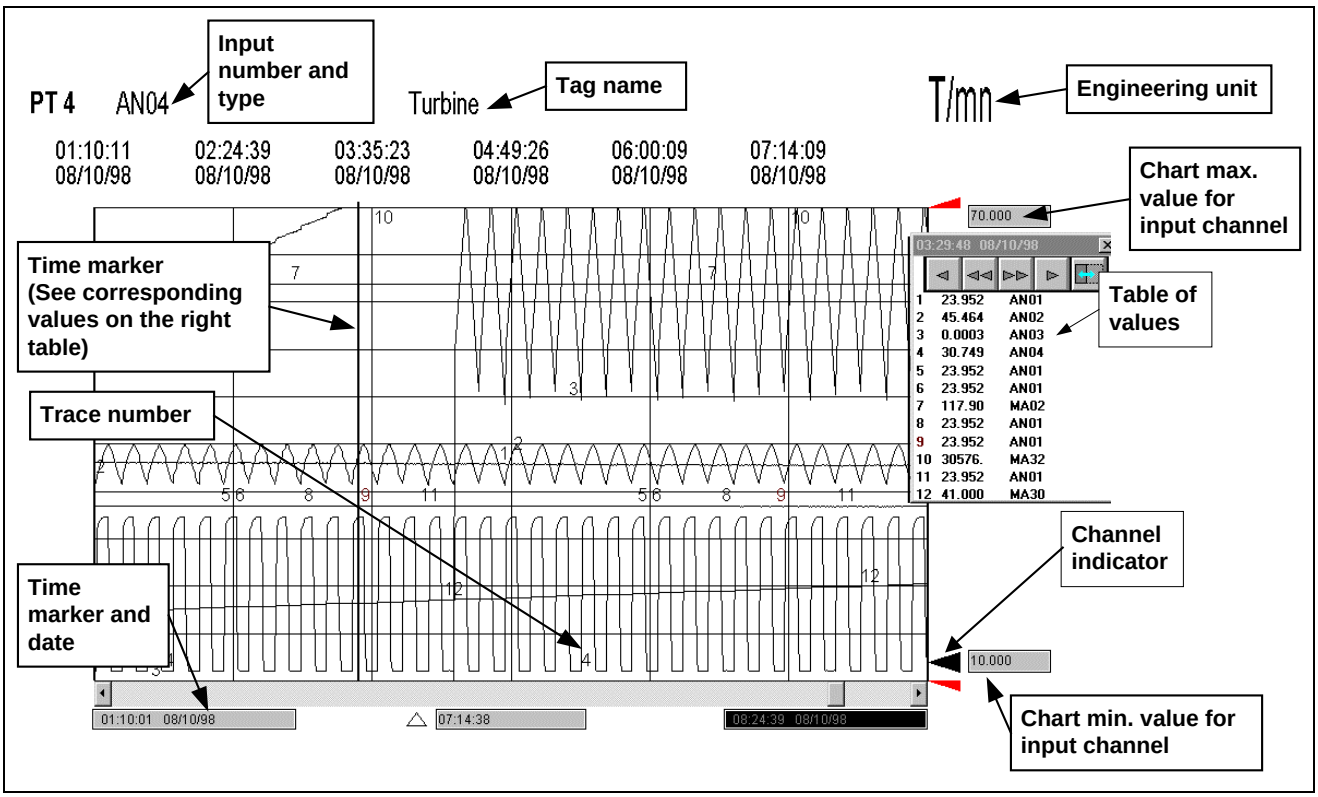
☑ the trend tagname,
☑ the input type of the trace (ANxx, MAxx or COxx for the Analog, Math or Communication inputs),
☑ the chart low limit,
☑ the chart high limit,
☑ the engineering unit.

TREND files contain a maximum of 12 channels so, in case of more trends, additional files are automatically created.
For example to store 32 charts on the PCMCIA under the "DATA" name, the recorder will create three files:
DATA1.LNT including the charts 1 to 12
DATA2.LNT including the charts 13 to 24
DATA3.LNT including the charts 25 to 32

Notes: 1. The variables used to initialize the engineering low or high limits are those corresponding to the range used by the recorder. For example, if the RANGE USED parameter of the READ/WRITE CHART matrix is "WITH RG1" or "RG1 ON ALARM", the limits used will be MIN_RG1 and MAX_RG1.

