1/16 - 1/8 DIN INDICATOR
CONCISE PRODUCT MANUAL (59344-3)

CAUTION: Installation should be only performed by technically competent personnel. Local Regulations regarding electrical installation & safety must be observed.

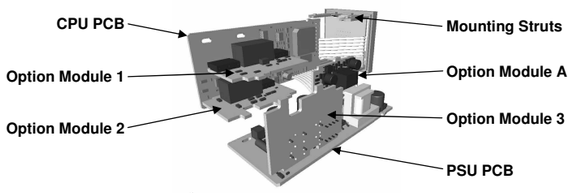
1. INSTALLATION

The two indicators covered by this manual have different DIN case sizes *(refer to section 9)*. Some installation details vary between these models. These differences have been clearly shown.

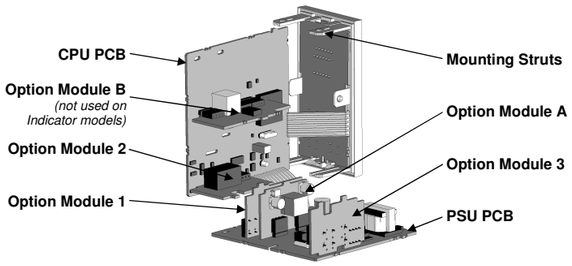
Note: The functions described in sections 2 to 8 are common to both models.

Installing Option Modules

1/16 Din Size Instruments



1/8 Din Size Instruments



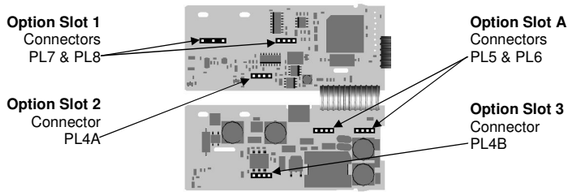
To access modules 1 or A, first detach the PSU and CPU boards from the front by lifting first the upper, and then lower mounting struts. Gently separate the boards.

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.

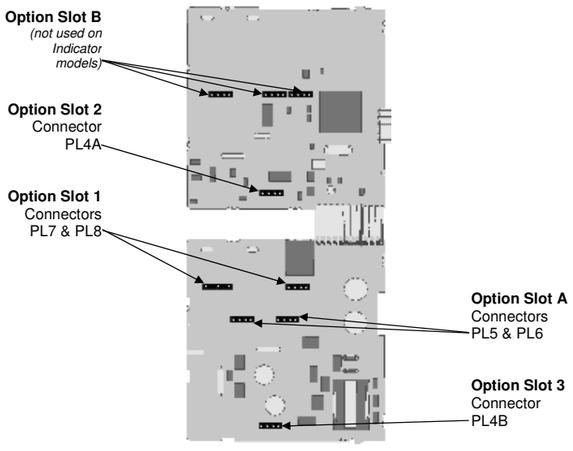
Note: Option modules are automatically detected at power up.

Option Module Connectors

1/16 Din Size Instruments



1/8 Din Size Instruments

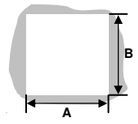


Panel-Mounting

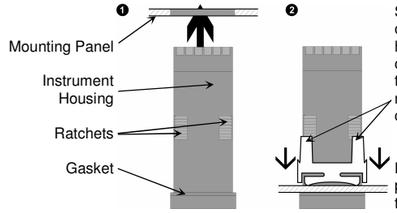
The mounting panel must be rigid, and may be up to 6.0mm (0.25inch) thick. Cut-out sizes are:

Cut-Out Dim A	Cut-Out Dim B
1/16 Din = 45mm	1/16 & 1/8 Din = 45mm
1/8 Din = 92mm	

For *n* multiple instruments mounted side-by-side, cut-out A is 48*n*-4mm (1/16 Din) or 96*n*-4mm (1/8 Din)



Tolerance +0.5, -0.0mm



Slide mounting clamp over the instrument housing towards rear face of mounting panel until the tongues engage in ratchets and instrument is clamped in position.

