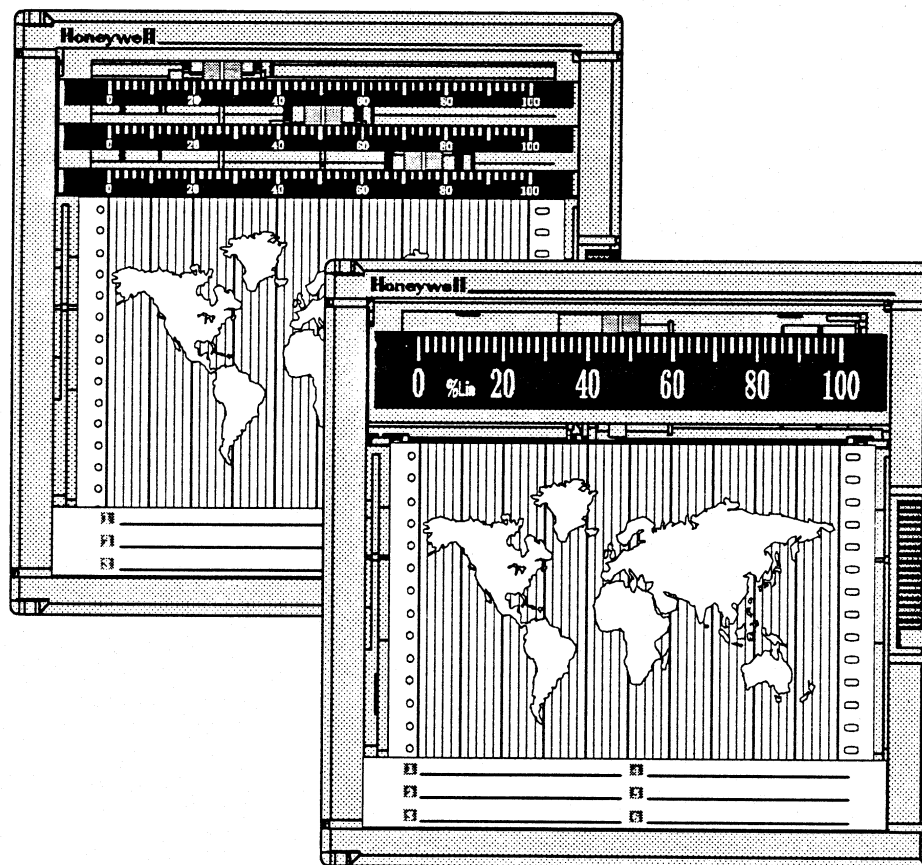


## DPR 100 A - DPR 100 B

### DIGITAL STRIP CHART RECORDER

### OPERATOR MANUAL



**LEADERLINE**

*Better Record Your World*



**DPR 100 A - DPR 100 B**  
**DIGITAL STRIP CHART RECORDER**

**OPERATOR MANUAL**

Ref. : EN1I-6125

Thank you for choosing a HONEYWELL DPR100 Recorder.

The product, designed and produced to ISO 9001, will serve you well and continue HONEYWELL's tradition as a supplier of quality instrumentation.

To fully benefit from its many features and functions, we would ask you to carefully read this manual. It describes how to prepare, install, configure and use your new recorder.

From first use, we are confident you will appreciate the user-friendly configuration, flexibility and completeness of chart information. Should you require further information, please do not hesitate to contact your nearest HONEYWELL sales office.

**Complete technical details for this product are given in the [Product Manual EN11-6126](#) including full configuration or via PC interface (with optional SW) and all maintenance and servicing details.**

If ever you should need assistance, we would ask you to have available the product model number, serial number and date code. This information is printed on a label attached to the case. We recommend to complete the table below with the same information.

[A listing of HONEYWELL Sales and Service Offices is given at the end of this manual.](#)

Product model number:	
Serial number:	
Date code:	
Service department telephone number:	

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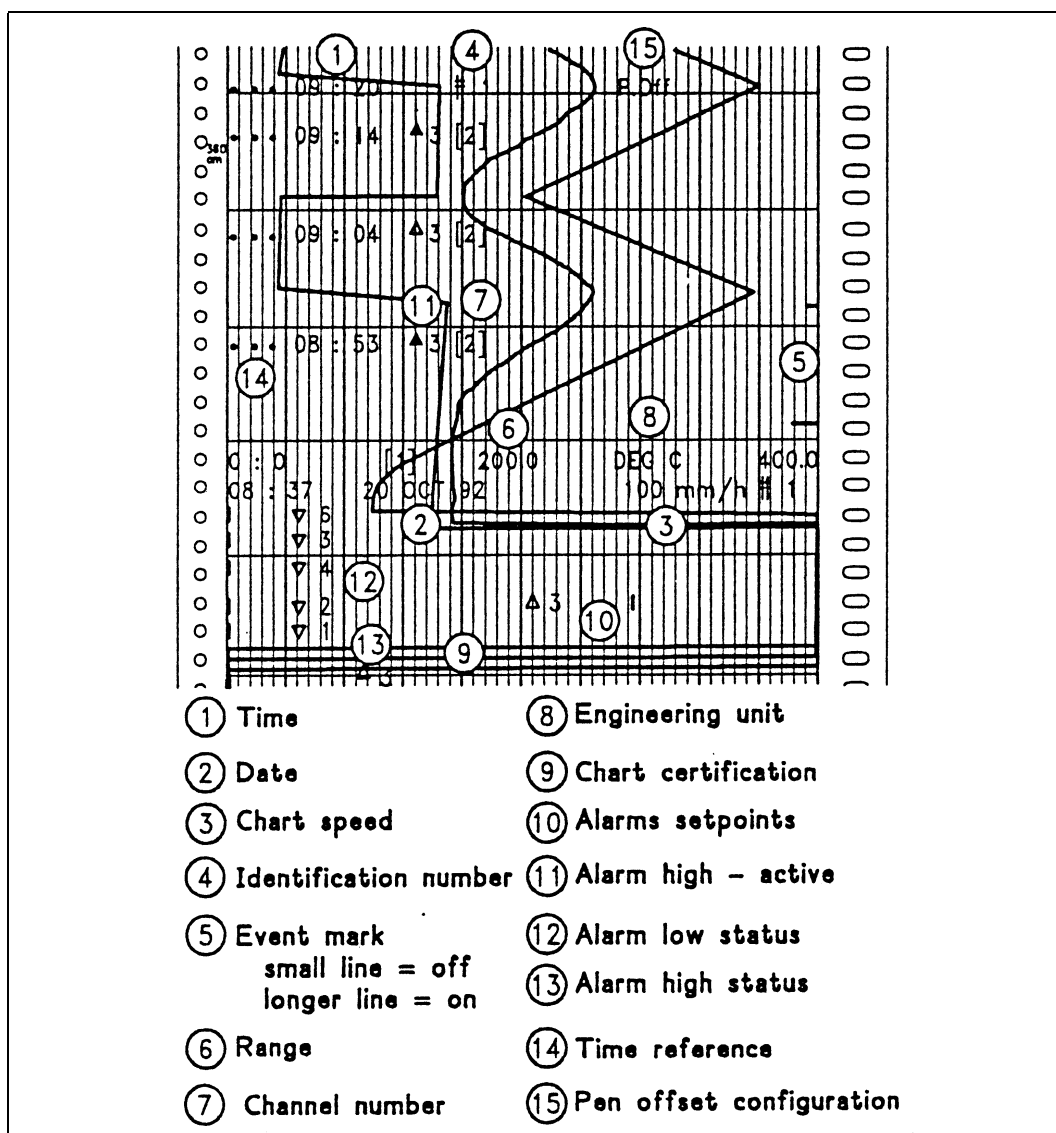
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# 1. OVERVIEW

## 1.1 CLEAR AND FULLY DOCUMENTED CHART OF PEN RECORDER

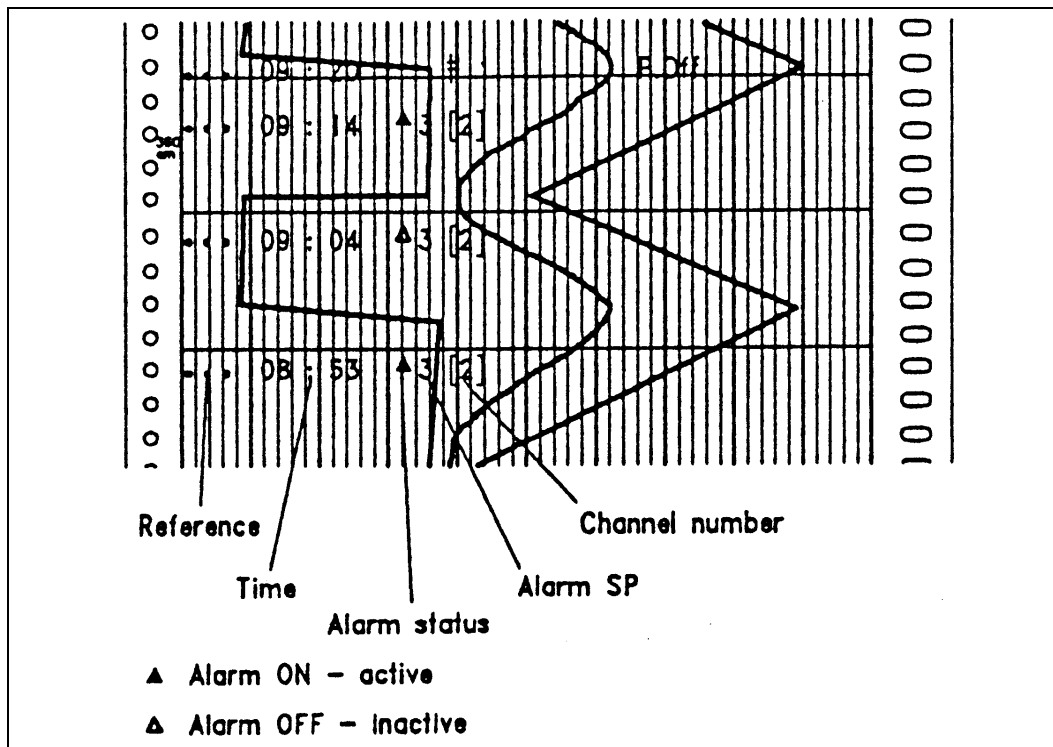
Color traces :

Pen 1 = blue  
Pen 2 = red  
Pen 3 = green



## 1. OVERVIEW

### 1.1.1 Alarms are indicated clearly



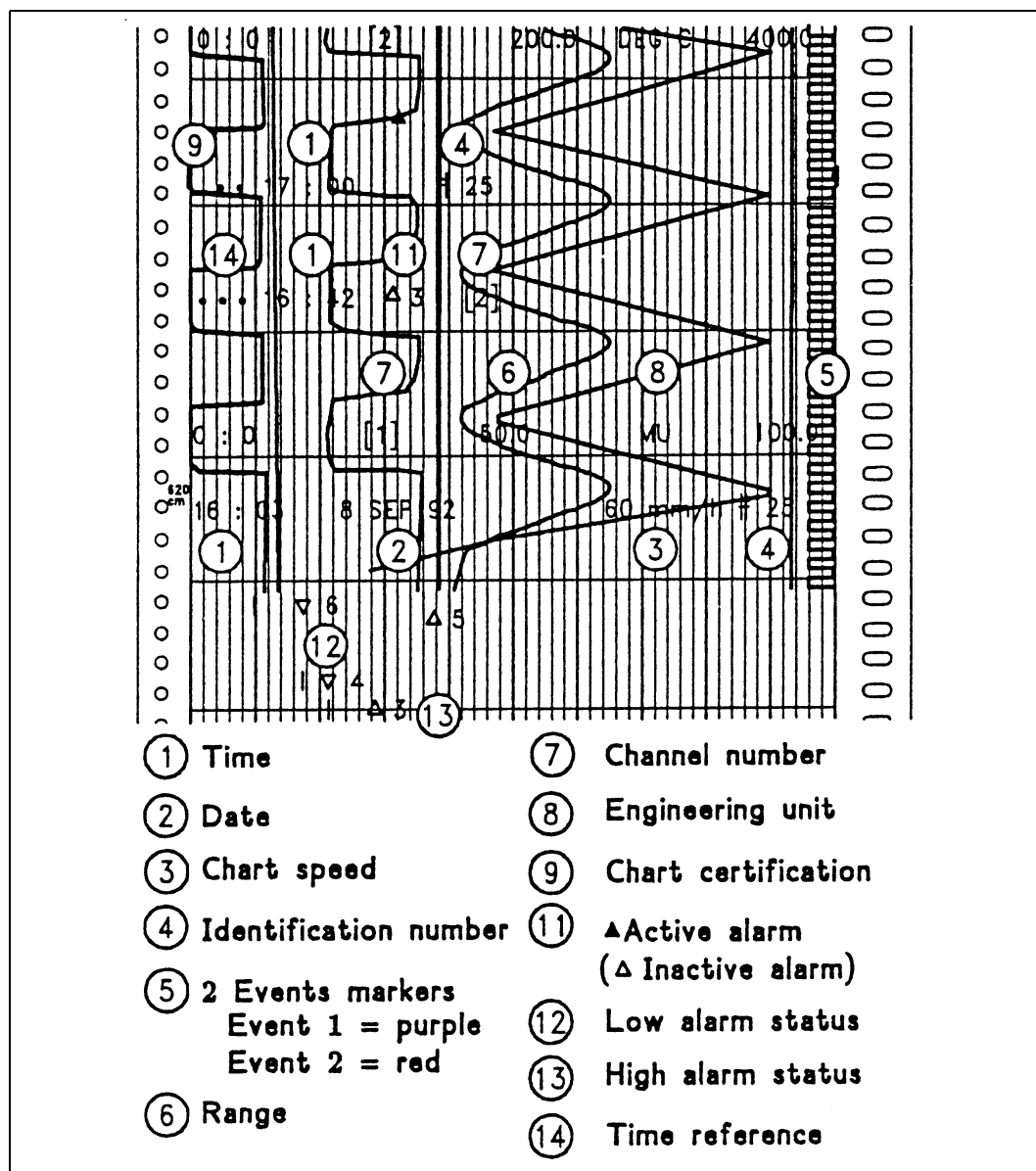
## 1. OVERVIEW

### 1.2 CLEAR AND FULLY DOCUMENTED CHART FOR MULTIPOINT RECORDER

Color traces

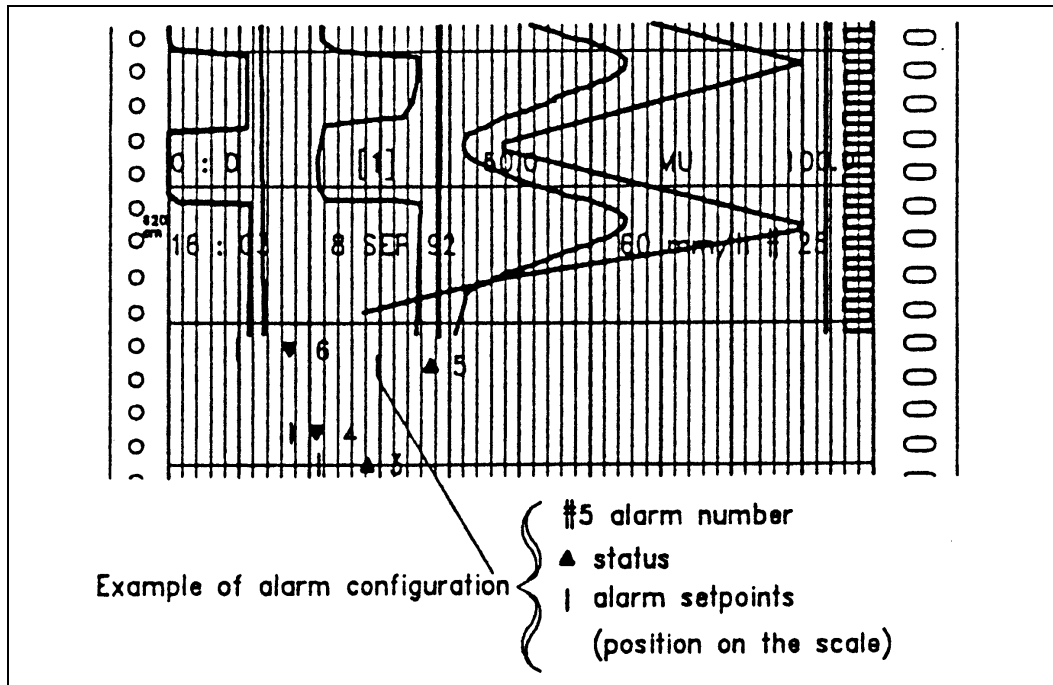
Channel 1 = purple  
Channel 2 = red  
Channel 3 = black

Channel 4 = green  
Channel 5 = blue  
Channel 6 = brown





## 1.2.1 Alarms are indicated clearly



### 2.1 WARNING



To avoid the risk of electrical shock which could cause personal injury, follow all safety notices in this documentation.



Protective earth terminal. Provided for connection of the protective earth supply system conductor.

☒ **POWER SUPPLY**

Ensure the source voltage matches the voltage of the power supply before turning on the power.

☒ **PROTECTIVE GROUNDING**

Make sure to connect the protective grounding to prevent an electric shock before turning on the power.

☒ **NECESSITY OF PROTECTIVE GROUNDING**

To avoid a potential shock hazard, never cut off the internal or external protective grounding wire or disconnect the wiring of protective grounding terminal.

☒ **DEFECT OF PROTECTIVE GROUNDING AND FUSE**

Do not operate the instrument when protective grounding or fuse might be defective.

☒ **FUSE**

To prevent a fire, make sure to use the fuse with specified standard (current voltage, type). Before replacing the fuse, turn off the power and disconnect the power source. Do not use a different fuse or short-circuit the fuseholder.

☒ **DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE**

Do not operate the instrument in the presence of flammable liquids or vapors. Operation of any electrical instrument in such an environment constitutes a safety hazard.

☒ **NEVER TOUCH THE INTERIOR OF THE INSTRUMENT**

Inside this instrument there are areas of high voltage; therefore, never touch the interior if the power supply is connected. This instrument has an internal changeable system; however, internal inspection and adjustments should be done by qualified personnel only.

☒ **EXTERNAL CONNECTION**

To ground securely, connect the protective grounding before connecting to measurement or control unit.

