



# Dynisco 1480 1/8 DIN Indicator Concise Product Manual 59471-5

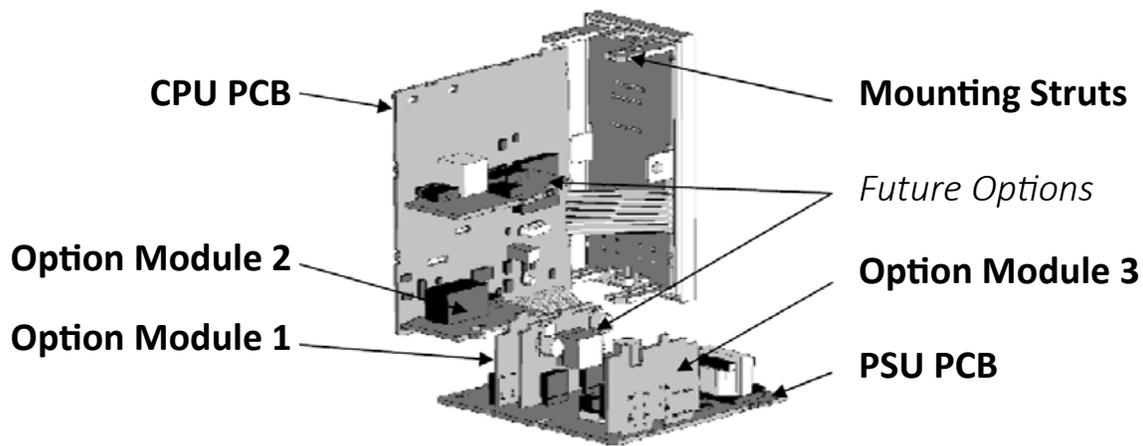
## Operating Manual



**CAUTION:** Installation should be only performed by technically competent personnel. Local Regulations regarding electrical installation & safety must be observed. The host equipment is required to provide a suitable electrical, mechanical and fire enclosure to meet relevant safety standards. Impairment of protection will occur if the product is used in a manner not specified by the manufacturer.

## 1. Installation

### Installing Option Modules/Maintenance



**CAUTION:** All power supply connections to the device must be removed when carrying out any form of maintenance.

To access modules, first detach the PSU and CPU boards from the front by lifting first the upper, and then lower mounting struts. Gently separate the boards.

- a. Plug the required option modules into the correct connectors, as shown below.
- b. Locate the module tongues in the corresponding slot on the opposite board.
- c. Hold the main boards together while relocating back on the mounting struts.

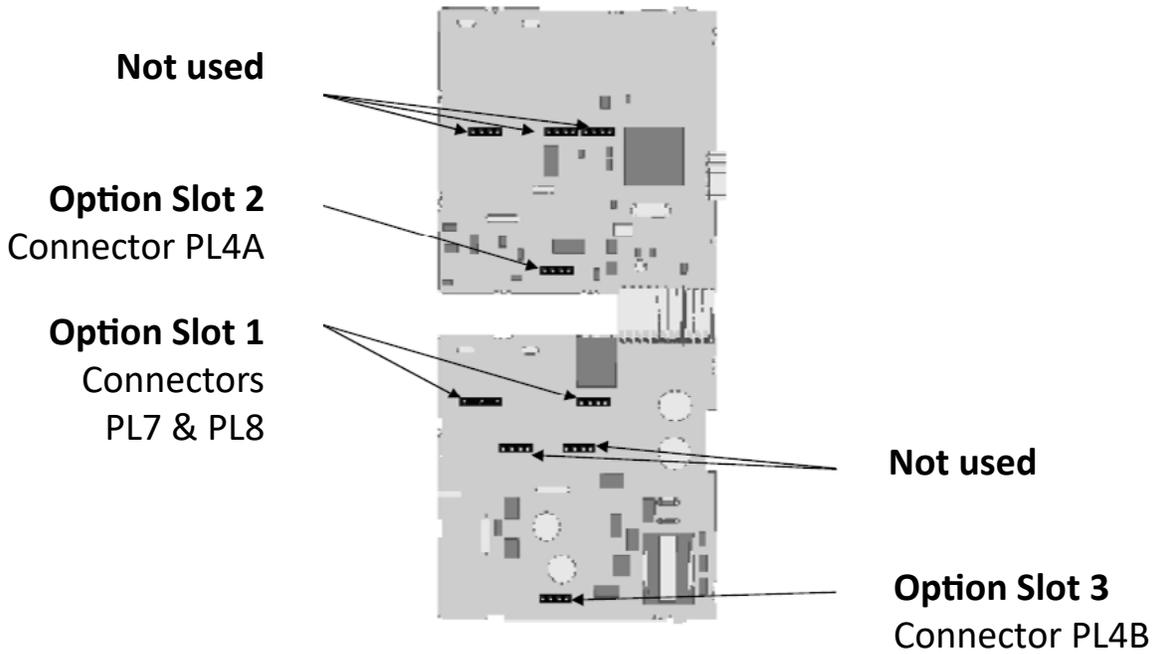
Replace the instrument by aligning the CPU and PSU boards with their guides in the housing, then slowly push the instrument back into position.