2. Engineering units will be truncated (4 characters instead of 5 for the recorder).

EXAMPLE: This is an example of trends with a time marker with the corresponding values in a table. This helps to analyse the curves as well as the embeded statistical analysis tool.



The data can also be displayed in the text format:

Date	Time	AN01	AN02	AN03	AN04
07/10/98	19:09:19	24.8010	45.8630	0.0003	11.342
07/10/98	19:09:24	24.8010	45.6158	70.0698	11.354
07/10/98	19:09:29	24.7920	45.2922	55.5748	11.342
07/10/98	19:09:34	24.8759	44.9719	55.1422	11.348
07/10/98	19:09:39	24.8553	44.6264	54.7251	11.334
07/10/98	19:09:44	24.8429	44.3186	54.3569	11.344
07/10/98	19:09:49	24.8260	43.9708	53.9346	11.340
07/10/98	19:09:54	24.8128	43.6279	53.5204	11.334
07/10/98	19:09:59	24.8601	43.2846	53.1030	11.326
07/10/98	19:10:04	24.7960	42.9461	52.6722	11.330
07/10/98	19:10:09	24.7440	42.5971	52.2500	11.336
07/10/98	19:10:14	24.7620	42.2475	51.8350	11.343

3.6.3 ALARMS file description

ALARMS files content is:

☑ the time/date stamp,
☑ the alarm number
☑ the alarm input type (ANxx, MAxx or COxx for the Analog, Math or Communication input #xx),
☑ the alarm type:

"L"	low alarm
"H"	high alarm
"CL"	change rate low
"CH"	change rate high
"CR"	change rate high/low
"DF"	differential

☑ the alarm status (1 = ON / 0 = OFF)
☑ the alarm setpoint.

EXAMPLE: In this example the Alarms are High Alarms (PV above the setpoint). The alarm tag gives the Alarm number and the input which is in alarm (05/MA03 H 0 means that the High alarm #5 falls down and that it was applied to the Math channel #3).

Date	Time	Message	Tag	Act.	State	Set Pt
08/10/98	08:15:45		05/MA03	H	1	0.50
08/10/98	08:15:50		05/MA03	H	0	0.50
08/10/98	08:15:55		05/MA03	H	1	0.50
08/10/98	08:15:56		11/AN02	H	0	36.53
08/10/98	08:15:57		08/AN02	H	0	36.49
08/10/98	08:15:57		09/AN02	H	0	36.51
08/10/98	08:15:57		10/AN02	H	0	36.52
08/10/98	08:15:59		01/AN02	H	0	36.47
08/10/98	08:15:59		02/AN02	H	0	36.47

Note: The message field is used for the "*" comment which indicates that the alarm may be prior to the recording date (see § 3.3).

3.6.4 DIGITAL event file description

EVENT file content is made of:

☑ the time/date stamp,
☑ the logic input number,
☑ the event status (ON/OFF; 1 = ON / 0 = OFF)

EXAMPLE: In this example the measures were stopped twice and each time the digital event #2 was ON. When measures start, the OFF status is considered as the normal status so it is not recorded.

Date	Time	Description	Tag	State
21/10/97	04:55:07	*	DI02	1
21/10/97	04:56:23	*	DI02	1
21/10/97	04:56:42		DI01	1
21/10/97	04:56:42		DI02	0
21/10/97	04:57:15		DI02	1
21/10/97	04:57:20		DI01	0

Note: The description field is reserved for the "*" comment which indicates that the digital event may be prior to the recording date (see § 3.3)

3.6.5 DIAGNOSTIC file description

DIAGNOSTIC file content is made of:
☑ the time/date stamp,
☑ the DIAGNOSTIC message.