Hold instrument firmly in position (apply pressure to bezel only)

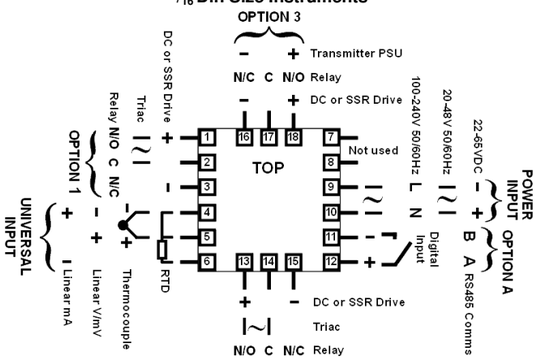
CAUTION: Do not remove the panel gasket; it is a seal against dust and moisture.

Rear Terminal Wiring

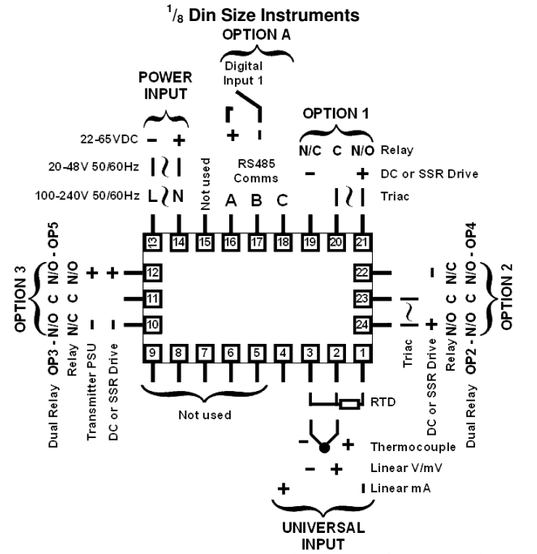
USE COPPER CONDUCTORS (EXCEPT FOR T/C INPUT)

Single Strand wire gauge: Max 1.2mm (18SWG)

1/16 Din Size Instruments



1/8 Din Size Instruments



These diagrams show all possible option combinations. The actual connections required depend on the model and 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

Note: At first power-up the message `Goto ConF` is displayed, as described in section 5 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 *for 1 sec followed by* →	Set Value	Description	Default Unlock Codes	Units Display (1/8 Din Only)
Operator	`SLCt`	`OPEr`	Normal operation	None	S
Set Up		`SEtP`	Tailor settings for application	10	
Configuration		`ConF`	Configure instrument for use	20	
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 `YESP`, 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 *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value	Units Display (1/8 Din Only)
Input Range/Type	`inPt`	*See following table for possible codes*		`JC`	r

Code	Input Type & Range	Code	Input Type & Range	Code	Input Type & Range
`bC`	B: 100 - 1824 ºC	`LC`	L: 0.0 - 537.7 ºC	`P24F`	PtRh20% vs 40%: 32 - 3362 ºF
`bF`	B: 211 - 3315 ºF	`LF`	L: 32.0 - 999.9 ºF		
`CC`	C: 0 - 2320 ºC	`nC`	N: 0 - 1399 ºC	`PtC`	Pt100: –199 - 800 ºC
`CF`	C: 32 - 4208 ºF	`nF`	N: 32 - 2551 ºF	`PtF`	Pt100: –328 - 1472 ºF
`JC`	J: –200 - 1200 ºC	`rC`	R: 0 - 1759 ºC	`Pt.C`	Pt100: –128.8 - 537.7 ºC
`JF`	J: –328 - 2192 ºF	`rF`	R: 32 - 3198 ºF	`Pt.F`	Pt100: –199.9 - 999.9 ºF
`J.C`	J: –128.8 - 537.7 ºC	`SC`	S: 0 - 1762 ºC	`0_20`	0 - 20 mA DC
`J.F`	J: –199.9 - 999.9 ºF	`SF`	S: 32 - 3204 ºF	`4_20`	4 - 20 mA DC
`KC`	K: –240 - 1373 ºC	`tC`	T: –240 - 400 ºC	`0_50`	0 - 50 mV DC
`KF`	K: –400 - 2503 ºF	`tF`	T: –400 - 752 ºF	`10.50`	10 - 50 mV DC
`K.C`	K: –128.8 - 537.7 ºC	`t.C`	T: –128.8 - 400.0 ºC	`0.5`	0 - 5 V DC
`K.F`	K: –199.9 - 999.9 ºF	`t.F`	T: –199.9 - 752.0 ºF	`1.5`	1 - 5 V DC
`LC`	L: 0 - 762 ºC	`P24C`	PtRh20% vs. 40%: 0 - 1850 ºC	`0_10`	0 - 10 V DC
`LF`	L: 32 - 1403 ºF			`2_10`	2 - 10 V DC

