Dynisco

From lab to production,
providing a window into the process

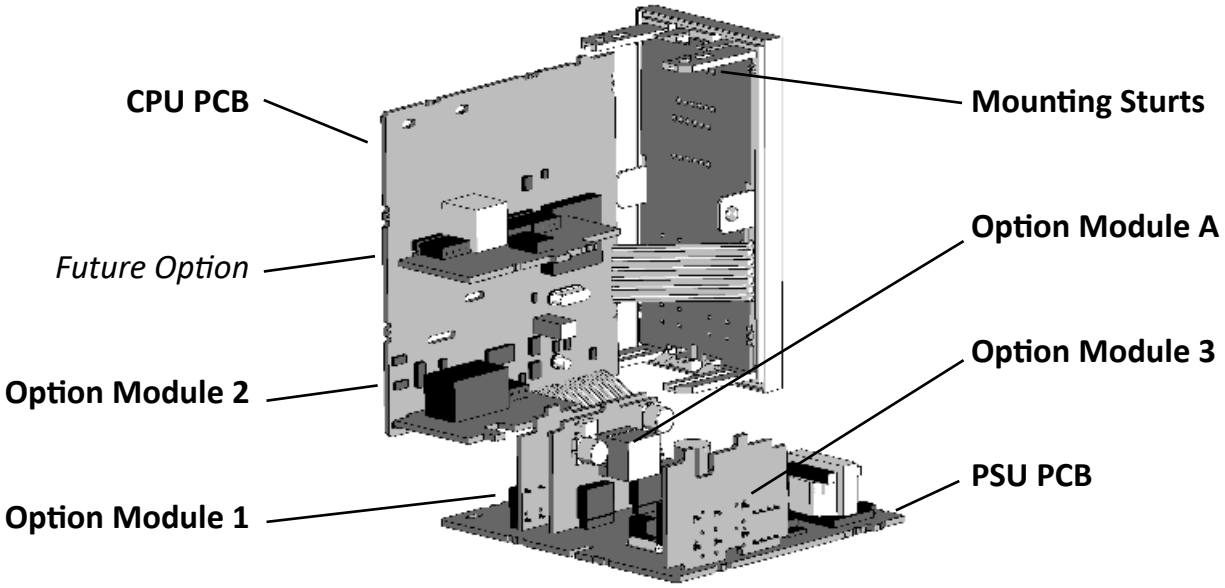
Dynisco 1490 1/8 DIN Indicator
Concise Product Manual 59476-9

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



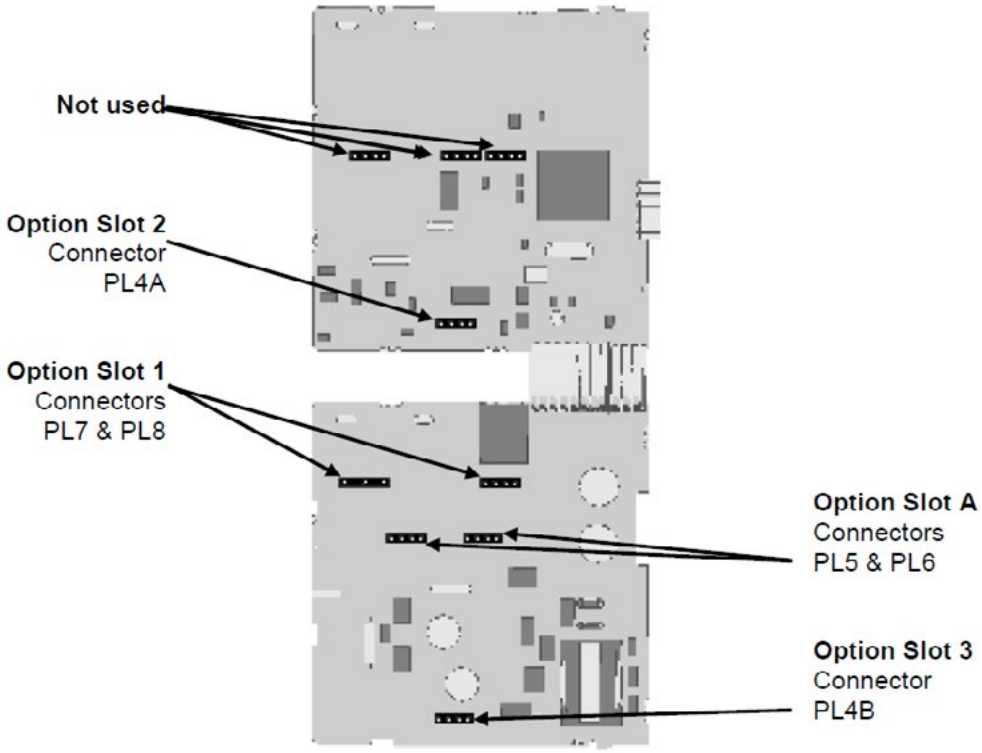
CAUTION: All power supply connections to the device must be removed when carrying out any form of maintenance.

