$^1/_{16}$ - $^1/_8$ - $^1/_4$ DIN PROCESS CONTROLLERS CONCISE PRODUCT MANUAL (59300-11)

CAUTION: Installation should be only performed by technically competent personnel. It is the responsibility of the installing engineer to ensure that the configuration is safe. Local regulations regarding electrical installation & safety must be observed - e.g. US National Electrical Code (NEC) and/or Canadian Electrical Code. Impairment of protection will occur if the product is used in a manner not specified by the manufacturer.

1. INSTALLATION

Some installation details vary between the three model sizes covered by this manual (refer to section 10). These differences have been clearly shown.

### Installing Option Modules: $^1/_{16}$ Din Size Instruments
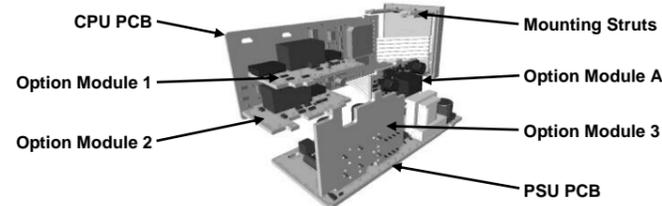
Installing Option Modules: $^1/_8$ & $^1/_4$ Din Size Instruments
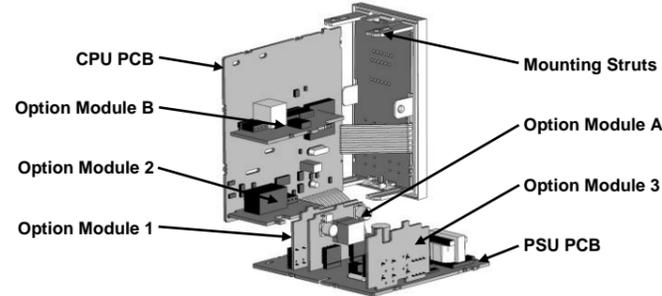

To access modules 1, A or B, first detach the PSU and CPU boards from the front by lifting the upper, and then lower mounting struts. Gently separate the boards.
a. Plug the required option modules into the correct connectors, as shown below.
b. Locate the module tongues in the corresponding slot on 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 only detected at power up.

Option Module Connectors: $^1/_{16}$ Din Size Instruments
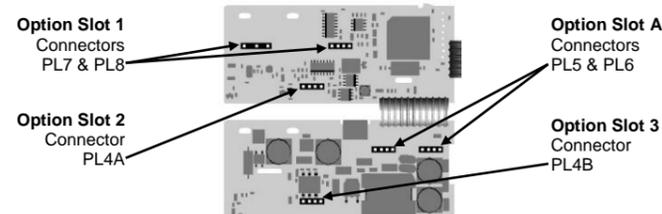
Option Module Connectors: $^1/_8$ & $^1/_4$ Din Size Instruments

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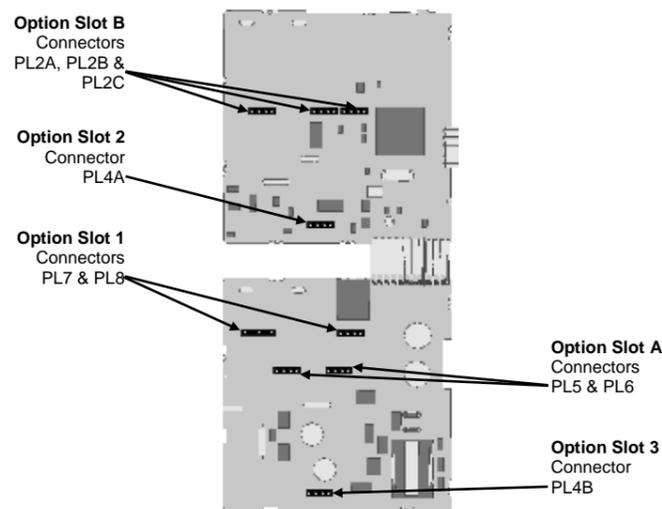
Panel-Mounting

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
$^1/_{16}$ & $^1/_8$ Din = 45mm	$^1/_{16}$ Din = 45mm
$^1/_4$ Din = 92mm	$^1/_4$ & $^1/_8$ Din = 92mm