The possible messages may be one of the 7 recorder events (with or without the OFF status depending whether the event is OFF or not) or other internal diagnostics:

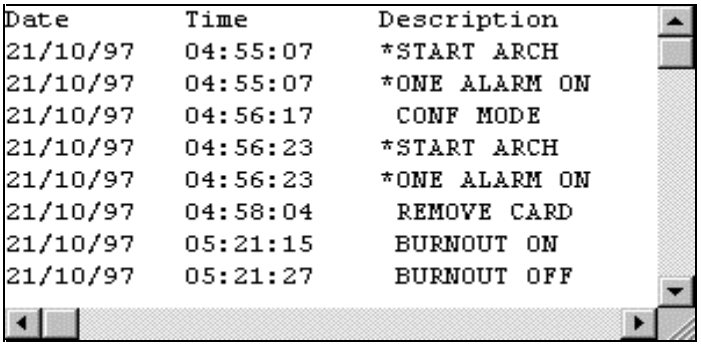
RECORDER EVENTS:

NO PAPER: there is no more paper
END PAPER: the paper length is reached
BATTERY FAIL: there is a problem on the battery
ONE ALARM ON: one analog alarm is on
BURNOUT: one input is in burnout
SHEDTIME: there is a communication time out
PCMCIA EVENT: the PCMCIA event is set

INTERNAL DIAGNOSTICS:

CONF MODE: one action has stopped the measures
START ARCHIVE: the archiving has started
STOP ARCHIVE: the archiving has been stopped
REMOVE CARD: the PCMCIA card has been removed
LOSS OF DATA: data have not been written on the memory card.

EXAMPLE: The "*" indicates that the event status has been detected ON just after a power on or after a restart of the measures (after a configuration mode) so that the time of the event detected by the recorder can be different from the real time of the event (see §3.3).



Date	Time	Description
21/10/97	04:55:07	*START ARCH
21/10/97	04:55:07	*ONE ALARM ON
21/10/97	04:56:17	CONF MODE
21/10/97	04:56:23	*START ARCH
21/10/97	04:56:23	*ONE ALARM ON
21/10/97	04:58:04	REMOVE CARD
21/10/97	05:21:15	BURNOUT ON
21/10/97	05:21:27	BURNOUT OFF

4. PCMCIA CONFIGURATION

4.1 PCMCIA sub-matrix parameters

4.1.1 PCMCIA sub-matrix parameters list

SUB-MATRIX → **PCMCIA READ/WRITE**

Position of parameters

4.1.2 Explanation of the classification

This section will describe all the matrices that have been modified by the PCMCIA option and then, how configuration will be possible.

♦	Means that parameter can be modified in RUN mode (measures are still done)
♦ ♦	Means that parameter can be modified in STOP mode (measures are stopped)
♣	Means that parameter can be modified with password 1 or password 2
♣ ♣	Means that parameter can be modified with password 2 only

4.1.3 PCMCIA sub-matrix parameters description

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**START**	♦ ♦ ♣ ♣
Definition:	Automatic start conditions	
How to modify it:	Select a new start condition	
Possible choices:	**NO ARCHIVE** **CONTINUOUSLY** **DI CLOSED #** **AL ON #**	
Default value:	**NO ARCHIVE**	
Note:	Stop conditions are the following: DI OPENED # AL OFF #	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**ROLLOVER**	♦ ♦ ♣ ♣
Definition:	Determines if, once the end of archive file has been reached, new data are copied at the beginning of this file, so that it contains the most recent data, or not.	
How to modify it:	Select or not rollover mode	
Possible choices:	**DISABLE** **ENABLE**	
Default value:	**DISABLE**	