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.
d. 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

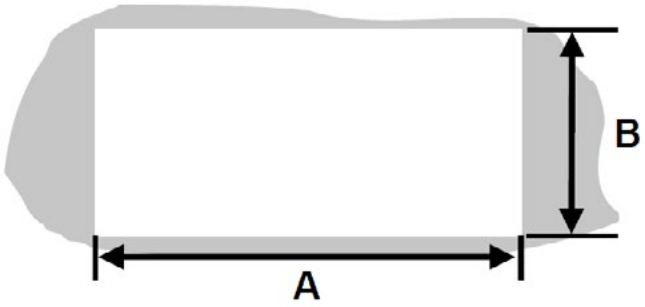


Panel-Mounting

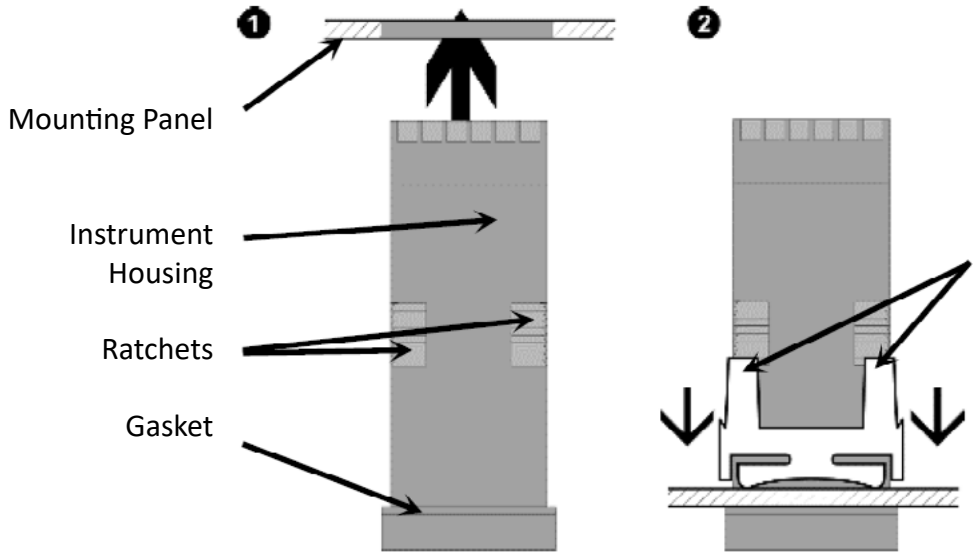
The mounting panel must be rigid, and may be up to 6.0mm (0.25inch) thick. Cut-out sizes are:

Cut-Out Dim A = 92mm
Cut-Out Dim B = 45mm

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



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.

3. 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.