For *n* multiple instruments mounted side-by-side, cut-out A is 48*n*-4mm ($^1/_{16}$ & $^1/_8$ Din) or 96*n*-4mm ($^1/_4$ Din)

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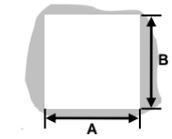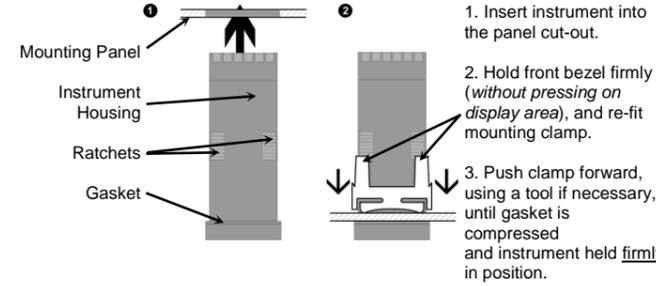
CAUTION: For an effective IP66 & NEMA 4X seal against dust and moisture, ensure gasket is well compressed against the panel, with the 4 tongues located in the same ratchet slot.

Rear Terminal Wiring

USE COPPER CONDUCTORS (EXCEPT FOR T/C INPUT). CABLE RATING 80°C MIN
Single Strand wire gauge: Max 1.2mm (18SWG)
The diagrams below show all possible option combinations. The actual connections required depends on the exact 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

$^1/_{16}$ Din Size Instrument Connections

$^1/_8$ & $^1/_4$ Din Size Instrument Connections
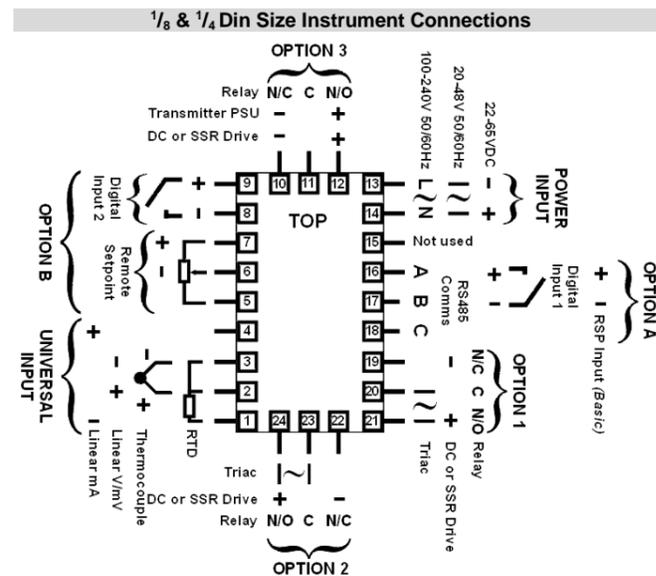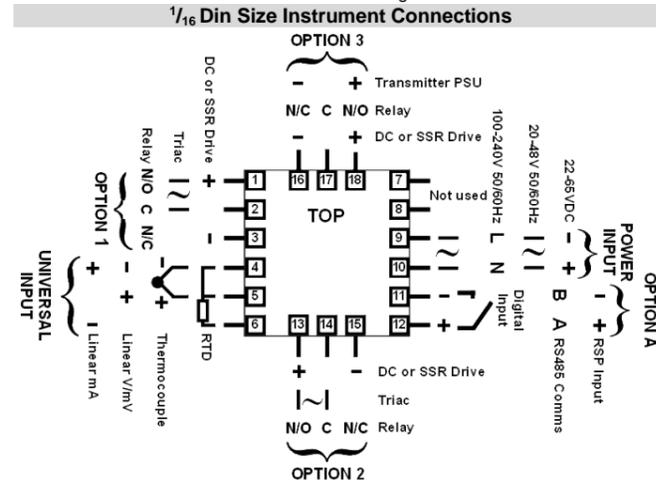
Note: At first power-up the message Goto ConF is displayed, as described in section 7 of this manual. Access to other menus is denied until configuration mode is completed

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2. SELECT MODE – SLCt

Select mode is used to access the configuration and operation menu functions. It can be accessed at any time by holding down ↵ and pressing ▲.
In select mode, press ▲ or ▼ to choose the required mode, 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	Upper Display	Lower Display	Description	Default Unlock Codes
Operator	OPEr	SLCt	Normal operation	None
Set Up	SEtP	SLCt	Tailor settings to the application	10
Configuration	ConF	SLCt	Configure the instrument for use	20
Product Info	inFo	SLCt	Check manufacturing information	None
Auto-Tuning	Atun	SLCt	Invoke Pre-Tune or Self-Tune	0

Note: The instrument will always return automatically to Operator mode if there is no key activity for 2 minutes.