**NOTE:** Option modules are automatically detected at power up.



## Option Module Connectors



## Panel Mounting

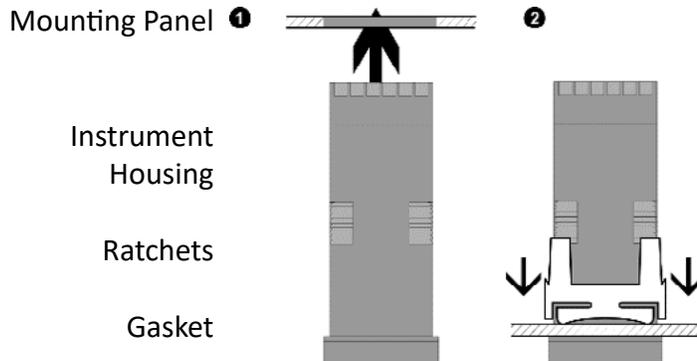
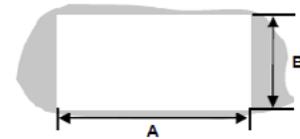
The mounting panel must be rigid, and may be up to 6.0mm (0.25inch) thick. Cut-out sizes are:

**Cut-Out Dim A = 92mm**

**Cut-Out Dim B = 45mm**

For n multiple instruments mounted side-by-side, cut-out A is  $96n-4$ mm

Tolerance +0.5, -0.0mm



1. Insert instrument into the panel cut-out.
2. Hold front bezel firmly (without pressing on display area), and re-fit mounting clamp. Push clamp forward, using a tool if necessary, until gasket is compressed and instrument held firmly in position.



**NOTE:** For an effective IP66 seal against dust and moisture, ensure gasket is well compressed against the panel, with the 4 tongues located in the same ratchet slot.

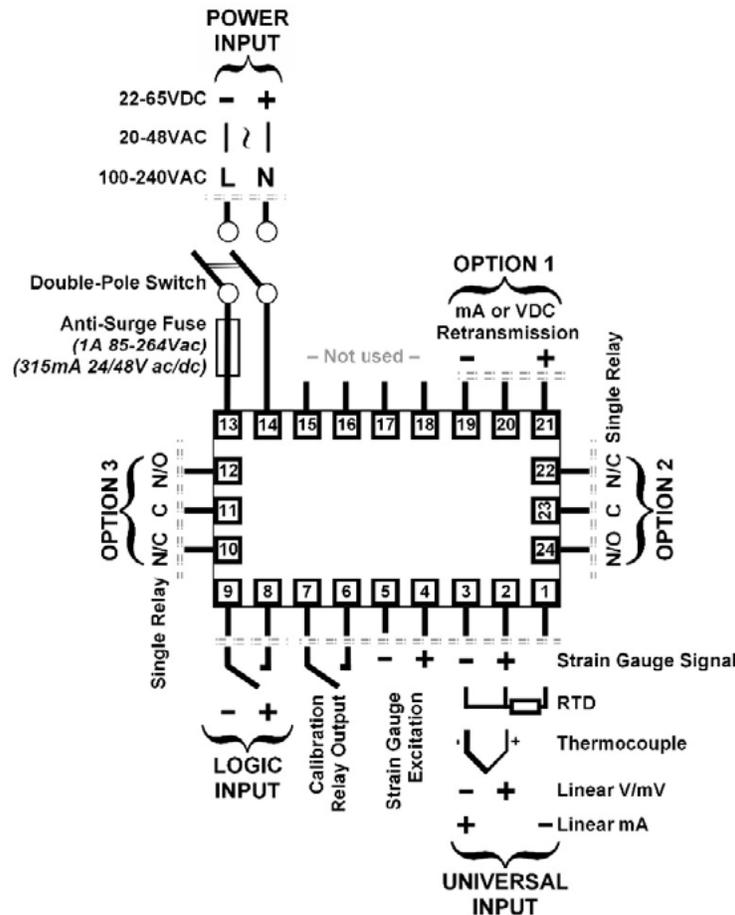
## Rear Terminal Wiring



All connections to the device must be made through a spade format or similar connection, with connection to the spade terminal touching both the insulation and conductor material. (Use a standard crimping tool). Connections must be mechanically secured so as to prevent any wiring becoming loose and coming in contact with other wires or the instrument casing.