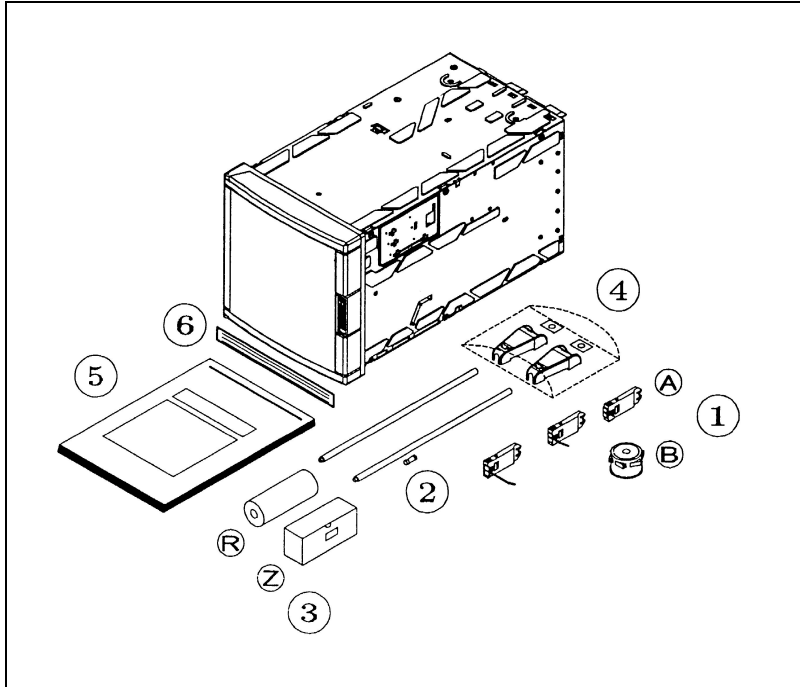
☒ If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

☒ Do not replace any component (or part) not explicitly specified as replaceable by your supplier.

## 2. INSTALLATION

### 2.2 UNPACKING

Remove the accessories and check them against the figure below.



1. Ink cartridge(s) (A) or ink wheel (B)
2. Fuse (Spare) (Use only 1 A T. fuses)
3. Roll (R) or fanfold (Z) chart
4. Mounting brackets with nuts
5. Operator manual
6. Front label

NOTE: In case of missing item, please contact your nearest sales office.

## 2. INSTALLATION

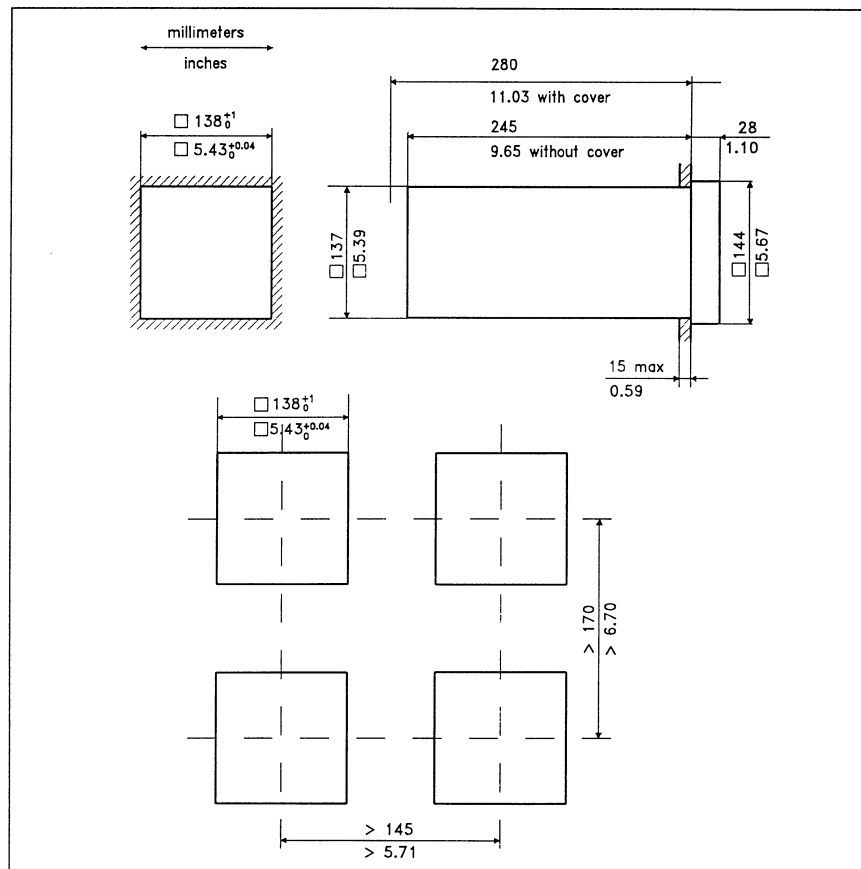
### 2.3 PANEL MOUNTING THE RECORDER

#### 2.3.1 Recommendations

This recorder is designed to operate under specific conditions. If you need more information, refer to the product specification sheet.

#### 2.3.2 External dimensions and cut-out

Prepare panel cut-out as detailed below:



**Note:** Maximum panel thickness 15 mm

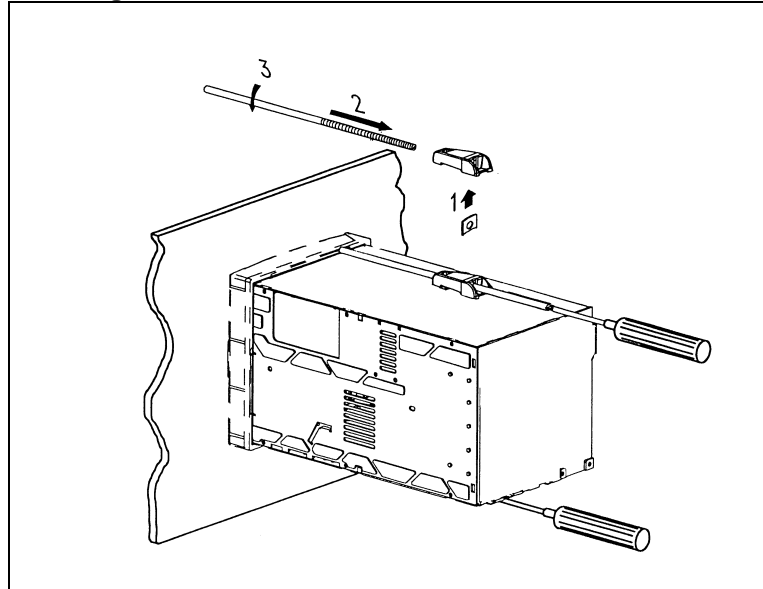
**Warning:** The maximum temperature inside the cabinet should not exceed the ambient conditions specific to the recorders.  
The recorder must be mounted into a panel to limit operator access to the rear terminals.

## 2. INSTALLATION

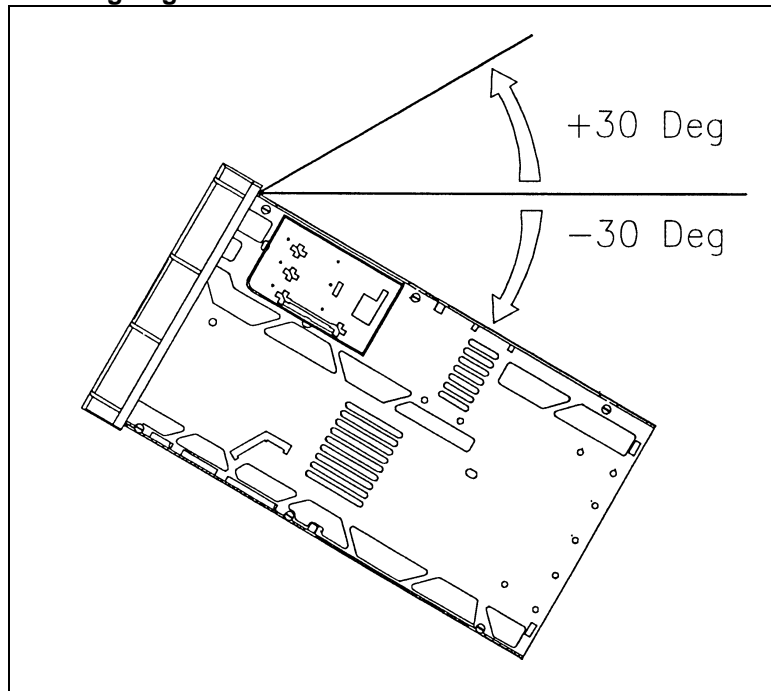
### 2.3.3 Installing the recorder

To install the recorder, follow the figures below:

#### Mounting brackets



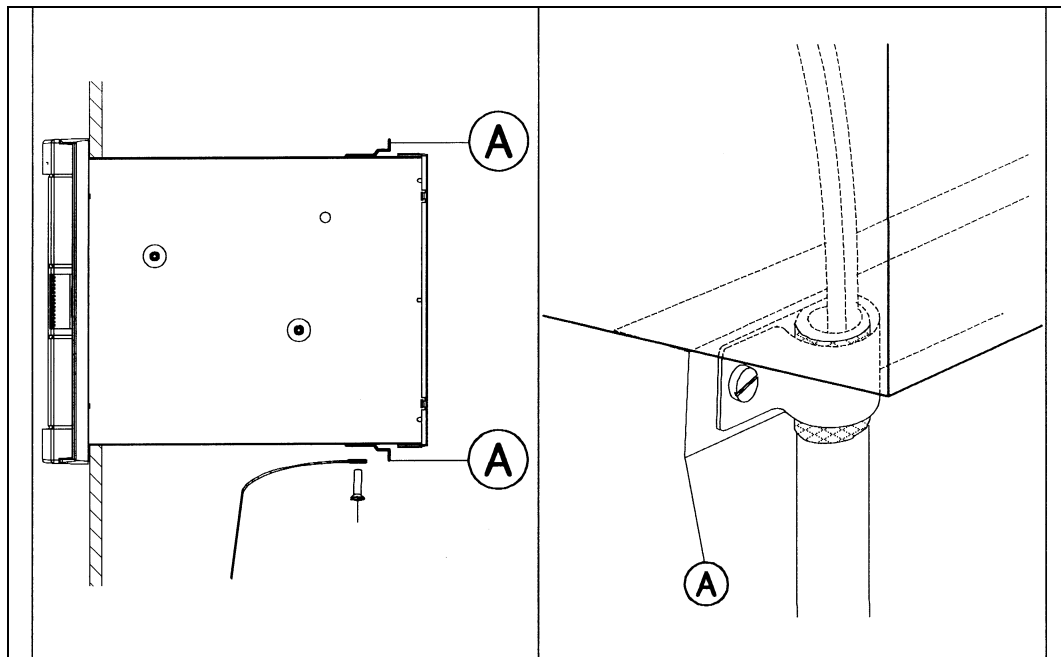
#### Mounting angle limits



### 2.4 WIRING THE RECORDER

#### 2.4.1 Recommendations

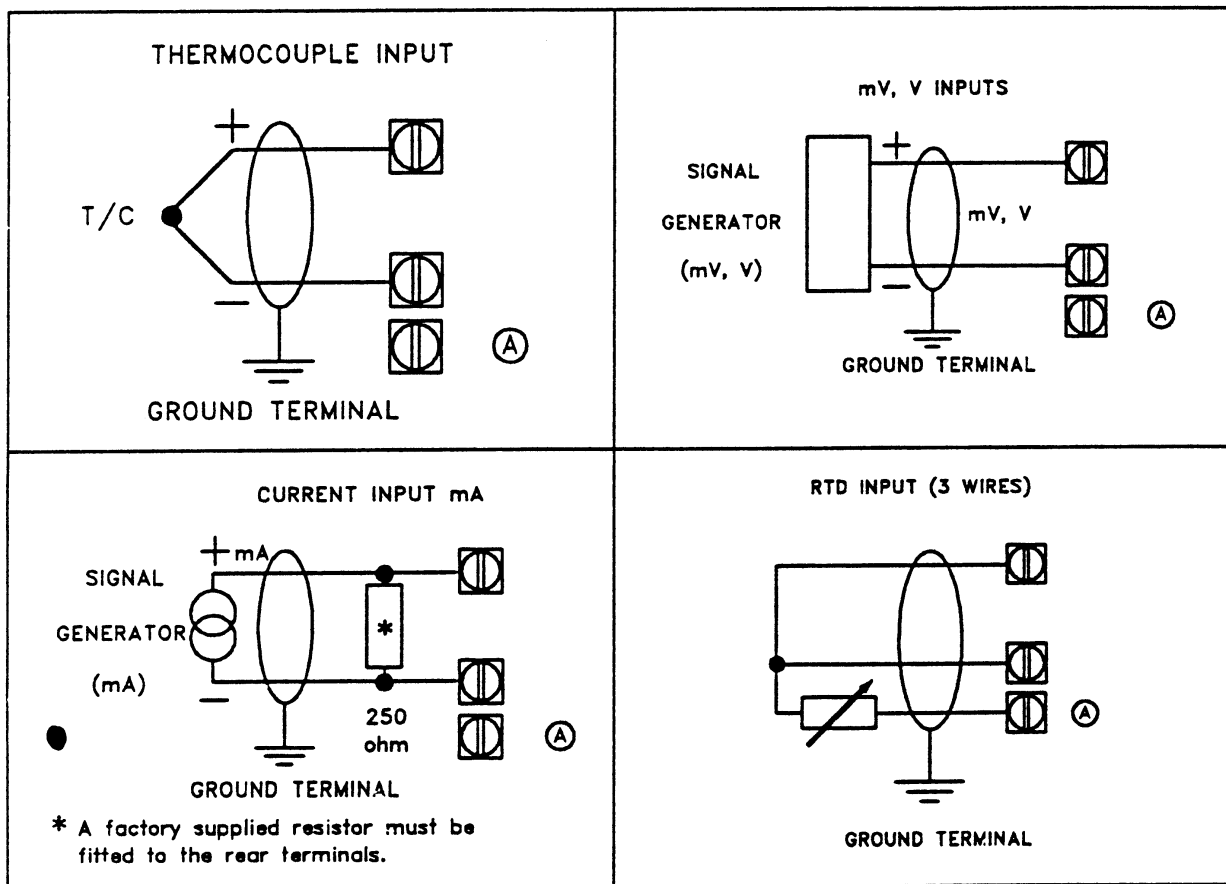
- All wiring must be in accordance with local norms and carried out by authorized experienced personnel.
- **The ground terminal must be connected before any other wiring (and disconnected last).**
- **A switch in the main power supply wiring is required near the equipment.**
- **If an external fuse is used to protect the line supply to the recorder, the fuse should match the recorder fuse rating (fuse type) as well as for the fuseholder.**
- Sensor wiring should be run as far as possible from power wiring.
- To reduce stray pick-up, we recommend the use of twisted pair sensor wiring.
- **EMI effects can be further reduced by the use of shielded cable sensor wiring. The shield must be connected to the ground terminal:**



#### A: Square of screening recapture (4610075-501)

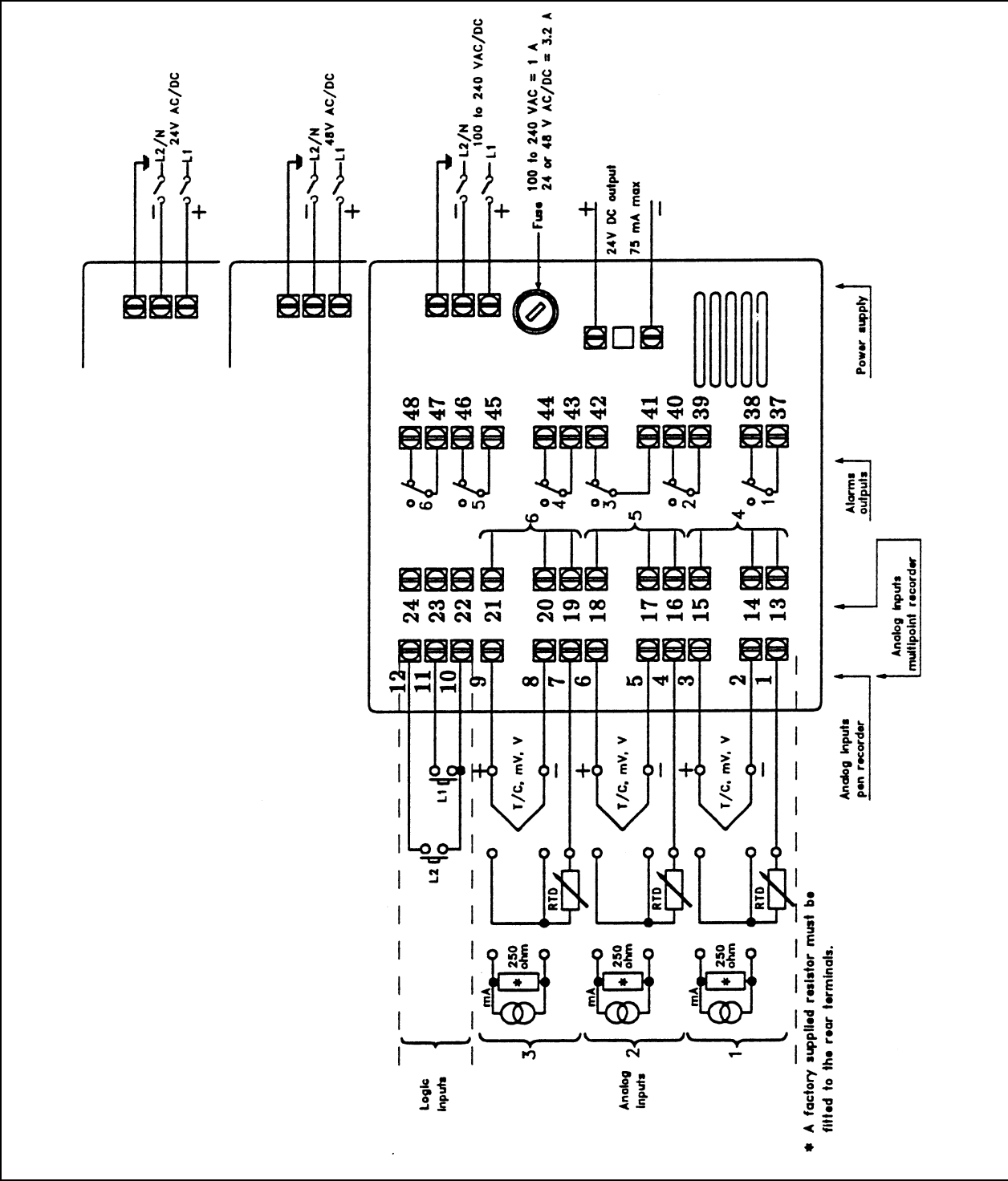
- The use of spade terminals on all wiring is recommended.