3. CONFIGURATION MODE - ConF

First select Configuration mode from Select mode (*refer to section 2*).
Press ↵ to scroll through the parameters, then press ▲ or ▼ to set the required value. Press AUTO to 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	Lower Display	Upper Display	Adjustment range & Description			Default Value
Input Range/Type	inPt		*See following table for possible codes*			JC

Code	Input Type & Range	Code	Input Type & Range	Code	Input Type & Range
bC	B: 100 - 1824 °C	LC	L: 0.0 - 537.7 °C	P24F	PtRh20% vs 40%: 32 - 3362 °F
bF	B: 211 - 3315 °F	LF	L: 32.0 - 999.9 °F		
CC	C: 0 - 2320 °C	nC	N: 0 - 1399 °C	PtC	Pt100: −199 - 800 °C
CF	C: 32 - 4208 °F	nF	N: 32 - 2551 °F	PtF	Pt100: −328 - 1472 °F
JC	J: −200 - 1200 °C	rC	R: 0 - 1759 °C	Pt.C	Pt100: −128.8 - 537.7 °C
JF	J: −328 - 2192 °F	rF	R: 32 - 3198 °F	Pt.F	Pt100: −199.9 - 999.9 °F
J.C	J: −128.8 - 537.7 °C	SC	S: 0 - 1762 °C	0.20	0 - 20 mA DC
J.F	J: −199.9 - 999.9 °F	SF	S: 32 - 3204 °F	4.20	4 - 20 mA DC
HC	K: −240 - 1373 °C	tC	T: −240 - 400 °C	0.50	0 - 50 mV DC
HF	K: −400 - 2503 °F	tF	T: −400 - 752 °F	10.50	10 - 50 mV DC
H.C	K: −128.8 - 537.7 °C	t.C	T: −128.8 - 400.0 °C	0.5	0 - 5 V DC
H.F	K: −199.9 - 999.9 °F	t.F	T: −199.9 - 752.0 °F	1.5	1 - 5 V DC
LC	L: 0 - 762 °C	P24C	PtRh20% vs. 40%: 0 - 1850 °C	0.10	0 - 10 V DC
LF	L: 32 - 1403 °F			2.10	2 - 10 V DC

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

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Scale Range Upper Limit	rUL		Scale Range Lower Limit +100 to Range Maximum	Range max (Lin=1000)
Scale Range Lower Limit	rLL		Range Minimum to Scale Range Upper Limit -100	Range min (Linear=0)
Decimal point position	dPoS		0=XXXX, 1=XXX.X, 2=XX.XX, 3=X.XXX (non-temperature ranges only)	1
Control Type	CtYP	SnGL	Primary only	SnGL
		dUAL	Primary & Secondary (e.g. heat & cool)	
Primary Output Control Action	CtrL	rEu	Reverse Acting	rEu
		dir	Direct Acting	
Alarm 1 Type	ALA1	P_Hi	Process High Alarm	P_Hi
		P_Lo	Process Low Alarm	
		dE	Deviation Alarm	
		bAnd	Band Alarm	
		nonE	No alarm	
High Alarm 1 value*	PhA1		Range Minimum to Range Maximum in display units	Range Max
Low Alarm 1 value*	PLA1			Range Min
Band Alarm 1 value*	bAL1		1 LSD to span from setpoint in display units	5
Dev. Alarm 1 value*	dAL1		+/- Span from setpoint in display units	5
Alarm 1 Hysteresis*	AHY1		1 LSD to full span in display units	1
Alarm 2 Type*	ALA2			P_Lo
High Alarm 2 value*	PhA2			Range Max
Low Alarm 2 value*	PLA2		Same options as Alarm 1	Range Min
Band Alarm 2 value*	bAL2			5