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	Units Display (1/8 Din Only)
Scale Range Upper Limit	`ruL`	Scale Range Lower Limit +100 to Range Maximum		Max (Lin = 1000)	u
Scale Range Lower Limit	`rLL`	Range Minimum to Scale Range Upper Limit -100		Min (Lin = 0)	L
Decimal point position	`dPoS`	`0`=XXXX, `1`=XXX.X, `2`=XX.XX, `3`=X.XXX	*(non-temperature ranges only)*	`1`	P
Linear Range Engineering Units Display	`L inU`	`nonE`	None (*Blank*), ºC or ºF *1/8 Din units only where linear inputs represent temperature*	`nonE`	
		`C`			C
		`F`			F
Multi-Point Scaling	`mPoS`	`EnAb`	Enables or disables the input multi-point scaling feature	`diSA`	S
		`diSA`			
Alarm 1Type	`ALA1`	`P_Hi`	Process High Alarm	`P_Hi`	I
		`P_Lo`	Process Low Alarm		
		`nonE`	No alarm		
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`	-
Alarm 2Type	`ALA2`	Options as for alarm 1		`nonE`	2
High Alarm 2*	`PhA2`			Max	2
Low Alarm 2*	`PLA2`			Min	
Al 2 Hysteresis*	`AHY2`			`1`	=
Alarm 3Type	`ALA3`	Options as for alarm 1		`nonE`	3
High Alarm 3*	`PhA3`			Max	3
Low Alarm 3*	`PLA3`			Min	
Al 3 Hysteresis*	`AHY3`			`1`	=
Alarm 4Type	`ALA4`	Options as for alarm 1		`nonE`	4

Parameter	Legend *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value	Units Display (1/8 Din Only)
High Alarm 4*	`PhA4`	Options as for alarm 1		Max	4
Low Alarm 4*	`PLA4`			Min	
Al 4 Hysteresis*	`AHY4`			`1`	4
Alarm 5 Type	`ALA5`			`nonE`	5
High Alarm 5*	`PhA5`			Max	5
Low Alarm 5*	`PLA5`			Min	
Al 5 Hysteresis*	`AHY5`			`1`	5
Output 1 Usage	`USE 1`	`A Ind`	Alarm 1, direct, non-latching	`rEtP` for linear outputs, `A Ind` for others	1
		`A Inr`	Alarm 1, reverse, non-latching		
		`A ILd`	Alarm 1, direct, latching		
		`A ILr`	Alarm 1, reverse, latching		
		`A2nd`	Alarm 2, direct, non-latching		
		`A2nr`	Alarm 2, reverse, non-latching		
		`A2Ld`	Alarm 2, direct, latching		
		`A2Lr`	Alarm 2, reverse, latching		
		`A3nd`	Alarm 3, direct, non-latching		
		`A3nr`	Alarm 3, reverse, non-latching		
		`A3Ld`	Alarm 3, direct, latching		
		`A3Lr`	Alarm 3, reverse, latching		
		`A4nd`	Alarm 4, direct, non-latching		
		`A4nr`	Alarm 4, reverse, non-latching		
		`A4Ld`	Alarm 4, direct, latching		
		`A4Lr`	Alarm 4, reverse, latching		
		`A5nd`	Alarm 5, direct, non-latching		
		`A5nr`	Alarm 5, reverse, non-latching		
		`A5Ld`	Alarm 5, direct, latching		