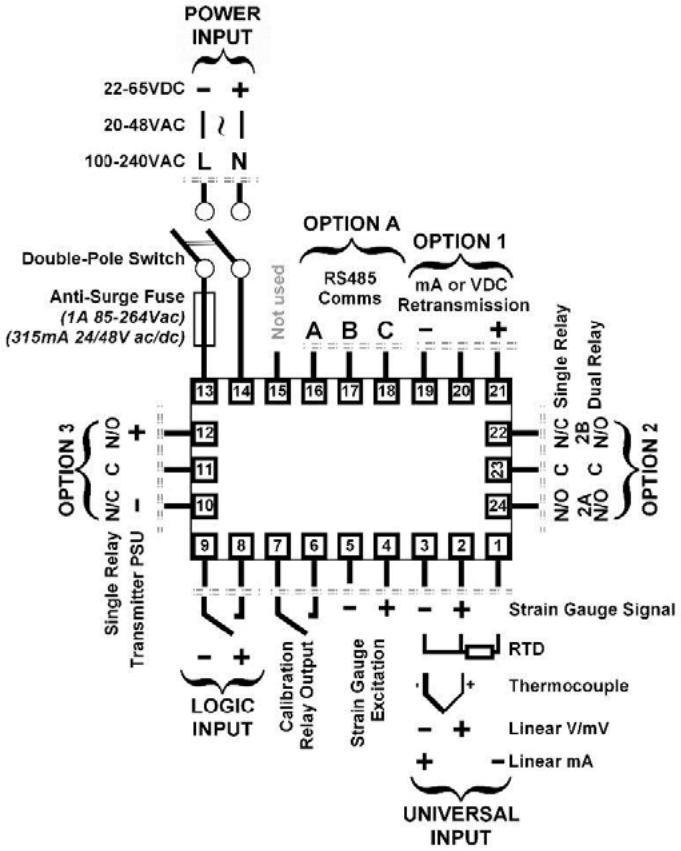
The above applies to any and all connection to hazardous mains supply, either direct or indirect (e.g. via a switch or relay).

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: 90 – 264V 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, or upon hardware change, the message Goto is displayed for 1 second then ConF is displayed. You must go into the configuration mode as described in section 3 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 SELCt 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 *for 1 sec followed by* →	Set Value	Description	Default Unlock Codes
Operator	SELCt	OPtr	Normal operation	None
Set Up		SEtUP	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
Special		SPECL	Special	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 depend 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 *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value
Mode Default	dF mn	d iSA	Enables or Disables Defaulting of Values within Mode	d iSA
		EnAb		
Input Range/Type	inPut	*See following table for possible codes*		Str_G

Code	Input Type & Range	Code	Input Type & Range	Code	Input Type & Range
bC	B: 100 - 1824 °C	L.F	L: 32.0 - 999.9 °F	PtF	Pt100: –328 - 1472 °F
bF	B: 211 - 3315 °F	nC	N: 0 - 1399 °C	Pt.C	Pt100: –128.8 - 537.7 °C
CC	C: 0 - 2320 °C	nF	N: 32 - 2551 °F	Pt.F	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
J.C	J: –128.8 - 537.7 °C	SF	S: 32 - 3204 °F	10.50	10 - 50 mV DC
J.F	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	t.C	T: –128.8 - 400.0 °C	0_10	0 - 10 V DC
K.C	K: –128.8 - 537.7 °C	t.F	T: –199.9 - 752.0 °F	2_10	2 - 10 V DC
K.F	K: –199.9 - 999.9 °F	P24C	PtRh20% vs. 40%: 0 - 1850 °C	Str_G	Strain Gauge -10mV to -50mV
LC	L: 0 - 762 °C	P24F	PtRh20% vs 40%: 32 - 3362 °F		
LF	L: 32 - 1403 °F				
L.C	L: 0.0 - 537.7 °C	PtC	Pt100: –199 - 800 °C		