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Dev. Alarm 2 Value*	dAL2		Same options as Alarm 1	5
Alarm 2 Hysteresis*	AHY2			1
Loop Alarm	LAEn		d iSA (disabled) or EnAb (enabled)	d iSA
Loop Alarm Time*	LAt		1 sec to 99 mins. 59secs	99.59
Alarm Inhibit	Inh	nonE	No alarms Inhibited	nonE
		ALA1	Alarm 1 inhibited	
		ALA2	Alarm 2 inhibited	
		both	Alarm 1 and alarm 2 inhibited	
Output 1 Usage	USE1	Pri	Primary Power	Pri
		SEc	Secondary Power	
		A1_d	Alarm 1, Direct	
		A1_r	Alarm 1, Reverse	
		A2_d	Alarm 2, Direct	
		A2_r	Alarm 2, Reverse	
		LP_d	Loop Alarm, Direct	
		LP_r	Loop Alarm, Reverse	
		Or_d	Logical Alarm 1 OR 2, Direct	
		Or_r	Logical Alarm 1 OR 2, Reverse	
		Ad_d	Logical Alarm 1 AND 2, Direct	
		Ad_r	Logical Alarm 1 AND 2, Reverse	
		rEtS	Retransmit SP Output	
		rEtP	Retransmit PV Output	
Linear Output 1 Range	tYP1	0_5	0 to 5 V DC output	0_10
		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 Output 1 Scale maximum	ro1H		-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 1 Scale minimum	ro1L		-1999 to 9999 (display value at which output will be minimum)	Range min
Output 2 Usage	USE2		Same options as Output 1	Sec or AI2
Linear Output 2 Range	tYP2		Same options as Output 1	0_10
Retransmit Output 2 Scale maximum	ro2H		-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 2 Scale minimum	ro2L		-1999 to 9999 (display value at which output will be minimum)	Range min
Output 3 Usage	USE3		Same options as Output 1	A1_d
Linear Output 3 Range	tYP3		Same options as Output 1	0_10
Retransmit Output 3 Scale maximum	ro3H		-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 3 Scale minimum	ro3L		-1999 to 9999 (display value at which output will be minimum)	Range min
Display Strategy	d iSP		1, 2, 3, 4, 5 or 6 (refer to section 8)	1
Serial Communications Protocol	Prot	ASC i	ASCII	Mbn
		Mbn	Modbus with no parity	
		MbE	Modbus with Even Parity	
		Mbo	Modbus with Odd Parity	
Serial Communications 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 to 255 (Modbus), 1 to 99 (ASCII)	1
Comms Write	CoEn	r_W	Read/Write	r_W
		r_0	Read only	
Digital Input 1 Usage	d iG1	d iS1	Setpoint 1 / Setpoint 2 select*	d iS1
		d iAS	Automatic / Manual select	
Digital Input 2 Usage	d iG2	d iS1	Setpoint 1 / Setpoint 2 select*	d irS
		d iAS	Automatic / Manual select	
		d irS	Remote / Local setpoint select	

Note: d iG2 has priority over d iG1 if both are configured for the same usage. If d iG1 or d iG2 =d iS1 the remote setpoint input is disabled.

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Remote Setpoint Input Range	r inP	0.20	0 to 20 mA DC input	0_10
		4.20	4 to 20 mA DC input	
		0_10	0 to 10 V DC input	
		2_10	2 to 10 V DC input	
		0.5	0 to 5 V DC input	
		1.5	1 to 5 V DC input	
		100	0 to 100mV DC input	Available on full RSP (Slot B) only
		Pot	Potentiometer (2KΩ minimum)	
RSP Upper Limit	r5Pu		-1999 to 9999	Range max
RSP Lower Limit	r5PL		-1999 to 9999	Range min
RSP Offset	r5Po		Constrained within Scale Range Upper & Scale Range Lower limits	0
Configuration Lock Code	CLoc		0 to 9999	20