## 2. INSTALLATION



Note: Terminal (A) is only used for RTD. (See diagrams above.)

2.4.2 Terminal connections



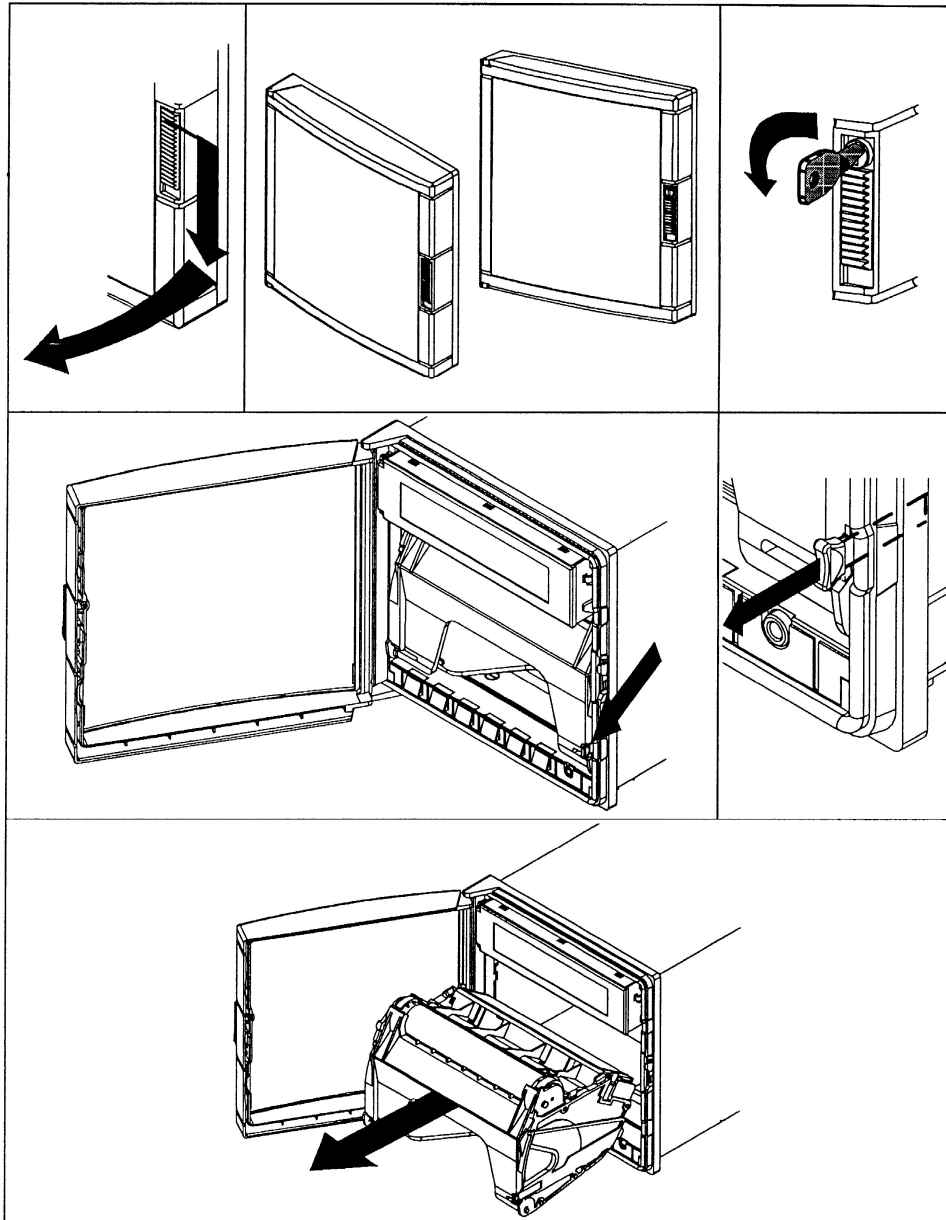


## 2. INSTALLATION

### 2.5 PREPARING POWER-UP

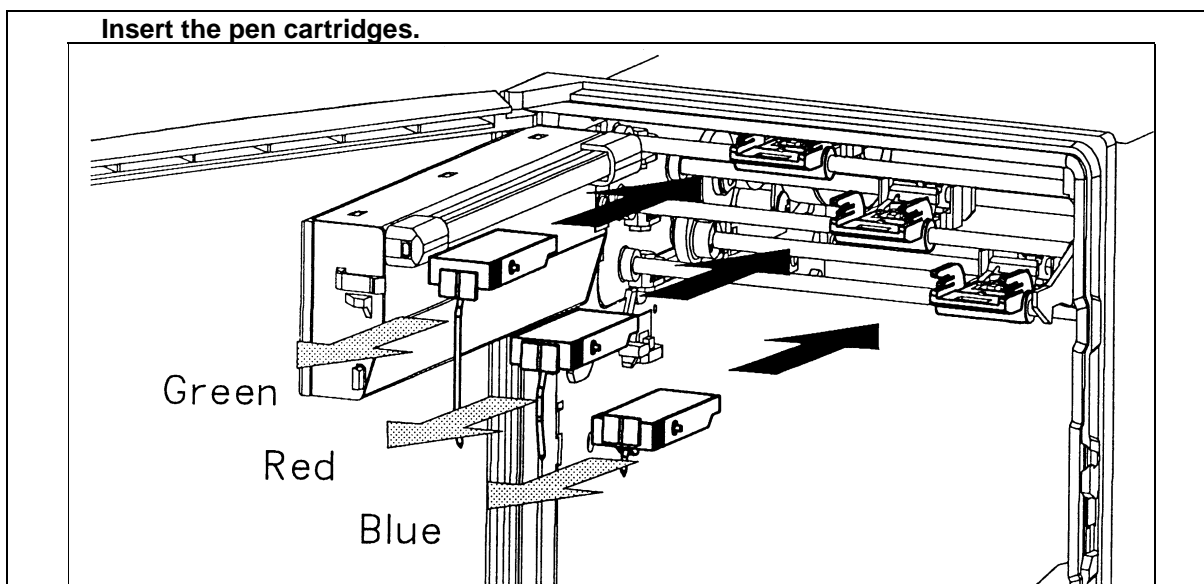
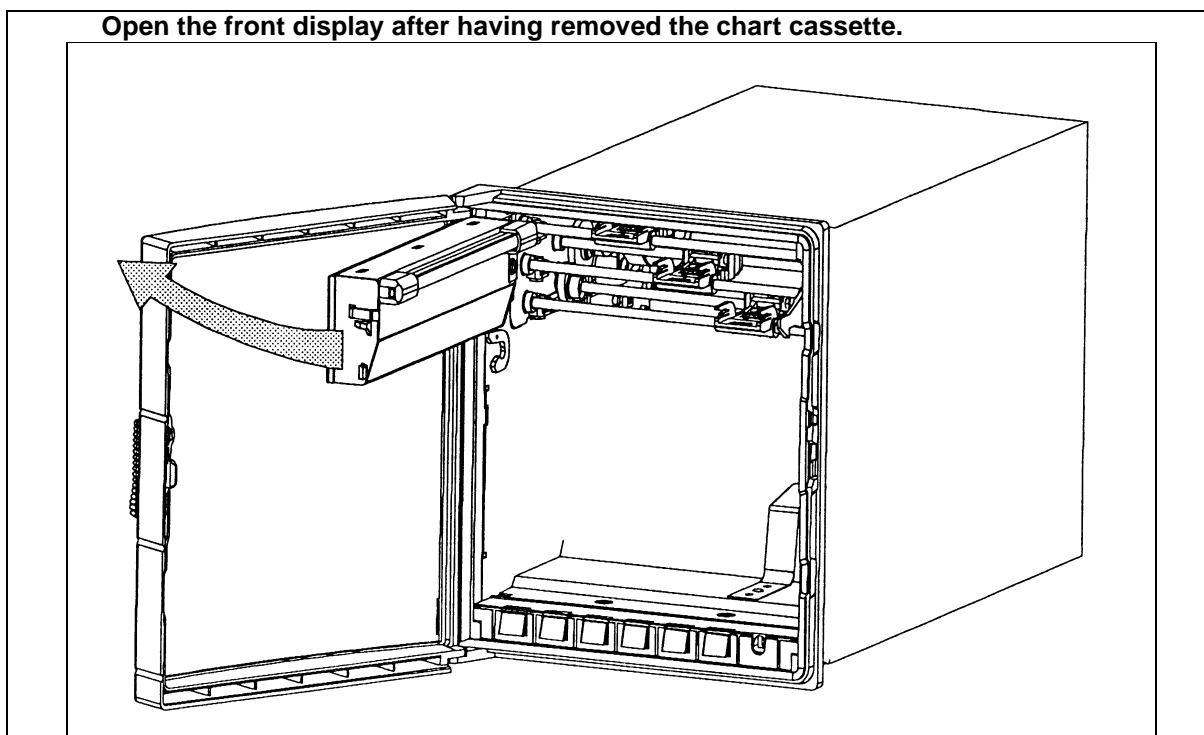
#### 2.5.1 Installing the printing system

Remove the chart cassette from the chassis as shown below:



## 2. INSTALLATION

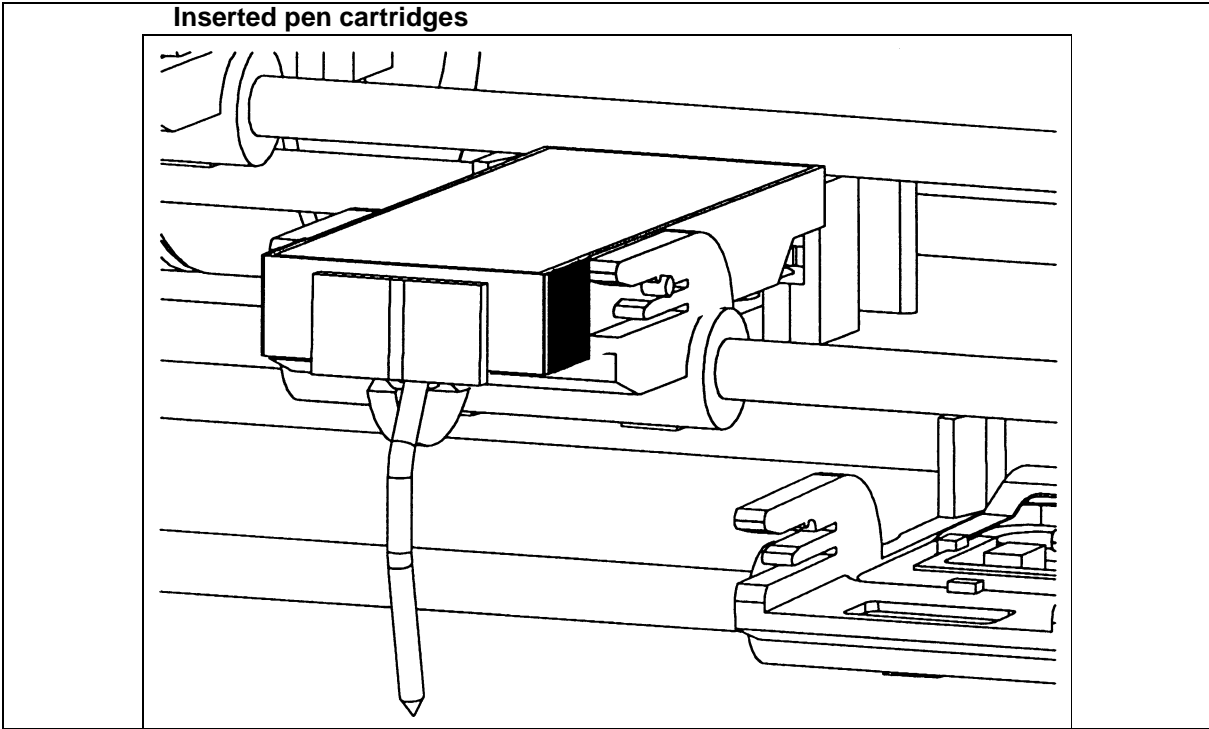
If you have a pen recorder, proceed as shown below:



## 2. INSTALLATION

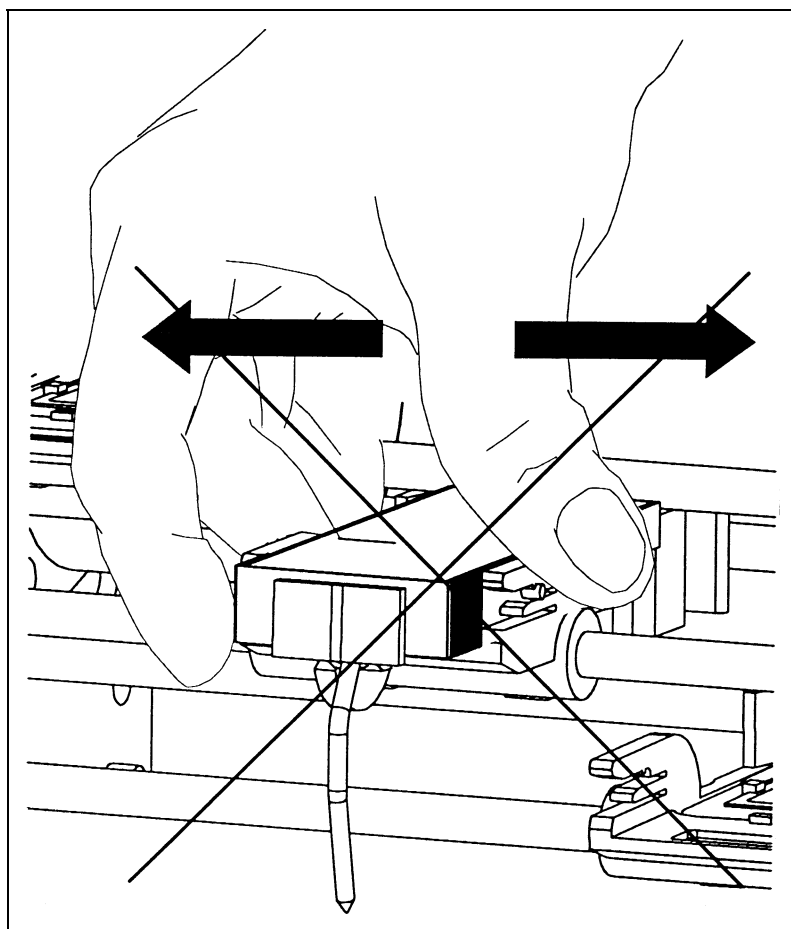
---

Inserted pen cartridges



## 2. INSTALLATION

---

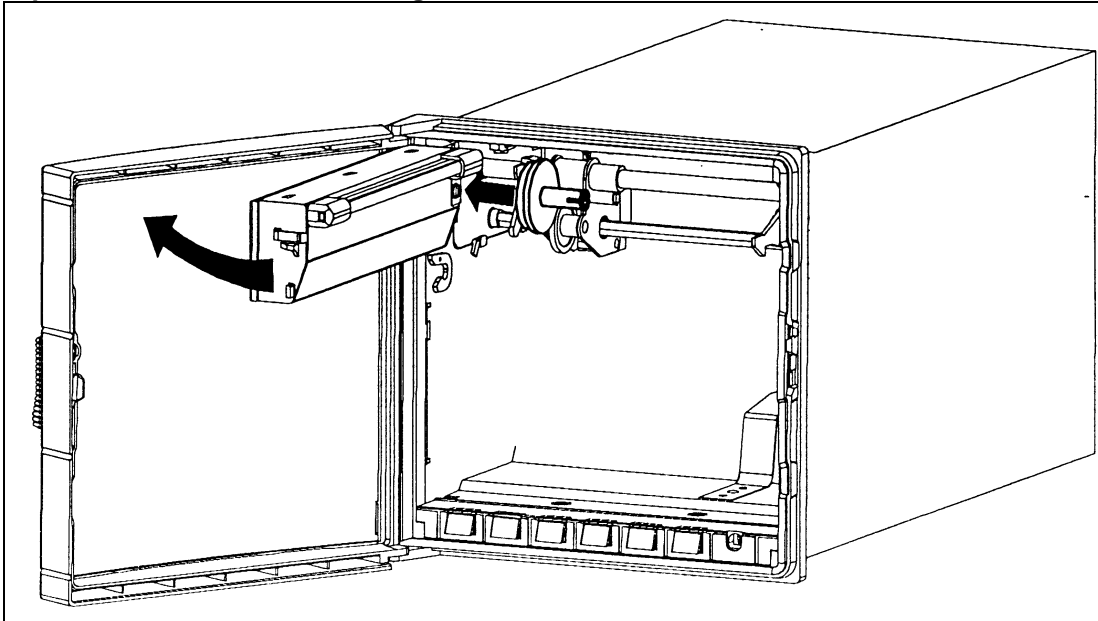


**CAUTION:** Do not move the print head mechanism when the recorder is working.

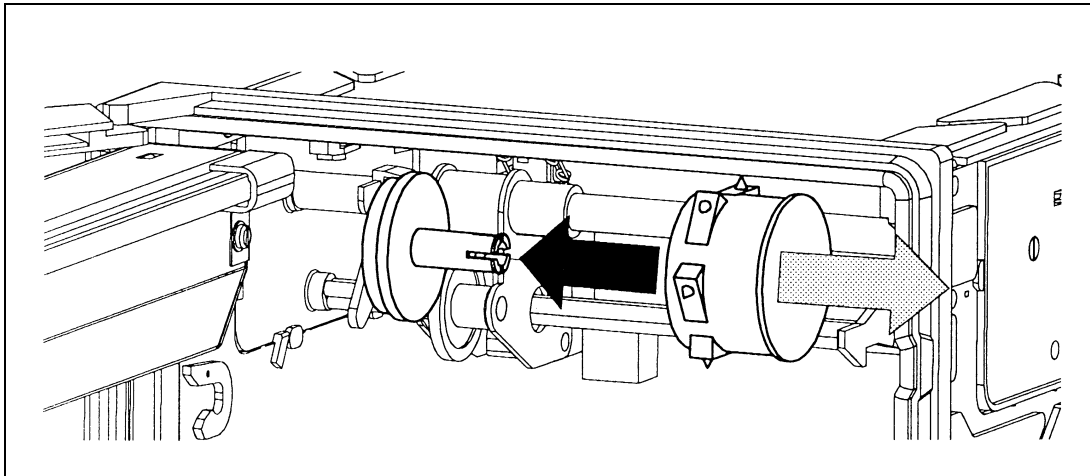
## 2. INSTALLATION

If you have a multipoint recorder, proceed as shown below:

