

COMMANDER CR100
Multipoint Chart Recorder

User Guide

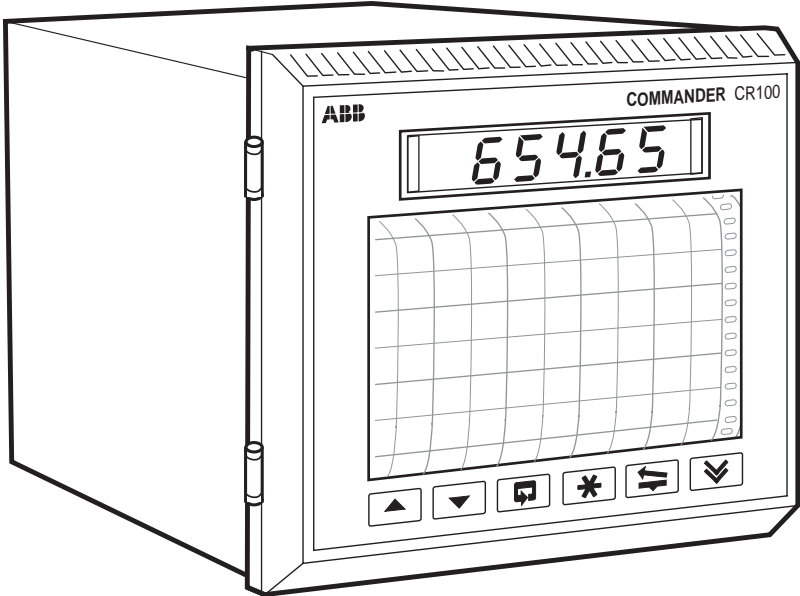


ABB INSTRUMENTATION

The Company

ABB Instrumentation is an established world force in the design and manufacture of instrumentation for industrial process control, flow measurement, gas and liquid analysis and environmental applications.

As a part of ABB, a world leader in process automation technology, we offer customers application expertise, service and support worldwide.

We are committed to teamwork, high quality manufacturing, advanced technology and unrivalled service and support.

The quality, accuracy and performance of the Company's products result from over 100 years experience, combined with a continuous program of innovative design and development to incorporate the latest technology.

The NAMAS Calibration Laboratory No. 0255 is just one of the ten flow calibration plants operated by the Company, and is indicative of ABB Instrumentation's dedication to quality and accuracy.

BS EN ISO 9001



St Neots, U.K. – Cert. No. Q5907
Stonehouse, U.K. – Cert. No. FM 21106

EN 29001 (ISO 9001)



Lenno, Italy – Cert. No. 9/90A



Stonehouse, U.K.

Use of Instructions



Warning.

An instruction that draws attention to the risk of injury or death.



Note.

Clarification of an instruction or additional information.



Caution.

An instruction that draws attention to the risk of damage to the product, process or surroundings.



Information.

Further reference for more detailed information or technical details.

Although **Warning** hazards are related to personal injury, and **Caution** hazards are associated with equipment or property damage, it must be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process system performance leading to personal injury or death. Therefore, comply fully with all **Warning** and **Caution** notices.

Information in this manual is intended only to assist our customers in the efficient operation of our equipment. Use of this manual for any other purpose is specifically prohibited and its contents are not to be reproduced in full or part without prior approval of Technical Communications Department, ABB Instrumentation.

Health and Safety






To ensure that our products are safe and without risk to health, the following points must be noted:

1. The relevant sections of these instructions must be read carefully before proceeding.
2. Warning labels on containers and packages must be observed.
3. Installation, operation, maintenance and servicing must only be carried out by suitably trained personnel and in accordance with the information given.
4. Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.
5. Chemicals must be stored away from heat, protected from temperature extremes and powders kept dry. Normal safe handling procedures must be used.
6. When disposing of chemicals ensure that no two chemicals are mixed.

Safety advice concerning the use of the equipment described in this manual or any relevant hazard data sheets (where applicable) may be obtained from the Company address on the back cover, together with servicing and spares information.

GETTING STARTED

This manual is divided into 5 sections which contain all the information needed to install, configure, commission and operate the Recorder. Each section is identified clearly by a symbol as shown below.

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Symbol Identification and Section Contents

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1 FRONT PANEL, PENS & CHARTS

i **Information.**

Pages 31 and 32 of this manual show all the frames in the programming levels. Space is provided on the page for writing the programmed setting or selection for each frame.

1.1 Introduction – Fig. 1.1

The COMMANDER CR100 front panel display, function keys and alarm indicators are shown in Fig. 1.1.

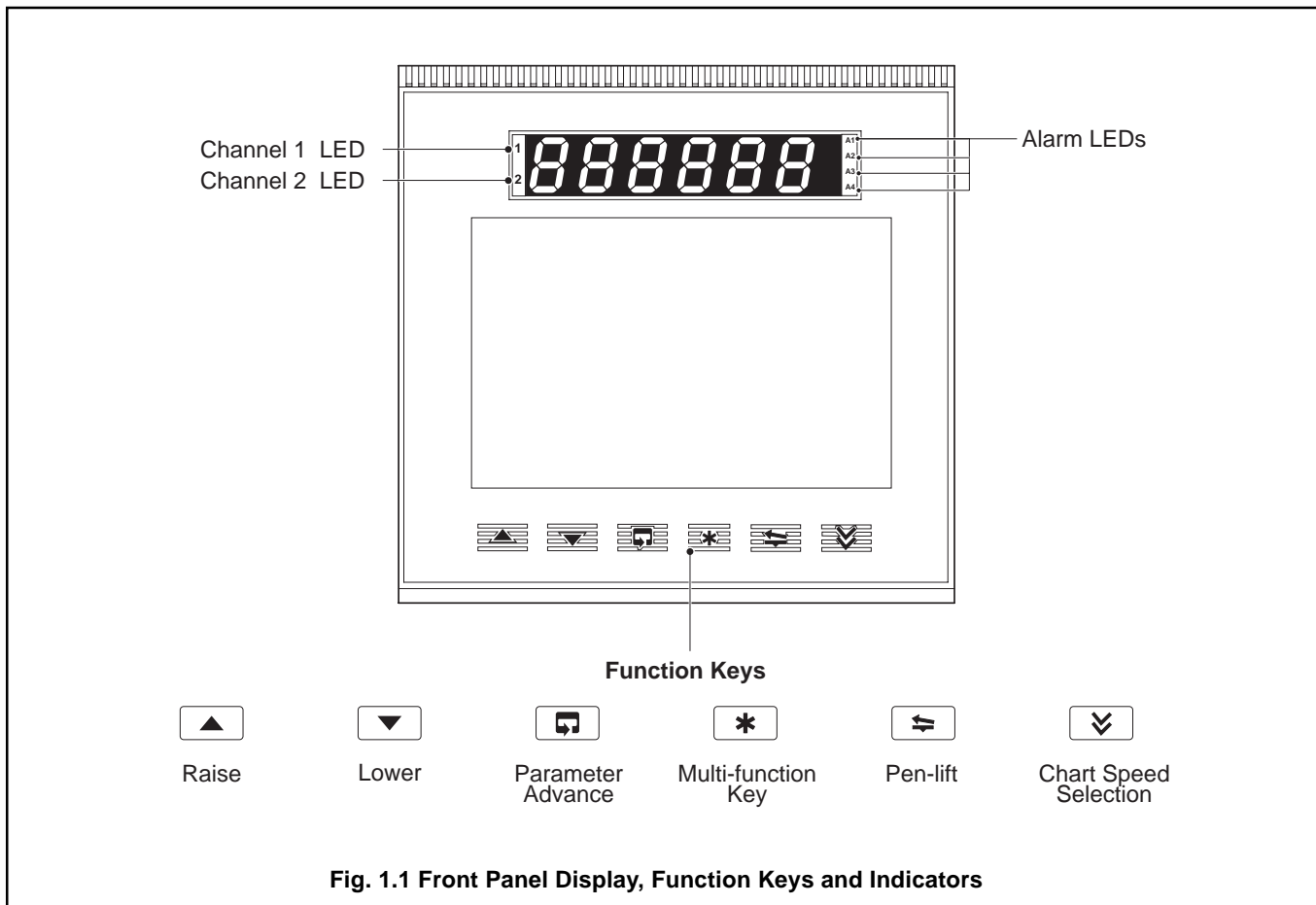


Fig. 1.1 Front Panel Display, Function Keys and Indicators

1.2 Use of Function Keys – Fig. 1.2

The front panel display, function keys and l.e.d. indicators are shown in Fig. 1.1

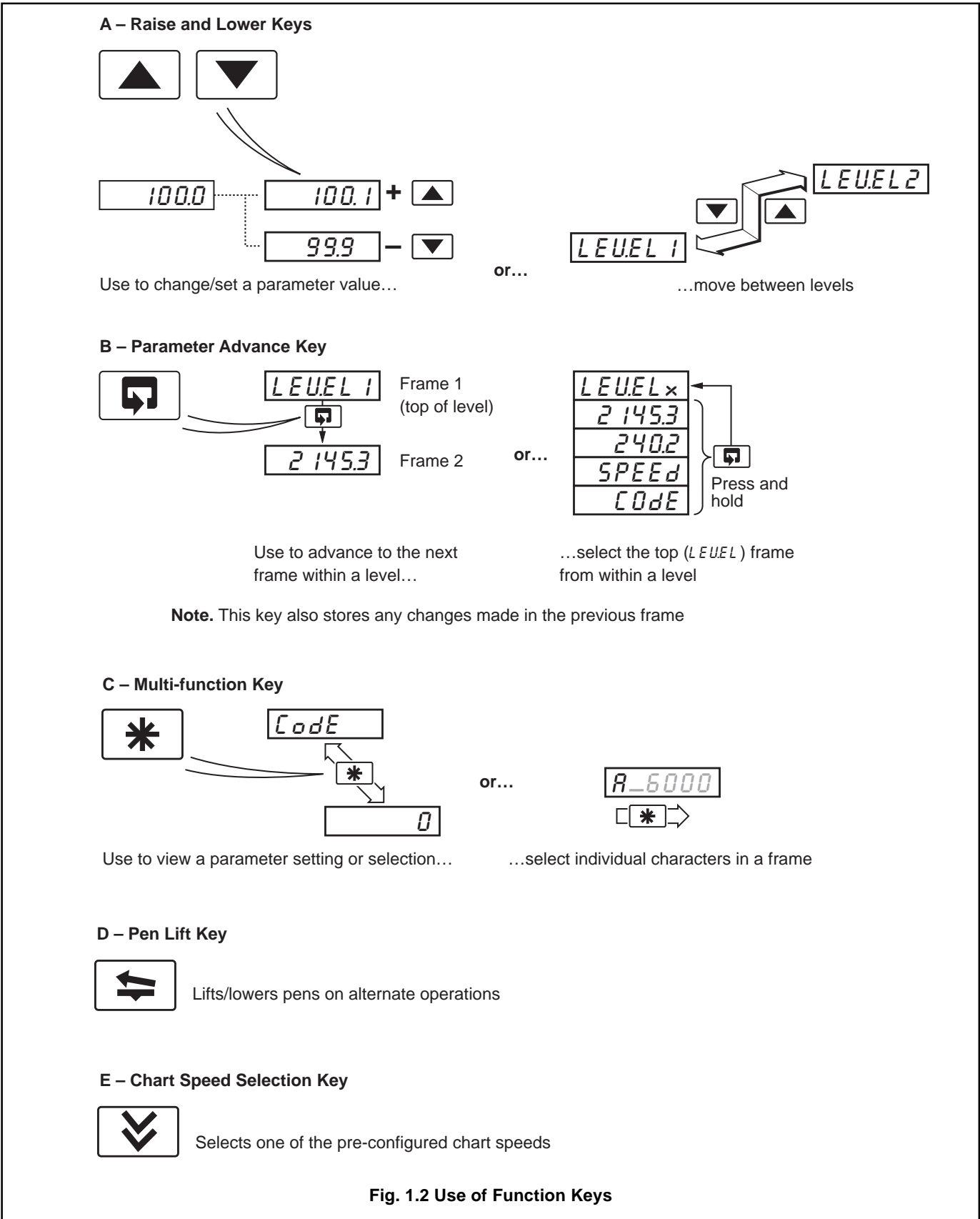
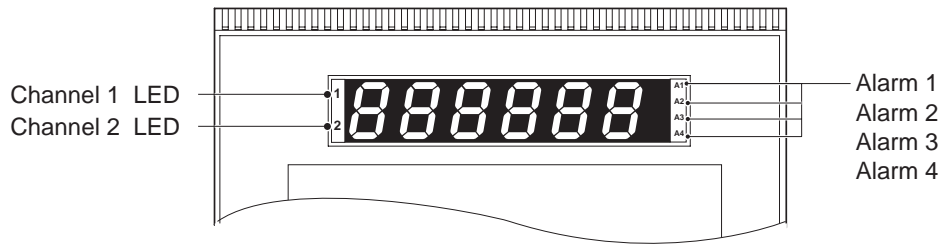


Fig. 1.2 Use of Function Keys

1.3 LED Alarms and Indicators – Fig. 1.3

**LED Status****All Alarm LEDs (and one or both channel identification LEDs in 2-pen instruments) flashing**

- Recorder is in the configuration mode – see section 4

Alarm LEDs A1, A2, A3 and A4





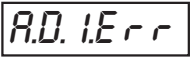
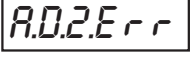

- Flashing – the associated alarm is active (off when inactive)
- Lit constantly – the associated alarm is an active latch alarm which has been acknowledged

Channel Identification LED's 1 or 2

- Indicates to which channel the display information is applicable (channel identification LED's are applicable only to 2-pen instruments)

Fig. 1.3 LED Alarms and Indicators


1.4 Error Messages

Display	Error/Action	To Clear Display
	Calibration Error Turn main power off and on again (if the error persists contact the Service Organization).	Press the  key.
	Configuration Error The configuration and/or setup data for the instrument is corrupted. Turn main power off and on again (if the error persists check the configuration/setup settings).	Press the  key.
	A to D Converter Fault The analog to digital converter is not communicating correctly for input 1.	Turn power off and on again. If the error persists contact the Service Organization.
 *	A to D Converter Fault The analog to digital converter is not communicating correctly for input 2.	Turn power off and on again. If the error persists contact the Service Organization.
	Process Variable Over/Under Range	Restore valid input.