4. SETUP MODE - SEtP

Note: Configuration must be completed before adjusting Setup parameters.
First select Setup mode from Select mode *(refer to section 2)*. The MAN LED [MAN] will light solid while in Setup mode. Press ⟳ to scroll through the parameters, then press △ or ▽ to set the required 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	Lower Display	Upper Display Adjustment Range & Description	Default Value
Input Filter Time Constant	F ilt	OFF or 0.5 to 100.0 secs	2.0
Process Variable Offset	OFF5	±Span of controller	0
Primary Power	PPW	Current % power levels *(read only)*	N/A
Secondary Power	5PW		
Primary Proportional Band	Pb_P	0.0% (ON/OFF) and 0.5% to 999.9% of input span	10.0
Secondary Proportional Band	Pb_5		
Automatic Reset (Integral Time)	ArSt	1 sec to 99 mins 59 secs and OFF (blank)	5.00
Rate (Derivative Time)	rAtE	00 secs (OFF) to 99 mins 59 secs	1.15
Overlap/Deadband	OL	-20 to +20% of Primary and Secondary Proportional Band	0
Manual Reset (Bias)	b iAS	0%(-100% if dual control) to 100%	25
Primary ON/OFF Differential	d iFP	0.1% to 10.0% of input span centered about the setpoint. *(Entered as a percentage of span)*	0.5
Secondary ON/OFF Diff.	d iF5		
Prim. & Sec. ON/OFF Differential	d iFF		
Setpoint Upper limit	5PuL	Current Setpoint to Range max	R/max
Setpoint Lower limit	5PLL	Range min to Current Setpoint	R/min
Primary Output Power Limit	OPuL	0% to 100% of full power	100
Output 1 Cycle Time	Ct 1	0.5, 1, 2, 4, 8, 16, 32, 64, 128, 256 or 512 secs.	32
Output 2 Cycle Time	Ct2		
Output 3 Cycle Time	Ct3		
High Alarm 1 value	PhA 1	Range Minimum to Range Maximum	R/max
Low Alarm 1 value	PLA 1		R/min
Deviation Alarm 1 Value	dAL 1	±Span from SP in display units	5
Band Alarm 1 value	bAL 1	1 LSD to span from setpoint	5
Alarm 1 Hysteresis	AHY 1	1 LSD to full span in display units	1
High Alarm 2 value	PhA2	Range Minimum to Range Maximum	R/max
Low Alarm 2 value	PLA2		R/min
Deviation Alarm 2 Value	dAL2	±Span from SP in display units	5
Band Alarm 2 value	bAL2	1 LSD to span from setpoint	5
Alarm 2 Hysteresis	AHY2	1 LSD to full span in display units	1
Loop Alarm Time	LAt 1	1 LSD to full span in display units	99.59
Auto Pre-tune	APt		
Auto/manual Control selection	PoEn	d iSA (disabled) or EnAb (enabled)	d iSA
Setpoint Select shown in Operator Mode	5SEn		
Setpoint ramp adjustment shown in Operator Mode	5Pr		
SP Ramp Rate Value	rP	1 to 9999 units/hour or Off (blank)	Off
Setpoint Value	5P	Scale range upper to lower limits. (when dual or remote setpoint options are used, 5P is replaced by 5P 1 & 5P2 or L5P _ or ☰ before the legend indicates the currently active SP)	Scale Range Minimum
Local Setpoint Value	_L5P		
Setpoint 1 Value	_5P 1		
Setpoint 2 Value	_5P2		
Setup Lock Code	5Loc	0 to 9999	10

5. AUTOMATIC TUNING MODE - Atun

First select Automatic tuning mode from Select mode *(refer to section 2)*.
Press ⟳ to scroll through the modes, then press △ or ▽ to set the required value.
To exit from Automatic tuning mode, hold down ⟳ and press △, to return to Select mode.
Pre-tune is a single-shot routine and is thus self-disengaging when complete.
If APt in Setup mode = EnAb, Pre-tune will attempt to run at every power up*.
Refer to the full user guide (available from your supplier) for details on controller tuning.
Pre-tune LED flashes and Self-tune LED is solid.

Parameter	Lower Display	Upper Display	Default Value
Pre-Tune	Ptun	On or OFF. Indication remains OFF if automatic tuning cannot be used at this time*	OFF
Self-Tune	Stun		
Tune Lock	tLoc	0 to 9999	0

** Note: Automatic tuning will not engage if either proportional band = 0.
Also, Pre-tune will not engage if setpoint is ramping, or the PV is less than 5% of input span from the setpoint.*

6. PRODUCT INFORMATION MODE - inFo

First select Product information mode from Select mode *(refer to section 2)*.
Press ⟳ to view each parameter. To exit from Product Information mode, hold down ⟳ and press △ to return to Select mode.
Note: These parameters are all read only.