**Open the front scale after having removed the chart cassette.**



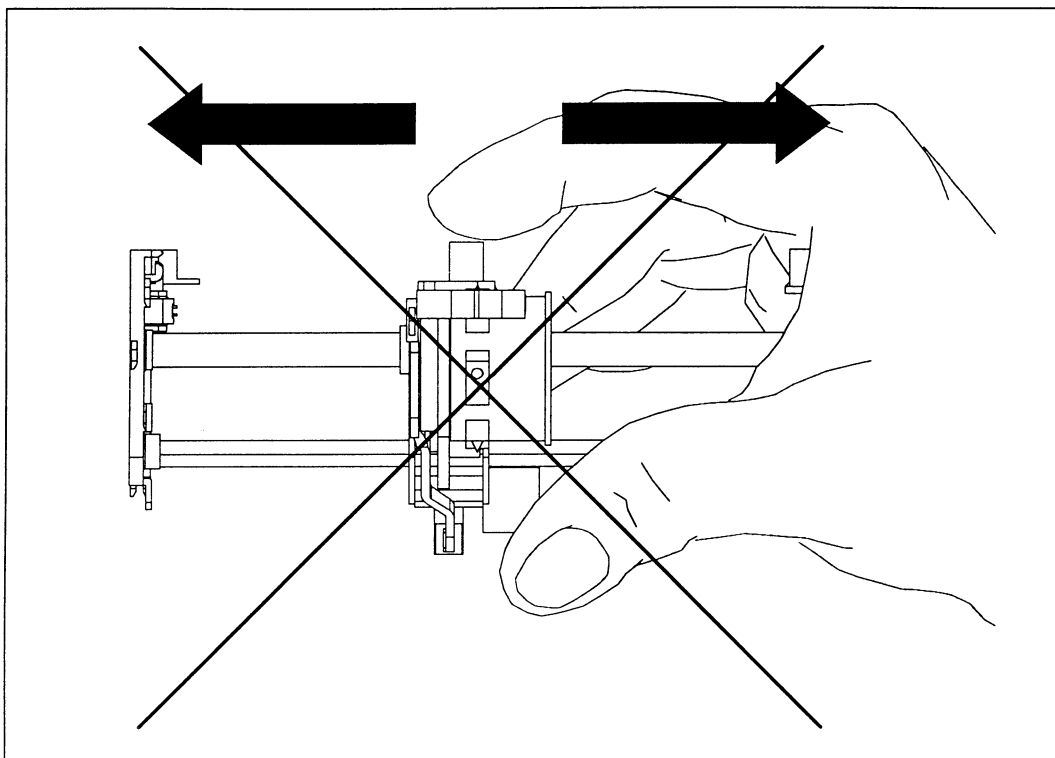
**Insert the ink wheel.**



**Note:** The ink wheel should be inserted and rotated counter-clockwise until ratchet engages.

## 2. INSTALLATION

---



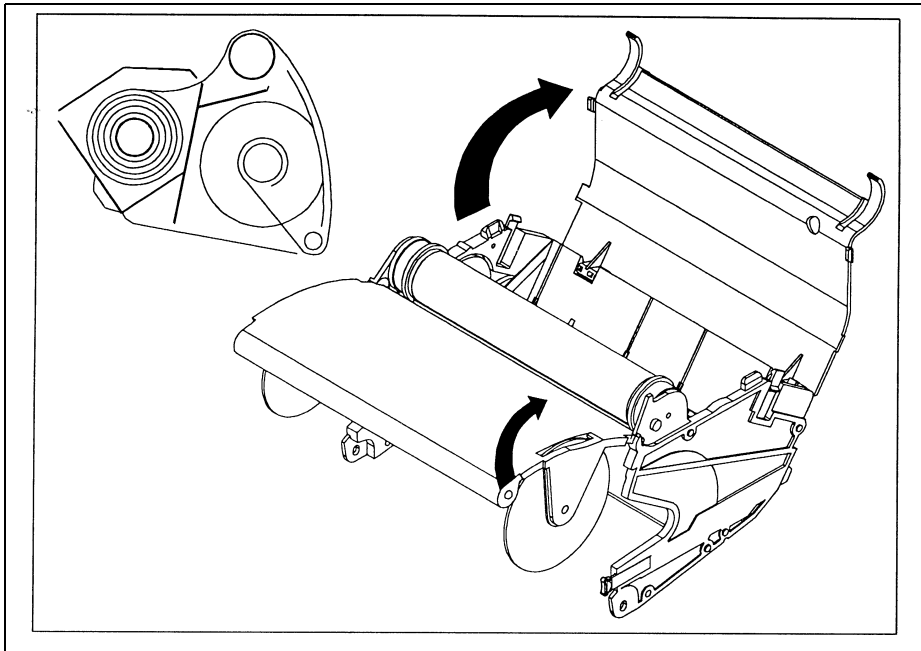
**CAUTION:** Do not move the print head mechanism when the recorder is working.

## 2. INSTALLATION

---

### 2.5.2 Fitting the roll chart

Open the chart cassette as shown below and install the chart using the figure on the cassette.



**Note 1:** To maintain print quality, the print carriage guide rods should be cleaned at six-monthly intervals with a dry cotton cloth. Lubricant should NOT be used.  
If required, the chart cassette can be cleaned with a damp cotton cloth.

**Note 2:** On completion, close the front scale(s) before reinserting the chart cassette in the printing position.

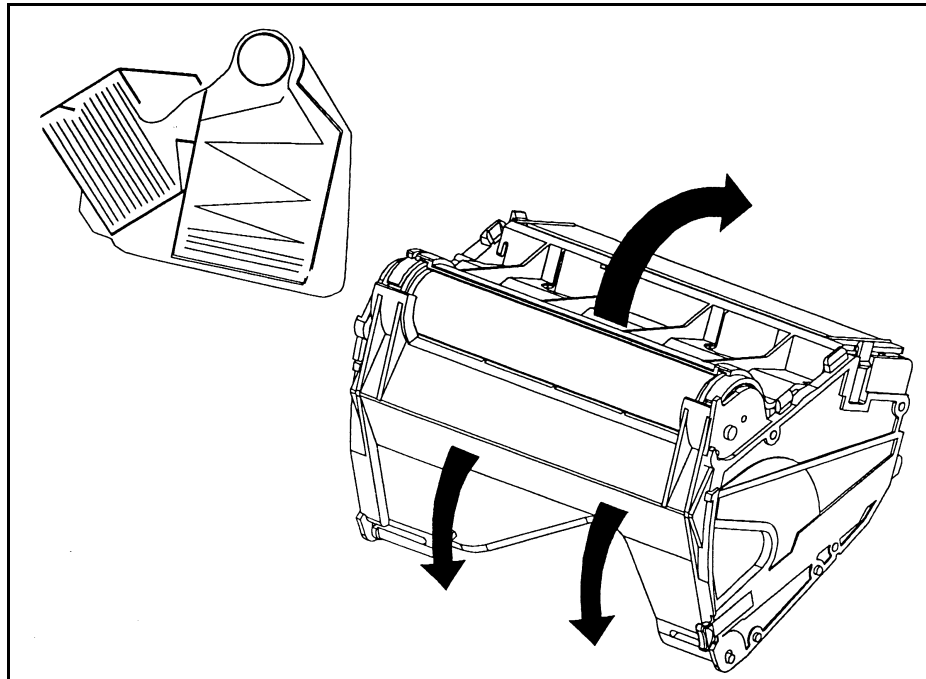
**Note 3:** After a change of paper it is recommended to check the chart with calibration and to adjust it if necessary ([Refer to section 2.7 CARRIAGE CALIBRATION](#)).

## 2. INSTALLATION

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### 2.5.3 Fitting the fanfold chart

- Open the chart cassette as shown below and install the chart using the figure on the cassette.
- Place the fanfold chart in the upper compartment with the folds in the vertical plane and the slots on the right hand side.
- Pull out 4 folds of paper and then close the rear metal cover.



**Note 1:** To maintain print quality, the print carriage guide rods should be cleaned at six-monthly intervals with a dry cotton cloth. Lubricant should NOT be used.  
If required, the chart cassette can be cleaned with a damp cotton cloth.

**Note 2:** On completion, close the front scale(s) before reinserting the chart cassette in the printing position.

**Note 3:** After a change of paper it is recommended to check the chart with calibration and to adjust it if necessary ([Refer to section 2.7 CARRIAGE CALIBRATION](#)).

## 2.6 CLEANING THE PANE

It is recommended to clean the recorder pane with a soft cloth and the following products:

- Light soapy water
- Methylated spirit



## 2. INSTALLATION

### 2.7 CARRIAGE CALIBRATION

#### 2.7.1 Chart certification

##### ON PEN RECORDER

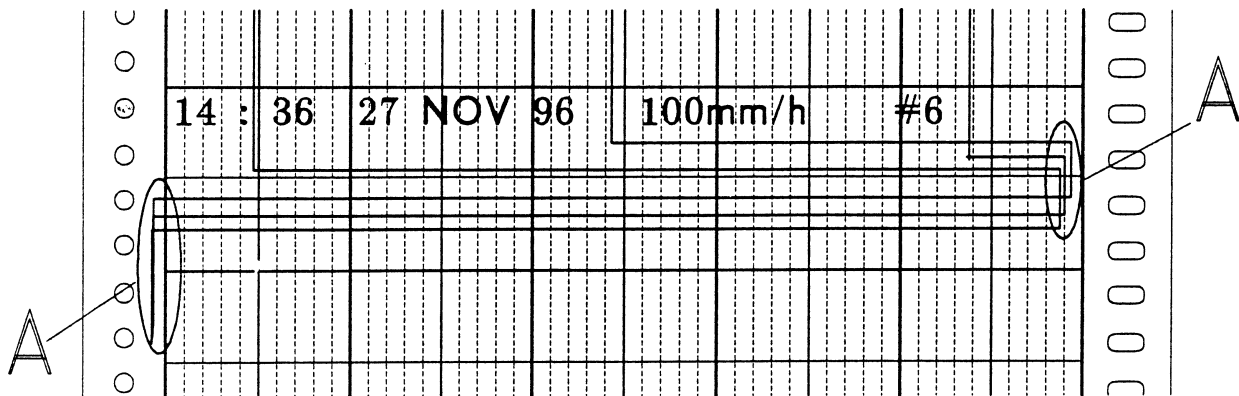


Figure 2-1

If the trace of one or several pens are not correctly on 0 % or 100 % (see ref. A, fig. 2-1) of the chart, make a carriage calibration.

##### ON MULTIPOINT RECORDER

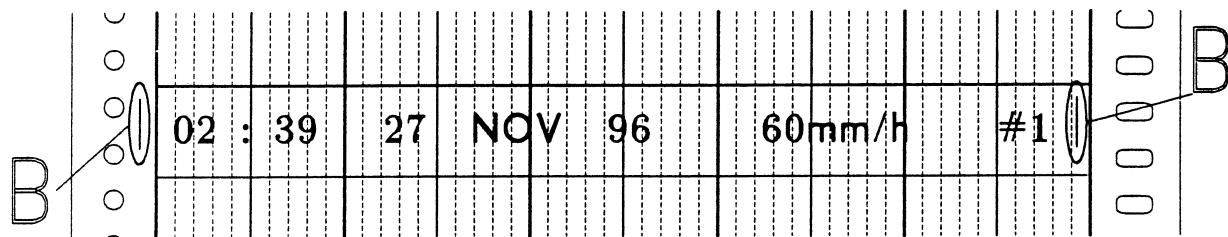




Figure 2-2

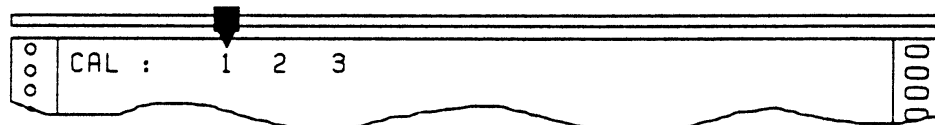
If the trace is not correctly on 0 % or 100 % (see ref. B, fig. 2-2) of the chart, make a carriage calibration.

## 2. INSTALLATION

### 2.7.2 Carriage calibration (or chart calibration)

This operation allows the 0 % and 100 % calibration of the traces on the paper.

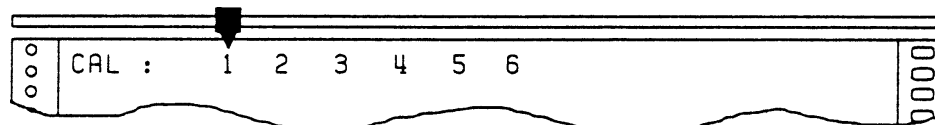
- The CALIBRATION mode is "hidden" and can only be accessed by a special combination of Function Keys when in the RUN mode.
- To enter the CALIBRATION mode, press both  and  **FOR 10 SECONDS** and the recorder will print the channel numbers.



**For a one-pen recorder: available channel number is 1 only.**

**For a two-pen recorder: available channel numbers are 1 and 2.**


**For a three-pen recorder: available channel numbers are 1, 2 and 3.**



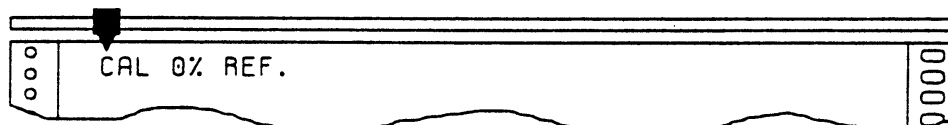
**For a multipoint recorder: available channel numbers are 1, 2, 3, 4, 5 and 6.**

When printing completed, the pointer will be positioned on channel 1.


On a multipoint recorder, the chart calibration is made once for all channels, whatever the channel you choose.

- **Press**  to confirm your choice (your choice will be highlighted).

Now the recorder prints a message indicating that it will calibrate the 0 % of the chart on the chosen channel.








**Warning:** The sensor **MUST** either be disconnected, or the input voltage shall not change of more than 25 % of the span during the whole operation.

**Then press**  to start the 0 % calibration.

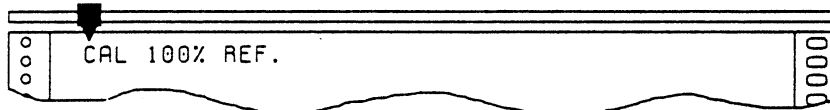
## 2. INSTALLATION


---





Now the pointer will take up the current 0 % calibration position. If necessary, the  and  keys can be used to position the pen to 0 %. The chart will advance by one line each time the  or  keys are pressed and the recorder will reprint its mechanical references and be positioned on its new value.

- **Press**  to confirm the new 0 % carriage calibration.

Now the recorder prints a message indicating that the 100 % of the span will be calibrated:




- To adjust the carriage calibration keep the input terminals open or keep the sensor connected, but be sure that the voltage given by this sensor have not changed from more than 25 % of the span since the 0 % calibration.
- **Then press**  to start the 100 % calibration.

Now the pointer will take up the current 100 % calibration position. If necessary, the  and  keys can be used to position the pen to 100 %. The chart will advance each time the  or  keys are pressed.

- **Press**  to confirm the new 100 % calibration.

Calibration is now complete and the recorder will reprint the calibration menu.

- At this point, if necessary, the recorder will print again the channel numbers to allow you to select another channel to calibrate.
- To return to RUN mode, the  key should be pressed for a few seconds.

**Note:** If the difference between the 100 % and 0 % reference signals is under 25 %, then only the carriage calibration is made; otherwise the operation will be considered as a full "field calibration". In case of faulty operation, you would have to provide again a complete field calibration (note that, if you have a PC LOADER, you can find back the factory calibration only by changing the configured range and coming back to the previous one).

### 2.8 CHECK LIST

- |   |  |
|---|--|
| 1 | Have you connected the ground terminal?  |
| 2 | Have you connected the sensor(s) correctly? (Wire type, polarity, etc.)                                    |
| 3 | Have you tightened all terminal screws?  |
| 4 | Have you installed the ink cartridge(s) or wheel?<br>( <a href="#">See figures on pages 2-7 to 2-11.</a> ) |
| 5 | Have you installed the chart correctly?<br>( <a href="#">See figures on pages 2-12 and 2-13.</a> )         |
| 6 | Have you closed the front scale?   |
| 7 | Have you fitted the chart cassette in the recorder?  |
| 8 | Have you programmed the right scale with your PC Loader?   |

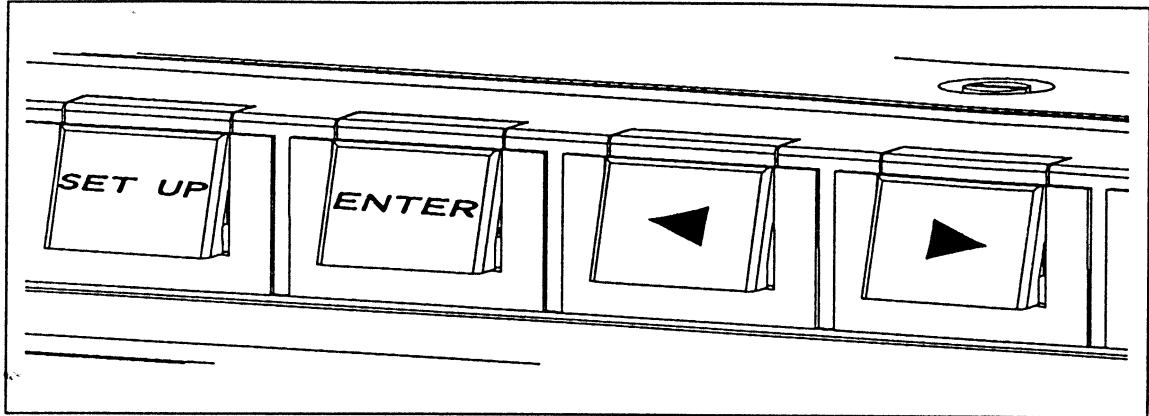
### 2.9 REPLACING THE INK CARTRIDGES

- Remove the chart cassette. The print carriage stops to allow you to replace the ink cartridges.
- Open the front scale.
- For the pen recorders:
  - Pull the ink cartridge forward and remove from its housing.
  - The new ink cartridge must be fully pushed home.
- For the multipoint recorder:
  - Hold the print carriage with the left hand and pull the ink wheel to the right and remove from its support.
  - The new ink wheel should be inserted and rotated counter-clockwise until ratchet engages.
- Close the front scale.
- Reinsert the chart cassette in printing position.

