¹/₁₆ - ¹/₈ - ¹/₄ DIN VMD CONTROLLERS **CONCISE PRODUCT MANUAL (59377-6)**

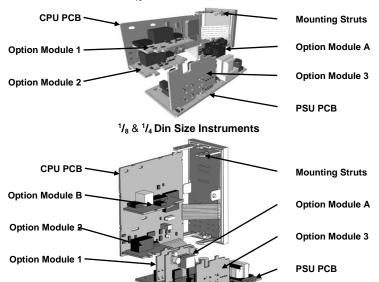
CAUTION: Installation should be only performed by technically competent personnel. Local Regulations regarding electrical installation & safety must be observed.

1. INSTALLATION

The models covered by this manual have three different DIN case sizes (refer to section 10). Some installation details vary between models. These differences have been clearly shown.

Note: The functions described in sections 2 thru 9 are common to all models. Installing Option Modules

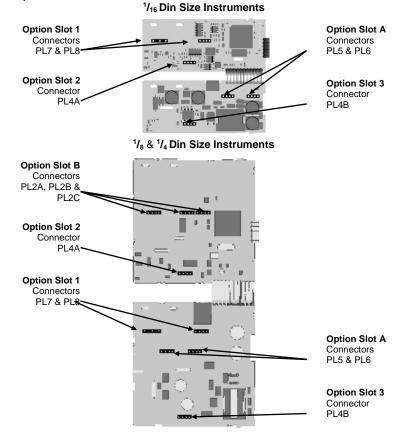
¹/₁₆ Din Size Instruments



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

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

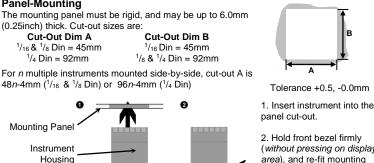
Option Module Connectors



Panel-Mounting

Ratchets

Gasket



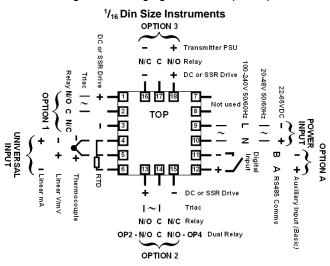
(without pressing on display area), and re-fit mounting clamp.

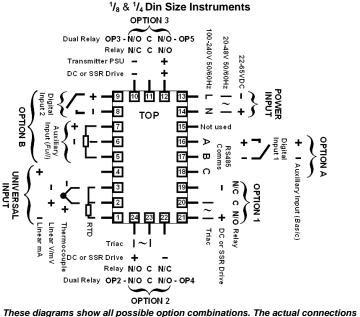
3. Push clamp forward, using a tool if necessary, until gasket is compressed and instrument held firmly in position

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)





required depend on the exact model and options fitted.

*Note: This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSR Drivers or 1 Dual Relay) for the valve Open & Close functions. See Output Usage 1-5 in Configuration Mode.