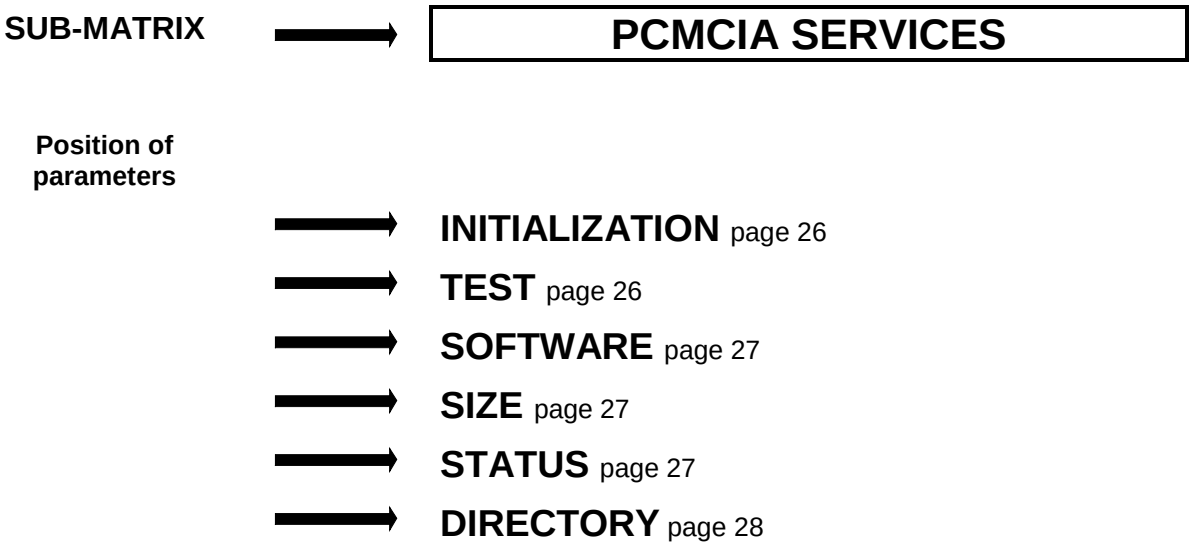
SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**LOG FREQ**	♦ ♦ ♣ ♣
Definition:	Archive frequency used to log TRENDS files.	
How to modify it:	Select a new frequency.	
Possible choices:	**1 s** **5 s** **10 s** **15 s** **30 s** **1 mn** **5 mn** **10 mn** **15 mn** **30 mn**	
Default value:	**10 s**	
Note:	In case of a change in the login frequency on the same file, the SDA software will make interpolations (depending if that option is configured or not) to produce a trend at the highest frequency. It is recommended in that case to read the file without interpolation.	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**% FULL**	♦ ♣
Definition:	Determines PCMCIA EVENT threshold.	
How to modify it:	Select a threshold in %.	
Possible choices:	**0 to 100%**	
Default value:	**90% ***	
See also:	PCMCIA in EVENTS matrix	

* The default value is 0% if the recorder was previously equipped with a firmware revision older than 001AK.

4.2 PCMCIA sub-matrix services

4.2.1 PCMCIA sub-matrix services list



NOTE: The memory card must be present in the recorder in order to access to the service functions and the INTERFACE parameter must be set to PCMCIA.

4.2.2 PCMCIA sub-matrix services description

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**INITIALIZATION**	♦ ♦ ♣ ♣
Definition:	Formats and initializes PCMCIA board.	
How to use/execute it:	At first, you have to enter the number of records you want for ALARMS files: **"Nb ALARM REC ?"** is blinking and you can type it (1651 max). Then their file name (7 characters max.): **"ALARM NAME ?"** is blinking and you can type it . Then the number of records for EVENTS files: **"Nb EVENT REC ?"** is blinking and you can type it (1651 max). Then its file name (7 characters max.): **"EVENT NAME ?"** is blinking and you can type it. The number of records for DIAGNOSTIC files: **"Nb DIAG REC ?"** is blinking and you can type it (2667 max). Then its file name (7 characters max.): **"DIAG NAME ?"** is blinking and you can type it. And finally, we have to type TRENDS file names (7 characters max.) : **"TREND NAME ?"** is blinking and you can type it. During completion, "PCMCIA INIT" is displayed.	
Notes:	• At each step, you can abort this initialization by pressing SET UP key. • Default file names are "ALARM" for ALARM, "EVENT" for EVENT, and "DIAG" for DIAGNOSTIC and their extensions are automatically added. If another file name has been entered, then it takes the place of the default one for the following answers. • A digital index is automatically added to trend file names on PCMCIA card. • ALARM, EVENT and DIAG records are organized in blocks and the files use sectors of 512 bytes (as in the DOS) so that the effective number of records may be greater than the programmed number of records. • If the number of records is set to "0", the corresponding file is not created.	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**TEST**	♦ ♦ ♣ ♣
Definition:	Tests PCMCIA device.	
How to use/execute it:	By pressing ENTER, PCMCIA board driver tests the whole PCMCIA device: during execution, the percentage of test completion is displayed on the screen: For example: "15% PASSED" If an error occurs during this test, "FAILED" appears during 2s. Test is aborted and PCMCIA status becomes PCMCIA BAD.	
Note:	At any moment, you can abort the process by using SETUP key. The test duration is about 1 minute per Megabyte of capacity.	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**SOFTWARE**	♦ ♣
Definition:	PCMCIA board driver software revision.	
How to use/execute it:	You can only read the value.	
	You can exit by pressing SETUP key.	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**SIZE**	♦ ♣
Definition:	PCMCIA board size in Mb.	
How to use/execute it:	You can only read the value.	
	You can exit by pressing SETUP key.	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**STATUS**	♦ ♣
Definition:	Return status of PCMCIA board.	
	PCMCIA board status could be:	
	PCMCIA MISSING: the card is not inboard	
	PCMCIA NOT INIT: the card has to be initialized (cf INITIALIZATION parameter in this matrix)	
	PCMCIA BAD: the card cannot be correctly used by the PCMCIA driver. Initialize it again or test it.	
	PCMCIA FULL: at least, one of the included file is full according to the threshold configured by the user (cf "%FULL" parameter in READ/WRITE PCMCIA matrix.	
	PCMCIA PRESENT: the card is ready to be used	
How to use/execute it:	You can only read the status.	
	You can exit by using SETUP key.	