**Note:** When pen recorders are not used for long periods of time, it is recommended that the ink cartridges be removed and capped.



### 3.1 FUNCTION KEYS



#### 3.1.1 SETUP


The **SETUP** key has three functions.

- Entering CONFIGURATION main menu from the RUN mode.
- Exiting CONFIGURATION main menu to normal RUN mode.
- Exiting CONFIGURATION sub-menus (ALARMS, SPEED, ID, TIME, DATE) to return to the main menu.


#### 3.1.2 ENTER


The **ENTER** key allows confirmation of your choice of a sub-menu or a parameter.

#### 3.1.3 INCREMENT

The  key has 2 functions:

- Advancing chart in run mode. The chart advances until the key is released.
- Moving the pointer in configuration mode.

The  key moves the pointer to the right and places it at the sub-menu or parameter to be changed.

**Note:** When the pointer is placed either on the last sub-menu or on the last parameter to the right, this key has no effect. If you want to move the pointer to the left, use the  key.

## 3. CONFIGURATION

### 3.1.4 DECREMENT

The ◀ key moves the pointer to the left and places it at the sub-menu or parameter to be changed.

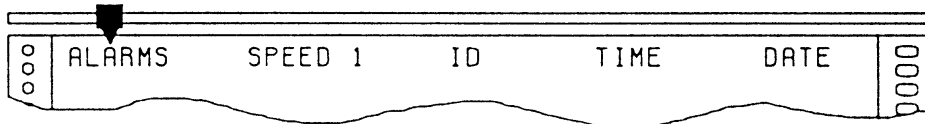
Note: When the pointer is placed either on the first sub-menu or on the first parameter to the left, this key has no effect. If you want to move the pointer to the right, use the ▶ key.

### 3.2 MAIN MENU

The recorder automatically prints any modification to the configuration.

- To access the main menu, press **SETUP** for a few seconds.

The recorder will print the main menu:

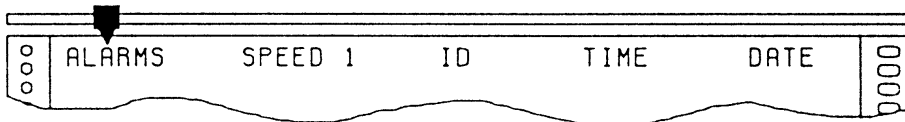


When printing completed, the pointer will be positioned at the ALARMS sub-menu. If there is no action, the recorder returns to the RUN mode after a few minutes.

- Press ▶ to move the pointer to the right and place on the desired sub-menu or parameter you wish to modify.
- **Note 1:** To return to the normal RUN mode, press the **SETUP** key for a few seconds.
- **Note 2:** When existing configuration mode, the recorder will reprint its mechanical references and return to RUN mode.

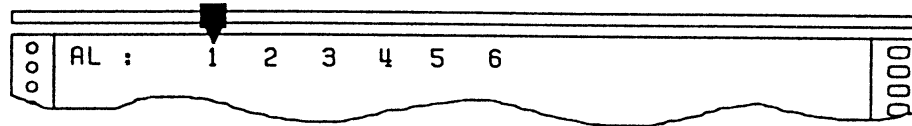
### 3.3 ALARMS

- When the pointer is positioned at ALARMS:



### 3. CONFIGURATION

- Press **ENTER** to confirm your choice and the recorder prints the ALARMS sub-menu:



The printed numbers refer to ALARMS numbers. For example, the digit 1 represents alarm number 1.

- Press **▶** or **◀** to point to the desired alarm number.
- Press **ENTER** to confirm your choice. (Your choice will be highlighted)

The pen carriage moves to indicate the position of the alarm setpoint on the scale.

- Pressing **▶** or **◀** modifies the pen position from initial position to the new required position.
- Press **ENTER** to confirm the new value. The content of ALARMS sub-menu will be reprinted.

**IMPORTANT:** Unless modified by PC and configuration software, the standard alarm configuration is shown below.

- For a One-pen recorder:** Alarm numbers are 1 and 2.
- For a Two-pen recorder:** Alarm numbers are 1, 2, 3 and 4.
- For a Three-pen recorder:** Alarm numbers are 1 to 6.
- For a Multipoint recorder:** Alarm numbers are 1 to 6.

**Note:**

- The alarm type (High or Low) is pre-configured but may be modified via PC and configuration software.

PEN RECORDER		
ALARM NUMBER	TYPE	PEN
1	Low	Pen 1
2	High	Pen 1
3	Low	Pen 2
4	High	Pen 2
5	Low	Pen 3
6	High	Pen 3

MULTIPOINT RECORDER		
ALARM NUMBER	TYPE	CHANNEL
1	High	Channel 1
2	High	Channel 2
3	High	Channel 3
4	High	Channel 4
5	High	Channel 5
6	High	Channel 6



## 3. CONFIGURATION

Alarm type and set point are printed each time the recorder is powered.

High Alarm ON	▲	Low Alarm ON	▼
High Alarm OFF	△	Low Alarm OFF	▽

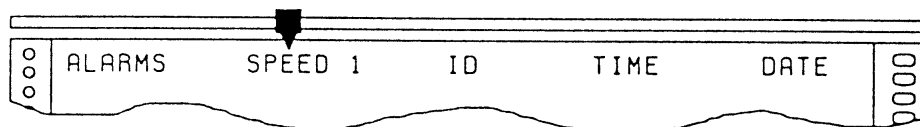
- The operation can be repeated for other ALARMS or the ALARMS sub-menu can be left by pressing the **SETUP** key for a few seconds, so that you will return to the main menu.

### 3.4 SPEED

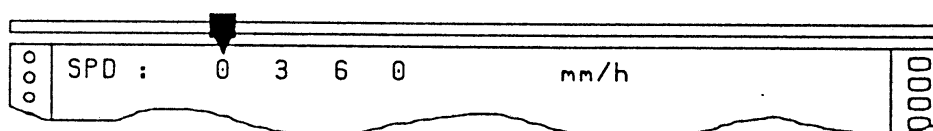
This menu permits configuration of chart speed #1. Selection of units (mm/ or inches per hour) and chart speed #2 are pre-configured as defined in your order.

#### 3.4.1 SPEED (mm/hour)

- When the pointer is positioned at SPEED 1:

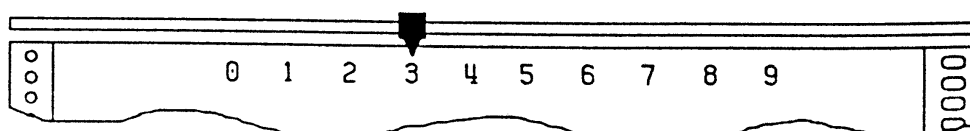


- Press **ENTER** and the recorder prints current speed #1:







When printing completed, the pointer will be positioned at the leading digit, in this case 0.

- Press **▶** or **◀** to select the position of digit to be changed.  
For example, position the pointer on the digit 3. The minimum speed is 10 mm/h and maximum speeds are 6000 mm/h for pen recorders and 1500 mm/h for the multipoint.
- Press **ENTER** to confirm your choice of position and the recorder will print the choice of values which can be selected. (Your choice will be highlighted).



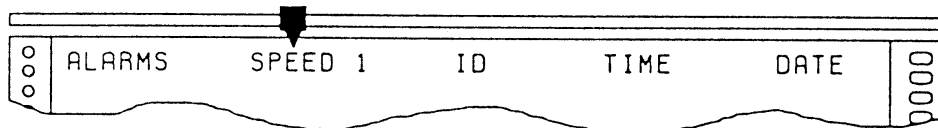
### 3. CONFIGURATION

In this example, the pointer will be positioned at the current value, in this case 3.

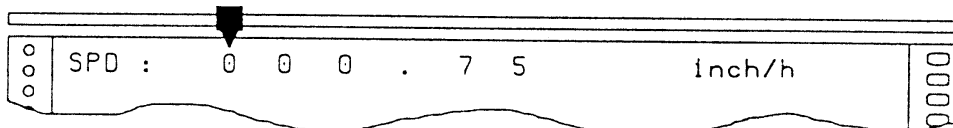
- Press  or  to move the pointer to the desired value, for example 1.
- Press  to confirm the change and the new speed of 160 mm/h will be printed.
- At this point, if necessary, the position of the next digit to be changed can be made and followed by selection of value.
- To return to the main menu, the  key should be pressed for a few seconds.

#### 3.4.2 SPEED (inches/hour)




- When the pointer is positioned at SPEED 1:

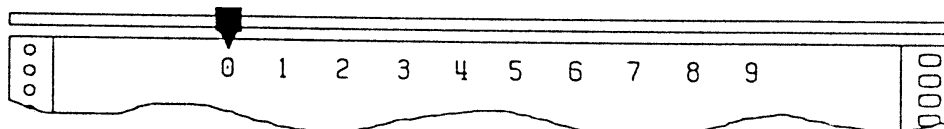






- Press  and the recorder prints current speed #1:



When printing completed, the pointer will be positioned at the leading digit, in this case 0.

- Press  or  to select the position of digit to be changed, for example 0. The minimum speed is 0.5 inch/h and the maximum speeds are 240 inch/h for the pen recorders and 60 inch/h for the multipoint.
- Press  to confirm your choice and the recorder prints choice of value which can be selected. (Your choice will be highlighted)



- Press  or  to move the pointer to the desired value, for example 2.
- Press  to confirm your choice and the new speed of 20.75 inch/h will be printed.
- At this point, if necessary, the position of the next digit to be changed can be made and followed by selection of value.
- To return to the main menu, the  key should be pressed for a few seconds.

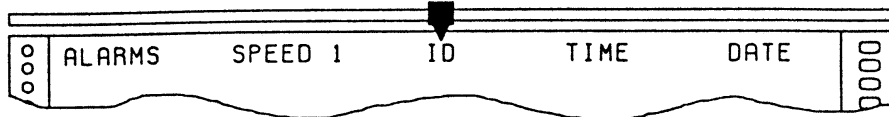
**Note:** Choices available for least significant digit are 0 or 5 only.

## 3. CONFIGURATION

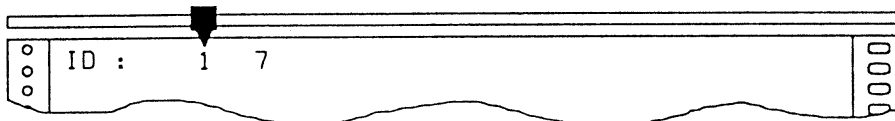
### 3.5 IDENTIFICATION

This menu permits configuration of a specific ID (1 to 99) for the recorder.

- When the pointer is positioned at ID (IDENTIFICATION OR ADDRESS NUMBER):

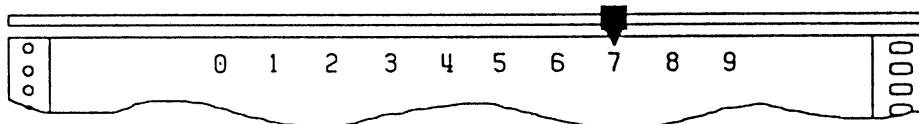


- Press **ENTER** and the recorder prints the current identification number:



When printing completed, the pointer will be positioned at the leading digit, in this case 1.

- Select the digit to be changed by pressing **▶** or **◀**, for example 7.
- Press **ENTER** to confirm your selection (Your choice will be highlighted) and the recorder prints choice of values which may be selected.

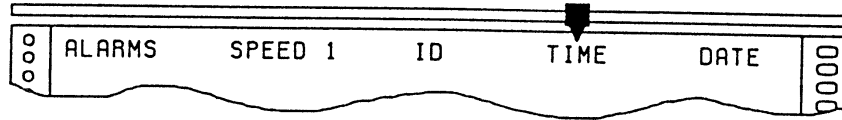


When printing completed, the pointer will be positioned to the current value, in this case 7.

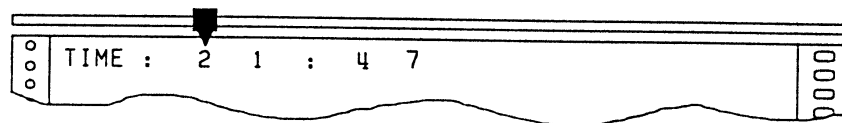
- Press **▶** or **◀** to position the pointer to the desired value, for example 4.
- Press **ENTER** to confirm your choice and the new identification 14 will be printed.
- At this point, the selection of the next digit requiring modification can be made.
- To return to the main menu, the **SETUP** key should be pressed for a few seconds.

### 3.6 TIME

- When the pointer is positioned at TIME:



Press **ENTER** to confirm your choice and the recorder prints the current time:

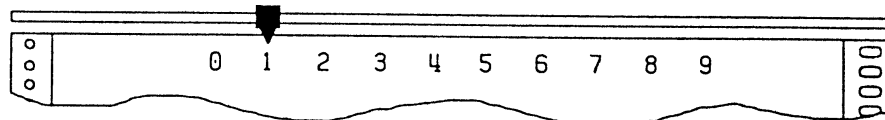


When printing completed, the pointer will be positioned at the leading digit, in this case 2.

- Press **▶** or **◀** to choose the position you wish to modify, for example 1.

**Note:** It is recommended that the least significant position in minute units be set last to ensure a precise time configuration.

- Press **ENTER** to confirm your choice (Your choice will be highlighted) and the recorder prints choice of values which may be selected.



When printing completed, the pointer will be positioned at the current value, in this case 1.

- Press **▶** or **◀** to choose another value, for example 2.
- Press **ENTER** to confirm your choice and the new time of 22:47 will be printed.

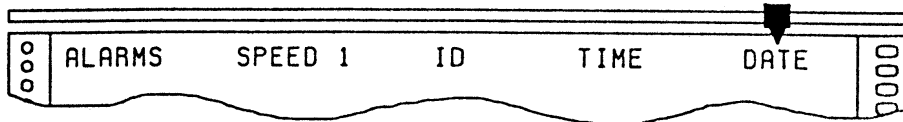
**Note:** The internal recorder clock is corrected/modified when **ENTER** is pressed.

- A this point, if necessary, the position of the next digit to be changed can be made, followed by selection of value.
- To return to the main menu, the **SETUP** key should be pressed for a few seconds.

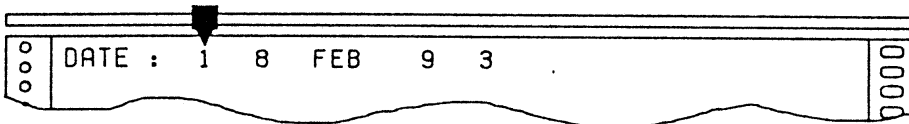
## 3. CONFIGURATION

### 3.7 DATE

- When the pointer is positioned at DATE:



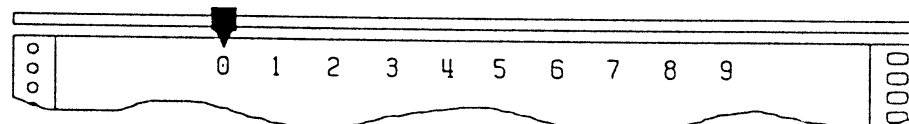
- Press **ENTER** to confirm your choice and the recorder prints the current date:



When printing completed, the pointer will be positioned at the leading position, in this case 1.

- Press **▶** or **◀** to choose the position you wish to modify, in this example 8.
- Press **ENTER** to confirm your choice. (Your choice will be highlighted)

The recorder prints the range of values which may be selected.



When printing completed, the pointer will be positioned at the current value, in this case 8.

- Press **▶** or **◀** to choose another value, for example 9.
- Press **ENTER** to confirm your choice and the new date will be printed: 19 FEB 93.
- At this point, if necessary, the position of the next digit to be changed can be made and followed by selection of value.
- To return to the main menu, the **SETUP** key should be pressed for a few seconds.

### 4.1 PRODUCT IDENTIFICATION

Make sure that the model number shown on the product nameplate agrees with the model you have ordered. The model number may be interpreted from the following tables.

Pen and Multichannel recorder: analog display.

I  
N  
S  
T  
R  
U  
C  
T  
I  
O  
N  
S

- Select digits from key number and tables I to IX to build up your model number.
- A complete model number has the requested number of digits from each table as shown below. The table VII can accept more than 4 digits.