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

Parameter	Legend *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value
Scale Range Upper Limit	rUL	Scale Range Lower Limit +100 to Range Maximum		Max (Lin = 10000)
Scale Range Lower Limit	rLL	Range Minimum to Scale Range Upper Limit -100		Min (Lin = 0)
Decimal point position	dPoS	0=XXXXX 1=XXXX.X 2=XXX.XX 3=XX.XXX 4=X.XXXX	*(non-temperature ranges only)*	0

Multi-Point Scaling	mn PS	EnAb diSA	Enables or disables linear input multi-point scaling feature	diSA
Alarm 1Type	ALM1	P_Hi P_Lo nonE	Process High Alarm Process Low Alarm No alarm	P_Hi
High Alarm 1*	PhA 1	Alarm 1 value, adjustable within scaled range, in display units		Max
Low Alarm 1*	PLA 1			Min
Alarm 1 Hysteresis*	AHY 1	1 LSD to full span in display units on safe side of alarm		10

Parameter	Legend *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value
Alarm 2 Type	ALM2	Options as for alarm 1		nonE
High Alarm 2*	PhA 2			Max
Low Alarm 2*	PLA 2			Min
Alarm 2 Hysteresis*	AHY 2			10
Output 1 Usage	USE 1	rEtP dc 10	Retransmit PV Output 0 to 10VDC (adjustable) transmitter power supply*	rEtP
Output 1 PV Retransmit Type	tyP 1	0_5 0_10 2_10 0_20 4_20	0 to 5 V DC output 0 to 10 V DC output 2 to 10 V DC output 0 to 20 mA DC output 4 to 20 mA DC output	0_10
Retransmit Scale Maximum	rtHG 1	Display value between, -1999 & 99999 at which Output 1 will be at maximum		Range max
Retransmit Scale Minimum	rtLo 1	Display value between, -1999 & 99999 at which Output 1 will be at minimum		Range min
Tx PSU 1 level	PSU 1	Output 1 Power Supply (0 to 10VDC)*		10.0

Output 2A Usage	USE2A	A1 nd	Alarm 1, direct, non-latching	A Ind
		A1 nr	Alarm 1, reverse, non-latching	
		A1 Ld	Alarm 1, direct, latching	
		A1 Lr	Alarm 1, reverse, latching	
		A2 nd	Alarm 2, direct, non-latching	
		A2 nr	Alarm 2, reverse, non-latching	
		A2 Ld	Alarm 2, direct, latching	
		A2 Lr	Alarm 2, reverse, latching	
		Or 12d	Logical Alarm 1 OR 2, direct	
		Or 12r	Logical Alarm 1 OR 2, reverse	
		Any d	Any active alarm, direct	
		Any r	Any active alarm, reverse	
Output 2B Usage	USE2b	As for Output 2 Usage		A2nd
Output 3 Usage	USE3	As for Output 2 Usage		A2nd
Display Strategy	diSP	0, 1, 2, 3, 4 or 6 *(refer to section 8)*		0
Serial Communication Protocol	Proto	Mbno	Modbus with no parity	Mbno
		MbEn	Modbus with Even parity	
		Mbod	Modbus with Odd parity	
Serial Communication Bit Rate	bAud	1.2	1.2 Kbps	4.8
		2.4	2.4 Kbps	
		4.8	4.8 Kbps	
		9.6	9.6 Kbps	
		19.2	19.2 Kbps	
Comms Address	Addr	1	Address from 1 to 255	1
Comms Write	CoEn	rWrt	Read/Write	rWrt
		rOnLY	Read Only	
Logic Input Usage	diGi	rELAY	Reset latched relay(s)	rrLY
		tArE	Initiate Tare (zero display)	
		rESPu	Reset min/max PV values	
		rESAt	Reset Alarm 1 elapsed time	
		rPuAt	Reset Alarm 1 elapsed time & min/max PV values	
Logic Input State	diG d	CLoSE	Close contact activates logic state	CLS
		OPn	Open contact activates logic state	
Config Lock	C Loc	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 *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value
Mode Default	dF mn		Enables/Disables Defaulting of Values within Mode	d iSA
Input Filter Time Constant	F iLt		Off or 0.5 to 100.0 secs	0.5
Alarm Duration Filter Time	ALMdF		OFF or 0.5 to 100.0 secs. Alarm will not turn on if active for less than time set	0.5
Input fail Mode	InPFL		When input fails PV should go Low or High scale reading	H iGh
Process Variable Offset	OFF S		±Span of controller	0.0
Raw PV value	S iGnL		Linear input value, un-scaled (mA, mV or VDC)	
High Alarm 1	PhA 1		Alarm 1 value, adjustable within scaled range, in display units	Max
Low Alarm 1	PLA 1			Min
Alarm 1 Hysteresis	AHy 1		1 LSD to full span in display units on safe side of alarm	10