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

- Comp	Supplementary Installation Information - Compliance shall not be impaired when fitted to the final installation. - Designed to offer a minimum of Basic Insulation only.					Parameter	Lower Display		Upper Display	Adjustment range &		
- The b suitable	- The body responsible for the installation is to ensure that supplementary insulation suitable for Installation Category II is achieved when fully installed.						High Alarm 1 value**	РҺЯ І	Range M	linimum to Range Maximum in display	Description Range Max	
	- To avoid possible hazards, accessible conductive parts of the final installation should be protectively earthed in accordance with EN6010 for Class 1 Equipment.						Low Alarm 1 value**	PLR I		units	Range Min	
	 Output wiring should be within a Protectively Earthed cabinet. Sensor sheaths should be bonded to protective earth or not be accessible. 							Band Alarm 1 value**	ьal I	1 LSD	to span from setpoint in display units	5
	- Live parts should not be accessible without the use of a tool. - A disconnecting device should disconnect both LINE & NEUTRAL conductors						s	Dev. Alarm 1 value**	dal I	+/- \$	Span from setpoint in display units	5
	neously.	g device m	nust be ea	asily accessible.				Alarm 1 Hysteresis**	AHY I	1	LSD to full span in display units	1
Note:	At first now	er-un the	messan	e Goto ConF is dis	nlaved	as describ	ed in section	Alarm 2 Type**	ALA5			P_Lo
	is manual			enus is denied unt				High Alarm 2 value**	Phas		Options as for alarm 1	Range Max
	SELEC		= _ 5	ΓF				Low Alarm 2 value**	PLA5			Range Min
Select	mode is use	d to acces	s the cor	nfiguration and opera			S.	Band Alarm 2 value**	PArs			5
In sele	ct mode, pre	ess 🛆 or	∀ to ch	ding down 🖸 and p noose the required m	node, pre	ess 🖸 to e	nter. An	Dev. Alarm 2 Value**	9875			5
Droop				code, then press			p modes.	Alarm 2 Hysteresis**	8H75		Options as for alarm 1	I
Mode		Upper	Lower		scriptio		Default	Loop Alarm	LAEn		SA (disabled) or EnAb (enabled)	d iSA
	ſ	Display	Display	y			Unlock Codes			non£ ALA I	No alarms Inhibited Alarm 1 inhibited	
Operat		OPtr	SLCE		al opera		None	Alarm Inhibit	Inh i	ALA2	Alarm 2 inhibited	nonE
Set Up Config	uration	SELP ConF	SLCE SLCE	Tailor setting Configure the			01 05			ьогн ОРП	Alarm 1 and alarm 2 inhibited Valve Open	
Produc	ct Info	inFo	SLCE	Check manuf	acturing	information	None			<u> </u>	Valve Close	
Auto-T		Rtun Ient will a	SLCE Iways re	Invoke Pre-			if there is no			A I_d A I_r	Alarm 1, Direct Alarm 1, Reverse	
	tivity for 2									₽_28	Alarm 2, Direct	
3.	CONFIG	URAT		ODE - ConF						A2_r L₽_d	Alarm 2, Reverse Loop Alarm, Direct	
First se	elect Configu	iration mo	de from S	Select mode <i>(refer to</i> eters, then press Δ	section	2).	guired value	Output 1 Usage*	USE I	LP_r	Loop Alarm, Reverse	OPN
Press	AUTO SCIOI	cept the ch	nange, ot	herwise parameter v	vill rever	t to previous	value. To			Or_d Or_r	Logical Alarm 1 OR 2, Direct Logical Alarm 1 OR 2, Reverse	
exit fro	m Configura	tion mode	, hold do	wn 🖸 and press 🛛	, to re	turn to Sele	ct mode.			Rd_d	Logical Alarm 1 AND 2, Direct	
to use	r guide (ava	ailable fro	m your s	supplier) for further						Ad_r rEtS	Logical Alarm 1 AND 2, Reverse Retransmit SP Output	
are rep	are repeated in Setup Mode.											
Derem		Lawar	Unner	A division and range		anintian	Defeult			ւեր	Retransmit PV Output	
Param		Lower Display					Default Value			гЕЕР 0_5	0 to 5 V DC output	
Input F	Range/Type	Display InPL	Display See	e following table for p	oossible	codes	Value JC	Linear Output 1 Range	Eyp I	rEEP 0_5 0_ 10 2_ 10	0 to 5 V DC output 0 to 10 V DC output 2 to 10 V DC output	0_ 10
Input F Code	Range/Type	Display InPL e &	Display See Code	e following table for p Input Type & Range		codes Input Type Range	Value JC & &		EAL I	rELP 0_5 0_10 2_10 0_20	0 to 5 V DC output 0 to 10 V DC output	0_ 10
Input F	Range/Type	Display InPL e & 24 °C	Display See	e following table for p Input Type &	oossible	codes Input Type Range	Value JC 2 & 40%:	Range Retransmit Output		rELP 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 -1999 to 9999	
Input F Code 6C 6F CC	Range/Type Input Typ Range B: 100 - 182 B: 211 - 337 C: 0 - 2320	Display InPL e & 24 °C 5 °F °C	Display Sec Code L.C L.F NC	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C	Code P24F PEC	codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199	Value JC 2 & 40%: - 800 °C	Range Retransmit Output 1 Scale maximum	EYP I ro IH	rELP 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 -1999 to 9999 (display value at which output will be maximum)	