* 2-pen recorder only.

1.5 Fitting Charts & Pens

1.5.1 Removing/Refitting a Chart Unit – Fig. 1.4

Operate the  key to lift the pen(s). Referring to Fig. 1.4:


- ① Open the door.



Note. Items ② and ③ must be carried out simultaneously.

- ② Press the chart latch and...
- ③ Using the chart grip, swing the chart unit outwards and upwards through 90°.
- ④ Pull to remove the chart unit from the chassis.



Note. Before refitting the chart unit check that the pen(s) are raised. If not, press the  key.

- ⑤ To refit the chart unit, hold it with the front horizontal and locate the fulcrum pins in the slots in the chassis side plates.
- ⑥ Swing down the chart unit.
- ⑦ Press on the bottom of the unit until it latches into place.

Close the door. Press the  key to lower the pen(s).

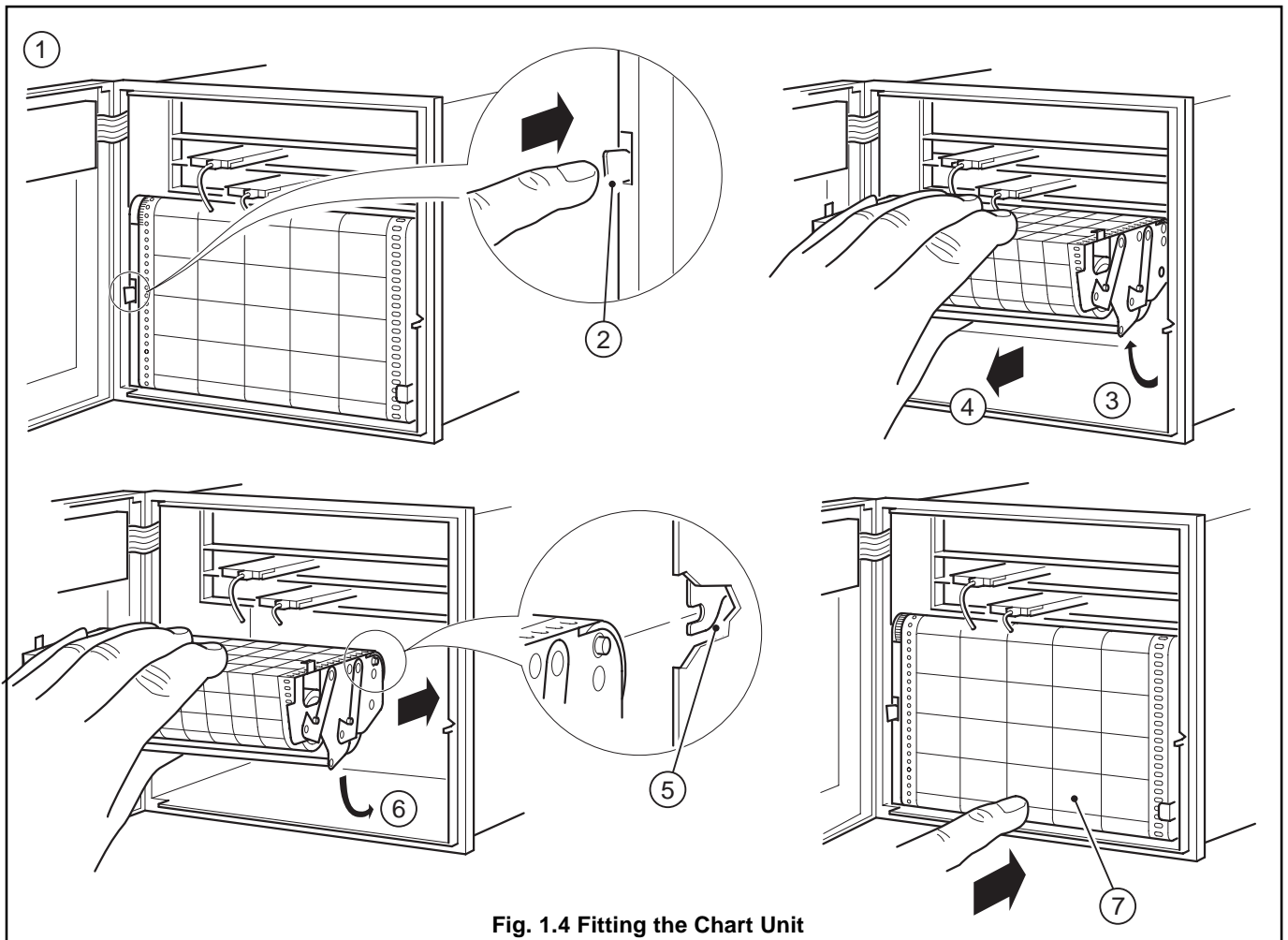


Fig. 1.4 Fitting the Chart Unit

...1.5 Fitting Charts & Pens

1.5.2 Fitting a Fanfold Chart – Fig. 1.5

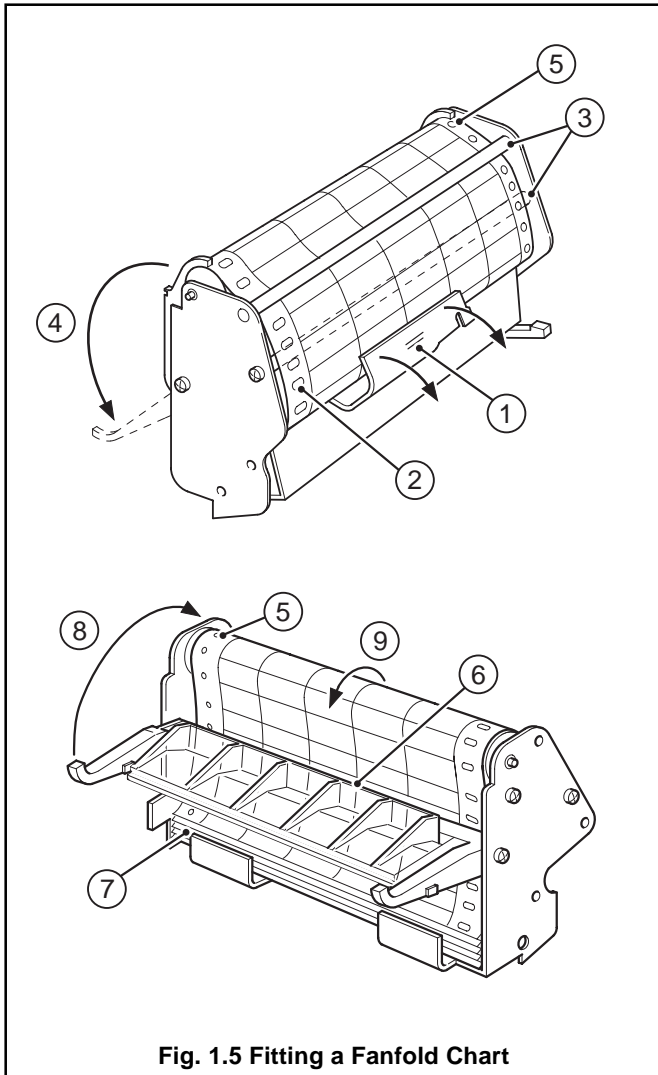


Fig. 1.5 Fitting a Fanfold Chart

Remove the chart unit and the used chart from the tray – see Section 1.5.1. Referring to Fig. 1.5:

- ① With the spring flap held open, place the new chart in the feed tray and close the flap.
- ② Ensure that as the paper is withdrawn the perforated slots are to the left and the printed side outwards.
- ③ Feed the paper over the first tie rod and under the second.
- ④ Hinge back the window moulding.
- ⑤ Feed the paper over the top roller, ensuring that the holes engage correctly with the drive pegs.
- ⑥ Pass the end of the paper behind the window moulding.
- ⑦ Feed the paper into the tray, arranging the folds so that the brown dots are visible on the external folded edges at the front of the tray.
- ⑧ Close the window moulding.
- ⑨ Advance the chart to the correct time line.

If the instrument is already operating, refit the chart unit. If the instrument is being set up for the first time, fit the pen cartridge – see Section 1.5.4.

...1.5 Fitting Charts & Pens

1.5.3 Fitting a Roll Chart – Fig. 1.6

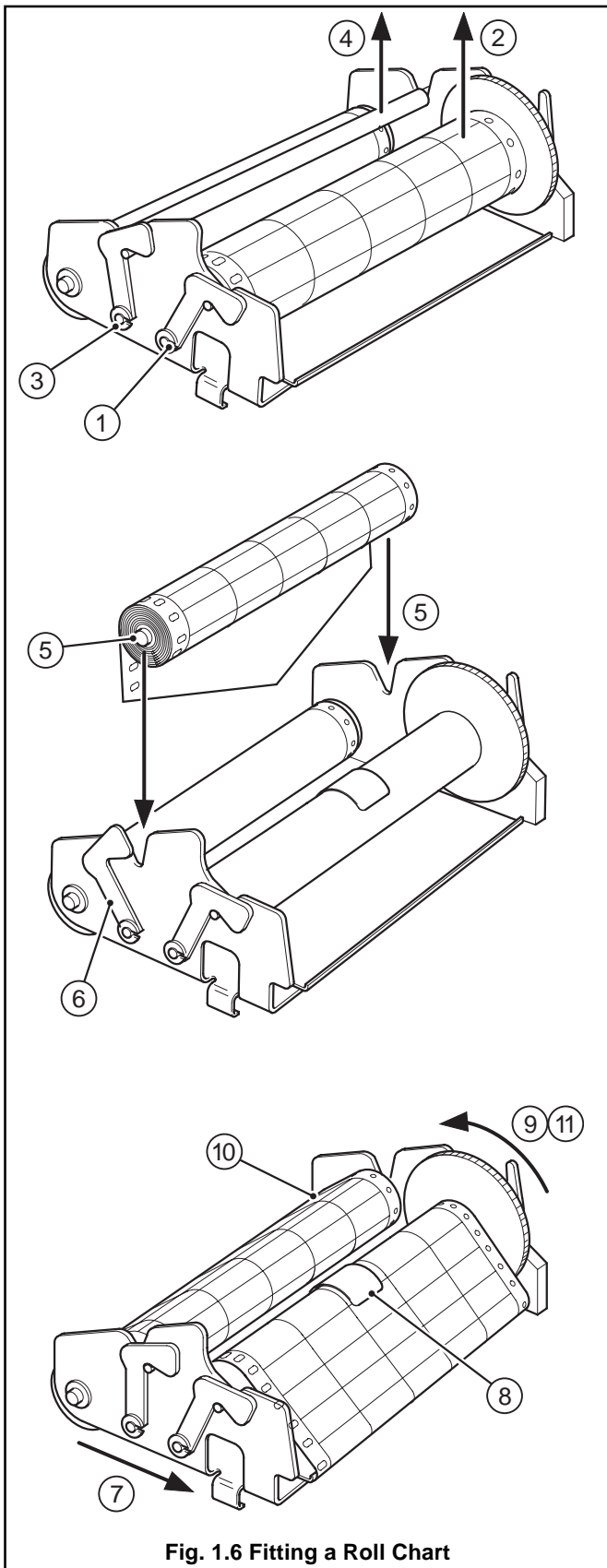


Fig. 1.6 Fitting a Roll Chart


Remove the chart unit – see Section 1.5.1.
Referring to Fig. 1.6:

- ① To remove a used chart, lay the chart unit face downwards and release the rewind roller latches on each side.
- ② Lift the roller away and slide the used roll off. (Retain the spring clip which will be found inside the roll.) Refit the roller and secure the latches.
- ③ To fit a new chart, release the feed spindle latches on each side.
- ④ Lift the spindle away.
- ⑤ Insert the spindle into the new chart roll and refit the spindle to the chart unit.
- ⑥ Secure the latches at each end.
- ⑦ Draw off about 200mm (8 in.) of paper from the chart and pass it round the front of the chart unit to the rewind roller.
- ⑧ Feed the tapered end on to the roller, wind on two turns and secure with the spring clip.
- ⑨ Take up the slack by rotating the thumbwheel.
- ⑩ Ensure that the holes along the edge of the paper are correctly engaged with the drive pegs on the roller assembly.
- ⑪ Advance the chart to the correct time line using the thumbwheel.