Parameter	Legend *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value
High Alarm 2	PhA 2		Options as for alarm 1	Max
Low Alarm 2	PLA 2			Min
Al 2 Hysteresis	AHy 2			10
Scaling Breakpoint 1	ScAL 1		Multi-point scaling breakpoint 1 value, adjustable from 0 to 100 in % of span	100
Display Value 1	d iSP 1		Value to be displayed at multi-point scaling breakpoint 1, in display units	Range Max

Scaling Breakpoint 2	ScAL2	Multi-point scaling breakpoint 2, adjustable up to 100% of span. Must be >ScA 1 value		
Display Value 2	d ,SP2	Value to be displayed at Multi-point scaling breakpoint 2, in display units		
Scaling Breakpoints 3..9	ScAL3..9	Breakpoints (from 3 to 9). Each adjustable up to 100% of span, but must less than the previous value.		
Display Values 3..9	d ,SP3..9	Values to be displayed at Multi-point scaling breakpoint for breakpoints 3 to 9, in display units		
Tare Feature	tArE	EnAb d ,SA	Enables or disables the input auto-zero Tare feature	d ,SA
Setup Lock Code	S Loc	0 to 9999		10

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 Str_G

Parameter	Legend *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value
Mode Default	dF .M	d ,SA EnAb	Enables or Disables Defaulting of Values within Mode	d ,SA
Shunt Resistor	Shunt	d ,SA EnAb	Enables or Disables use of shunt resistor	EnAb
Calibration Resistor Value	rCAL	40% to 100% (appears only when Shunt is EnAb)		80

Start Low Calibration	CLoLJ	Press △ and ▽ to start calibration	0.0
Start High Calibration	CH iGh	Press △ and ▽ to start calibration making sure to apply the high range signal if Shunt is set d iSA (Can only be accessed once a successful low calibration has been completed)	10000
Calibration Lock Code	r Loc	0 to 9999	10

When the calibration procedure begins ---- appears on the screen. Once the calibration is complete donE appears on the screen.

If there are faults detected with the calibration the error message ErCAL will appear.

ErCAL appears during the *low* calibration step if the offset is greater than -10mV, for example -11mV. *This could signify a faulty sensor.*

ErCAL appears during the high calibration step if the count value is greater than +50mV. *Again this could signify a faulty sensor.*

Note: Performing a calibration with less than a 10mV difference between the high and low calibration values will compromise the accuracy of the instrument.

6. Special Mode

Note: Configuration must be completed before adjusting Special parameters.

This mode enables special features with the correct code entered; enter a value of 0 as default otherwise please refer to your supplier for information on what special features are available and which numbers invoke these.

7. 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 *for 1 sec followed by* →	Value	Description
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
Input Over Range	Err	CHH]	Input signal is > 5% over-range
Input Under Range		CLL]	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		Err 1	Option 1 module fault
Option 2 Error		Err2	Option 2 module fault
Option 3 Error		Err3	Option 3 module fault
Option 3 Error		ErrA	Option A module fault
Calibration	ErCAL		High and Low calibration points are too close to each other for a valid reading

Note: CHH], CLL] or OPEN may also be displayed if an incorrect input type is selected.