		`A5Lr`	Alarm 5, reverse, latching		
		`O 12d`	Logical Alarm 1 OR 2, direct		
		`O 12r`	Logical Alarm 1 OR 2, reverse		
		`O 13d`	Logical Alarm 1 OR 3, direct		
		`O 13r`	Logical Alarm 1 OR 3, reverse		
		`O23d`	Logical Alarm 2 OR 3, direct		
		`O23r`	Logical Alarm 2 OR 3, reverse		
		`AnYd`	Any active alarm, direct		
		`AnYr`	Any active alarm, reverse		
		`rEtP`	Retransmit PV Output		
		`dc 10`	0 to 10VDC (adjustable) transmitter power supply*		
Output 1 PV Retransmit Type	`tyP 1`	`0_5`	0 to 5 V DC output	`0_10`	1
		`0_10`	0 to 10 V DC output		
		`2_10`	2 to 10 V DC output		
		`0_20`	0 to 20 mA DC output		
		`4_20`	4 to 20 mA DC output		
Retransmit OP 1 Scale maximum	`ro1H`	Display value between, -1999 & 9999 at which Output 1 will be at maximum		Range max	H
Retransmit OP 1 Scale minimum	`ro1L`	Display value between, -1999 & 9999 at which Output 1 will be at minimum		Range min	L
TxPSU 1 level	`PSU 1`	Output 1 Power Supply (0 to 10VDC)*		`10.0`	1
Output 2 Usage	`USE2`	As for Output 1 Usage		`A2nd`	2
Output 2 PV Retransmit Type	`tyP2`	As for Output 1 PV Retransmit Type			2
Retransmit OP2 Scale Maximum	`ro2H`	As for Retransmit Output 1 Scale Maximum			H
Retransmit OP2 Scale Minimum	`ro2L`	As for Retransmit Output 1 Scale Minimum			L
TxPSU 2 level	`PSU2`	Output 2 Power Supply (0 to 10VDC)*		`10.0`	2
Output 3 Usage	`USE3`	As for Output 1 Usage		`A3nd`	3
Output 3 PV Retransmit Type	`tyP3`	As for Output 1 PV Retransmit Type			3
Retransmit OP3 Scale maximum	`ro3H`	As for Retransmit Output 1 Scale Maximum			H
Retransmit OP3 Scale minimum	`ro3L`	As for Retransmit Output 1 Scale Minimum			L
TxPSU 3 level	`PSU3`	Output 3 Power Supply (0 to 10VDC)*		`10.0`	3
Output 4 Usage	`USE4`	Alarm output options as for Output 1 Usage		`A4nd`	4
Output 5 Usage	`USE5`			`A5nd`	5
Display Strategy	`diSP`	`0`, `1`, `2`, `3`, `4` or `6` *(refer to section 6)*		`0`	d
Display Colour	`CLor`	`rEd`	Permanent Red	`G-r`	c
		`Grn`	Permanent Green		
		`r-G`	Red to Green on any alarm		
		`G-r`	Green to Red on any alarm		
Serial Communication Protocol	`Prot`	`ASC 1`	ASCII	`rtbn`	P
		`rtbn`	Modbus with no parity		
		`rtbE`	Modbus with Even Parity		
		`rtbo`	Modbus with Odd Parity		
Comms Bit Rate	`bAud`	`1.2`, `2.4`, `4.8`, `9.6` or `19.2` kbps		4.8	b
Comms Address	`Addr`	`1` to `255` (Modbus), `1` to `99` (ASCII)		1	A