<div><div>D _ _ _</div><div>—</div></div>	-	<div><div>— — — — —</div></div>	-	<div><div>— — —</div></div>	-	<div><div>—</div></div>	-	<div><div>—</div></div>	-	<div><div>—</div></div>	-	<div><div>— — — , — — —</div></div>	-	<div><div>— —</div></div>	-	<div><div>— — — , — — —</div></div>		
Key number		I		II		III		IV		V		VI		VII		VIII		IX

K E Y  N U M B E R	Description			Specify	Availability					
1 Pen Recorder	Deg C	1 scale → to input 1	DA101	◆						
	Deg F	1 scale → to input 1	DA111	◆						
2 Pen Recorder	Deg C	2 scales → to input 1 & 2	DA102	◆	◆					
	Deg F	2 scales → to input 1 & 2	DA112	◆	◆					
3 Pen Recorder	Deg C	3 scales → to input 1, 2 & 3	DA103	◆	◆	◆				
	Deg F	3 scales → to input 1, 2 & 3	DA113	◆	◆	◆				
3 Channel Recorder	Deg C	1 scale 0 to 100 Linear	DB103	◆	◆	◆				
	Deg F	1 scale 0 to 100 Linear	DB113	◆	◆	◆				
6 Channel Recorder	Deg C	1 scale 0 to 100 Linear	DB106	◆	◆	◆	◆	◆	◆	◆
	Deg F	1 scale 0 to 100 Linear	DB116	◆	◆	◆	◆	◆	◆	◆

## 4. APPENDIX

		Range/Scale Selection (6 digits)					Selection	Input					
		1 per input						1	2	3	4	5	6
Table I  Ranges	Upscale  <												

## 4. APPENDIX

					PEN			MPT	
					1	2	3	3	6
Table II	Chart speed	Chart speed (3 digits)			Availability				
	Units frequency	- 85 to 264 V ac/dc	Chart speed mm/h	A	♦	♦	♦	♦	♦
		- 85 to 264 V ac/dc	Chart speed inch/h	B	♦	♦	♦	♦	♦
		- 85 to 250 V ac/dc	Chart speed mm/h us	C	♦	♦	♦	♦	♦
		- 85 to 250 V ac/dc	Chart speed inch/h us	D	♦	♦	♦	♦	♦
		- 24 Vac/dc	Chart speed mm/h	E	♦	♦	♦	♦	♦
		- 24 Vac/dc	Chart speed inch/h us	F	♦	♦	♦	♦	♦
		- 48 Vac/dc	Chart speed mm/h	G	♦	♦	♦	♦	♦
		- 48 Vac/dc	Chart speed inch/h us	H	♦	♦	♦	♦	♦
	Pre set	mm/h	inch/h	A	♦	♦	♦	♦	♦
		10	½	B	♦	♦	♦	♦	♦
		20	¾	C	♦	♦	♦	♦	♦
		30	1	D	♦	♦	♦	♦	♦
		50	2	E	♦	♦	♦	♦	♦
		60	3	F	♦	♦	♦	♦	♦
		100	4	G	♦	♦	♦	♦	♦
		120	5	H	♦	♦	♦	♦	♦
		150	6	I	♦	♦	♦	♦	♦
		180	7	J	♦	♦	♦	♦	♦
		200	8	K	♦	♦	♦	♦	♦
		240	10	L	♦	♦	♦	♦	♦
		300	15	M	♦	♦	♦	♦	♦
		360	20	N	♦	♦	♦	♦	♦
		600	25	P	♦	♦	♦	♦	♦
		720	30	Q	♦	♦	♦	♦	♦
		1200	40	R	♦	♦	♦	♦	♦
		1500	60	S	♦	♦	♦	♦	♦
		1800	90	T	♦	♦	♦	♦	♦
		3500	120	U	♦	♦	♦	♦	♦
		4800	180	V	♦	♦	♦	♦	♦
		6000	240		♦	♦	♦	♦	♦
	Pre set	10 (i)	½ (i)	A	♦	♦	♦	♦	♦
		20	¾	B	♦	♦	♦	♦	♦
		30	1	C	♦	♦	♦	♦	♦
		50	2	D	♦	♦	♦	♦	♦
		60	3	E	♦	♦	♦	♦	♦
		100	4	F	♦	♦	♦	♦	♦
		120	5	G	♦	♦	♦	♦	♦
		150	6	H	♦	♦	♦	♦	♦
		180	7	I	♦	♦	♦	♦	♦
		200	8	J	♦	♦	♦	♦	♦
		240	10	K	♦	♦	♦	♦	♦
		300	15	L	♦	♦	♦	♦	♦
		360	20	M	♦	♦	♦	♦	♦
		600	25	N	♦	♦	♦	♦	♦
		720	30	P	♦	♦	♦	♦	♦
		1200	40	Q	♦	♦	♦	♦	♦
		1500	60	R	♦	♦	♦	♦	♦

\* Any other speed (within limits) is adjustable on the unit by configuration.

Note (i) : basic factory configuration



## 4. APPENDIX

				PEN			MPT	
				1	2	3	3	6
	Descriptions			Availability				
<b>Table III</b>	Alarms (f)	None	0	♦	♦	♦	♦	♦
		6 relays – 2 configured (channel #1)	1	♦				
		2 relays – 2 configured (channel #1)	2	♦	♦	♦	♦	♦
		6 relays – 4 configured (channel #1 and ch #2)	4		♦			
		6 relays – 6 configured ( 2 on each channel)	5			♦	♦	
		6 relays – (one high alarm SP on each channel)	6					♦

(f) : Alarm output : "N.C"contact. Can be changed in "N.O"

<b>Table IV</b>	Logic input	None	0	♦	♦	♦	♦	♦
		2 remote L1 : Print inhibit switch	A	♦	♦	♦	♦	♦
		contacts L2 : Change speed 1 to speed 2						
		2 remote L1 : Print inhibit switch	B	♦	♦	♦		
		contacts L2 : Event marks						
		2 remote L1 : Print inhibit switch	C				♦	♦
		contacts L2 : Event trace						
		2 remote L1 : Event trace 1	D				♦	♦
		contacts L2 : Event trace 2						

<b>Table V</b>	Chart cassette	Standard chart : 0 – 100 lin. (50 divisions)						
		Roll	R	♦	♦	♦	♦	♦
		Fan fold	Z	♦	♦	♦	♦	♦

<b>Table VI</b>	Door And case	Dark grey door with latch, plastic window	1	♦	♦	♦	♦	♦
		Dark grey door key lock, plastic window	2	♦	♦	♦	♦	♦
		Dark grey door, latch, abrasion resistant window	3	♦	♦	♦	♦	♦
		Dark grey door, key lock, abrasion resistant window	4	♦	♦	♦	♦	♦
		Portable case (a)	5	♦	♦	♦	♦	♦

<b>Table VII</b>	Options	None	00	♦	♦	♦	♦	♦
		Pen offset compensation	0A		♦	♦		
		Power supply for transmitter 24 Vdc (75 mA max.) (j)	0B	♦	♦	♦	♦	♦
		Chart illumination	0C	♦	♦	♦	♦	♦
		Ambient temperature 60 ° C (d)	0D					
		Remote compensation box input						
		- At 50 ° C on all T/C inputs	0E	♦	♦	♦	♦	♦
		- At 60 ° C on all T/C inputs	0F	♦	♦	♦	♦	♦
		Rear terminal cover (b) (j)	0G	♦	♦	♦	♦	♦
		Specific range/scale config. (complete table note "h")	0H	♦	♦	♦	♦	♦
		Unit CSA approval (k) (j)	CS	♦	♦	♦	♦	♦
		Calibration text report (i)	TR	♦	♦	♦	♦	♦

## 4. APPENDIX

					PEN			MPT	
					1	2	3	3	6
Descriptions					Availability				
Table VIII	Literature	Operator manual	English	EN	♦	♦	♦	♦	♦
		Languages	French	FR	♦	♦	♦	♦	♦
			German	GE	♦	♦	♦	♦	♦
			Italian	IT	♦	♦	♦	♦	♦
			Spanish	SP	♦	♦	♦	♦	♦
			Swedish	SW	♦	♦	♦	♦	♦
			Dutch	DU	♦	♦	♦	♦	♦
			English : US format	US	♦	♦	♦	♦	♦

Table IX	Special	None ST number	000	♦	♦	♦	♦	♦
			XXX	(e)	(e)	(e)	(e)	(e)

- (a) : Portable case with dark grey door, plastic window, latch, rear mains switch, IEC mains plug connector and rear cover.
- (b) : In addition to the cover on the power supply terminals (which is standard).
- (d) : Not available with fan fold chart : Option Z in table V.
- (e) : Refer to special instrument list or contact factory for new requirements.
- (h) : Recorder specific range/scale configuration : please complete following table.
- (i) : If this has to be made on a specific range, please order also the option "OH".
- (j) : The 24 V must be connected directly to the supply terminals.
- (k) : Available with table II option CXX or DXX.

			Input Range *			Chart **						Scale **								Filter ****
Pen	Mpt* **	Channel	Min.	Max.	Burnout	Min.	Max.	Eng. Unit				Min.	Max.	Eng. unit				Item #	Value	
		1																		
		2																		
		3																		
		4																		
		5																		
		6																		

\* For mV, V, mA, the input signal may be adjusted within the actuation limits (minimum range adjustment = 20 %)

\*\* For T/C, RTD, the chart scale may be adjusted within the actuation limits (minimum range adjustment = 20 %) and scale/chart must be identical.

\*\*\* Multipoint recorders are available in "special" with 2 or 3 scales engraved on the same support. Please add : ST011, and specify the requested scale ranges.

\*\*\*\* The numeric filter is applied on all analog inputs, configurable by PC loader from 0 to 99 seconds.



## 5. PRODUCT SPECIFICATION SHEET

Technical data	
<b>Analog inputs</b>	
Pen recorder	1, 2 or 3 continuous traces. Pen 1 also prints all chart documentation.
Multipoint recorder	1 up 6 channels. Inputs are scanned by relays, galvanically isolated and individually configurable to any listed actuation.
Signal source	Thermocouple with individual cold junction compensation. Line resistance up to 1000 ohms T/C, mV, mA, Volt RTD Pt 100 3-wire connections, lead resistance per wire 40 $\Omega$ balanced.
Field calibration	A channel field calibration - 0% and 100% span - may be made to certify input sensor loop.
Burnout	T/C, mV, Volt, factory set to upscale (configurable to downscale or none). RTD: inherent upscale. mA: inherent downscale
Scanning time	mV, V, mA : 330 ms Pen: 2 seconds at 10-60 mm/h (T/C or RTD) 1 second at 60-300 mm/h (T/C or RTD) 0.33 second at > 330 mm/h or if one linear input is selected  Multipoint: 5 seconds for 6 channels
Input impedance	10 Mohm for T/C, mV inputs, > 1 Mohm for volt inputs.
Stray rejection	Series mode $\geq 60$ dB. Common mode at 250 Vac $\geq 130$ db.
<b>Logic inputs (option)</b>	
Actions	Up to 2-dry contact inputs (1.5 mA – 12Vdc)  Change chart speed 1 to speed 2 Print inhibit Event marking :  - Pen : pen 1 used as operation marker on the right side of the chart - Mpt : 2 traces maximum on the right side of the chart. (L <sub>1</sub> = purple, L <sub>2</sub> = red)
<b>Scales</b>	
Pen	1 analog scale per pen in accordance with the input range
Mpt	1 analog scale, 0 to 100 linear.
<b>Recording span</b>	
Scaling	Per input, an analog scale is printed on the chart with the engineering unit. Each input can be configured differently.
Pen offset	Distance between pens: 2 mm Chart definition: 1 step = 0.2 mm
Pen carriage speed	1 second full scale

## 5. PRODUCT SPECIFICATION SHEET

Technical data	
<b>Chart length</b>	Fanfold 18 m (as DIN 16230) Roll 24 m
<b>Pen trace</b>	
Pen	1400 m per pen
Multipoint	250 m per color
<b>Chart speed</b>	1 or 2 chart speeds, fully configurable, selected by a logic input. Speed 1: fully adjustable per step of 1 mm/h, within limit Speed 2: choice as per the model selection guide
Speed setting	Pen: 10 to 6000 mm/h (.5 to 240"/h). Mpt: 10 to 1500 mm/h (.5 to 60"/h).
Stepping chart motor	Resolution 0.12 mm
<b>Alarms (Option)</b>	
Pen 1, 2, 3 or Mpt 3 CH	2 alarm setpoints per channel, (factory set* 1 low, 1 high)
Mpt (6CH)	1 alarm setpoint per channel, (factory set* high)
Hysteresis	0.5 % to 99 % of scale (factory set at 0.5 %)
Outputs	Up to 6 alarm relays output contacts 1 SPST normally closed contact (may be configured into normally open contact)
Rating contact	2 A, 250 VAC on resistive loads * Other selections configured by PC
<b>Power supply</b>	
To transmitters	85 to 264 Vac, 50/60 Hz or 24 or 48 Vac/dc (+10 –15 % nominal)
Power consumption	24 Vdc, 50 mA max. (optional) (75 mA available from 100V) 3 pens: 30 VA max. Mpt: 30 VA max.
<b>Clock timer</b>	
Format	Year, month, hour, minute can be set
Power interruption	Battery back-up time of 10 years with 3 years off power
Accuracy	± 10 <sup>-5</sup>
<b>Packaging</b>	
Weight	Pen: 3.5 kg Mpt: 3.5 kg
Front face	144 x 144 mm according to DIN 43718
Depth	245 mm/9.7" behind panel, including terminals and line protection cover.
Front window	Polycarbonate
Front protection	IP54 (IEC 529) – optionally IP55
Lock	Latch or key (DIN 43832-N)
Cut out	DIN 138 x 138 mm
Construction	Silicon - free
Optional	Chart illumination Rear terminal cover
<b>Mounting</b>	Panel mounting ± 30° from horizontal.
<b>Wiring</b>	Rear screw terminals. Terminal modules are plugged on the instrument.

## 5. PRODUCT SPECIFICATION SHEET

Technical data	
<b>Writing</b>	
Pen	1 cartridge per pen, fibre tip, 1400 m of trace per color (blue, red, green).
Multipoint	1 print wheel, 6 colors, 250 m of trace per color (purple, red, black, green, blue, brown).
<b>Noise immunity</b>	Meets or exceeds: IEC 801-2: electrostatic discharge: meets level 3 IEC 801-3: radiated electrostatic field: meets level 3 IEC 801-4: electrical fast transients: meets level 3 IEC 801-5: line voltage surge: meets level 3 VDE 871 radio EMI interference (EN55022 class B): meets level B
<b>Safety protection</b>	Complies with IEC 414, 348 and 1010-1 installation category 2 for personal protection. Designed to meet UL and CSA C22.2, N142 standard (CSA approved)
<b>Electrical insulation</b>	
Input to input	Test voltage 280 Vac for 1 min (except for RTD input).
Input to ground	Test voltage 2.1 kVdc for 1 min.
Input to line voltage	Test voltage 2.1 kVdc for 1 min.
Line voltage to ground	Test voltage 2.1 kVdc for 1 min.
Alarm relay to ground	Test voltage 2.1 kVdc for 1 min.
Logic input to ground	Test voltage 500 Vdc for 1 min.
<b>Temperature</b>	
Ambient	0 to 50° C (32 to 122°C). Optionally 0 to 60° C (32 to 140° F)
Storage	-40 to 70° C (32 to 158° F) 10 to 90 % RH non condensing
<b>Humidity</b>	
Roll	10 to 90 % RH non-condensing
Fan fold	15 to 80 % RH non condensing
<b>Vibrations</b>	Frequency: 10 to 60 Hz – amplitude 0.07 mm 60 to 150 Hz- acceleration 1g

## 5. PRODUCT SPECIFICATION SHEET

Accuracy			
Reference conditions			
Temperature	23° C ±2° C (73° F ±3° F)		
Humidity	65 % ±5 % RH		
Line voltage nominal	±1 %		
Source resistance	0 Ω		
Series mode	0 V		
Common mode	0 V		
Frequency nominal	±1 %		
Accuracy		A/D converter accuracy: 0.25 % of selected input range * (IEC873). For a 4/20 mA input, you must add the resistor accuracy. Cold junction accuracy: 0.5° C Chart resolution: 0.2 mm	
Rated limits and associated drifts			
	Parameter	Rated limits	Influence on accuracy
	Temperature	0 to 50° C (32 to 122° F)	0.1 % per 10° C of change Cold junction 0.3° C/10° C
	Supply voltage	85 to 264 V	No influence
	Source resistance	T/C, mV	6 μV per 100 Ω of line resistance, 1000 Ω max.
		RTD	0.1° C per Ω in each wire balanced leads, 40 Ω max.
	Humidity	10 to 90 % RH at 25° C	0.1 % max.
	Long-term stability		0.1 % per year
	Vibrations	1.25 mm at 0 t 14 Hz 1 g at 14 to 250 Hz	
Extreme conditions			
Operating			
Temperature	0 to 60° C (32 to 140° F)		
Humidity	10 to 90 % RH non-condensing		
Storage			
Temperature	-40 to 70° C (-40 to 158° F)		
Humidity	5 to 95 % RH non-condensing		
* Refer to "Available ranges" table for exceptions			

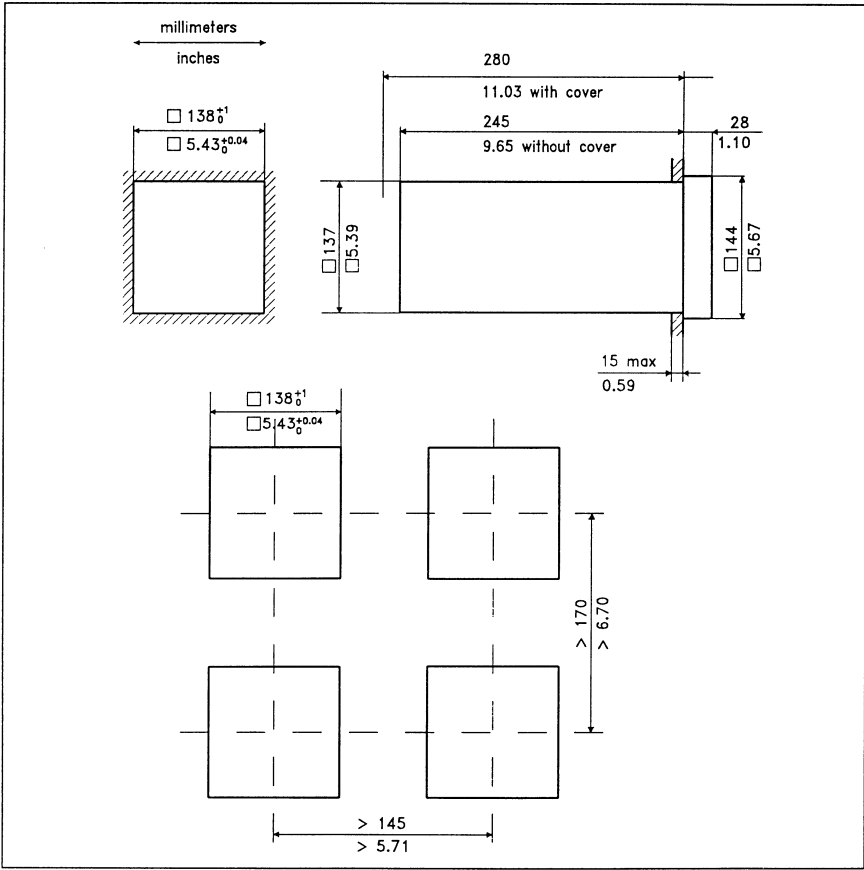
## 5. PRODUCT SPECIFICATION SHEET

Available ranges			
Thermocouples		° C	° F
	J	-50 to 150	-100 to 300
		0 to 400	0 to 800
		0 to 800	0 to 1500
	K	0 to 400	0 to 800
		0 to 800	0 to 1500
		0 to 1200	0 to 2400
		0 to 1400	0 to 2500
	N (Nicrosil Nisil)	0 to 400	0 to 800
		0 to 800	0 to 1500
		0 to 1200	0 to 2400
		0 to 1400	0 to 2500
	R	0 to 1600	0 to 3000
	S	0 to 1600	0 to 3000
	T	-100 to 200	-150 to 400
		0 to 150	0 to 300
		50 to 150	100 to 300
Note: Provision to accept T/C input for remote compensation box at fixed temperature of 50° C or 60° C.			
RTD's	Pt100  (Alpha = 0.00385)	-50 to 50*	-60 to 140*
		-50 to 150*	-100 to 300*
		0 to 100*	0 to 200*
		-200 to 200	-300 to 400
		0 to 400	0 to 800
MV and Volt	0 to 10 mV		0 to 1 V
	0 to 20 mV		0 to 5 V
	0 to 50 mV		1 to 5 V
	10 to 50 mV		0 to 10 V
	0 to 100 mV		
mA	0 to 20 mA or 4 to 20 mA linear		
	4 to 20 mA SQRT		
	Input resistor 250 ohms required		
* Accuracy = 1° C or 1.8° F			