If the instrument is already operating, refit the chart unit. If the instrument is being set up for the first time, fit the pen cartridge – see Section 1.5.4.

...1.5 Fitting Charts & Pens

1.5.4 Fitting a Pen Cartridge – Fig. 1.7


Ensure that the instrument is switched on and operate the  key to raise the pens. Referring to Fig. 1.7:

- ① Pull the used pen(s) (if fitted) gently from the assemblies and discard.
- ② Remove the air vent cover(s) from the new pen(s).
- ③ Carefully twist and pull the cap(s) from the fibre tip(s).
- ④ Push each new pen into the appropriate clip assembly.

No. 1 (red) pen in the bottom position.

No. 2 (green) pen in the top position.

Pull gently on each pen to ensure that it is engaged in the clip.

Press the  key to lower the pens. Close the door.

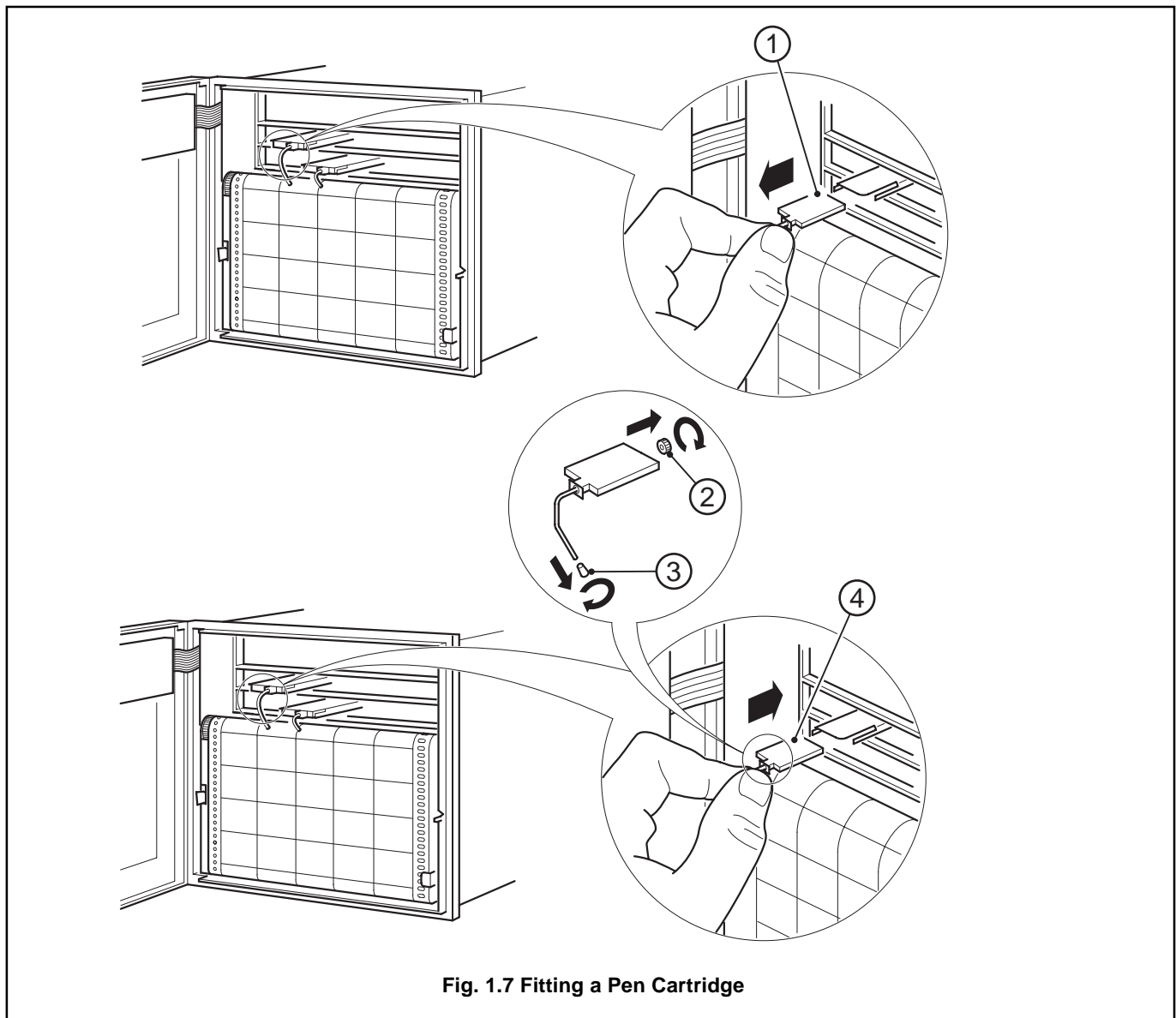


Fig. 1.7 Fitting a Pen Cartridge

2 OPERATOR MODE



2.1 Introduction

Operator Mode (Level 1) is the normal day-to-day mode of the Recorder.

Frames displayed in Level 1 are determined by the functions which are selected during configuration of the instrument – see Section 4.

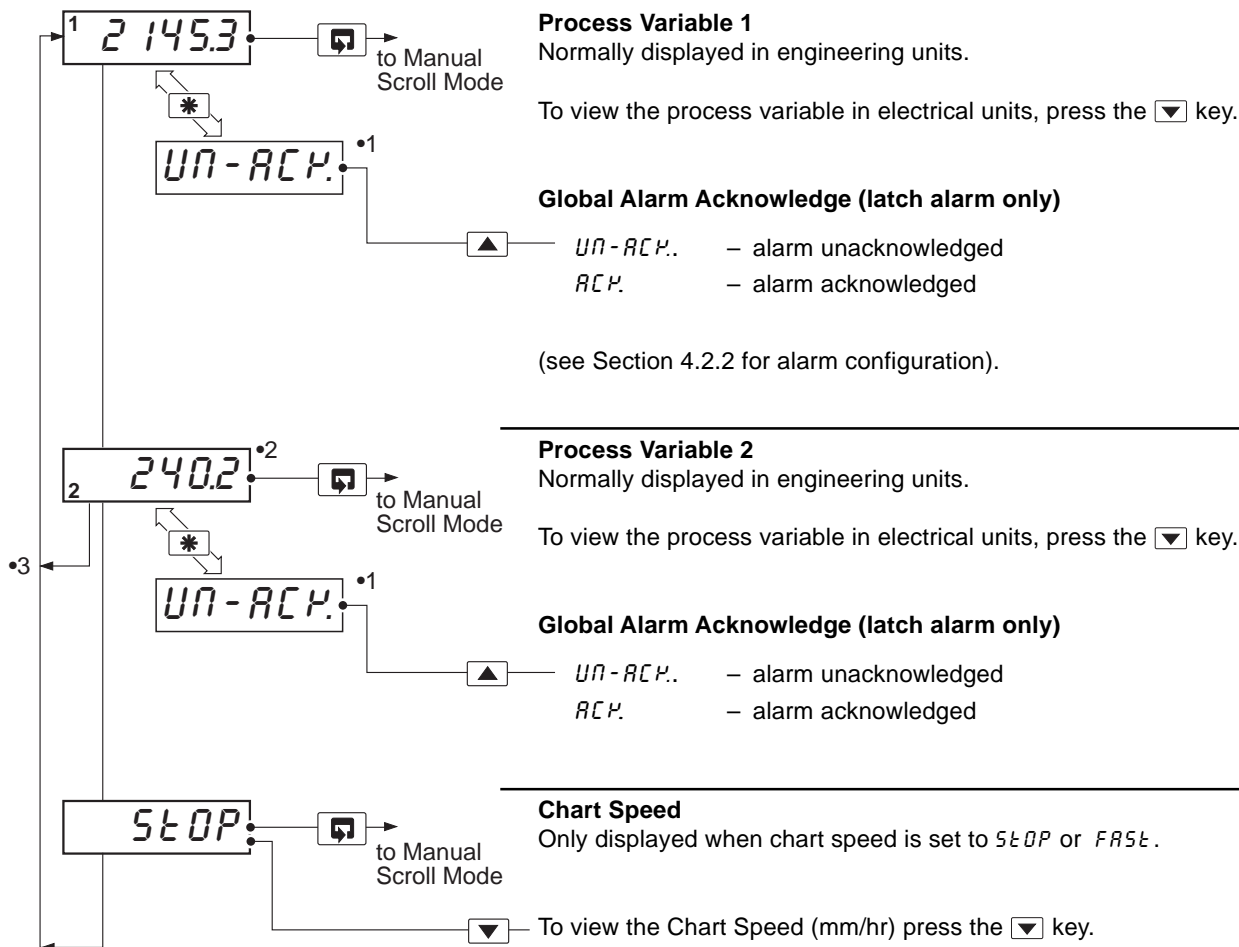


Note. Only the operating frames relevant to the configured functions are displayed in Operator Mode.

The two indicator functions are:

- **Auto Scroll Mode** – This page
- **Manual Scroll Mode** – Page 12

2.2 Operating Page (Level 1) – Auto Scroll Mode



- 1 Displayed only if there is an active latch alarm.
- 2 Not displayed in single-pen instruments.
- 3 Auto Scroll loop if the chart speed is set to 'Normal.'



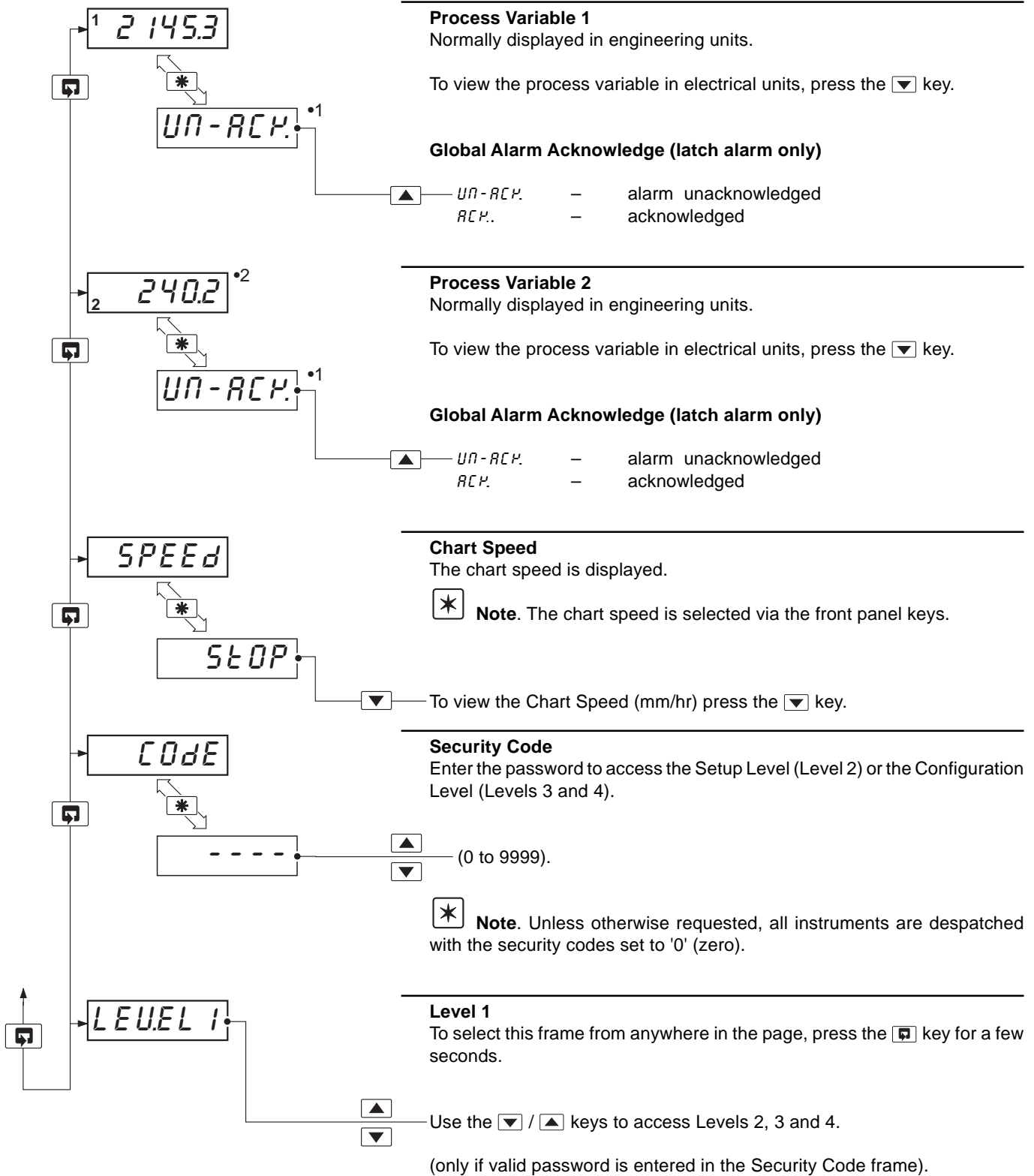
Notes.