Continued on next page…

Parameter	Legend (for 1 sec followed by →)	Set Value	Adjustment Range & Description	Default Value	Units Display (1/8 Din Only)
Comms Write	CoEn	r_W	Read/Write	r_W	E
		r_O	Read only		
Digital Input Usage	dIG1	rrLY	Reset latched relay(s)	rrLY	-
		tArE	Initiate Tare (zero display)		
		rPu	Reset min/max PV values		
		rE	Reset Alarm 1 elapsed time		
		rPuE	Reset Alarm 1 elapsed time & min/max PV values		
Config Lock	CLoc	Config Mode lock code, 0 to 9999		20	C

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	Units Display (1/8 Din Only)
Input Filter Time Constant	FiLt	OFF or 0.5 to 100.0 secs		2.0	t
Process Variable Offset	OFFS	±Span of controller		0.0	o
Raw PV value	SiG	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	=
High Alarm 3	PhA3	Options as for alarm 1	Max		3
Low Alarm 3	PLA3		Min		
Al 3 Hysteresis	AHY3			1	≡
High Alarm 4	PhA4	Options as for alarm 1	Max		4
Low Alarm 4	PLA4		Min		
Al 4 Hysteresis	AHY4			1	4
High Alarm 5	PhA5	Options as for alarm 1	Max		5
Low Alarm 5	PLA5		Min		
Al 5 Hysteresis	AHY5			1	5
Scaling Breakpoint 1	ScA1	Multi-point scaling breakpoint 1 value, adjustable from 0 to 100 in % of span		100	1
Display Value 1	d iS1	Value to be displayed at multi-point scaling breakpoint 1, in display units		Range Max	
Scaling Breakpoint 2	ScA2	Multi-point scaling breakpoint 2, adjustable up to 100% of span. Must be >ScA1 value			2
Display Value 2	d iS2	Value to be displayed at Multi-point scaling breakpoint 2, in display units			
Scaling Breakpoint 3	ScA3	Multi-point scaling breakpoint 3, adjustable up to 100% of span. Must be >ScA2 value			3
Display Value 3	d iS3	Value to be displayed at Multi-point scaling breakpoint 3, in display units			
Scaling Breakpoint 4	ScA4	Multi-point scaling breakpoint 4, adjustable up to 100% of span. Must be >ScA3 value			4
Display Value 4	d iS4	Value to be displayed at Multi-point scaling breakpoint 4, in display units			
Scaling Breakpoint 5	ScA5	Multi-point scaling breakpoint 5, adjustable up to 100% of span. Must be >ScA4 value			5
Display Value 5	d iS5	Value to be displayed at Multi-point scaling breakpoint 5, in display units			
Scaling Breakpoint 6	ScA6	Multi-point scaling breakpoint 6, adjustable up to 100% of span. Must be >ScA5 value			6
Display Value 6	d iS6	Value to be displayed at Multi-point scaling breakpoint 6, in display units			
Scaling Breakpoint 7	ScA7	Multi-point scaling breakpoint 7, adjustable up to 100% of span. Must be >ScA6 value			7
Display Value 7	d iS7	Value to be displayed at Multi-point scaling breakpoint 7, in display units			
Scaling Breakpoint 8	ScA8	Multi-point scaling breakpoint 8, adjustable up to 100% of span. Must be >ScA7 value			8
Display Value 8	d iS8	Value to be displayed at Multi-point scaling breakpoint 8, in display units			
Scaling Breakpoint 9	ScA9	Multi-point scaling breakpoint 9, adjustable up to 100% of span. Must be >ScA8 value			9
Display Value 9	d iS9	Value to be displayed at Multi-point scaling breakpoint 9, in display units			
Tare Feature	tArE	EnAb	Enables or disables the input auto-zero Tare feature	d iSA	r
		d iSA			
Setup Lock Code	SLoc	0 to 9999		10	S

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

5. 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	Units Display (1/8 Din Only)
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	CHHJ	Input signal is > 5% over-range	E
Input Under Range		CLLJ	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
Option A Error		ErrA	Option A module fault	A
Option B Error		Errb	Shown if any module is fitted (option B not used on Indicators)	b

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

6. 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	Units Display (1/8 Din Only)
Proc	PV Value*	Always	Process Variable value *Read only* *Latched outputs can be reset*	°C, °F or *blank*
mnA	Max PV Value	Strategies 0, 1, 3, 4, & 6	Maximum displayed value (inc CHHJ or OPEN) since mnA last reset. *To reset, press ▽ or △ for 3 seconds, display = ---- when reset*	°C, °F or *blank*
mn	Min PV Value	Strategies 0, 1, 3, 4, & 6	Minimum displayed value (inc CLLJ or OPEN) since mn last reset. *To reset, press ▽ or △ for 3 seconds, display = ---- when reset*	°C, °F or *blank*
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*	E
AL1	Alarm 1 Value	Strategies 2, 3, 4 & 6 if alarm 1 configured	Alarm 1 value, *adjustable except in Strategy 6*	1 (Alm1 only = A)
AL2	Alarm 2 Value	Strategies 2, 3, 4 & 6 if alarm 2 configured	Alarm 2 value, *adjustable except in Strategy 6*	2
AL3	Alarm 3 Value	Strategies 2, 3, 4 & 6 if alarm 3 configured	Alarm 3 value, *adjustable except in Strategy 6*	3
AL4	Alarm 4 Value	Strategies 2, 3, 4 & 6 if alarm 4 configured	Alarm 4 value, *adjustable except in Strategy 6*	4
AL5	Alarm 5 Value	Strategies 2, 3, 4 & 6 if alarm 5 configured	Alarm 5 value, *adjustable except in Strategy 6*	5
ALSt	Active Alarm Status*	When one or more alarms are active	5432 — Alarm 4 active, Alarm 2 active, Alarm 3 active, Alarm 5 active *Latched outputs can be reset*	1 if alarm 1 active

Alarm Indication

ALM1 ALM2 ALM3 ALM4 ALM5
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

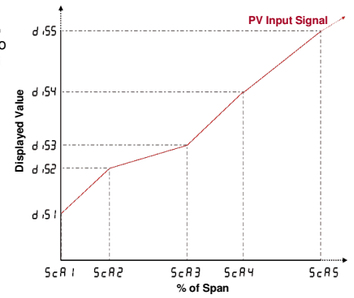
Any latched outputs can be reset whilst the Process variable or Alarm Status screens are displayed, by pressing the ▽ or △ key, via the Digital Input (if fitted) or with a communications command via the RS485 module (if fitted).
***Note:* Outputs will only reset if their alarm condition is no longer present.**
Caution: A reset will affect ALL latched outputs.