The above applies to any and all connection to hazardous mains supply either direct or indirect (Through a switch (Relay)) USE COPPER CONDUCTORS (EXCEPT FOR T/C INPUT) Use Screened Cable on Retransmission Option 1 Single Strand wire gauge: Max 1.2mm (18SWG)

## Connections



This diagram shows all possible option combinations. The actual connections required depend on the options fitted.



**CAUTION:** Check information label on housing for correct operating voltage before connecting supply to Power Input. Fuse: 100 – 240V ac – 1amp anti-surge 24/48V ac/dc – 315mA anti-surge



Electrical shock can result in death or serious injury. Avoid contact with the leads and terminals. High voltages that may be present on leads can cause electrical shock

Note: At first power-up the message Goto ConF is displayed, as described in section 6 of this manual. Access to other menus is denied until configuration mode is completed

## 2. Select Mode

Select mode is used to access the configuration and operation menu functions. It can be accessed at any time by holding down  and pressing . The SLct legend is shown for 1 second, followed by the legend for the current mode. Press  or  to choose the required mode, then press  to enter. An unlock code is required to prevent unauthorised entry to Configuration, & Setup modes. Press  or  to enter the unlock code, then press  to proceed.

Mode	Legend <i>for 1 sec followed by</i> 	Set Value	Description	Default Unlock Codes	Units Display
Operator	SLct	OPtr	Normal operation	None	5
Set Up		SEtP	Tailor settings for application	10	
Configuration		ConF	Configure instrument for use	20	
Calibration		UCAL	Calibrate Strain Gauge input	10	
Product Info		inFo	Instrument information	None	



NOTE: Automatic return to Operator Mode after 2 minutes without key activity.



### 3. Configuration Mode

First select Configuration mode from Select mode (refer to section 2). Press  to scroll through the parameters. *While this key is pressed, and up to 1 second after, the parameter legend is shown, followed by the current value.* Press  or  to set the required value. Press  to display YES?, press  accept the change, otherwise parameter will revert to previous value. To exit from Configuration mode, hold down  and press , to return to Select mode. **Note: Parameters displayed depends on how instrument has been configured. Refer to user guide (available from your supplier) for further details. Parameters marked \* are repeated in Setup Mode.**

Parameter	Legend <i>for 1 sec followed by</i>	Set Value	Adjustment Range & Description	Default Value	Units Display
Mode Default	dF.n7	d,SA EnAb	Enables or Disables Defaulting of Values within Mode	d,SA	
Input Range/Type	inPt	See following table for possible codes		St_G	r
Code	Input Type & Range	Code	Input Type & Range	Code	Input Type & Range
bC	B: 100 - 1824 °C	LF	L: 32.0 - 999.9 °F	PtF	Pt100: -328 - 1472 °F
bF	B: 211 - 3315 °F	nC	N: 0 - 1399 °C	PtC	Pt100: -128.8 - 537.7 °C
cC	C: 0 - 2320 °C	nF	N: 32 - 2551 °F	PtF	Pt100: -199.9 - 999.9 °F
cF	C: 32 - 4208 °F	rC	R: 0 - 1759 °C	0_20	0 - 20 mA DC
jC	J: -200 - 1200 °C	rF	R: 32 - 3198 °F	4_20	4 - 20 mA DC
jF	J: -328 - 2192 °F	sC	S: 0 - 1762 °C	0_50	0 - 50 mV DC
jC	J: -128.8 - 537.7 °C	sF	S: 32 - 3204 °F	10_50	10 - 50 mV DC
jF	J: -199.9 - 999.9 °F	tC	T: -240 - 400 °C	0_5	0 - 5 V DC
kC	K: -240 - 1373 °C	tF	T: -400 - 752 °F	1_5	1 - 5 V DC
kF	K: -400 - 2503 °F	tC	T: -128.8 - 400.0 °C	0_10	0 - 10 V DC
kC	K: -128.8 - 537.7 °C	tF	T: -199.9 - 752.0 °F	2_10	2 - 10 V DC
kF	K: -199.9 - 999.9 °F	P24C	PtRh20% vs. 40%: 0 - 1850 °C	St_G	Strain Gauge -10mV to -50mV



<b>LC</b>	L: 0 - 762 °C	<b>P24F</b>	PtRh20% vs 40%: 32 - 3362 °F
<b>LF</b>	L: 32 - 1403 °F		
<b>LC</b>	L: 0.0 - 537.7 °C	<b>PtC</b>	Pt100: -199 - 800 °C