Input F Code 6C 6F CC CF	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200	Display InPL e & 24 °C 5 °F °C 3 °F	Display See Code L.C L.F NC NF	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F	Code Code P24F PEC PEF	codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -328	Value JC 2 & 40%: - 800 °C - 1472 °F	Range Retransmit Output		rELP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output	Range max
Input F Code 6C 6F CC	Range/Type Input Typ Range B: 100 - 182 B: 211 - 337 C: 0 - 2320	Display InPL e & 24 °C 5 °F °C 3 °F 2200 °C	Display Sec Code L.C L.F NC	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C	Code P24F PEC	Codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -328 Pt100: -128	Value JC 2 & 40%: - 800 °C	Range Retransmit Output 1 Scale maximum Retransmit Output	ro IH	rELP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999	Range max Range min
Input F Code 6C 6F CC CF JC JF J.C	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 -	Display InPL e & 24 °C 15 °F °C 3 °F 200 °C 192 °F 537.7 °C	Display Set Code L.C L.F NF rF F SC	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C	Code P24F PEC PEF PE.C PE.F 0_20	codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -199 0 - 20 mA D	Value JC 2 & 40%: - 800 ℃ - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum	ro IH ro IL	rELP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum)	Range max Range min Sec or Al2
Input F Code 6C 6F CC CF JC J.C J.C J.F	Binput Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 21 J: -128.8 - J: -199.9 -	Display nPL e & 44 °C 15 °F °C 30 °F 200 °C 192 °F 537.7 °C 999.9.9 °F	Display Sec Code L.C L.F NC NF rC rF SC SF	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F	Code P24F PEC PEF PE.C PE.F 0.20 4_20	codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -128 Pt100: -199 0 - 20 mA D 4 - 20 mA D	Value JC 2 & 40%: - 800 °C - 1472 °F - 8 - 537.7 °C - 9 - 999.9 °F C C C	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output	ro IH ro IL USE2 Ł9P2	-ELP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999	Range max Range min Sec or Al2 0_ 10
Input F Code 6C 6F CC CF JC JF J.C	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 -	Display nPL e & 44 °C 5 °F °C 3 °F 200 °C 192 °F 537.7 °C 999.9 °F 373 °C	Display Set Code L.C L.F NF rF F SC	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C	Code P24F PEC PEF PE.C PE.F 0_20	codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -128 Pt100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D	Value JC 2 & 40%: - 800 °C - 1472 °F - 88 - 537.7 °C - 9999.9 °F C C C C C	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum	ro IH ro IL USE2	-ELP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum)	Range max Range min Sec or Al2
Input F Соде 6С 6Г 0Г 0Г 0.С 0.Г 0.Г 0.Г 0.Г 0.Г 0.Г 0.Г 0.Г 0.Г 0.Г	Bit Not Constraint Second	Display InPL e & 24 °C 5 °F °C 3 °F 200 °C 192 °F 537.7 °C 503 °F 537.7 °C 537.7 °C	Display Sec Code L.C L.F nC rF F 5C 5F EC EF EC EF	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C	Code Code P24F PEC PEF PE.C PE.F 0.20 4.20 0.50 10.50 0.5	codes Input Type Range PrRh20% vs 22 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -199 0 - 20 mA D 0 - 50 mV D 10 - 50 mV I 0 - 50 V DC	Value JC 2 & 40%: - 800 °C - 1472 °F - 88 - 537.7 °C - 9999.9 °F C C C C C	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output	ro IH ro IL USE2 Ł9P2	-EEP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output	Range max Range min Sec or Al2 0_ 10 Range max
Input F Code 6C 6F CC CF JC J.C J.F HC HF	Binput Type Input Typ 8: 100 - 182 8: 211 - 332 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 21 J: -128.8 - J: -199.9 - K: -240 - 13 K: -400 - 2	Display nPL e & e & e & e & e & e & e & e &	Display Sec Code L,C L,F nC TF FC FC SF EC EF EC E,F	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F	Code Code P24F PEC PEF PE.C PE.F 0.20 4.20 0.50 10.50 0.5 1.5	codes Input Type Range PIRh20% vs 32 - 3362 °F P1100: -199 P1100: -128 P1100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 V DC 1 - 5 V DC	Value JC 2 & 40%: - 800 °C - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C C C C C DC	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum Output 3 Usage*	ro IH ro IL USE2 EYP2 ro2H	-EEP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999	Range max Range min Sec or Al2 0_ 10 Range max