SUB-MATRIX	*PARAMETER*	*CLASSIFICATION*
PCMCIA	**DIRECTORY**	♦ ♣
Definition:	Allows you to read PCMCIA card directory: the names of the files on the memory card (with DOS extension), the number of records used and remaining per file are displayed (only the files compatible with the recorder data are displayed).	
How to use/execute it:	If a file exists, its name and its index are first displayed in the PCMCIA card: Ex : **01 ALARM.LNA** With the ↑ and ↓ keys, you can scroll all SDA files written on the card. The ← and → keys allow you to display the number of records already used in this file and the number of remaining records. The file index is still displayed to show you which is the corresponding file. Ex : Press →. Then the following message appears on the display: **01 U: 12** That means that 12 records have already been written on the 1st file. Press → again: The following string is shown: **01 R: 1488** That means that 1488 records are still available for this 1st file. Or the following string is shown for TREND files: **01 R : 1 10 : 45** That means that there is still space for 1 day 10 hours and 45 minutes of archiving time. Note that except for TREND files, the total number of records corresponds to the size given or computed during PCMCIA card initialization. You can exit by using SETUP key.	

5. KITS LIST

KITS LIST	PART #
PCMCIA upgrade kit	46190163-501
PCMCIA Memory card 4 Mo	46190165-501
PCMCIA Memory card 8 Mo	46190165-502
PCMCIA Memory card 20 Mo	46190165-503
SDA (Software Data Analysis) software	045501
PCMCIA card reader (120 VAC, 60 Hz)*	089435
PCMCIA card reader (230 VAC, 50 Hz)*	089439

*Card readers connect to the parallel printer port of a PC and printers then connect the card reader.

6. TROUBLESHOOTING

6.1 PCMCIA option is not recognized by the recorder (PCMCIA matrix does not appear)

CHECK	DIAGNOSTIC / ACTION
Check if the flat cable connection between PCMCIA board and CPU board is correct.	**1. NO:** Check for the proper connection.

6.2 PCMCIA INIT service is not possible

CHECK	DIAGNOSTIC / ACTION
Is PCMCIA memory card really plugged into the driver?	**1. NO:** Insert the card into the board.
Is problem corrected ?	**2. NO:** Verify you only use **ATA flash card** devices (see Section 5 - Kits list for certified cards).

6.3 “PCMCIA FULL” message is displayed on the recorder

CHECK	DIAGNOSTIC / ACTION
What is the threshold value in READ-WRITE\PCMCIA matrix?	**1.** Increase this value to disable “PCMCIA FULL” message display.
Is problem corrected ?	**2. NO:** Initialize PCMCIA card again with INIT utility in PCMCIA / SERVICE matrix and increase the number of records for the files which are too small.

6.4 “PCMCIA NOT INIT” message is displayed on the recorder

CHECK	DIAGNOSTIC / ACTION
	1. Initialize the card by using INIT menu in PCMCIA / SERVICE matrix.