**Note: Decimal point shown in table indicates temperature resolution of 0.1°**

Parameter	Legend <i>for 1 sec followed by</i> →	Set Value	Adjustment Range & Description	Default Value	Units Display
Scale Range Upper Limit	<b>rUL</b>		Scale Range Lower Limit +100 to Range Maximum	Max (Lin = 1000)	<b>U</b>
Scale Range Lower Limit	<b>rLL</b>		Range Minimum to Scale Range Upper Limit -100	Min (Lin = 0)	<b>L</b>
Decimal point position	<b>dpOS</b>	0=XXXX, 1=XXX.X, 2=XX.XX, 3=X.XXX	(non-temperature ranges only)	0	<b>P</b>
Linear Range Engineering Units Display	<b>L inU</b>	<b>nonE</b>	None (Blank), °C or °F	<b>nonE</b>	°C °F
		<b>C</b>			
		<b>F</b>			
Multi-Point Scaling	<b>mpS</b>	<b>EnAb</b> <b>d,SA</b>	Enables or disables the input multi-point scaling feature	<b>d,SA</b>	<b>S</b>
Alarm 1 Type	<b>ALA1</b>	<b>P_H,</b>	Process High Alarm	<b>P_H,</b>	<b>I</b>
		<b>P_Lo</b>	Process Low Alarm		
		<b>nonE</b>	No alarm		
High Alarm 1*	<b>PhA1</b>	Alarm 1 value, adjustable within scaled range, in display units		Max	<b>I</b> (Alm1 only = <b>A</b> )
Low Alarm 1*	<b>PLA1</b>			Min	
Alarm 1 Hysteresis*	<b>AHY1</b>	1 LSD to full span in display units on safe side of alarm		<b>I</b>	<b>-</b>
Parameter	Legend <i>for 1 sec followed by</i> →	Set Value	Adjustment Range & Description	Default Value	Units Display
Alarm 2 Type	<b>ALA2</b>		Options as for alarm 1	<b>nonE</b>	<b>2</b>
High Alarm 2*	<b>PhA2</b>			Max	<b>2</b>
Low Alarm 2*	<b>PLA2</b>			Min	<b>2</b>



AI 2 Hysteresis*	<b>AHY2</b>			<b>1</b>	<b>=</b>
Output 1 Usage	<b>USE1</b>	<b>rEtP</b>	Retransmit PV Output	<b>rEtP</b>	<b>1</b>
		<b>dc 10</b>	0 to 10VDC (adjustable) transmitter power supply*		
Output 1 PV Retransmit Type	<b>tYP1</b>	<b>0_5</b>	0 to 5 V DC output	<b>0_10</b>	<b>1</b>
		<b>0_10</b>	0 to 10 V DC output		
		<b>2_10</b>	2 to 10 V DC output		
		<b>0_20</b>	0 to 20 mA DC output		
		<b>4_20</b>	4 to 20 mA DC output		
Retransmit Scale Maximum	<b>ro 1H</b>	Display value between, -1999 & 9999 at which Output 1 will be at maximum		Range max	<b>H</b>
Retransmit Scale Minimum	<b>ro 1L</b>	Display value between, -1999 & 9999 at which Output 1 will be at minimum		Range min	<b>L</b>
TxPSU 1 level	<b>PSU1</b>	Output 1 Power Supply (0 to 10VDC)*		<b>10.0</b>	<b>1</b>
Output 2 Usage	<b>USE2</b>	<b>A 1nd</b>	Alarm 1, direct, non-latching	<b>A 1nd</b>	<b>2</b>
		<b>A 1nr</b>	Alarm 1, reverse, non-latching		
		<b>A 1Ld</b>	Alarm 1, direct, latching		
		<b>A 1Lr</b>	Alarm 1, reverse, latching		
		<b>A 2nd</b>	Alarm 2, direct, non-latching		
		<b>A 2nr</b>	Alarm 2, reverse, non-latching		
		<b>A 2Ld</b>	Alarm 2, direct, latching		
		<b>A 2Lr</b>	Alarm 2, reverse, latching		
		<b>O 12d</b>	Logical Alarm 1 OR 2, direct		
		<b>O 12r</b>	Logical Alarm 1 OR 2, reverse		
		<b>A nYd</b>	Any active alarm, direct		
		<b>A nYr</b>	Any active alarm, reverse		
Output 3 Usage	<b>USE3</b>	As for Output 2 Usage		<b>A 2nd</b>	<b>4</b>
Display Strategy	<b>d iSP</b>	<b>0, 1, 2, 3, 4</b> or <b>6</b> (refer to section 6)		<b>0</b>	<b>d</b>
Logic Input Usage	<b>d iG1</b>	<b>rrLY</b>	Reset latched relay(s)	<b>rrLY</b>	<b>1</b>
		<b>tArE</b>	Initiate Tare (zero display)		
		<b>rPu</b>	Reset min/max PV values		
		<b>rE</b>	Reset Alarm 1 elapsed time		
		<b>rPuE</b>	Reset Alarm 1 elapsed time & min/max PV values		