- a) To exit Auto Scroll Mode from any frame in the Auto Scroll loop, press the key. The display remains in this frame until the key is pressed again.
- b) Instrument starts up in Auto Scroll Mode at Power-on or when the key is pressed at *LEVEL 1*.
- c) Press the key anywhere in the page to select pre-configured chart speed.
- d) Single-pen instruments default to Auto Scroll Mode when the chart speed is set to *STOP* or *FAST*.



...2 OPERATOR MODE

2.3 Operating Page (Level 1) – Manual Scroll Mode



- 1 Only displayed if there is an active latch alarm.
- 2 Not displayed in single pen instruments.

3 SET UP MODE



3.1 Introduction

To access the Set Up Level (Level 2) the correct password must be entered in the security code frame in Level 1 – see Fig. 3.1

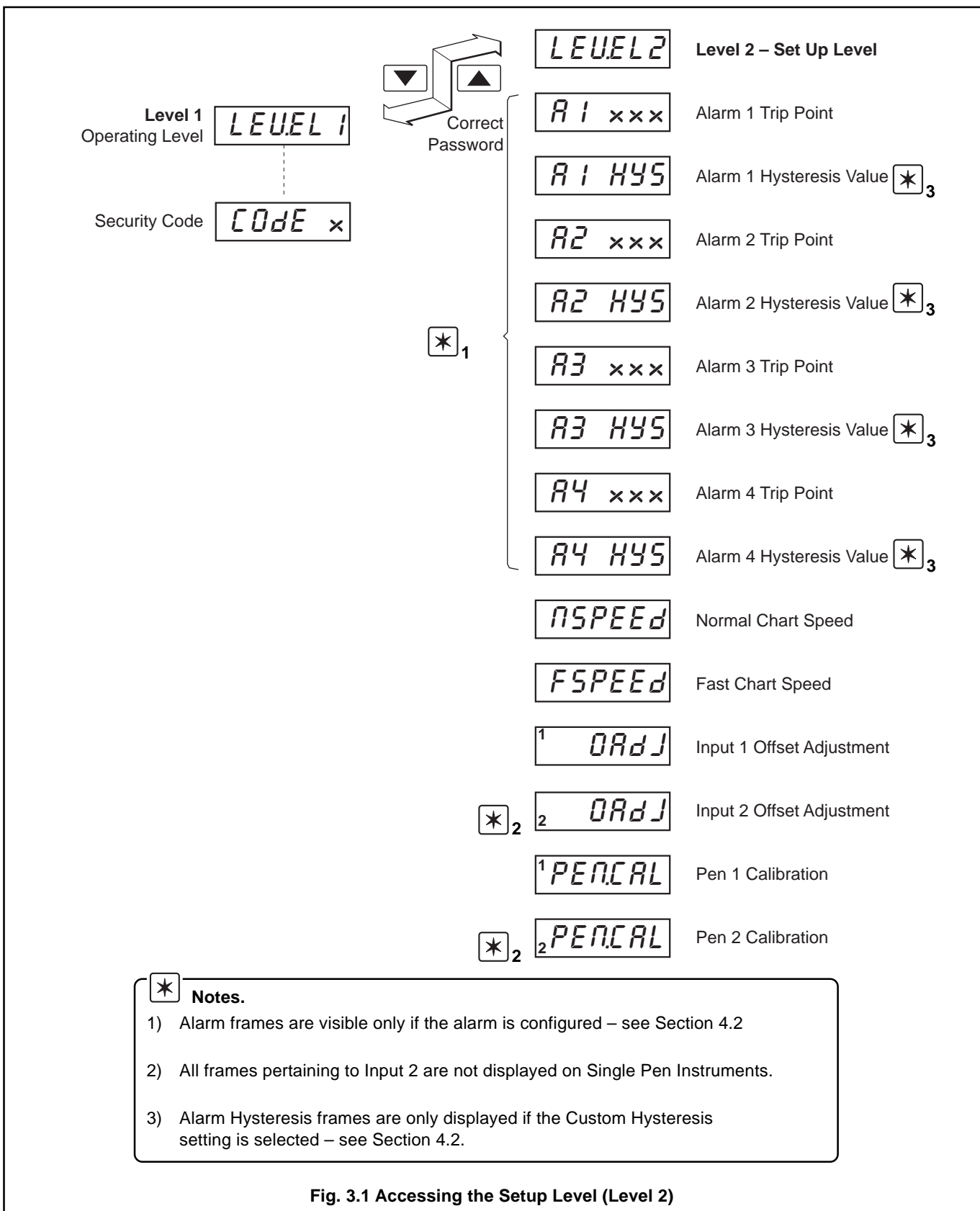
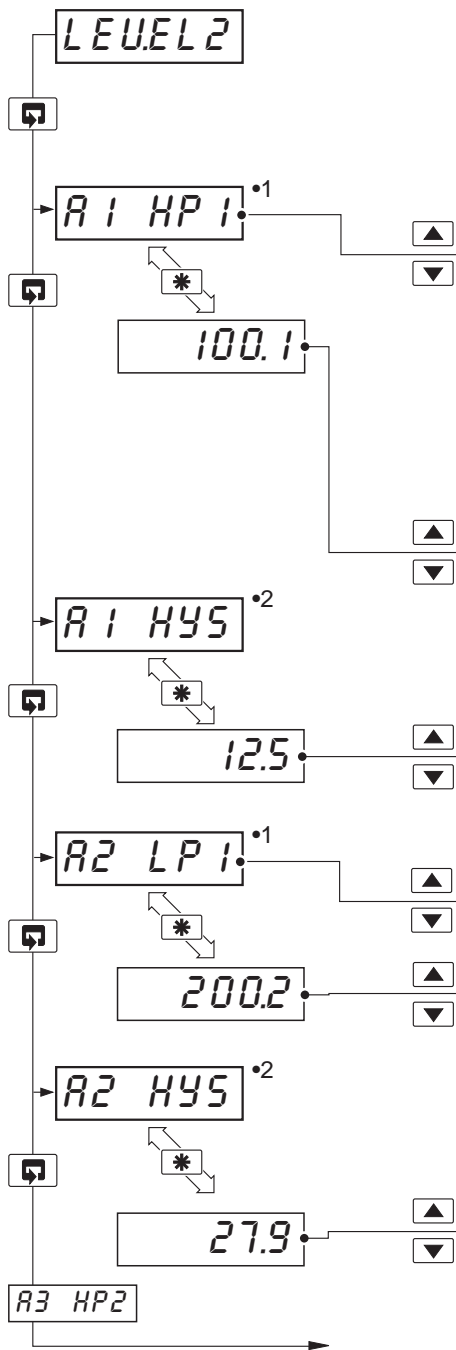


Fig. 3.1 Accessing the Setup Level (Level 2)



3.2 Set Up Level (Level 2)



Level 2

***** **Note.** To select this frame from anywhere in this level, press the key for a few seconds.

Alarm 1 Type and Trip Point

- Alarm 1 type:
- R1 HP1 – Input 1 high process alarm
 - R1 LP1 – Input 1 low process alarm
 - R1 HL1 – Input 1 high latch alarm
 - R1 LL1 – Input 1 low latch alarm
 - R1 HP2 – Input 2 high process alarm
 - R1 LP2 – Input 2 low process alarm
 - R1 HL2 – Input 2 high latch alarm
 - R1 LL2 – Input 2 low latch alarm

Alarm 1 trip point [In engineering units]

Alarm 1 Hysteresis Value

[In engineering units]

Alarm 2 Type and Trip Point

Alarm 2 type – see Alarm 1 type above

Alarm 2 trip point [In engineering units]

Alarm 2 Hysteresis Value

[In engineering units]

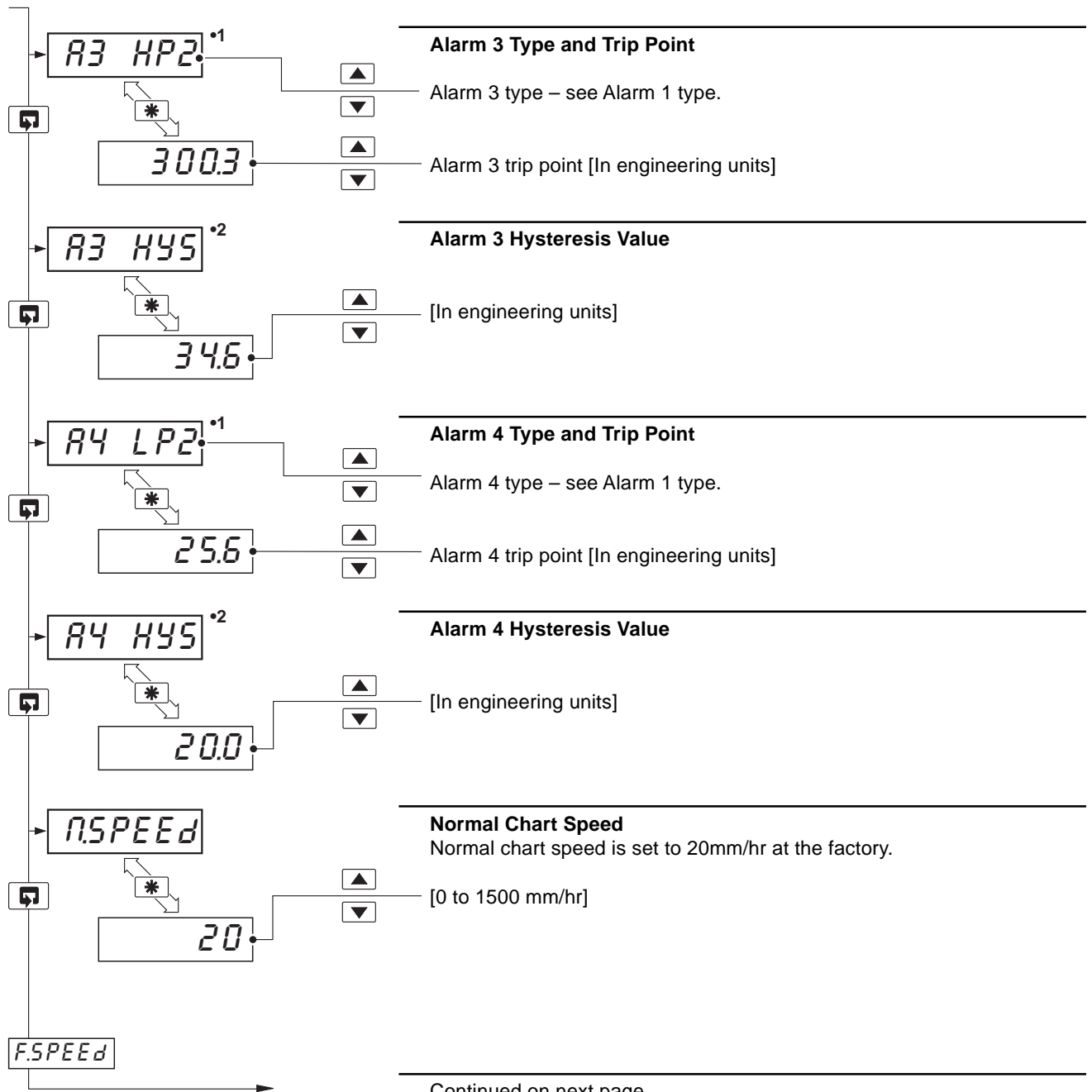
Continued on next page.