8. 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 *for 1 sec followed by* →	Value	Display Strategy and When Visible	Description
Proc	PV Value*	Always	Process Variable value *Read only* *Latched outputs can be reset*
MAX	Max PV Value	Strategies 0, 1, 3, 4, & 6	Maximum displayed value (inc CHHJ or OPEN) since MAX last reset. *To reset, press ▽ or △ for 3 seconds,* *display = ---- when reset*
Min	Min PV Value	Strategies 0, 1, 3, 4, & 6	Minimum displayed value (inc CLLJ or OPEN) since Min last reset. *To reset, press ▽ or △ for 3 seconds,* *display = ---- when reset*
Et1	Elapsed Time	Strategies 0, 4 & 6 if alarm 1 configured. Format *mm.ss to 99.59 then mmm.s (10 sec increments)* Shows CHHJ if >999.9	Accumulated alarm 1 active time since Et1 last reset. *To reset, press ▽ or △ for 3 seconds,* *display = ---- when reset*
ALM1	Alarm 1 Value	Strategies 2, 3, 4 & 6 if alarm 1 configured	Alarm 1 value, a*djustable except in Strategy 6*
ALM2	Alarm 2 Value	Strategies 2, 3, 4 & 6 if alarm 2 configured	Alarm 2 value, a*djustable except in Strategy 6*
AL St	Active Alarm Status*	When one or more alarms are active	2 1 — Alarm 2 active; Alarm 1 active ***LATCHED OUTPUTS CAN BE RESET***

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.

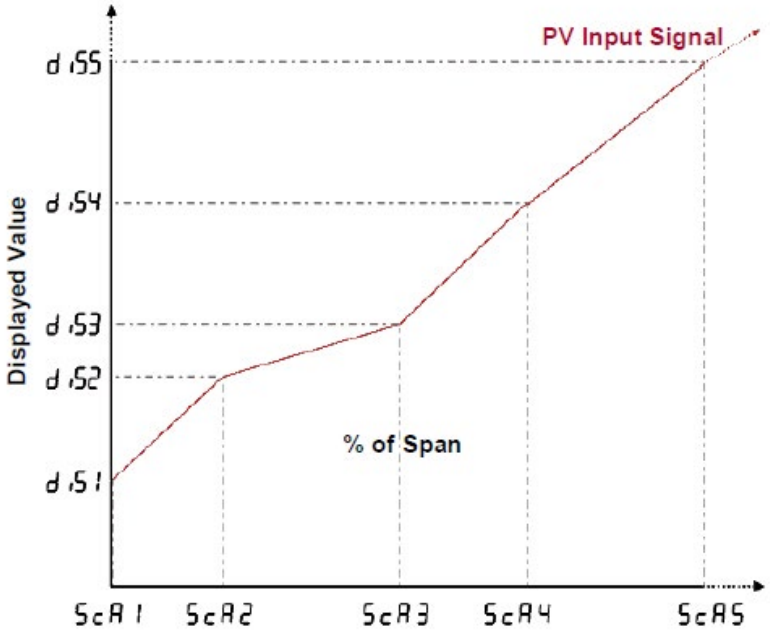
*Resetting Latched Alarm Outputs

Any latched outputs can be reset whilst the Process variable or Alarm Status screens are displayed, by pressing the or key, via the Digital Input or with a communications command via the RS485 module (if fitted).

Note: Outputs will only reset if their alarm condition is no longer present.