Parameter	Lower Display	Upper Display	Description
Input type	In_1	Un i	Universal input
Option 1 module type fitted	OPn1	nonE	No option fitted
		rLY	Relay output
		55r	SSR drive output
		tr i	Triac output
		L in	Linear DC voltage / current output
Option 2 module type fitted	OPn2		Same as Option 1
Option 3 module type fitted	OPn3	nonE	No option fitted
		rLY	Relay output
		55r	SSR drive output
		L in	Linear DC voltage / current output
		dc24	Transmitter power supply
Auxiliary Option A module type fitted	OPnA	nonE	No option fitted
		r485	RS485 communications
		d iG i	Digital Input*
		r5P i	Remote Setpoint Input *(basic)* *
Auxiliary Option B module type fitted	OPnb	nonE	No option fitted
		r5P i	Remote Setpoint Input *(full)* and Digital Input 2*
Firmware type	FW	Value displayed is firmware type number	
Firmware issue	iSS	Value displayed is firmware issue number	
Product Revision Level	PrL	Value displayed is Product Revision level	
Date of manufacture	dOm	Manufacturing date code *(mmyy)*	
Serial number 1	Sn 1	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	

7. MESSAGES & ERROR INDICATIONS

These messages indicate that an error has occurred or there is a problem with the process variable signal or its wiring.
Caution: Do not continue with the process until the issue is resolved.

Parameter	Upper Display	Lower Display	Description
Instrument parameters are in default conditions	Goto	ConF	Configuration & Setup required. This screen is seen at first turn on, or if hardware configuration has been changed. Press ⟳ to enter the Configuration Mode, next press △ or ▽ to enter the unlock code number, then press ⟳ to proceed
Input Over Range	CHH	Normal	Process variable input > 5% over-range, or wrong sensor type.
Input Under Range	CLL	Normal	Process variable input > 5% under-range, or wrong sensor type.
Input Sensor Break	OPEN	Normal	Break detected in process variable input sensor, wiring, or wrong sensor type.The SP goes to 0.
RSP Over Range	Normal	CHH **	RSP input over-range	** also seen wherever RSP value would be displayed
RSP Under Range	Normal	CLL **	RSP input under-range	
RSP Break	Normal	OPEN **	Break detected in RSP input signal	
Option 1 Error		OPn1	Option 1 module fault	
Option 2 Error		OPn2	Option 2 module fault	
Option 3 Error	Err	OPn3	Option 3 module fault	
Option A Error		OPnA	Option A module fault or RSP in both A & B	
Option B Error		OPnb	Option B module fault	

8. OPERATOR MODE - OPtr

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, then press △ or ▽ to set the required value.
Note: All Operator Mode parameters in Display strategy 6 are read only (see d i5P in configuration mode), they can only be adjusted via Setup mode.

Upper Display	Lower Display	Display Strategy and When Visible	Description
PV Value	Active SP Value	1 & 2 *(initial screen)*	PV and target value of selected SP *Local Setpoints are adjustable in Strategy 2*
PV Value	Actual SP Value	3 & 6 *(initial screen)*	PV and actual value of selected SP (e.g. ramping SP value). *Read only*
PV Value	*(Blank)*	4 *(initial screen)*	Process variable only *Read only*
Active SP Value	*(Blank)*	5 *(initial screen)*	Target value of selected setpoint only. *Read only*
SP Value	5P	1, 3, 4, 5 & 6 if digital input is not d i5 1 and RSP not fitted	Target value of selected SP *Adjustable except in Strategy 6*
SP1 Value	_5P 1	Digital input = d i5 1. _ lit if active SP = SP1	Target value of SP1 *Adjustable except in Strategy 6*
SP2 Value	_5P2	Digital input = d i5 1. _ lit if active SP = SP2	Target value of SP2 *Adjustable except in Strategy 6*
Local SP Value	_L5P	RSP fitted. _ or ☰ lit if the active SP = L5P	Target value of local setpoint *Adjustable except in Strategy 6*
Remote SP Value	_r5P	RSP fitted. _ or ☰ lit if the active SP = r5P	Target value of remote setpoint *Read only*
d iG i, L5P or r5P	5P5	RSP is fitted, digital input is not d i5 1 and 5SEn is enabled in Setup mode	Selects local/remote active setpoint L5P = local SP, r5P = remote SP d iG i = selection via digital input (if configured). Note: selecting L5P or r5P will override digital input, active SP indication changes to ☰ *Adjustable except in Strategy 6*
Actual SP Value	5PrP	rP is not blank	Actual (ramping) value of selected SP. *Read only*
Ramp Rate	rP	5Pr enabled in Setup mode	SP ramping rate, in units per hour *Adjustable except in Strategy 6*
Active Alarm Status	ALSt	When one or more alarms are active. [ALM] ALM indicator will also flash	L2 1 — Alarm 2 active, Alarm 1 active, Loop Alarm active