Input F Соде 6С 6С 6 6 6 6 7 7 7 9 7 9 9 9 9 9 9 9 9 9 9 9	Bit Note Second Se	Display nPL e & e & e & e & e & e & e & e &	Display Sea Code L,C L,F nC F rC rF SC SF EC E,F E,C E,F P24(C	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C	Code Code P24F PEC PEF PE.C PE.F 0.20 4.20 0.50 0.50 0.5 1.5 0.10 2.10	codes Input Type Range PIRh20% vs 32 - 3362 °F P1100: -199 P1100: -128 P1100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 10 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC	Value JC 2 & 40%: - 800 °C - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C C C C C DC	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum	ro IH ro IL USE2 EYP2 ro2H ro2L	-EEP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 As for output 1 As for output 1	Range max Range min Sec or Al2 O_ IO Range max Range min
Input F Соде 6С 6Г 0Г 0Г 0Г 0Г 0Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г 4Г	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 21 J: -199.9 - K: -240 - 13 K: -400 - 2 K: -128.8 - L: 0 - 762 % L: 0 - 762 % L: 32 - 1403	Display nPL e & e & e & e & e & e & e & e &	Display Sec Code L.C L.F nC rF F SF EC EF EC EF EC EF EC EF EC Upper Display	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C andicates temperations	Code Code P24F PEC PEF PE.F 0_20 4_20 0_50 0_50 0_5 1_5 0_10 50 2_10 2_10 2_10 2_10	codes Input Type Range PIRh20% vs 32 - 3362 °F PI100: -199 PI100: -128 P1100: -128 P1100: -128 P100: -50 mV D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C	Value JC 2 & 40%: - 800 °C - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C C C C C C DC 	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum Output 3 Usage* Linear Output 3	ro IH ro IL USE2 E9P2 ro2H ro2L USE3 E9P3	-EEP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum)	Range max Range min Sec or Al2 0_ 10 Range max Range min A 1_d
Input F Соdе <i>bC</i> <i>bF</i> <i>CC</i> <i>JF</i> <i>JC</i> <i>JF</i> <i>JC</i> <i>JF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VC</i> <i>VF</i> <i>VC</i> <i>VC</i> <i>VC</i> <i>VC</i> <i>VC</i> <i>VC</i> <i>VC</i> <i>VC</i>	Range/Type Input Typ Range B: 100 - 182 B: 211 - 33' C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 - J: -128.8 - J: -128.8 - K: -240 - 11 K: -400 - 2 K: -199.9 - L: 0 - 762 °C L: 32 - 1403 Decimal point Range Limit Range	Display nPL e & 4 °C 5 °F °C 3 °F 200 °C 192 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F int showr Display ruL	Display Sec Code L,C L,F nC rF SC SF EC EF E,C E,F P24C Upper Display	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1752 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C Dindicates temperat Adjustment range Scale Range Lower to Range Maxi Range Minimu	Code Code P24F PEC PEF PE.C PE.F 0.20 4.20 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0	codes Input Type Range PIRh20% vs 32 - 3362 °F P1100: -199 P1100: -128 P1100: -128 P1100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC other of Coscription 00	Value JC 2 & 40%: - 800 °C - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C C C C C C DC - - DC - - - - - - - - - - - - -	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum	го IH го IL USE2 EУР2 го2H го2L USE3 EУР3 го3H го3L	- EEP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum)	Range max Range min Sec or Al2 0_ 10 Range max Range min A 1_d 0_ 10 Range max
Input F Code 6C 6F CC 7F JC JF JC JF 4C 4F 4C 4F 4C 4F 4C 4F 4C 4F 4C 4F 4C 4C 4C 4C 4C 4C 4C 4C 4C 4C 4C 4C 4C	Range/Type Input Typ Range B: 100 - 182 B: 211 - 33' C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 - J: -128.8 - J: -128.8 - K: -240 - 11 K: -400 - 2 K: -199.9 - L: 0 - 762 °C L: 32 - 1403 Decimal point Range Limit	Display nPL e & e & e & e & e & e & e & e &	Display Sec Code L.C L.F nC rF SC SF EC E.F E.C E.F P24C Upper Display	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C Dindicates temperat Adjustment range Scale Range Lower to Range Minimu Scale Range Upper	Code Code P24F PEC PEF PE.C PE.F 0.20 4.20 0.50 0.50 0.50 0.50 0.5 1.5 0.10 2.10 2.10 2.10 2.10 2.10 2.10 2.10	codes Input Type Range PIRh20% vs 32 - 3362 °F P1100: -199 P1100: -128 P1100: -128 P1100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC olution of C scription 00	Value JC 3 & 40%: - 800 °C - 1472 °F - 8 - 537.7 °C - 9999.9 °F C C C C C C C C D C C C C C C C C C C C C C	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum Output 4 Usage*	го IH го IL USE2 E9P2 го2H го2L USE3 E9P3 го3H го3L	- EEP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) -1999 to 9999 (display value at which output will be minimum) -1999 to 9999 (display value at which output will be minimum)	Range max Range min Sec or Al2 0_ 10 Range max Range min A 1_d 0_ 10 Range max Range max