Multi-Point Scaling

When enabled (Mm PS = EnAb), up to 9 breakpoints can be set to compensate for nonlinear input signals.
For each breakpoint, the input scale value (ScALn) is entered in % of input span, followed by the value to be shown (diSPn) 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 Digital Input (if fitted), with a communications command via the RS485 module (if fitted) 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. This will have no effect on any stored Max or Min values until they are reset. Once Reset the Max and Min value will follow the displayed value that has gone through the tare process

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

9. 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 *for 1 sec followed by* →	Value	Description
Input type	In_1	Un1	Universal input
Option 1 module type fitted	OPn1	nonE	No option fitted
		LinE	Enhanced Resolution Linear DC Voltage/Current Output
Option 2 module type fitted	OPn2	nonE	No option fitted
		rLY	Relay output
		drLY	Dual Relay (outputs 2 & 4)
Option 3 module type fitted	OPn3	nonE	No option fitted
		rLY	Relay output
		dc24	24VDC Transmitter Power Supply fitted
Auxiliary Option A module type fitted	OPnA	nonE	No option fitted
		r485	RS485 communications
Firmware type	FWJ	Value displayed is firmware type number	
Firmware issue	ISS	Value displayed is firmware issue number	
Product Rev Level	PrL	Value displayed is Product Revision Level	
Manufactured Date	dOM	Month & year of manufacture. Format *mmyy*	
Serial number 1	Sn1	First four digits of serial number	
Serial number 2	Sn2	Middle four digits of serial number	
Serial number 3	Sn3	Last four digits of serial number	

10. Serial Communications

Refer to the full user guide (available from your supplier) for details.

11. Specifications

UNIVERSAL INPUT

Strain Gauge:	350Ω, by means of 4 or 6 wire (6 to use internal Shunt resistor) Bridge excitation: 10Vdc ± 7% Bridge Sensitivity: 1.4-4mV/V Shunt Value: From 40%to 100% Input signal Span: -25% to 125% (Approx. -10mV to +50mV)
Thermocouple Calibration:	±0.1% of full range, ±1LSD (±1°C for Thermocouple CJC). BS4937, NBS125 & IEC584.
PT100 Calibration:	±0.1% of full range, ±1LSD.
B	S1904 & DIN43760 (0.00385Ω/Ω/°C).
DC Calibration:	±0.1% of full range, ±1LSD.
Sampling Rate:	10 per second, 16 bit resolution approximately (100ms sample time)
Impedance:	>10MΩ resistive, except dc mA (5Ω) and V (47kΩ).
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. ***Note: Sensor break not detectable on 0 to 20mA, 0 to 50mV, 0 to 5V & 0 to 10v input types.***
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

Single 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.

Dual Relay

Contact Type & Rating:	Single pole single throw (SPST), latching or non-latching action (selectable); 2A resistive at 120/240VAC.
Lifetime:	>200,000 operations at rated voltage/current.
Isolation:	Reinforced safety isolation from inputs and other outputs.

Linear DC

Accuracy:	±0.1% of span (mA @ 250Ω, V @ 2kΩ).
Resolution:	15 3/4 bit (1 part in 52K) and updated at approx. 65ms intervals. (130ms settling time)
Isolation:	Reinforced safety isolation from inputs and other outputs.

Transmitter PSU

Power Rating:	24V Tx PSU Module; Unregulated 18 to 32V DC into 400 Ω min Linear Output Module; Regulated 0.0 to 10.0V into 500 Ω min.
Isolation:	Reinforced safety isolation from inputs and other outputs.

SERIAL COMMUNICATIONS (RS485) (option)

Physical:	1200, 2400, 4800, 9600 or 19200 bps.
Protocols:	Selectable between Modbus and West ASCII.
Isolation:	Reinforced safety isolation from all inputs and 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 ⍰10%, 50/60Hz, 9VA *(for mains powered versions)*, or 20 to 48VAC 50/60Hz 9VA or 22 to 65VDC 5W *(for low voltage versions).*

ENVIRONMENTAL

Standards:	CE & UL
EMI:	EN61326-1:2013, Table 2 & Class A.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Safety Considerations:	UL61010-1 Edition 3, Pollution Degree 2 & Installation Category II.
Front Panel Sealing:	IP66 (IP20 behind the panel).

(IP rating tested by a UKAS accredited laboratory, but not recognized by UL).

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 are in this style.

FIRMWARE

This version of the manual is applicable from firmware version 04 or later.
Under the Product Information Mode select I55 to display firmware version.