•1 Not displayed if the alarm is disabled ('None' is selected) – see Section 4.2.2

•2 Displayed only if custom alarm hysteresis is selected – see Section 4.2.3



...3.2 Set Up Level (Level 2)



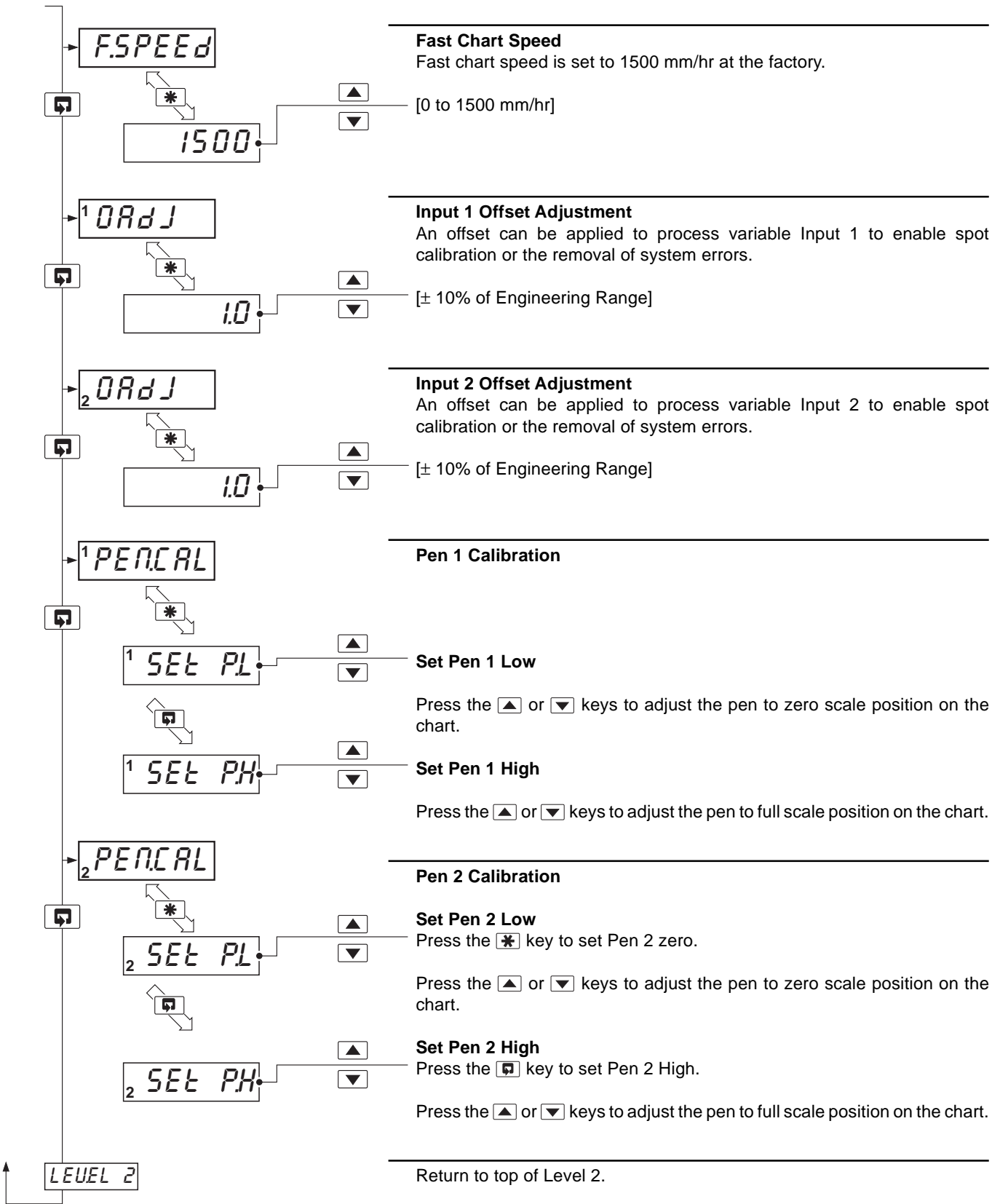
Continued on next page.

•1 Not displayed if the alarm is disabled ('None' is selected) – see Section 4.2.2
 •2 Displayed only if custom alarm hysteresis is selected – see Section 4.2.3



...3 SET UP MODE

...3.2 Set Up Level (Level 2)





4 CONFIGURATION MODE

4.1 Introduction

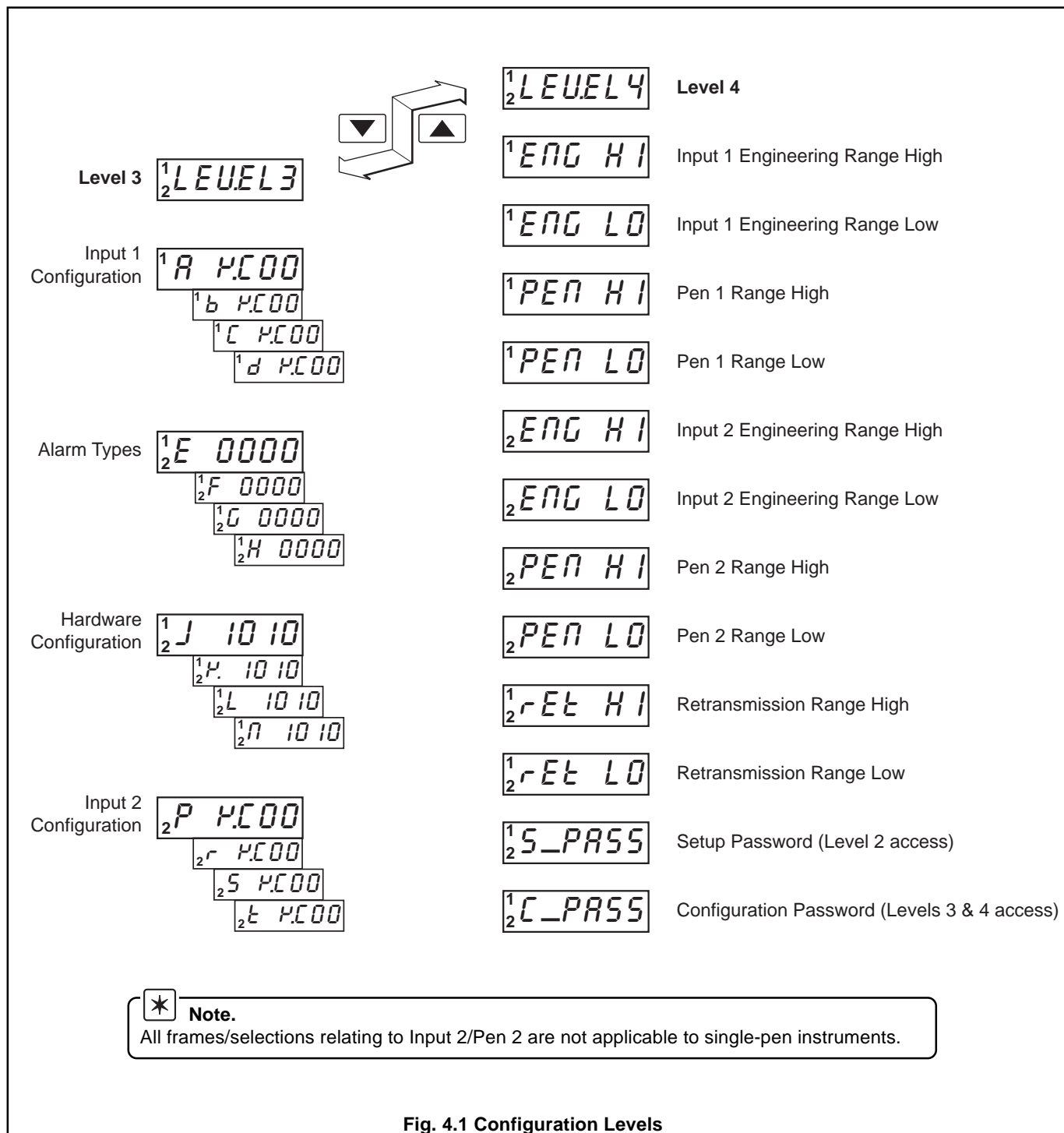
The Configuration Mode comprises two levels (3 and 4) as shown in Fig. 4.1.



Note.

When in the configuration level:

- All Alarm l.e.d.s (and one or both Channel Identification l.e.d.s on 2-pen instruments) flash.
- All relays are turned OFF.
- The analog output reverts to 'Retransmission Low' (4mA) output level.



Note.

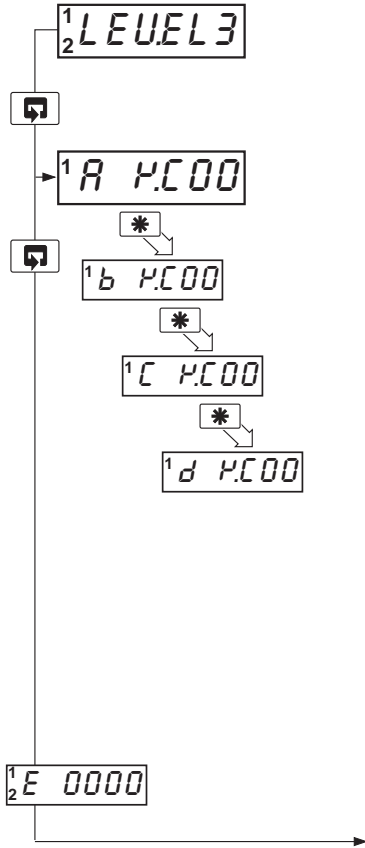
All frames/selections relating to Input 2/Pen 2 are not applicable to single-pen instruments.

Fig. 4.1 Configuration Levels



4.2 Input, Hardware & Alarms Configuration (Level 3)

4.2.1 Input 1 Configuration



Level 3

***** **Note.** To select to this frame from anywhere in this level, press the key for a few seconds.

'ABCD' Settings

The first character (*A*, *b*, *c* or *d*) identifies the parameter to be changed. The current setting is indicated by a flashing letter. Parameter options are shown in Fig. 4.2

- A* = Input type and range configuration
- b* = Temperature units
- c* = Number of decimal points
- d* = Analog input filter

***** **Notes.**

- 1) When changing to a temperature input type (codes b to P), the full operating range of the thermocouple or RTD (see Table 4.1) is entered in Level 4 Engineering Range High/Low and Pen Range High/Low – see Section 4.3. For voltage or current input types (codes 1 to 7) the values remain unchanged.
- 2) In the event of a fault being detected on the input, the 'Broken Sensor Drive' action is dependent on the input type:
 - Thermocouple and RTD – Upscale
 - mA, mV and Volt – Downscale
- 3) For custom settings contact the local distributor.

Continued on page 20

Thermocouple	Maximum Range °C	Maximum Range °F	Accuracy (% of reading)
B	-18 to 1800	0 to 3270	0.1% or ±1°C (1.8°F) [above 200°C (392°F)]
E	-100 to 900	-140 to 1650	0.1% or ±0.5°C (0.9°F)
J	-100 to 900	-140 to 1650	0.1% or ±0.5°C (0.9°F)
K	-100 to 1300	-140 to 2350	0.1% or ±0.5°C (0.9°F)
L	-100 to 900	-140 to 1650	0.1% or ±1.5°C (2.7°F)
N	-200 to 1300	-325 to 2350	0.1% or ±0.5°C (0.9°F)
R	-18 to 1700	0 to 3000	0.1% or ±0.5°C (0.9°F) [above 300°C (540°F)]
S	-18 to 1700	0 to 3000	0.1% or ±0.5°C (0.9°F) [above 200°C(392°F)]
T	-250 to 300	-400 to 550	0.1% or ±0.5°C (0.9°F)

RTD	Maximum Range °C	Maximum Range °F	Accuracy (% of reading)
PT100	-200 to 600	-325 to 1100	0.1% or ±0.5°C (0.9°F)

Linear Inputs	Range	Accuracy (% of reading)
Millivolts	0 to 500 mV	0.1% or ±10µA
Milliamps	0 to 50 mA	0.2% or ±2µA
Volts	0 to 5V	0.2% or ±2mV
Resistance	0 to 5000Ω	0.2% or ±0.08Ω

Notes.

Performance accuracy is not guaranteed at extreme low end of thermocouple and sq. root ranges.
 RTD, 3-wire platinum, 100Ω per DIN 43760 standard (IEC751), with range of 0 to 400Ω.