Manual Control

If PoEn is set to EnAb in Setup mode, manual control can be selected/de-selected by pressing the [AUTO/MAN] key in Operator mode, or by changing the status of a digital input if d iG i or d iG2 have been configured for d iAS in Configuration mode.
While in Manual Control mode, the [MAN] indicator will flash and the lower display will show Pxxx (where xxx is the current manual power level). Switching to/from manual mode is via Bumpless Transfer. Press △ or ▽ to set the required output power.
Caution: Manual power level is not restricted by the OPuL power limit.

9. SERIAL COMMUNICATIONS

Refer to the full user guide (available from your supplier) for details.
Note: you cannot connect to the configuration port & RS485 at the same time

10. 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. *Control outputs turn off.*
Isolation:	Isolated from all outputs (except SSR driver). Universal input must not be connected to operator accessible circuits if relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required.

REMOTE SETPOINT INPUT (100 device load)

Accuracy:	±0.25% of input range ±1 LSD.
Sampling Rate:	4 per second.
Sensor Break Detection:	4 to 20 mA, 2 to 10V and 1 to 5V ranges only. *Control outputs turn off if RSP is the active SP.*
Isolation:	Slot A - Basic isolation, Slot B - Reinforced safety isolation from other inputs and outputs.

DIGITAL INPUTS

Volt-free(or TTL):	Open(2 to 24VDC) = SP1, Local SP or Auto Mode, Closed(<0.8VDC) = SP2, Remote SP or Manual Mode.
Isolation:	Reinforced safety isolation from inputs and other outputs.

OUTPUTS

Relay

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

SSR Driver

Drive Capability:	SSR drive voltage >10V into 500Ω min. (~20mA)
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.

DC

Types / Ranges	0 to 20mA, 4 to 20mA, 0 to 5V, 0 to 10V or 2 to 10V
Load Resistance:	Current Output 500Ω max, Voltage Output 500Ω min.
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:	20 to 28V DC (24V nominal) into 910Ω minimum resistance.
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.

You cannot connect both configuration port & RS485 port at the same time.

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, 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, cUL & CSA
EMI:	Complies with EN61326-1:2013.
Safety Considerations:	Complies with UL61010-1 Edition 3, EN61010-1 Version 2010 & CSA 22.2 No 1010.192. Pollution Degree 2, Installation Category II.
Panel Sealing:	Front to IP66 & NEMA 4X when correctly mounted – Refer to section 1

PHYSICAL

Front Bezel Size:	1/16 Din = 48 x 48mm, 1/8 Din = 96 x 48mm, 1/4 Din = 96 x 96mm.
Depth Behind Panel:	1/16 Din = 110mm, 1/8 & 1/4 Din = 100mm.
Weight:	0.21kg maximum.

SUPPLEMENTARY INFORMATION FOR CSA

-Compliance shall not be impaired when fitted to the final installation.
-Designed to offer a minimum of Basic Insulation only.
-The body responsible for the installation is to ensure that supplementary insulation suitable for Installation Category II is achieved when fully installed.
-To avoid possible hazards, accessible conductive parts of the final installation should be protectively earthed in accordance with EN61010 for Class 1 Equipment.
-Output wiring should be within a Protectively Earthed cabinet.
-Sensor sheaths should be bonded to protective earth or not be accessible.
-Live parts should not be accessible without the use of a tool.
-When fitted to the final installation, an IEC/CSA APPROVED disconnecting device should be used to disconnect both LINE and NEUTRAL conductors simultaneously.
-Do not position the equipment so that it is difficult to operate the disconnecting device.