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>JF</i> <i>JC</i> <i>JF</i> <i>JC</i> <i>JF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>LF</i> Note: Param Scale <i>Lower</i> Decim positio	Range/Type Input Typ Range B: 100 - 182 B: 211 - 33* C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 - J: -128.8 - J: -128.8 - K: -240 - 13 K: -1400 - 2 K: -128.8 - L: 0 - 762 °C L: 32 - 1403 Decimal point Imit al point n	Display nPL e & 4 °C 5 °F °C 3 °F 200 °C 192 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F int showr Display ruL	Display Sec Code L.C L.F nC rF SC SF EC EF E.C E.F P24C Upper Display	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C indicates temperat Adjustment range Scale Range Lower to Range Maxia Range Minimu Scale Range Upper xxx, I=xxx.x, Z=x (non-temperature rate	Code P24F PEC PEF PE.C PE.F 0_20 4_20 0_50 10.50 0_5 1.5 0_10 2_10 2_10 ture res 2_6 & Des ture tass 1.5 0_10 2_10 ture res 2_6 & Des 1.5 0_10 2_10 ture res 2_6 & Des 1.5 0_10 2_10 ture res 2_6 & Des 1.5 0_10 2_10 ture res 2_6 & Des 1.5 0_10 2_10 ture res 2_6 & Des 1.5 0_10 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	codes Input Type Range PRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -138 Pt100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C Scription 00	Value JC 2 & 40%: - 800 °C - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C C C C C C DC - - DC - - - - - - - - - - - - -	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum	го IH го IL USE2 EУР2 го2H го2L USE3 EУР3 го3H го3L	- FELP 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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum)	Range max Range min Sec or Al2 0_ 10 Range max Range min A 1_d 0_ 10 Range max
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>CF</i> <i>JC</i> <i>JF</i> <i>JC</i> <i>JF</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>UF</i> <i>Note:</i> Param Scale Uper Decim positio Primar	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 - J: -128.8 - J: -128.8 - K: -400 - 2 K: -128.8 - L: 0 - 762 % L: 32 - 1403 Decimal point	Display nPL e & e & e & e & e & e & e & e &	Display Sec Code L.C L.F nC rF SC SF EC E.F E.C E.F P24C Upper Display	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C indicates temperat Adjustment range Scale Range Lower to Range Maxia Range Minimu Scale Range Upper xxx, I=xxx.x, Z=x (non-temperature rate	Code P24F PEC PEF PE.C PE.F 0_20 4_20 0_50 10.50 0_5 1.5 0_10 2_10 ture res 2_8 Des 1.5 0_10 2_10 ture res 2_8 Des 1.5 0_20 0_5 1.5 0_10 2_10 ture res 2_8 Des 1.5 0_20 0_5 1.5 0_10 2_10 ture res 2_8 Des 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 1.5 0_20 0_5 0_5 0_5 0_5 0_5 0_5 0_5 0_	codes Input Type Range PRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -138 Pt100: -199 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C Scription 00	Value JC 2 & 40%: - 800 °C - 1472 °F .8 - 537.7 °C .9 - 999.9 °F C C C C C C DC - - DC - - - - - - - - - - - - -	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum Output 4 Usage* Output 5 Usage* Display Strategy Serial	ro IH ISE2 LYP2 ro2H USE3 LYP3 ro3H ro3H USE4 USE4 USE5 d SP	- ГЕЦР 0_5 0_10 2_10 0_20 4_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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) put 1 except Retransmit of PV or SP is not possible. 7, 9, 4, 5, 6 or 7 (<i>refer to section 8</i>) Modbus with no parity	Range max Range min Sec or Al2 0_10 Range max Range min A 1_d 0_10 Range max Range min 0_10 Range max