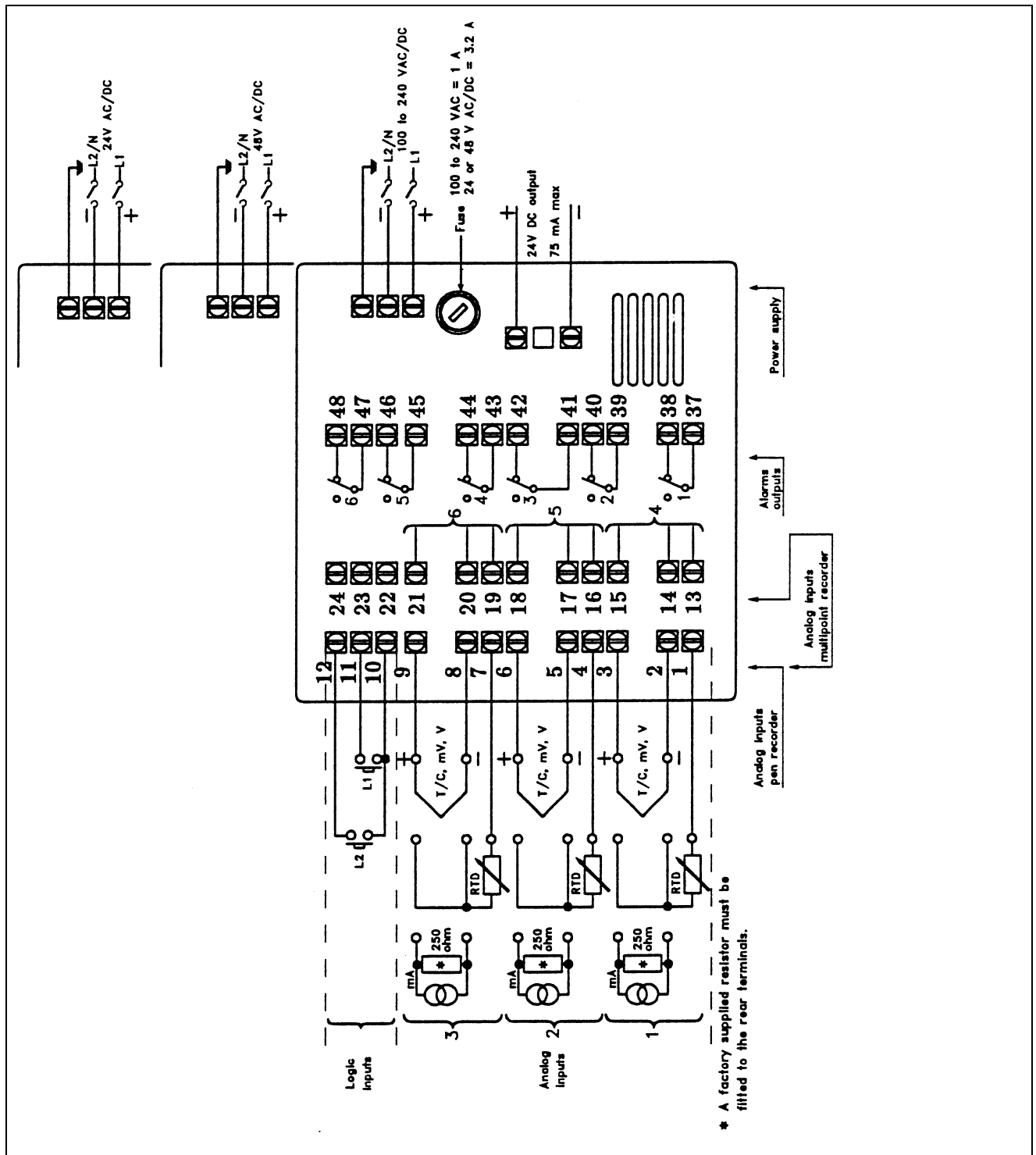
# 5. PRODUCT SPECIFICATION SHEET

## DIMENSIONS



## 5. PRODUCT SPECIFICATION SHEET

### TERMINAL CONNECTIONS



## ***5. PRODUCT SPECIFICATION SHEET***

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## 6. PARTS LIST

### 6.1 Parts list

Use this page (or copy) to order your consumables.

<b>ORDER TO:</b> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px;"></div>	<b>Order reference:</b> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 5px;"></div>		
<b>FROM:</b> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%; margin-top: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%; margin-top: 5px;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%; margin-top: 5px;"></div>			
Description/Part.	Reference	Quantities	Minimum Order Qty
Pen 1 Blue (See note)	46187001-001		5
Pen 2 Red	46187001-002		5
Pen 3 Green	46187001-003		5
Ink cartridge Multipoint (6 colours)	46180501-001		2
Chart Roll	40 divisions 50 divisions 60 divisions 65 divisions 70 divisions 75 divisions 100 divisions Special	46187044-040 46187044-050 46187044-060 46187044-065 46187044-070 46187044-075 46187044-100 on request	25 5 25 25 25 25 25 100
Fanfold	40 divisions 50 divisions 60 divisions 65 divisions 70 divisions 75 divisions 100 divisions Special	46187045-040 46187045-050 46187045-060 46187045-065 46187045-070 46187045-075 46187045-100 on request	25 5 25 25 25 25 25 100
- Universal Power Supply 85 to 264 Vac	46182886-004 (Europe: 5×20) 46182886-003 (US: 6.3×32)		10 10
Fuse	- Power Supply 24 Vac/dc or 48 Vac/dc	46182886-002 (Europe: 5×20) 46182886-001 (US: 6.3×32)	10 10
Front label	1-2-3 channels 6 channels	46187084-003 46187084-006	5
<b>Note:</b> As pen 1 prints all messages, it will require replacement before pens 2 or 3. It is recommended to order 3 times the quality of pen 1.			

## **6. PARTS LIST**

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For at undgå elektrisk stød med mulighed for personskade, skal alle sikkerhedsbestemmelser i denne manual følges nøje.



Beskyttende jordterminal. Terminalen er forberedt for og skal forbindes til beskyttelses-jordledning i henhold til stærkstrømsbekendtgørelsen (DK).

- Hvis udstyret ikke bruges som specificeret i manualen, kan den beskyttelse udstyret yder blive nedsat eller forsvinde.
- Erstat kun komponenter som udtrykkeligt er specificeret som udskiftelige i manualen.
- Al ledningsforbindelse skal følge strækstrømsbekendtgørelsen (DK) og udføres af autoriseret erfarent personel.
- Den beskyttende jordterminal skal forbindes først af alle forbindelser (og fjernes som den sidste).
- Jvf. stærkstrømsreglementet skal der installeres en afbryder til forsyningssapændingen nær udstyret.
- Hver leder skal have ekstra beskyttelse ifølge stærkstrømsbekendtgørelsen (DK).

#### UDSTYRS SPECIFIKATIONER

Strømforsyning : 85 til 264 V AC

Frekvens : 50/60 Hz

Effektforbrug : 55 VA max.

#### OMGIVELSE SPECIFIKATIONER

Placer ikke udstyret i nærheden af brandbare væsker eller dampe.

<b>Fugtighed</b>	Rullepapir	10 - 90 % RH ikke kondenserende
	Foldepapir	15 - 80 % RH ikke kondenserende
<b>Temperatur</b>	Drift	0 til 50°C (32 til 120°F)
	Opbevaring	-40 til 70°C (-40 til 160°F)
<b>Vibrationer</b>	Frekvens	10 til 60 Hz, amplitude 0.07 mm
		60 til 150 Hz, acceleration 1 g

#### UDSTYRS INSTALLATION

Skriveren skal monteres i en tavle for at forhindre adgang til bagterminaler.

(Maksimal tavletykkelse 15 mm)

#### INSTRUKTION FOR RENGØRING

Brug kun en tør bomuldsklud til rengøring af udstyret.

#### UDSKIFTNING AF SIKRING

Sikring : For at forebygge brand, vær sikker på at sikringen opfylder kravene til strøm, spænding og karakteristik. Sluk for spændingen før sikringen udskiftes. Brug ikke en sikring af anden type.



Ter vermindering van het gevaar van elektrische schokken die lichamelijk letsel kunnen veroorzaken, dient u alle veiligheidsaanwijzingen in dit document te volgen.



Beschermende aarde-aansluiting. Bestemd voor aansluiting van de aardingsdraad van de voeding.

- Indien de apparatuur wordt gebruikt anders dan door de fabrikant gespecificeerd, kan de bescherming, die de apparatuur biedt ongedaan worden gemaakt.
- Alleen die onderdelen mogen worden vervangen die door de fabrikant als uitwisselbaar zijn aangemerkt.
- Alle bedrading moet in overeenstemming zijn met plaatselijke standaards en zijn uitgevoerd door geautoriseerd ervaren personeel.
- De aardingsdraad moet worden aangesloten vóórdat alle andere bedrading wordt aangesloten (en als laatste worden verbonden).
- Een schakelaar in de netstroomtoevoer is vereist, vlakbij het instrument.
- Elke stroomdraad moet beveiligd zijn met een zekering gelijkwaardig aan zowel de recorderzekering (zekering type) als die van de zekeringhouder.

#### **Apparatuur voorwaarden**

Aansluitspanning: 85 tot 264 V AC

Frequentie: 50/60 Hz

Toegestane belasting: 55 VA max.

#### **Omgevingscondities**

Gebruik het instrument niet in de aanwezigheid van ontvlambare vloeistoffen of dampen. Het gebruik van elk elektrisch instrument in een dergelijke omgeving vormt een gevaar voor uw veiligheid.

<b>Relatieve vochtigheid</b>	Rol	10 tot 90 % RH niet condenserend
	Vouwkaart	15 tot 80 % RH niet condenserend
<b>Temperatuur</b>	Omgevingstemp.	0 tot 50°C (32 tot 120°F)
	Opslag	-40 tot 70°C (-40 tot 160°F)
<b>Trillingen</b>	Frequentie	10 tot 60 Hz, amplitude 0.07 mm
		60 tot 150 Hz, versnelling 1 g

#### **Montage van de apparatuur**

De recorder moet worden gemonteerd in een paneel om de toegankelijkheid tot de achterste aansluitpunten te beperken (paneeldikte maximaal 15 mm)

#### **Schoonmaken**

Alleen een droge katoenen doek gebruiken voor het schoonmaken van het instrument.

#### **Vervanging van verbruiksmaterialen**

Zekering: ter voorkoming van brand dient u de zekering met de gespecificeerde standaard te gebruiken (stroom spanning, type). Voor u de zekering vervangt moet u de netspanning uitschakelen en de stroomtoevoer onderbreken. Gebruik geen andere zekering en sluit de zekeringhouder niet kort.



Noudata tämän ohjeen kaikkia turvaohjeita välttääksesi sähkötapaturman vaaraa.



Suojamaaliitin. Kytke maadoitusjohdin tähän liittimeen.

- Jos laitetta käytetään olosuhteissa, joihin sitä ei ole suunniteltu, käyttöturvallisuus voi heikentyä.
- Älä vaihda mitään komponenttia tai osaa, jota valmistaja ei ole määritellyt käyttäjän vaihdettavaksi.
- Johdotukset on tehtävä noudattaen paikallisia määräyksiä ja tekijällä on oltava riittävä ammattitaito.
- Ensimmäiseksi on kytkettävä suojamaa-liitin (ja viimeiseksi irroittettava).
- Syöttöjännitekytkin on sijoitettava lähelle laitetta.
- Suojaa johtimet asianmukaisilla sulakkeilla.

#### LAITTEEN VAATIMUKSET

Syöttöjännite: 85 ... 264 V AC

Taajuus: 50/60 Hz

Tehonkulutus: 55 VA max.

#### KÄYTTÖOLOSUHTEET

Älä käytä laitetta paikassa jossa on syttyviä nesteitä tai kaasuja, koska laitteen käyttö aiheuttaa räjähdysvaaran.

<b>Kosteus</b>	Rulla	10 ... 90 % RH non condensing
	Laskostuva	15 ... 80 % RH non condensing
<b>Lämpötila</b>	Käyttö	0 ... 50 ast. C (32 ... 120 ast. F)
	Varastointi	-40 ... 70 ast. C (-40 ... 160 ast. F)
<b>Tärinä</b>	Taajuus	10 ... 60 Hz, amplitude 0.07 mm
		60 ... 150 Hz, kiihtyvyys 1 g

#### LAITTEEN ASENNUS

Piirturi on asennettava paneeliin siten, että peräliittimille jää riittävästi tilaa.

(Paneelin maksimi paksuus 15 mm)

#### PUHDISTUSOHJEET

Käytä vain kuivaa puuvillakangasta laitteen puhdistukseen.

#### KULUTUSOSIEN VAIHTAMINEN

Käytä aina oikean tyyppistä sulaketta (virta, jännite, tyyppi). Katkaise syöttöjännite laitteesta ennen sulakkeen vaihtoa. Älä käytä ohjeista poikkeavaa sulaketta tai oikosulje sulakepesää.





ΓΙΑ ΝΑ ΜΕΙΩΘΕΙ Ο ΚΙΝΔΥΝΟΣ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ Η ΟΠΟΙΑ ΜΠΟΡΕΙ ΝΑ ΠΡΟΚΑΛΕΣΕΙ ΤΡΑΥΜΑΤΙΣΜΟ, ΑΚΟΛΟΥΘΕΙΣΤΕ, ΟΛΕΣ ΤΙΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ ΠΟΥ ΠΑΡΑΤΙΘΕΝΤΑΙ Σ' ΑΥΤΟ ΤΟ ΦΥΛΛΑΔΙΟ.



ΠΡΟΣΤΑΤΕΥΤΙΚΗ ΓΕΙΩΣΗ. ΠΑΡΕΧΕΤΑΙ ΓΙΑ ΤΗΝ ΣΥΝΔΕΣΗ ΜΕ ΤΟ ΣΥΣΤΗΜΑ ΓΕΙΩΣΗΣ ΤΗΣ ΕΓΚΑΤΑΣΤΑΣΗΣ.

- ΑΝ Η ΣΥΣΚΕΥΗ ΧΡΗΣΙΜΟΠΟΙΗΘΕΙ ΜΕ ΤΡΟΠΟ ΠΟΥ ΔΕΝ ΣΥΜΦΩΝΕΙ ΜΕ ΤΙΣ ΟΔΗΓΙΕΣ ΤΟΥ ΚΑΤΑΣΚΕΥΑΣΤΗ ΠΙΘΑΝΟΝ ΝΑ ΜΕΙΩΘΕΙ Η ΠΡΟΣΤΑΣΙΑ ΠΟΥ ΠΡΟΣΦΕΡΕΙ.
- ΝΑ ΜΗΝ ΑΝΤΙΚΑΘΙΣΤΑΤΑΙ ΚΑΝΕΝΑ ΕΞΑΡΤΗΜΑ Η' ΤΜΗΜΑ ΤΟΥ ΟΡΓΑΝΟΥ ΠΟΥ ΔΕΝ ΑΝΑΦΕΡΕΤΑΙ ΣΑΦΩΣ ΑΠΟ ΤΟΝ ΚΑΤΑΣΚΕΥΑΣΤΗ ΩΣ ΑΝΤΑΛΛΑΞΙΜΟ.
- ΟΛΕΣ ΟΙ ΚΑΛΩΔΙΩΣΕΙΣ ΠΡΕΠΕΙ ΝΑ ΕΙΝΑΙ ΣΥΜΦΩΝΕΣ ΜΕ ΤΗΝ ΤΟΠΙΚΗ ΝΟΜΟΘΕΣΙΑ ΚΑΙ Η ΕΓΚΑΤΑΣΤΑΣΗ ΤΟΥΣ ΠΡΕΠΕΙ ΝΑ ΓΙΝΕΙ ΑΠΟ ΕΙΔΙΚΕΥΜΕΝΟ ΚΑΙ ΕΜΠΕΙΡΟ ΠΡΟΣΩΠΙΚΟ.
- Η ΓΕΙΩΣΗ ΠΡΕΠΕΙ ΝΑ ΣΥΝΔΕΘΕΙ ΠΡΙΝ ΑΠΟ ΟΠΟΙΑΔΗΠΟΤΕ ΑΛΛΗ ΚΑΛΩΔΙΩΣΗ, ΚΑΙ ΤΕΛΕΥΤΑΙΑ ΚΑΤΑ ΤΗΝ ΑΠΟΣΥΝΔΕΣΗ.
- ΕΝΑΣ ΔΙΑΚΟΙΠΤΗΣ ΤΗΣ ΚΥΡΙΑΣ ΠΑΡΟΧΗΣ ΑΠΑΙΤΕΙΤΑΙ ΚΟΝΤΑ ΣΤΟ ΟΡΓΑΝΟ.
- ΚΑΘΕ ΚΑΛΩΔΙΟ ΠΡΕΠΕΙ ΝΑ ΠΡΟΣΤΑΤΕΥΕΤΑΙ ΑΠΟ ΑΣΦΑΛΕΙΑ ΙΣΟΔΥΝΑΜΗ ΜΕ ΤΗΝ ΑΣΦΑΛΕΙΑ ΤΟΥ ΚΑΤΑΓΡΑΦΙΚΟΥ, ΚΑΘΩΣ ΕΠΙΣΗΣ ΚΑΙ ΜΕ ΑΣΦΑΛΕΙΟΘΗΚΗ.