Additional 1/8 Din Indicator Units Display and LED's

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 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 YESP
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.

7. 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	Units Display (1/8 Din Only)
Input type	In_1	Un1	Universal input	t
Option 1 module type fitted	OPn1	nonE	No option fitted	1
		rLY	Relay output	
		SSr	SSR drive output	
		tr1	Triac output	
		Lin	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)	
		SSr	SSR drive output	
		tr1	Triac output	
		Lin	Linear DC voltage / current output	
Option 3 module type fitted	OPn3	nonE	No option fitted	3
		rLY	Relay output	
		drLY	Dual Relay (outputs 3 & 5)	
		SSr	SSR drive output	
		Lin	Linear DC voltage / current output	
		dc24	24V DC Transmitter power supply	
Auxiliary Option A module type fitted	OPnA	nonE	No option fitted	A
		r485	RS485 communications	
		diG1	Digital Input	
Firmware type	FtyP	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
Manufactured Date	dOMY	Month & year of manufacture. Format *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

8. SERIAL COMMUNICATIONS

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

9. SPECIFICATIONS

UNIVERSAL INPUT

Thermocouple Calibration:	±0.1% of full range, ±1LSD (±1°C for Thermocouple CJC). BS4937, NBS125 & IEC584.
PT100 Calibration:	±0.1% of full range, ±1LSD. BS1904 & DIN43760 *(0.00385Ω/Ω/°C).*
DC Calibration:	±0.1% of full range, ±1LSD.
Sampling Rate:	4 per second.
Impedance:	>10MΩ resistive, except DC mA (5Ω) and V (47kΩ).
Sensor Break Detection:	Thermocouple, RTD, 4 to 20 mA, 2 to 10V and 1 to 5V ranges only. *High alarms activate for thermocouple/RTD sensor break, low alarms activate for mA/V DC sensor break.*
Isolation:	Isolated from all outputs (except SSR driver). 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.

DIGITAL INPUT

Voltage Input: Volt-free Contacts:	Reset or Tare occurs on high (2 to 24VDC) to low <0.8VDC, or Open to Closed transition.
Isolation:	Reinforced safety 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.

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.

SSR Driver

Drive Capability:	SSR drive voltage >10V into 500Ω min.
Isolation:	Not isolated from universal input or other SSR driver outputs.

Triac

Operating Voltage:	20 to 280Vrms (47 to 63Hz).
Current Rating:	0.01 to 1A (full cycle rms on-state @ 25°C); derates linearly above 40°C to 0.5A @ 80°C.
Isolation:	Reinforced safety isolation from inputs and other outputs.

Linear DC

Accuracy:	±0.25% (mA @ 250Ω, V @ 2kΩ). Degrades linearly to ±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.

Transmitter PSU

Power Rating:	24V TxPSU Module; Unregulated 20 to 28V DC into 910Ω min Linear output Module; Regulated 0.0 to 10.0V into 500Ω min.
Isolation:	Reinforced safety isolation from inputs and other outputs.

SERIAL COMMUNICATIONS

Physical:	RS485, at 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.
Supply Voltage and Power:	100 to 240VAC ±10%, 50/60Hz, 7.5VA *(for mains powered versions)*, or 20 to 48VAC 50/60Hz 7.5VA or 22 to 65VDC 5W *(for low voltage versions)*.

ENVIRONMENTAL

Standards:	CE, UL & ULC
EMI:	Complies with EN61326 (Susceptibility & Emissions).
Safety Considerations:	Complies with EN61010-1 & UL3121. Pollution Degree 2, Installation Category II.
Front Panel Sealing:	To IP66 (IP20 behind the panel).

PHYSICAL

Front Bezel Size:	1/16 Din = 48 x 48mm, 1/8 Din = 96 x 48mm
Depth Behind Panel:	1/16 Din = 110mm, 1/8 Din = 100mm.
Weight:	0.21kg maximum.