Logic Input State	d iGd	CLS	Close contact activates logic state	CLS	,
		OPN	Open contact activates logic state		
Config Lock	CLoc	Config Mode lock code, 0 to 9999		20	£

## 4. Setup Mode

**Note: Configuration must be completed before adjusting Setup parameters.** First select Setup mode from Select mode (refer to section 2). Press  to scroll through the parameters (*while this key is pressed, and for 1 sec after, the parameter legend is shown, then the current value*). Press  or  to change the value. To exit from Setup mode, hold down  and press  to return to Select mode. **Note: Parameters displayed depends on how instrument has been configured.**

Parameter	Legend <i>for 1 sec followed by</i> 	Set Value	Adjustment Range & Description	Default Value	Units Display
Mode Default	dF.n7		Enables or Disables Defaulting of Values within Mode	d .5A	
Input Filter Time Constant	F iLt		OFF or 0.5 to 100.0 secs	0.5	t
Alarm Duration Filter Time	ALFL		OFF or 0.5 to 100.0 secs. Alarm will not turn on if active for less than time set	0.0	t
Input fail Mode	InPF		When input fails PV should go Low or High scale reading	H iGh	
Process Variable Offset	OFFS		±Span of controller	0.0	o
Raw PV value	S iG		Linear input value, un-scaled (mA, mV or VDC)		blank
High Alarm 1	PhA1		Alarm 1 value, adjustable within scaled range, in display units	Max	1 (Alm1 only = A)
Low Alarm 1	PLA1			Min	
Alarm 1 Hysteresis	AHY1		1 LSD to full span in display units on safe side of alarm	1	-
High Alarm 2	PhA2		Options as for alarm 1	Max	2
Low Alarm 2	PLA2			Min	
Al 2 Hysteresis	AHY2				1



Parameter	Legend <i>for 1 sec followed by</i> →	Set Value	Adjustment Range & Description	Default Value	Units Display
Scaling Breakpoint 1	<b>ScA1</b>	Multi-point scaling breakpoint 1 value, adjustable from <b>0</b> to <b>100</b> in % of span		<b>100</b>	1
Display Value 1	<b>d ,S1</b>	Value to be displayed at multi-point scaling breakpoint 1, in display units		Range Max	
Scaling Breakpoint 2	<b>ScA2</b>	Multi-point scaling breakpoint 2, adjustable up to 100% of span. Must be > <b>ScA1</b> value			2
Display Value 2	<b>d ,S2</b>	Value to be displayed at Multi-point scaling breakpoint 2, in display units			
Scaling Breakpoint 3	<b>ScA3</b>	Multi-point scaling breakpoint 3, adjustable up to 100% of span. Must be > <b>ScA2</b> value			3
Display Value 3	<b>d ,S3</b>	Value to be displayed at Multi-point scaling breakpoint 3, in display units			
Scaling Breakpoint 4	<b>ScA4</b>	Multi-point scaling breakpoint 4, adjustable up to 100% of span. Must be > <b>ScA3</b> value			4
Display Value 4	<b>d ,S4</b>	Value to be displayed at Multi-point scaling breakpoint 4, in display units			
Scaling Breakpoint 5	<b>ScA5</b>	Multi-point scaling breakpoint 5, adjustable up to 100% of span. Must be > <b>ScA4</b> value			5
Display Value 5	<b>d ,S5</b>	Value to be displayed at Multi-point scaling breakpoint 5, in display units			
Scaling Breakpoint 6	<b>ScA6</b>	Multi-point scaling breakpoint 6, adjustable up to 100% of span. Must be > <b>ScA5</b> value			6
Display Value 6	<b>d ,S6</b>	Value to be displayed at Multi-point scaling breakpoint 6, in display units			
Scaling Breakpoint 7	<b>ScA7</b>	Multi-point scaling breakpoint 7, adjustable up to 100% of span. Must be > <b>ScA6</b> value			7
Display Value 7	<b>d ,S7</b>	Value to be displayed at Multi-point scaling breakpoint 7, in display units			
Scaling Breakpoint 8	<b>ScA8</b>	Multi-point scaling breakpoint 8, adjustable up to 100% of span. Must be > <b>ScA7</b> value			8
Display Value 8	<b>d ,S8</b>	Value to be displayed at Multi-point scaling breakpoint 8, in display units			