Min. span below zero Type T 70°C/126°F
 Type N 105°C/189°F
 THC standards DIN 43710 IEC 584
 RTD standards DIN 43760 IEC 751

Table 4.1 Analog Input ranges



A *P.C00* A – Input Type and Range Configuration (Input 1)

Display		Display	
<i>b</i>	THC Type B	<i>1</i>	0 to 20 mA
<i>E</i>	THC Type E	<i>2</i>	4 to 20 mA
<i>J</i>	THC Type J	<i>3</i>	0 to 5 V
<i>K</i>	THC Type K	<i>4</i>	1 to 5 V
<i>n</i>	THC Type N	<i>5</i>	0 to 50 mV
<i>r</i>	THC Type R	<i>7</i>	4 to 20 mA (square root linearizer)
<i>S</i>	THC Type S	<i>U</i>	Custom Configuration
<i>t</i>	THC Type T		
<i>P</i>	PT100 RTD		

b *P.C00* b – Temperature Units

Display	Temperature Units
<i>C</i>	Degrees C*
<i>F</i>	Degrees F*
<i>0</i>	No temperature units

* Temperature inputs only

C *P.C00* C – Process Variable Display Decimal Places

Display	
<i>0</i>	xxxxx
<i>1</i>	xxxx . x
<i>2</i>	xxx . xx
<i>3</i>	xx . xxx
<i>4</i>	xx . xxxx

d *P.C00* d – Analog Input Filter

Display	
<i>0</i>	0 seconds
<i>1</i>	1 second
<i>2</i>	2 seconds
<i>5</i>	5 seconds
<i>R</i>	10 seconds
<i>b</i>	20 seconds
<i>C</i>	40 seconds
<i>d</i>	60 seconds

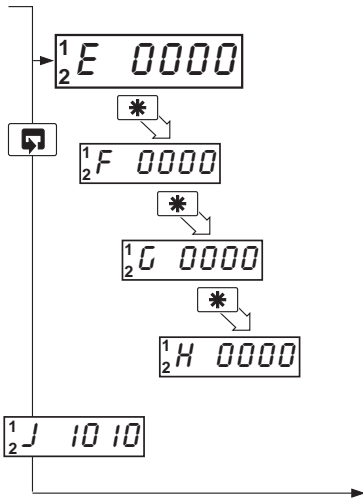
Fig. 4.2 Input 1 Configuration



...4 CONFIGURATION MODE

4.2.2 Alarms Configuration

* **Note.** Relays assigned to alarms are de-energized in the alarm state.



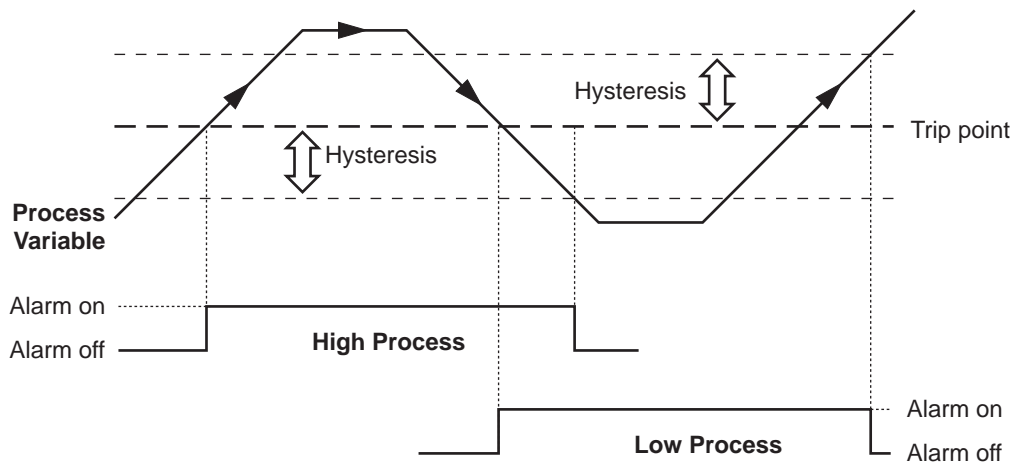
'EFGH' Settings

The first character (*E*, *F*, *G* or *H*) identifies the parameter to be changed. The current setting is indicated by a flashing letter. Parameter options are shown in Fig. 4.4.

<i>E</i>	=	Alarm 1 type
<i>F</i>	=	Alarm 2 type
<i>G</i>	=	Alarm 3 type
<i>H</i>	=	Alarm 4 type

* **Note.** For custom settings contact your local Service Organization.

Continued on page 22.



i Information.

For latch alarms the relay remains de-energized until acknowledged in Level 1 (or by a digital input)

Fig. 4.3 Alarm Action



¹E 0000 E – Alarm 1 Type

Display	
0	None
1	Input 1 High Process
2	Input 1 Low Process
3	Input 1 High Latch
4	Input 1 Low Latch
5	Input 2 High Process
6	Input 2 Low Process
7	Input 2 High Latch
8	Input 2 Low Latch

¹F 0000 F – Alarm 2 Type

Display	
0	None
1	Input 1 High Process
2	Input 1 Low Process
3	Input 1 High Latch
4	Input 1 Low Latch
5	Input 2 High Process
6	Input 2 Low Process
7	Input 2 High Latch
8	Input 2 Low Latch

¹G 0000 G – Alarm 3 Type

Display	
0	None
1	Input 1 High Process
2	Input 1 Low Process
3	Input 1 High Latch
4	Input 1 Low Latch
5	Input 2 High Process
6	Input 2 Low Process
7	Input 2 High Latch
8	Input 2 Low Latch

¹H 0000 H – Alarm 4 Type

Display	
0	None
1	Input 1 High Process
2	Input 1 Low Process
3	Input 1 High Latch
4	Input 1 Low Latch
5	Input 2 High Process
6	Input 2 Low Process
7	Input 2 High Latch
8	Input 2 Low Latch



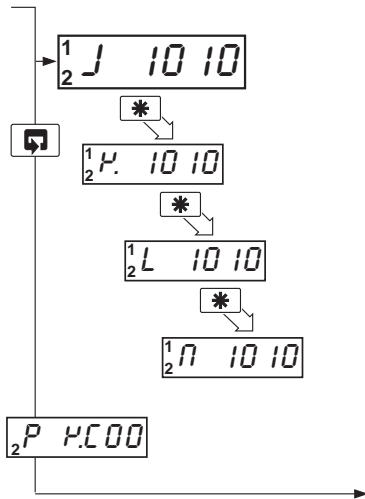
Note. Alarm types relating to Input 2 are not applicable for single-pen instruments.

Fig. 4.4 Alarm Type Settings



...4 CONFIGURATION MODE

4.2.3 Hardware Configuration



'JKLN' Settings

The first character (*J*, *P*, *L* or *n*) identifies the parameter to be changed. The current setting is indicated by a flashing letter. Parameter options are shown in Fig. 4.5.

- J* = Hardware configuration
- P* = Digital input functions
- L* = Relay sources configuration
- n* = Alarm hysteresis

***** **Note.** For custom settings contact the local distributor.

Continued on next page.

1 J 10 10 J – Hardware Configuration

Freq.		Analog Retrans Source
50Hz	60Hz	
<i>a</i>	<i>A</i>	Input 1
<i>z</i>	<i>b</i>	Input 2

1 P. 10 10 K – Digital Input Functions

Display	Alarm Ack Source	Chart Fast Source	Chart Stop Source
<i>0</i>	None	None	None
<i>1</i>	Dig 1	None	None
<i>2</i>	None	Dig 1	None
<i>3</i>	None	None	Dig 1
<i>4</i>	Dig 1	Dig 2	None
<i>5</i>	None	Dig 1	Dig 2
<i>6</i>	Dig 1	None	Dig 2

1 L 10 10 L – Relay Sources Configuration

Display	Relay 1 Source	Relay 2 Source
<i>1</i>	Alarm 1	Alarms 2, 3 OR 4
<i>2</i>	Alarms 1 OR 2	Alarms 3 OR 4
<i>3</i>	Alarms 1 OR 3	Alarms 2 OR 4
<i>4</i>	Alarms 1, 2 OR 3	Alarms 4

1 n 10 10 n – Alarm Hysteresis

Display	Hysteresis
<i>0</i>	None
<i>1</i>	0.1 %
<i>2</i>	0.2 %
<i>3</i>	0.5 %
<i>4</i>	1.0 %
<i>5</i>	2.0 %
<i>6</i>	5.0 %
<i>U</i>	Custom

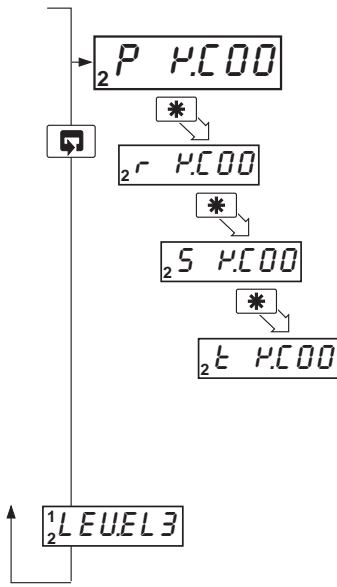
} As percentage of engineering range
In engineering units

***** **Note.** Alarm relays are logical 'OR' configured

Fig. 4.5 Hardware Configuration



4.2.4 Input 2 Configuration



'PRST' Settings

The first character (*P*, *r*, *S* or *t*) identifies the parameter to be changed and the current setting is indicated by a flashing letter. Parameter options are shown in Fig. 4.6.

P = Input type and range configuration

***** **Note.** Input 2 can only be configured as a thermocouple type if input 1 is also configured as a thermocouple.

r = Temperature units

S = Number of decimal points

t = Analog input filter

***** **Note.** For custom settings contact the local distributor.

Return to top of Level 3.

2 P 4.C00 P – Input Type and Range Configuration (input 2)

Display		Display	
<i>b</i>	THC Type B	<i>1</i>	0 to 20 mA
<i>E</i>	THC Type E	<i>2</i>	4 to 20 mA
<i>J</i>	THC Type J	<i>3</i>	0 to 5 V
<i>K</i>	THC Type K	<i>4</i>	1 to 5 V
<i>N</i>	THC Type N	<i>5</i>	0 to 50 mV
<i>r</i>	THC Type R	<i>7</i>	4 to 20 mA (square root lineariser)
<i>S</i>	THC Type S	<i>U</i>	Custom Configuration
<i>t</i>	THC Type T		
<i>P</i>	PT100 RTD		

r – Temperature Units



Display	Temperature Units
<i>C</i>	Degrees C*
<i>F</i>	Degrees F*
<i>0</i>	No temperature units

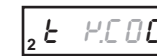
* Temperature inputs only

S – Process Variable Display Decimal Places



Display	
<i>0</i>	xxxxx
<i>1</i>	xxxx . x
<i>2</i>	xxx . xx
<i>3</i>	xx . xxx
<i>4</i>	x . xxxx

t – Analog Input Filter



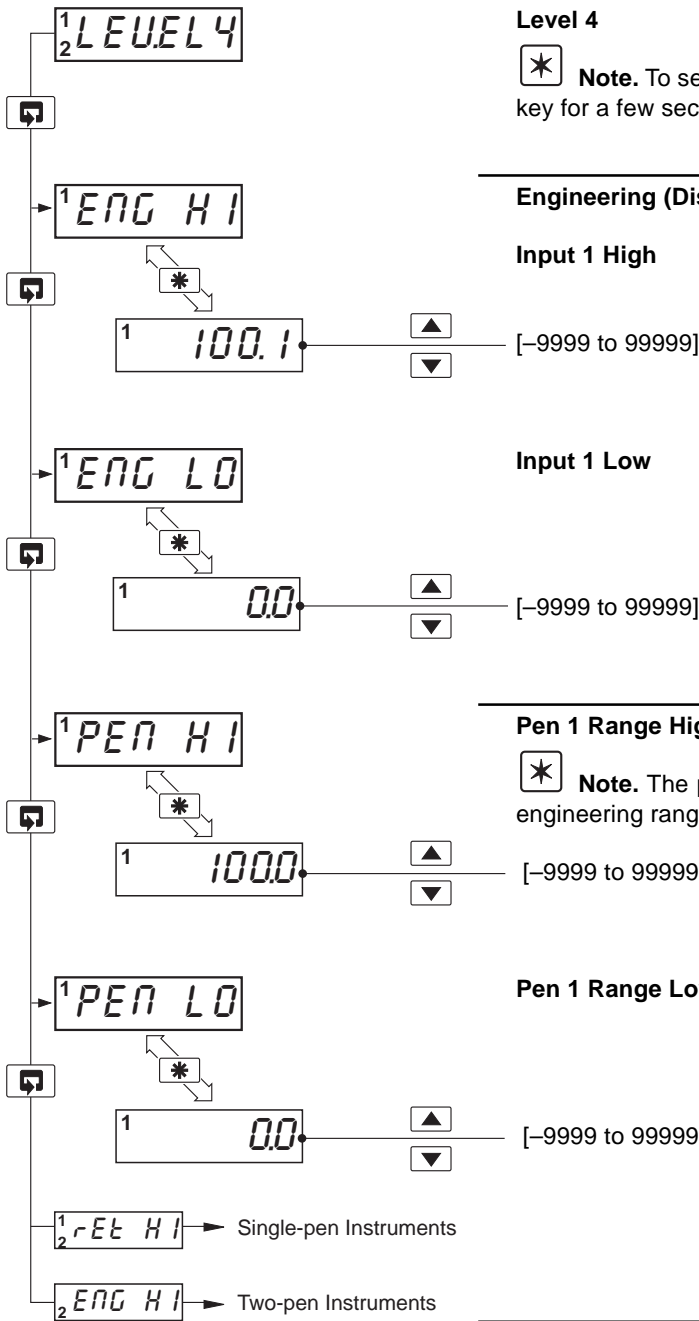
Display	
<i>0</i>	0 seconds
<i>1</i>	1 second
<i>2</i>	2 seconds
<i>5</i>	5 seconds
<i>A</i>	10 seconds
<i>b</i>	20 seconds
<i>C</i>	40 seconds
<i>d</i>	60 seconds

Fig. 4.6 Input 2 Configuration



...4 CONFIGURATION MODE

4.3 Ranges and Passwords (Level 4)



Level 4

Note. To select this frame from anywhere in this level, press the key for a few seconds.