6.5 “PCMCIA BAD” message is displayed on the recorder

CHECK	DIAGNOSTIC / ACTION
Is the card readable by an external driver?	**1. NO:** Change the card.
	2. YES: Run a TEST (PCMCIA / SERVICE). - If the test is successful, then the card is OK. - If the test stops before reaching 100 % of completion then an area of the card is bad. The card has to be changed.

6.6 “PCMCIA PENDING” message is displayed on the recorder

CHECK	DIAGNOSTIC / ACTION
Check the PCMCIA STATUS in PCMCIA / SERVICE :	
PCMCIA MISSING	The archive is ON and no card has been inserted in the driver. Insert a card to turn off the display.
PCMCIA BAD	The archive is ON and the inserted card is bad. Refer to § 6.5 to check card validity or insert a valid card.
PCMCIA NOT INIT	The archive is ON and the inserted card is not initialized. Refer to § 6.4.
PCMCIA PRESENT	The card has been initialized but part of the archiving configuration stored on the card does not match with the configuration of the recorder. Press RESET key and select RESET PCMCIA menu to make both configurations match. **WARNING ➔** A RESET PCMCIA will erase all previous data stored on the card.

6.7 PCMCIA triangle does not appear on the display when archiving

CHECK	DIAGNOSTIC / ACTION
Check INTERFACE parameter in MISCELLANEOUS / Read/Write	Turn parameter to PCMCIA.
Check START parameter in PCMCIA / Read/Write	If the archive is triggered by an alarm or a digital status, check alarm or digital status which should start the archiving (Press the DISPLAY key and select ALARM STATUS or LOGIC STATES).
Is PCMCIA PENDING displayed on the MMI ?	Refer to § 6.6

6.8 No data have been written on the card

CHECK	DIAGNOSTIC / ACTION
Check START parameter in PCMCIA / Read/Write	The archiving start condition has not been met. No data have been stored on the card.
Was PCMCIA PENDING displayed on the MMI ?	Refer to § 6.6
Check ROLLOVER parameter in PCMCIA / Read/Write	If ROLLOVER is set on DISABLE, check in DIRECTORY (PCMCIA / SERVICE) the amount of records that it is still possible to store. If this amount is 0, no data will be recorded on this file. Turn ROLLOVER to ENABLE or either reset or initialize the card.

6.9 SDA generates an error while opening trend files in chart display

CHECK	DIAGNOSTIC / ACTION
	1. An archived Math function has returned an error code which prevents SDA from charting correctly this channel. Open the trend file in the data table format and note the math in error. Open the trend file in the trend format and remove the math function in error from the list of selected traces to be charted.
	2. When the archiving process is incorrectly interrupted (ie : power off while archiving), it may happen that SDA displays an error message while opening the archive files. Files are nevertheless still readable except for their last data part. It is then recommended in that case to reduce the last time to display in the SDA opening trend files window.