Scaling Breakpoint 9	$S_{cA9}$	Multi-point scaling breakpoint 9, adjustable up to 100% of span. Must be $>S_{cA8}$ value		9	
Display Value 9	$d_{iS9}$	Value to be displayed at Multi-point scaling breakpoint 9, in display units			
Tare Feature	$tArE$	$E_{nAb}$	Enables or disables the input auto-zero Tare feature	$d_{iSA}$	r
		$d_{iSA}$			
Setup Lock Code	$S_{Loc}$	0 to 9999	10	5	

**Note:** Operator mode screens follow, without exiting from Setup mode.

## 5. Strain Gauge Calibration Mode

**Note:** Configuration must be completed before adjusting Calibration parameters. First select Calibration mode from Select mode (refer to section 2). Press  to scroll through the parameters (while this key is pressed, and for 1 sec after, the parameter legend is shown, then the current value). Press  or  to change the value. To exit from Calibration mode, hold down  and press to return to Select mode.

**Note:** Calibration mode will only be displayed if input type is set to St\_G

Parameter	Legend <i>for 1 sec followed by</i> 	Set Value	Adjustment Range & Description	Default Value	Units Display
Mode Default	$dF_{n7}$	$d_{iSA}$	Enables or Disables Defaulting of Values within Mode	$d_{iSA}$	$d_{iSA}$
		$E_{nAb}$			
Shunt Resistor	$ShnE$	$d_{iSA}$	Enables or Disables use of shunt resistor	$E_{nAb}$	$E_{nAb}$
		$E_{nAb}$			
Calibration Resistor Value	$rCAL$		40% to 100% (appears only when $ShnE$ is $E_{nAb}$ )	80	
Start Low Calibration	$C.Lo$		Press  and  to start calibration	0.0	
Start High Calibration	$C.H.$		Press  and  to start calibration making sure to apply the high range signal if $ShnE$ is set $d_{iSA}$  (Can only be accessed once a successful low calibration has been completed)	1000	
Calibration Lock Code	$rLoc$		0 to 9999	10	



When the calibration procedure begins ---- appears on the screen. Once Calibration is complete donE appears on screen. If there are any Faults with the calibration an error message will appear either Er\_r or Er\_C. Er\_C means the low calibration will fail if the offset is less than -10mV or greater than +10mV. This signifies potential faulty sensors or the high calibration will fail if the count value is less than +20mV or greater than +50mV. This signifies potential faulty sensors. Er\_r means the high calibration will fail if the mV value is within 10mV of the low calibration value. This is a potential RCAL failure.

## 6. Messages & Error Indications

These messages indicate that the instrument may require attention, or there is a problem with the signal input connection. *The message legend is shown for 1 second, followed by its value.*

**Caution:** Do not continue with the process until the issue is resolved.

Parameter	Legend <i>for 1 sec followed by</i> →	Set Value	Adjustment Range & Description	Default Value	Units Display
Instrument parameters are in default conditions	Goto	Conf	Configuration & Setup is required. This screen is seen at first turn on, or if hardware configuration is changed. Press  to enter Configuration Mode, next press  or  to enter the unlock code, then press  to proceed		C
Input Over Range	Err	[HH]	Input signal is > 5% over-range		E
Input Under Range		[LL]	Input signal is > 5% under-range (>10% under-range for 4 to 20mA, 1 to 5V and 2 to 10V ranges)		
Input Sensor Break		OPEN	Break detected in input signal, sensor or wiring		
Option 1 Error		Err1	Option 1 module fault		1
Option 2 Error		Err2	Option 2 module fault		2
Option 3 Error		Err3	Option 3 module fault		3
Calibration	Er_r		Shunt Resistor is Faulty		
Calibration	Er_C		High and Low calibration points are too close to each other for a valid reading		

**Note:** CHHJ, CLLJ or OPEN may be displayed if an incorrect input type is selected.



## 7. Operator Mode

This mode is entered at power on, or accessed from Select mode (see section 2). **Note: All Configuration mode and Setup mode parameters must be set as required before starting normal operations.** Press  to scroll through the parameters (*while this key is pressed, and for 1 sec after, the parameter legend is shown, followed by the current value*). **Note: All Operator Mode parameters in Display strategy 6 are read only (see diSP in configuration mode), they can only be adjusted via Setup mode.**