Engineering (Display) Range

Input 1 High

[-9999 to 99999]

Input 1 Low

[-9999 to 99999]

Pen 1 Range High

Note. The pen range can be set to a value greater or less than the engineering range, to suit the chart range markings.

[-9999 to 99999]

Pen 1 Range Low

[-9999 to 99999]

Continued on pages 25 and 26.



...4.3 Ranges and Passwords (Level 4)

* **Note.** Settings relating to Input 2 are not applicable for single-pen instruments.

2 ENG HI

↩

2 100.1

↩

2 ENG LO

↩

2 00

↩

2 PEN HI

↩

2 1000

↩

2 PEN LO

↩

2 00

Engineering (Display) Range

Input 2 High

[-9999 to 9999]

Input 2 Low

[-9999 to 9999]

1 2 rEt HI

Pen 2 Range High

* **Note.** The pen range can be set to a value greater or less than the engineering range, to suit the chart range markings.

[-9999 to 9999]

Pen 2 Range Low

[-9999 to 9999]

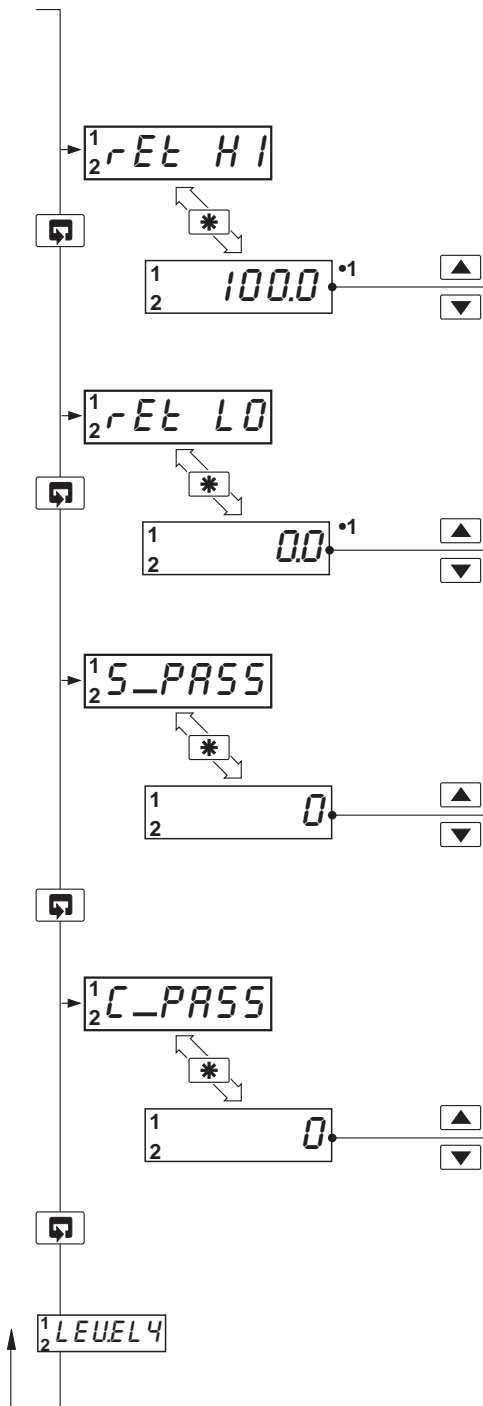
Continued on next page.

25



...4 CONFIGURATION MODE

...4.3 Ranges and Passwords (Level 4)



Retransmission Range

The retransmission range defines the engineering range to be retransmitted – see Section 4.2 Code J for source selection.

High (20mA output)

1 2 **100.0** *1 ▲ ▼ [-9999 to 99999 (in engineering units)]

Low (4mA output)

1 2 **00** *1 ▲ ▼ [-9999 to 99999 (in engineering units)]

Set Up Level Password

Set the password to enable access to the Setup Level (level 2).

1 2 **0** ▲ ▼ [0 to 9999]



Note. Unless otherwise requested, all instruments are despatched with passwords set to '0' (zero).

Configuration Level Password

Set the password to enable access to the Configuration Level (levels 3 and 4).

1 2 **0** ▲ ▼ [0 to 9999]



Note. Unless otherwise requested, all instruments are despatched with passwords set to '0' (zero).

Return to top of page.

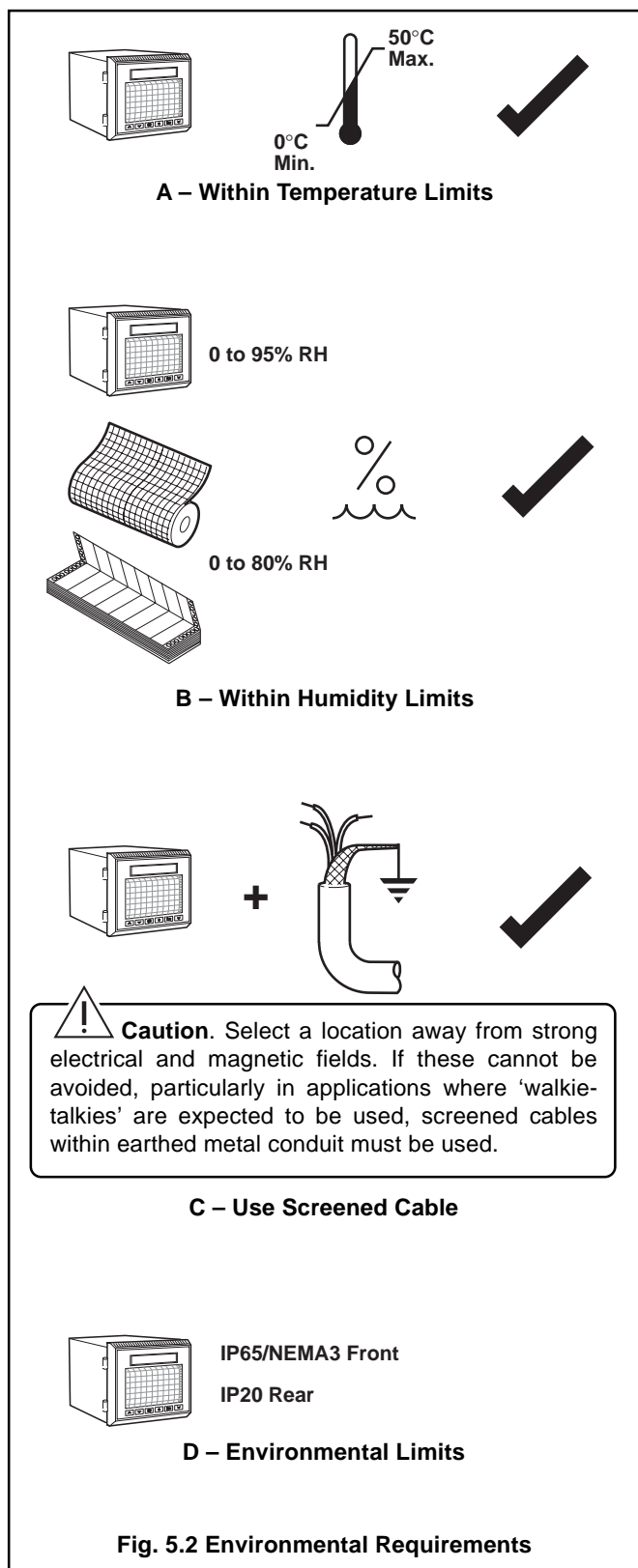
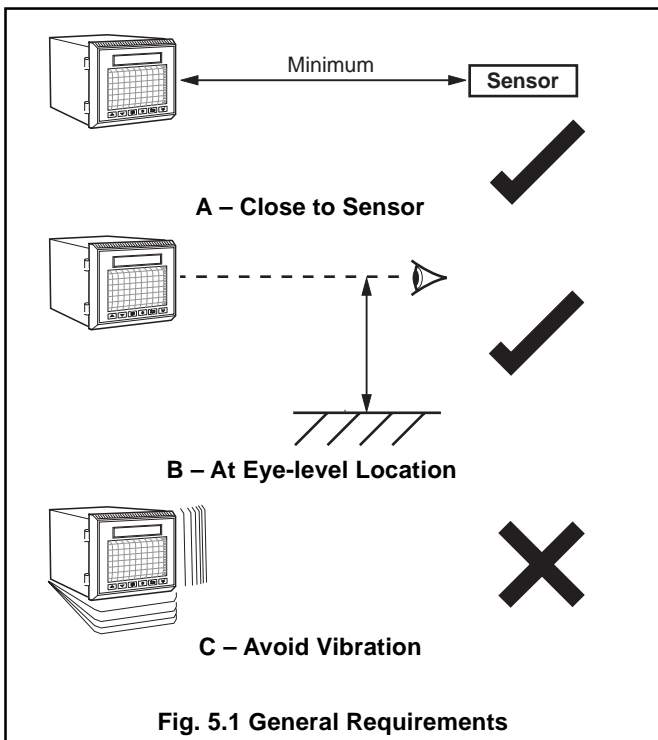


5 INSTALLATION

EC Directive 89/336/EEC

In order to meet the requirements of the EC Directive 89/336/EEC for EMC regulations, this product must not be used in a non-industrial environment.