#### ΤΕΧΝΙΚΑ ΣΤΟΙΧΕΙΑ ΟΡΓΑΝΟΥ

ΤΡΟΦΟΔΟΣΙΑ: 85 - 264 V ac

ΣΥΧΝΟΤΗΤΑ: 50/60 Hz

ΙΣΧΥΣ: 55 VA ΜΕΓΙΣΤΗ

#### ΣΥΝΘΗΚΕΣ ΠΕΡΙΒΑΛΛΟΝΤΟΣ

ΝΑ ΜΗΝ ΧΡΗΣΙΜΟΠΟΙΕΙΤΑΙ ΤΟ ΟΡΓΑΝΟ ΣΕ ΧΩΡΟΥΣ ΜΕ ΠΑΡΟΥΣΙΑ ΕΥΛΕΚΤΩΝ ΥΓΡΩΝ Η ΑΤΜΩΝ. ΧΡΗΣΗ ΟΠΟΙΟΥΔΗΠΟΤΕ ΗΛΕΚΤΡΙΚΟΥ ΟΡΓΑΝΟΥ ΣΕ ΤΕΤΟΙΟ ΠΕΡΙΒΑΛΛΟΝ ΑΠΟΤΕΛΕΙ ΚΙΝΔΥΝΟ ΑΤΥΧΗΜΑΤΟΣ.

ΥΓΡΑΣΙΑ	ΧΑΡΤΙ ΡΟΛΛΟ	10 - 90 % RH ΜΗ ΣΥΜΠΥΚΝΩΜΕΝΗ
	ΧΑΡΤΙ ΔΙΠΛΩΜΕΝΟ	15 - 80 % RH ΜΗ ΣΥΜΠΥΚΝΩΜΕΝΗ
ΘΕΡΜΟΚΡΑΣΙΑ	ΠΕΡΙΒΑΛΛΟΝΤΟΣ	0 / 50 DEG C (32 / 120 DEG F)
	ΑΠΟΘΗΚΕΥΣΗΣ	- 40 / 70 DEG C (- 40 / 160 DEG F)
ΤΑΛΑΝΤΩΣΗ	ΣΥΧΝΟΤΗΤΑ	10 - 60 Hz, ΜΕΓΕΘΟΣ 0.07 mm
		60 - 150 Hz, ΕΠΙΤΑΧΥΝΣΗ 1 g

#### ΤΟΠΟΘΕΤΗΣΗ ΜΗΧΑΝΗΜΑΤΟΣ

ΤΟ ΚΑΤΑΓΡΑΦΙΚΟ ΟΡΓΑΝΟ ΠΡΕΠΕΙ ΝΑ ΤΟΠΟΘΕΤΗΘΕΙ ΣΤΗΝ ΠΡΟΣΟΨΗ ΤΟΥ ΠΙΝΑΚΑ, ΕΤΣΙ ΩΣΤΕ ΝΑ ΜΗΝ ΜΠΟΡΕΙ Ο ΧΕΙΡΙΣΤΗΣ ΝΑ ΕΧΕΙ ΠΡΟΣΒΑΣΗ ΣΤΟ ΠΙΣΩ ΜΕΡΟΣ. ΜΕΓΙΣΤΟ ΠΑΧΟΣ ΠΙΝΑΚΟΣ 15 mm.

#### ΟΔΗΓΙΕΣ ΚΑΘΑΡΙΣΜΟΥ

ΧΡΗΣΙΜΟΠΟΙΗΣΤΕ ΜΟΝΟ ΕΝΑ ΣΤΕΓΝΟ ΒΑΜΒΑΚΕΡΟ ΥΦΑΣΜΑ ΓΙΑ ΤΟΝ ΚΑΘΑΡΙΣΜΟ ΤΟΥ ΟΡΓΑΝΟΥ.

#### ΑΝΤΙΚΑΤΑΣΤΑΣΗ ΑΝΑΛΩΣΙΜΟΥ ΥΛΙΚΟΥ

ΑΣΦΑΛΕΙΑ : ΠΡΟΣ ΑΠΟΦΥΓΗ ΠΥΡΚΑΙΑΣ Η ΑΣΦΑΛΕΙΑ ΘΑ ΠΡΕΠΕΙ ΝΑ ΑΝΤΙΚΑΘΙΣΤΑΤΑΙ ΜΕ ΝΕΑ, ΒΑΣΗ ΤΩΝ ΠΡΟΤΕΙΝΟΜΕΝΩΝ ΠΡΟΔΙΑΓΡΑΦΩΝ (ΤΑΣΗ, ΕΝΤΑΣΗ, ΤΥΠΟΣ). ΠΡΙΝ ΑΠΟ ΤΗΝ ΑΝΤΙΚΑΤΑΣΤΑΣΗ ΝΑ ΔΙΑΚΟΙΠΤΕΤΑΙ Η ΠΑΡΟΧΗ ΤΑΣΗΣ Η' ΝΑ ΑΠΟΣΥΝΔΕΕΤΑΙ Η ΚΑΛΩΔΙΩΣΗ ΠΑΡΟΧΗΣ. ΝΑ ΜΗΝ ΧΡΗΣΙΜΟΠΟΙΗΤΑΙ ΑΣΦΑΛΕΙΑ ΔΙΑΦΟΡΕΤΙΚΗ ΑΠΟ ΤΗΝ ΠΡΟΤΕΙΝΟΜΕΝΗ, ΚΑΙ ΝΑ ΜΗΝ ΒΡΑΧΥΚΥΚΛΩΝΕΤΑΙ Η ΑΣΦΑΛΕΙΟΘΗΚΗ.



Para reduzir o risco de choque eléctrico que pode causar danos corporais, seguir todas as normas de segurança contidas nesta documentação.



Terminal de protecção de terra. Fornecido para ligação do condutor do sistema da protecção de terra.

- Se este equipamento for usado de modo não especificado pelo fabricante, a protecção fornecida pelo equipamento pode não ser adequada.
- Não se deve substituir qualquer componente (ou peça) que não seja explicitamente especificado como substituível pelo nosso revendedor.
- Toda a cabelagem tem que estar de acordo com as normas locais e deve ser conduzida por pessoal autorizado com experiência.
- O terminal de terra deve ser ligado antes de ser feita qualquer outra cabelagem (e desligado em último lugar).
- Deve haver um interruptor da alimentação principal junto do equipamento.
- Cada fio deve estar protegido com um fusível equivalente ao do Registador (tipo de fusível), o mesmo se aplicando ao suporte do fusível.

### **Especificações do Equipamento**

Voltagem: 85 a 264 Vca

Frequência: 50/60 Hz

Potência ou consumo de Corrente: 55 VA max.

### **Condições Ambientais**

Não operar o instrumento na presença de líquidos ou vapores inflamáveis. A operação de qualquer instrumento eléctrico em tal ambiente constitui um perigo para a segurança.

<b>Humidade</b>	Rolo	10 a 90 % RH não condensado
	Leque	15 a 80 % RH não condensado
<b>Temperatura</b>	Ambiente	0 a 50°C (32 a 120°F)
	Armazenagem	-40 a 70°C (-40 a 160°F)
<b>Vibrações</b>	Frequência	10 a 60 Hz, amplitude de 0.07 mm
		60 a 150 Hz, 1g de aceleração

### **Instalação do Equipamento**

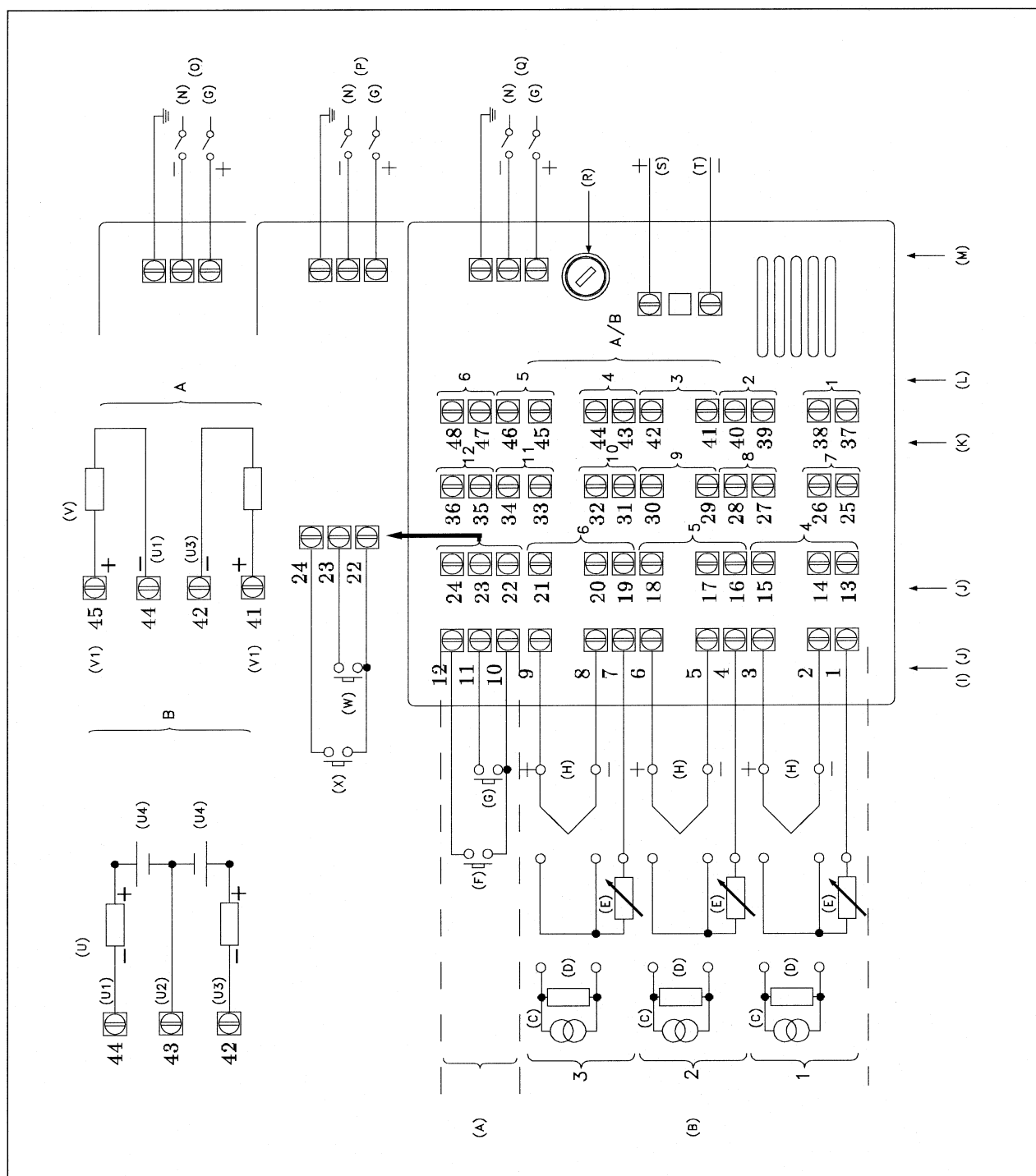
O Registador deve ser montado num painel para limitar o acesso do operador aos terminais traseiros (espessura máxima do painel 15 mm).

### **Instruções de Limpeza**

Usar apenas um cotonete seco para limpar a unidade.

### **Substituição de Consumíveis**

Fusível: Para evitar um incêndio certifique-se de que usa um fusível com especificações standard (voltagem, corrente, tipo). Antes de substituir o fusível, desligue a alimentação e desligue os fios da fonte de alimentação. Não usar fusíveis diferentes ou fazer curto circuito do suporte de fusível.



## PO

- (A) Entradas lógicas
- (B) Entradas analógicas
- (C) mA
- (D) 250 ohms
- (E) RTD
- (F) L2
- (G) L1
- (H) T/C, mV, V
- (I) Entradas analógicas para registador de caneta
- (J) Entradas analógicas para registador multiponto
- (K) 7 a 12 saídas de alarme
- (L) 1 a 6 saídas de alarme ou 1 a 2 saídas corrente
- (M) Fonte de alimentação
- (N) L2/N
- (O) 24 V ca/cc
- (P) 48 V ca/cc
- (Q) 100 a 240 V ca/cc
- (R) Fusível de 100 a 240 V ca = 1 A  
24 ou 48 V ca/cc = 3.2 A
- (S) Saída de 24 V cc
- (T) Máximo de 75 mA
- (U) Gerador externo
- (U1) OUT 2
- (U2) 0 V
- (U3) OUT 1
- (U4) 24 V DC max.
- (V) Gerador interno
- (V1) +12 V
- (W) L3
- (X) L4

## DU

- (A) Logische ingangen
- (B) Analoge ingangen
- (C) mA
- (D) 250 ohm
- (E) RTD
- (F) L2
- (G) L1
- (H) T/C, mV, V
- (I) Analoge ingangen, pen recorder
- (J) Analoge ingangen, meerpunts recorder
- (K) 7 tot 12 alarm uitgangen
- (L) 1 tot 6 alarm uitgangen of 1 tot 2 stroom uitgangen
- (M) Netvoeding
- (N) L2/N
- (O) 24 V AC/DC
- (P) 48 V AC/DC
- (Q) 100 tot 240 V AC/DC
- (R) Zekering 100 tot 240 V AC = 1 A  
24 of 48 V AC/DC = 3.2 A
- (S) 24 V DC uitgang
- (T) 75 mA max.
- (U) Externe generator
- (U1) OUT 2
- (U2) 0 V
- (U3) OUT 1
- (U4) 24 V DC max.
- (V) Interne generator
- (V1) +12 V
- (W) L3
- (X) L4

## GR

- (A) ΛΟΓΙΚΗ ΕΙΣΟΔΟΣ
- (B) ΑΝΑΛΟΓΙΚΗ ΕΙΣΟΔΟΣ
- (C) mA
- (D) 250 ohms
- (E) RTD
- (F) L2
- (G) L1
- (H) T/C, mV, V
- (I) ΑΝΑΛΟΓΙΚΕΣ ΕΙΣΟΔΟΙ ΚΑΤΑΓΡΑΦΙΚΗΣ ΠΕΝΝΑΣ
- (J) ΑΝΑΛΟΓΙΚΕΣ ΕΙΣΟΔΟΙ ΚΑΤΑΓΡΑΦΙΚΟΥ ΠΟΛΛΑΠΛΩΝ ΕΓΓΡΑΦΩΝ
- (K) 7 - 12 ΣΥΝΑΓΕΡΜΟΙ ΕΞΟΔΟΥ
- (L) 1 - 6 ΣΥΝΑΓΕΡΜΟΙ ΕΞΟΔΟΥ Η' 1 - 2 ΡΕΥΜΑΤΑ ΕΞΟΔΟΥ
- (M) ΤΡΟΦΟΔΟΣΙΑ
- (N) L2/N
- (O) 24 V AC/DC
- (P) 48 V AC/DC
- (Q) 100 - 240 V AC/DC
- (R) ΑΣΦΑΛΕΙΑ
- (S) ΕΞΟΔΟΣ ΣΥΝΕΧΗΣ ΤΑΣΗΣ
- (T) ΕΞΩΤΕΡΙΚΗ / ΕΣΩΤΕΡΙΚΗ ΤΡΟΦΟΔΟΣΙΑ
- (U) ΕΞΩΤΕΡΙΚΗ ΓΕΝΝΗΤΡΙΑ
- (U1) OUT 2
- (U2) 0 V
- (U3) OUT 1
- (U4) 24 V DC max.
- (V) ΕΣΩΤΕΡΙΚΗ ΓΕΝΝΗΤΡΙΑ
- (V1) +12 V
- (W) L3
- (X) L4

## DA

- (A) Logiske indgange
- (B) Analoge indgange
- (C) mA
- (D) 250 Ohm
- (E) RTD (PT 100)
- (F) L2
- (G) L1
- (H) T/C, mV, V
- (I) Analoge indgange lineskriver
- (J) Analoge indgange multipunktskriver
- (K) 7 til 12 alarm udgange
- (L) 1 til 6 alarm udgange eller 1 til 2 strømudgange
- (M) Strømforsyning
- (N) L2/N
- (O) 24 V AC/DC
- (P) 48 V AC/DC
- (Q) 100 - 240 V AC/DC
- (R) Sikring 100 - 240 V AC = 1 A  
24 eller 48 V AC/DC = 3.2 A
- (S) 24 V DC udgang
- (T) 75 mA max.
- (U) Extern generator
- (U1) OUT 2
- (U2) 0 V
- (U3) OUT 1
- (U4) 24 V DC max.
- (V) Intern generator
- (V1) +12 V
- (W) L3
- (X) L4

## **FI**

- (A)** Logiikkatulot
- (B)** Analogiatulot
- (C)** mA
- (D)** 250 ohms
- (E)** RTD
- (F)** L2
- (G)** L1
- (H)** T/C, mV, V
- (I)** Analogiatulot kynäpiirturi
- (J)** Analogiatulot monipistepiirturi
- (K)** 7 ... 12 hälytyslähdöt
- (L)** 1 ... 6 hälytyslähdöt tai 1 ... 2 virtalähdöt
- (M)** Jännitelähde
- (N)** L2/N
- (O)** 24 V AC/DC
- (P)** 48 V AC/DC
- (Q)** 100 ... 240 V AC/DC
- (R)** Sulake 100 ... 240 V AC = 1 A  
24 tai 48 V AC/DC = 3.2 A
- (S)** 24 V DC lähtö
- (T)** 75 mA max.
- (U)** External generator
- (U1)** OUT 2
- (U2)** 0 V
- (U3)** OUT 1
- (U4)** 24 V DC max.
- (V)** Internal generator
- (V1)** +12 V
- (W)** L3
- (X)** L4