Legend <i>for 1 sec followed by</i> 	Value	Display Strategy and When Visible	Description	Units Display
<b>Proc</b>	PV Value*	Always	Process Variable value Read only <i>Latched outputs can be reset</i>	°C, °F or blank
<b>Max</b>	Max PV Value	Strategies 0, 1, 3, 4, & 6	Maximum displayed value (inc <b>CHH</b> or <b>OPEN</b> ) since <b>Max</b> last reset. <i>To reset, press  or  for 3 seconds, display = ---- when reset</i>	°C, °F or blank
<b>Min</b>	Min PV Value	Strategies 0, 1, 3, 4, & 6	Minimum displayed value (inc <b>LLL</b> or <b>OPEN</b> ) since <b>Min</b> last reset. <i>To reset, press  or  for 3 seconds, display = ---- when reset</i>	°C, °F or blank
<b>Et</b>	Elapsed Time	Strategies 0, 4 & 6 if alarm 1 configured. Format <i>mm.ss</i> to 99.59 then <i>mmm.s</i> (10 sec increments) <i>Shows CHH if &gt;999.9</i>	Accumulated alarm 1 active ime since <b>Et</b> last reset. <i>To reset, press  or  for 3 seconds, display = ---- when reset</i>	E
<b>AL1</b>	Alarm 1 Value	Strategies 2, 3, 4 & 6 if alarm 1 configured	Alarm 1 value, adjustable <i>except in Strategy 6</i>	1 (Alm1 only = <b>A</b> )
<b>AL2</b>	Alarm 2 Value	Strategies 2, 3, 4 & 6 if alarm 2 configured	Alarm 2 value, adjustable <i>except in Strategy 6</i>	2
<b>ALSt</b>	Active Alarm Status*	When one or more alarms are active	2 — Alarm 2 ac ive <i>Latched outputs can be reset</i>	1 if alarm 1 active



## Alarm Indication



The Active Alarm Status screen indicates any active alarms. In addition, the associated Alarm LED flashes. For latching alarm outputs, the LED flashes when the alarm condition exists, and goes to ON when the alarm condition is no longer present if the output has not yet been reset.

### \*Resetting Latched Alarm Outputs

Any latched outputs can be reset whilst the Process variable or Alarm Status screens are displayed, by pressing the  or  key, via the Logic Input.



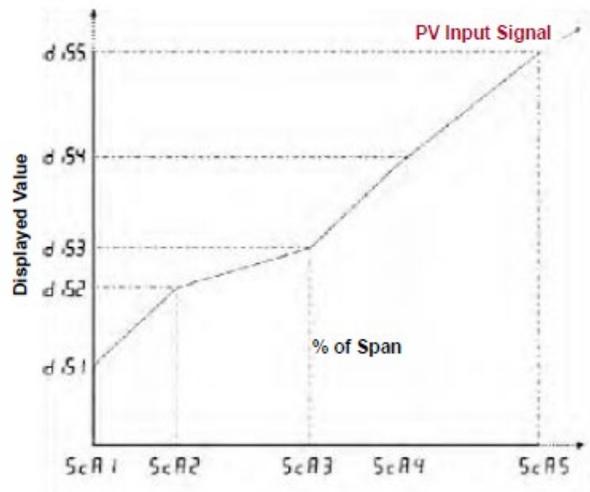
**NOTE: A reset will affect ALL latched outputs, but outputs will only reset if their alarm condition is no longer present.**

## Additional Indicator Units Display and LEDs

In Operator Mode, a Units display shows °C or °F when temperature values are shown. This display is also used in other modes as a confirmation of the parameter type currently shown in the main display. The SET LED indicator is off in Operator Mode, Flashing in Configuration Mode and ON in Set-up mode. MIN and MAX LED's light when these stored values are shown.

## Multi-Point Scaling

When enabled (MPS = EnAb), up to 9 breakpoints can be set to compensate for non-linear input signals. For each breakpoint, the input scale value (ScAn) is entered in % of input span, followed by the value to be shown (diSn) in display units. Each breakpoint's input scale value must be higher than the previous value, but the display values can be higher or lower. Any scale value set to 100% becomes the last in the series.



## Tare Feature

When Tare is enabled (tArE = EnAb), it can be used to set the displayed value to zero automatically, by making the PV Offset parameter equal, but opposite to, the current process variable value. Tare can be initiated via the Logic Input, or by using the following key press sequence:

Press  until the process variable is displayed.

Hold down  and  together for three seconds until the display shows YES?



Release both keys and press **△** within 3 seconds to confirm the request. The display should read 0 briefly, then begin responding to input signal changes.

*Note: Tare request is aborted if this sequence is not followed exactly.*

## 8. Product Information Mode

First select Product information mode from Select mode (refer to section 2). Press **↻** to view each parameter (while this key is pressed, and for 1 sec after, the parameter legend is shown, followed by its value). Hold down **↻** and press **△** to return to Select mode.