7. PROMPTS TRANSLATION

EN	FR	GE	SP	IT
PCMCIA	PCMCIA	PCMCIA	PCMCIA	PCMCIA
CONFIRM	CONFIRMER	BESTÄTIGEN	CONFIRM	CONFERMA
PARAMETERS				
START	DEMARRAGE	START	EMPEZAR	PARTENZA
R0LLOVER	RE-ENRG	UEBERSCHR	VUELTA	RICARICARE
LOG FREQ	FREQ ENRG	FREQ AUFZ	FREC LOG	FREQ LOG
% FULL	% PLEIN	% VOLL	% LLENO	% PIENO
INIT	INIT	INIT	INICIALIZ	INITIALIZZA
TEST	TEST	TEST	PRUEBA	TEST
SOFTWARE	LOGICIEL	SOFTWARE	SOFTWARE	SOFTWARE
SIZE	TAILLE	GROESSE	TAMANO	DIMENSIONE
STATUS	ETAT	STATUS	ESTADO	STATO
DIRECTORY	REPERTOIRE	VERZEICHNIS	REPERTORIO	DIRECTORY
POSSIBLE VALUES				
NO ARCHIVE	PAS ARCHIVE	KEIN ARCHIV	NO ARCHIVO	NO ARCHIVIO
AL ON #	AL ON N°	AL EIN NR	AL ACTIV #	ALL ON#
DI CLOSED#	LO FER N°	BI SCHL NR	ED CERRA #	DI CHIUSO#
CONTINUOUSLY	CONTINU	DAUERND	CONTINUAMENT	CONTINUO
NB ALARM REC?	NB PTS ALARME ?	ANZ REG ALARM	N REG ALARMAS ?	N PUNTI ALLARME
ENABLE	AUTORISE	AKTIVIEREN	ACTIVAR	ABILITATO
DISABLE	REFUSE	INAKTIVIEREN	DEACTIVAR	DISABILITATO
ALARM NAME?	NOM ALARME ?	ALARM BEZEICHNG	NOMBRE ALARMA ?	NOME ALLARMI
NB EVENT REC?	NB PTS EVT ?	ANZ REG EREIGN	N REG EVENTOS ?	N PUNTI EVENTI
EVENT NAME	NOM EVT ?	EREIGN BEZEICHNG	NOMBRE EVENTO ?	NOME EVENTI
NB DIAG REC?	NB PTS DIAG ?	ANZ REG DIAGR	N REG DIAG ?	N PUNTI DIAG
DIAG NAME	NOM DIAG ?	DIAGR BEZEICHNG	NOMBRE DIAG ?	NOME DIAG
TREND NAME	NOM TRACE ?	TREND BEZEICHNG	NOMBRE TRAZA ?	NOME TRACCE
% PASSED	% TEST BON	% ERFOLG	% BUENA	% TEST BUONO
FAILED	ECHEC	FEHLERHAFT	MALA	NO RIUSCITO
PCMCIA BAD	PCMCIA MAUVAISE	PCMCIA AUSFALL	PCMCIA DEFEC	PCMCIA GUASTA
PCMCIA FULL	PCMCIA PLEINE	PCMCIA VOLL	PCMCIA LLENA	PCMCIA PIENA
PCMCIA NOT INIT	PCMCIA NON INIT	PCMCIA NICHT INI	PCMCIA SIN INIC	PCMCIA NON INIZ
PCMCIA PENDING	PCMCIA EN ATT.	PCMCIA WARTEZUST	PCMCIA PENDIENTE	PCMCIA IN ATTESA
PCMCIA DATA LOST	PERTE DE DONNEES	VERLOR DATEN	DATOS PERDIDOS	DATI PERSI
PCMCIA PRESENT	PCMCIA PRESENTE	PCMCIA VORHANDEN	PCMCIA PRESENTE	PCMCIA PRESENTE
PCMCIA MISSING	PCMCIA ABSENTE	PCMCIA VERREIST	PCMCIA SACADA	PCMCIA ASSENTE
REMOVE PCMCIA	RETIRER PCMCIA	ENTFERNE PCMCIA	QUITAR PCMCIA	TOGLIERE PCMCIA
RESET PCMCIA	RAZ PCMCIA	PCMCIA ZURUECKS	REINICIAR PCMCIA	RESET PCMCIA
PCMCIA INIT	INIT PCMCIA	INIT PCMCIA	INIC PCMCIA	INIZIALIZ PCMCIA
Mb	Mo	MB	Mb	MB
PCMCIA CONF CHG	PCMCIA CHGT CONF	PCMCIA KONFÄNDRG	CAMB CONF PCMCIA	CAMB CONF PCMCIA
START ARCHIVE	DEBUT ARCHIVE	START ARCHIVIERG	INICIAR ARCHIVO	START ARCHIVIO
STOP ARCHIVE	FIN ARCHIVE	STOP ARCHIVIERG	PARAR ARCHIVO	STOP ARCHIVIO
PCMCIA EVENT	EVT PCMCIA	PCMCIA EREIG	SUC PCMCIA	EVEN PCMCIA
WAIT PLEASE	ATTENDEZ SVP	BITTE WARTEN	ESPERE P. FAVOR	ATTENDERE
INTERFACE	INTERFACE	INTERFACE	INTERFASE	INTERFACCIA
s	s	SEKUNDE SEKUNDEN	s	s
mn	mn	MINUTE MINUTEN	mn	mn