5.1 Siting – Figs. 5.1 and 5.2



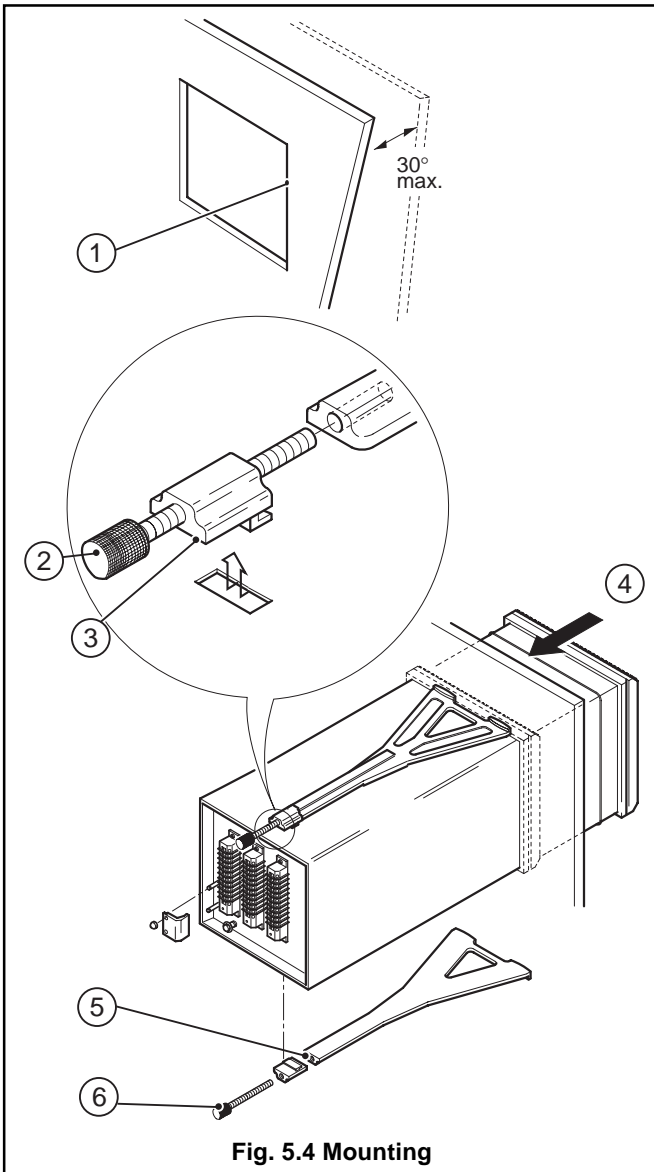
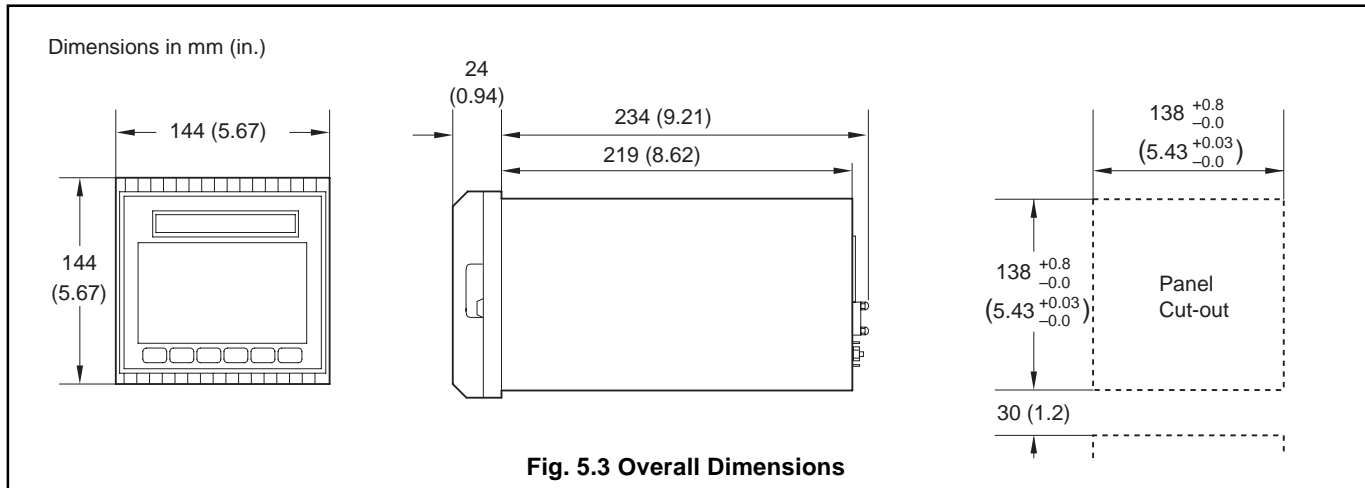


...5 INSTALLATION

5.2 Mounting – Figs. 5.3 and 5.4



Information. A minimum mounting panel thickness of 3mm is recommended.



- ① Cut a hole in the panel (see Fig. 5.3 for dimensions).
- ② Loosen the retaining screw on each panel clamp.
- ③ Lift the retaining screws and remove the panel clamp anchors. Remove the panel clamps.
- ④ Insert the instrument into the panel cut-out.
- ⑤ Refit the panel clamps to the case, ensuring that the panel clamp anchors are located correctly in their slots.
- ⑥ Secure the instrument by tightening the panel clamp retaining screws.



Caution. The clamp must fit flat against the instrument case. If the clamp is bowed, the securing screw is too tight and sealing problems may occur.



5.3 Electrical Connections – Fig. 5.6 (overleaf)



Warning. Before making any connections, ensure that the power supply, any powered control circuits and high common mode voltages are switched off.



Note. If it is not possible to avoid strong electrical and magnetic fields, screened cables within earthed metal conduit must be used.

5.4 Relays, Arc Suppression and Output

5.4.1 Relay Contact Ratings

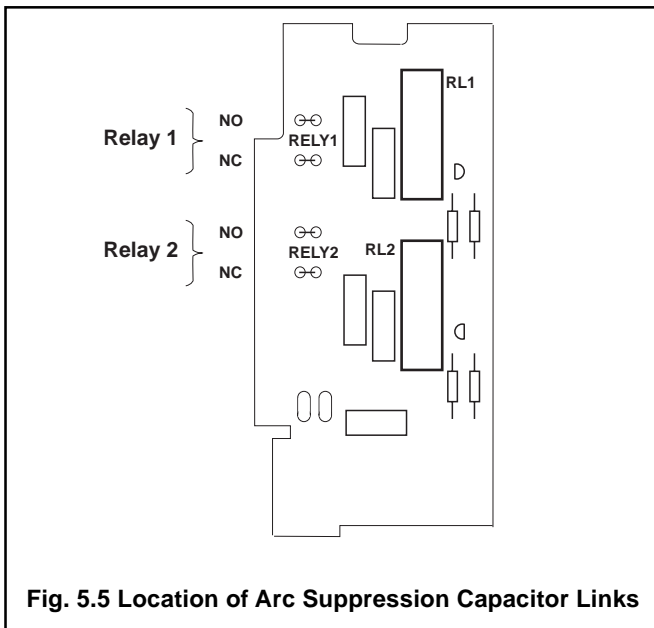
Relay contacts are rated at:

115/230V AC at 5A (non-inductive)

250V DC 25W max.

5.4.2 Arc Suppression Capacitors – Fig 5.5

Arc suppression components are fitted across both relays. If these contacts are used to operate external relays, the capacitor leakage current may be sufficient to prevent the external relay from de-energizing. If so, switch off the power supply and external alarm circuits. Identify the relay module and remove it. Cut the links to the suppression circuit and refit the module.



5.4.3 Retransmission Analog Output

Max. load 15V (750Ω at 20mA)

Isolation 500V from I/Ps

5.5 Spares and Consumables

Roll Charts

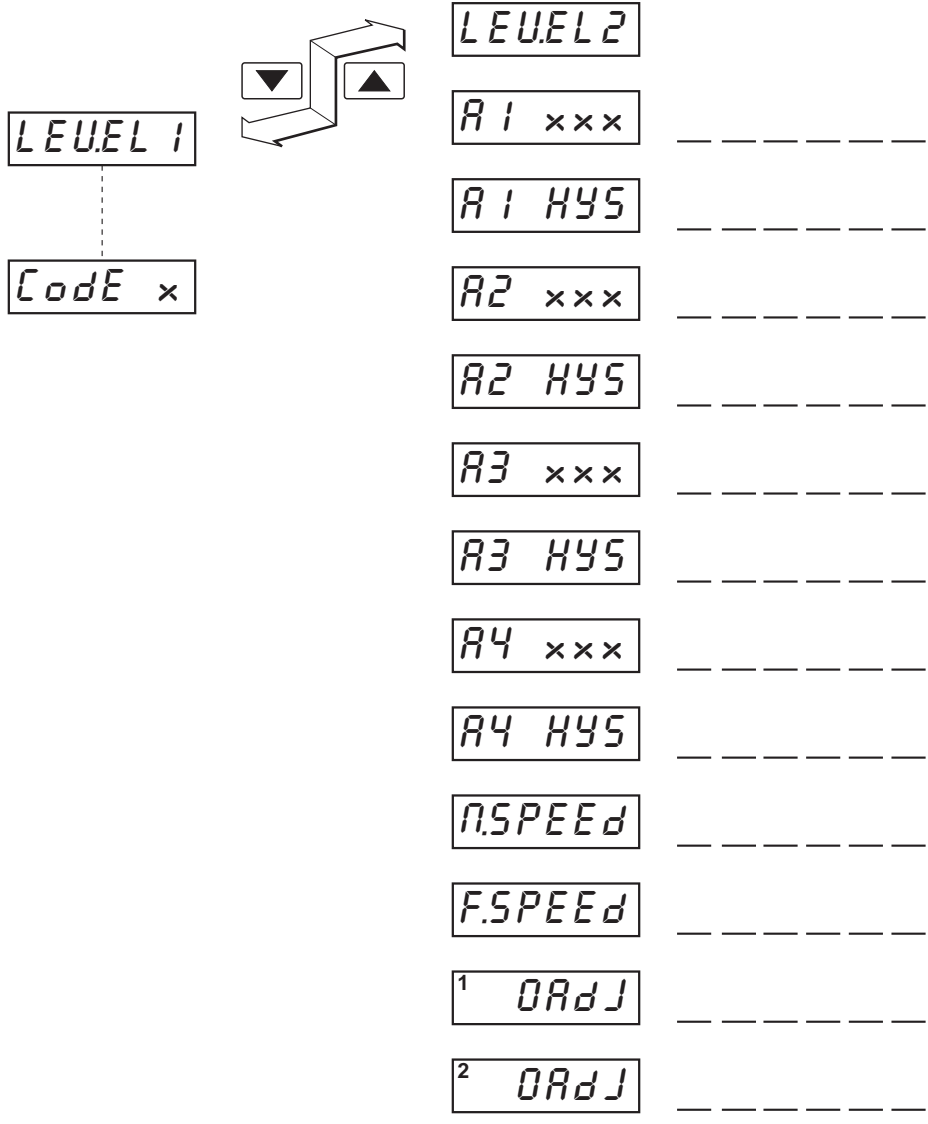
Range	International	North America
-50/+50	P100L/7477G	KPC100-1110
-50/+100	P100L/7484G	-
0/10	P100L/7402G	KPC100-1023
0/14	P100L/17463G	KPC100-1047
0/20	P100L/7404G	KPC100-1080
0/50	P100L/7401G	KPC100-1032
0/60	P100L/7469G	KPC100-1118
0/70	P100L/17400G	-
0/75	P100L/17487G	-
0/80	P100L/7432G	-
0/100*	P100L/7400G	KPC100-1037
0/150	P100L/7414G	KPC100-1039
0/200	P100L/7420G	KPC100-1040
0/300	P100L/7415G	KPC100-1042
0/500	P100L/7465G	KPC100-1043
0/800	P100L/17446G	KPC100-1045
0/1000	P100L/7476G	KPC100-1072
0/1200	P100L/7461G	KPC100-1074
0/1400	P100L/17484G	-
0/1600	P100L/17488G	-
800/1600	P100L/17490G	-

Fanfold Charts

Range	International	North America
-50/+50	P100L/7477X	KPC100-8042
-50/+100	P100L/7484X	-
0/10	P100L/7402X	KPC100-8010
0/14	P100L/17463X	KPC100-8032
0/20	P100L/7404X	KPC100-8008
0/50	P100L/7401X	-
0/60	P100L/7469X	-
0/70	P100L/17400K	-
0/75	P100L/17487X	-
0/80	P100L/7432X	-
0/100*	P100L/7400X	KPC100-8034
0/150	P100L/7414X	KPC100-8050
0/200	P100L/7420X	KPC100-8051
0/300	P100L/7415X	KPC100-8053
0/500	-	KPC100-8058
0/800	P100L/17446X	KPC100-8064
0/1000	P100L/7476X	KPC100-8037
0/1200	P100L/7461X	KPC100-8039
0/1400	P100L/17484X	-
800/1600	P100L/17490X	-

Pens

Red	P100L/1095
Green	P100LM/0056



Instrument Serial Number : _____

Product Code : CR10 / _____



CUSTOMER CONFIGURATION LOG

		¹ LEVEL4 ² LEVEL3	_____
¹ LEVEL3 ² LEVEL3		¹ ENG HI ² ENG LO	_____
¹ A Y.COD A_B_C_D_		¹ PEN HI ² PEN LO	_____
¹ E 0000 E_F_G_H_		¹ ENG HI ² ENG LO	_____
¹ J 1010 J_K_L_N_		¹ PEN HI ² PEN LO	_____
¹ P Y.COD P_r_s_t_		¹ rEt HI ² rEt LO	_____
		¹ S_PASS ² S_PASS	_____
		¹ C_PASS ² C_PASS	_____

Instrument Serial Number : _____

Product Code : CR10_/_____

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India

ABB Instrumentation Ltd.
Tel: 91-0129-275592/5593/5597
Fax: 91-0129-275019/5446

Client Warranty

Prior to installation, the equipment referred to in this manual must be stored in a clean, dry environment, in accordance with the Company's published specification. Periodic checks must be made on the equipment's condition.

In the event of a failure under warranty, the following documentation must be provided as substantiation:

1. A listing evidencing process operation and alarm logs at time of failure.
2. Copies of operating and maintenance records relating to the alleged faulty unit.



The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

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