*Note: These parameters are all read only.*

Parameter	Legend <i>for 1 sec followed by</i>	Value	Description	Units Display
Input type	In_1	Un_1	Universal input	t
Option 1 module type fitted	OPn1	nonE	No option fitted	1
		rLY	Relay output	
		L in	Linear DC voltage / current output	
Option 2 module type fitted	OPn2	nonE	No option fitted	2
		rLY	Relay output	
		drLY	Dual Relay (outputs 2 & 4)	
		L in	Linear DC voltage / current output	
Option 3 module type fitted	OPn3	nonE	No option fitted	3
		rLY	Relay output	
Auxiliary Option A (future option)	OPnA	nonE	No option fitted	A
Firmware type	FwJ		Value displayed is firmware type number	F
Firmware issue	ISS		Value displayed is firmware issue number	n
Product Rev Level	PrL		Value displayed is Product Revision Level	r
Date of manufacture	dOPn		Manufacturing date code (mmyy)	d
Serial number 1	Sn1		First four digits of serial number	A
Serial number 2	Sn2		Middle four digits of serial number	b
Serial number 3	Sn3		Last four digits of serial number	c



## 9. Specifications

### Universal Input

Strain Gauge:	350 $\Omega$ , by means of 4 or 6 wire (6 to use internal Shunt resistor) Bridge excitation: 10VDC $\pm$ 7% @ 45mA Max. Bridge Sensitivity: 1.4-4mV/V Shunt Value: From 40%to 100% Input signal Span: -25% to 125% (Approx. -10mV to +50mV)
Thermocouple Calibration:	$\pm$ 0.1% of full range, $\pm$ 1LSD ( $\pm$ 1 $^{\circ}$ C for Thermocouple CJC). BS4937, NBS125 & IEC584.
PT100 Calibration:	$\pm$ 0.1% of full range, $\pm$ 1LSD. BS1904 & DIN43760 (0.00385 $\Omega/\Omega/^{\circ}$ C).
DC Calibration:	$\pm$ 0.1% of full range, $\pm$ 1LSD.
Sampling Rate:	4 per second. (250ms)
Impedance:	>10M $\Omega$ resistive, except DC mA (5 $\Omega$ ) and V (47k $\Omega$ )
Sensor Break Detection:	Strain Gauge: Depending on user setting InPF can cause input to fail high scale or low scale reading. Reading will fail on either, Sig+ or Sig-loss, or incorrect excitation output <0.8mA and >50mA supply.
Thermocouple/RTD:	High alarms activate for sensor break. Linear 4 to 20mA, 2 to 10V and 1 to 5V DC: Low alarms activate for sensor break. <b>Note: Sensor break not detectable on 0 to 20mA, 2 to 10V and 1 to 5V DC input types.</b>
Isolation:	Isolated from all outputs. Universal input must not be connected to operator accessible circuits if single relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required.

### Logic Input

Input Signal:	If the Logic State setting in Config Mode = CLS, Reset or Tare occurs on an Open to Closed transition, or high (3 to 5VDC) to low (<0.8VDC) transition. If Logic State setting in Config Mode = OPN, Reset or Tare occurs on a Closed to Open transition, or low (<0.8VDC) to high (3 to 5VDC)) transition.
Isolation:	No isolation from inputs and other outputs.



## Outputs

### Relay

Contact Type & Rating: Single pole double throw (SPDT), latching or non-latching action (selectable); 2A resistive at 120/240VAC.  
Lifetime: >500,000 operations at rated voltage/current.  
Isolation: Basic Isolation from universal input and SSR outputs.

### Linear DC

Accuracy:  $\pm 0.25\%$  (mA @ 250 $\Omega$ , V @ 2k $\Omega$ ). Degrades linearly to  $\pm 0.5\%$  for increasing burden (to specification limits).  
Resolution: 8 bits in 250ms (10 bits in 1s typical, >10 bits in >1s typical).  
Isolation: Reinforced safety isolation from inputs and other outputs.

## OPERATING CONDITIONS (FOR INDOOR USE)

Ambient Temperature: 0°C to 55°C (Operating), -20°C to 80°C (Storage).  
Relative Humidity: 20% to 95% non-condensing.  
Altitude: <2000m  
Supply Voltage and Power: 100 to 240VAC  $\pm 10\%$ , 50/60Hz, 8.5VA (for mains powered versions), or 20 to 48VAC 50/60Hz 7.5VA or 22 to 65VDC 5W (for low voltage versions).

## ENVIRONMENTAL

Standards: CE  
EMI: Complies with EN61326 (Susceptibility & Emissions).  
Safety: Complies with EN61010-3  
Considerations: Pollution Degree 2, Installation Category II.  
Front Panel Sealing: To IP66 (IP20 behind the panel).

## PHYSICAL

Front Bezel Size: 96 x 48mm (1/8 Din Horizontal).  
Depth Behind Panel: 100mm.  
Weight: 0.21kg maximum.

## MANUFACTURING SITE

Address: The Hyde Business Park, Brighton, BN2 4JU, United Kingdom

## SYMBOL EXPLANATION



Caution general danger to life  
or limb



General information and  
notices.