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>CF</i> <i>JC</i> <i>JF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>LF</i> Note: Param Scale Upper Scale <i>Lower</i> Decim positio	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 21 J: -128.8 - J: -128.8 - K: -400 - 2 K: -400 - 2 K: -128.8 - L: 0 - 762 % L: 32 - 1403 Decimal point Limit Range Limit al point N	Display nPL e & 4 °C 5 °F 00 °C 192 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F int showr Display ruL dPo5 CLrL	Display Sec Code L.C L.F nC rF SF EC EF E.C E.F P24C Upper Display O=xx d r C=xx	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C indicates temperative Adjustment range Scale Range Lower to Range Maxim Range Minimu Scale Starge Upper XXX, I=XXX, Z=X (non-temperature range Direct S to 5.00 (5 secs to	Code Code P24F PEC PEF PEC PEF 0_20 4_20 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 0_50 10.50 0_50	codes Input Type Range PtRh20% vs 22 - 3362 °P Pt100: -199 Pt100: -128 Pt100: -199 0 - 20 mA D 0 - 50 mV D 10 - 50 mV I 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC olution of C scription 00 20 00	Value JC a & 40%: - 800 °C - 1472 °F 8 - 537.7 °C 9 - 999.9 °F C C C C C C C DC J Ange max (Lin=1000) Range max (Linear=0) J FEU	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale maximum Output 4 Usage* Output 5 Usage* Display Strategy	ro IH I SEE2 E9P2 ro2H I SE3 E9P3 ro3H ro3H I SE4 USE4 USE5	- FELP 0_5 0_10 2_10 0_20 4_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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) put 1 except Retransmit of PV or SP is not possible. 2, 3, 4, 5, 6 or 7 (refer to section 8)	Range max Range min Sec or Al2 0_ 10 Range max Range min A 1_d 0_ 10 Range max Range max
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>CF</i> <i>JC</i> <i>JF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>LF</i> Note: Param Scale Upper Scale <i>Lower</i> Decim positio	Range/Type Input Typ Range B: 100 - 182 B: 211 - 332 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 2 J: -128.8 - J: -128.8 - J: -128.8 - K: -400 - 2 K: -128.8 - L: 0 - 762 % L: 32 - 1403 Decimal point Limit al point n y Output	Display nPL e & 4 °C 5 °F °C 3 °F 200 °C 999.9 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F int showr Display ruL dPo5 CLrL	Display Sec Code L.C L.F nC rF 5C 5F EC EF E.C E.F P24C Upper Display 0=xx d r 0=xx d r 0=xx	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C C indicates temperat Adjustment range Scale Range Lower to Range Maxit Range Minimu Scale Range Upper XXX, I=XXX.X, Z=X (non-temperature range Direct	Code P24F PEC PEF PE.C PEF PL.C PEF 0_20 4_20 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50 10.50 0_50	Codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 0 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C scription 00	Value JC 2 & 40%: - 800 °C - 1472 °F 8 - 537.7 °C 9 - 999.9 °F C C C C C C C DC - DC - N 1° Default Value Range max (Lin=1000) Range min (Linear=0)	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Retransmit Output 2 Scale minimum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale maximum Output 4 Usage* Output 5 Usage* Display Strategy Serial Communications Protocol	ro IH ISE2 LYP2 ro2H USE3 LYP3 ro3H ro3H USE4 USE4 USE5 d SP	- Е Е Р 0_5 0_10 2_10 0_20 4_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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) put 1 except Retransmit of PV or SP is not possible. 7, 3, 4, 5, 6 or 7 (<i>refer to section 8</i>) Modbus with no parity Modbus with Odd Parity 1.2 kbps	Range max Range min Sec or Al2 0_ I0 Range max Range min A I_d 0_ I0 Range max Range min PI A I_d
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>CF</i> <i>JC</i> <i>JF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>LF</i> Note: Param Scale Upper Scale <i>Lower</i> Decim positio	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 C: 32 - 4200 J: -200 - 11 J: -328 - 21 J: -128.8 - J: -128.8 - K: -400 - 2 K: -400 - 2 K: -128.8 - L: 0 - 762 % L: 32 - 1403 Decimal point Limit Range Limit al point N	Display nPL e & 4 °C 5 °F 00 °C 192 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F int showr Display ruL dPo5 CLrL	Display See Code L.C L.F NF -F SC SF EC EF E.C E.F Opper Display O=xx d r O=xx d r O. Time Va er P_H ,	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C Findicates temperat Adjustment range Scale Range Lower to Range Maxit Range Minimu Scale Range Lower to Range Upper Xx, I=xxx.x, Z=x (non-temperature range Direct. 5 to 5.00 (5 secs to alve takes to move b ad stops (full Open to Process F	Code P24F PEC PEF PEC PEF PEC PEF 0_20 4_20 0_50 10,50 10,50 10,50 0_50 10,50	Codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -139 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C scription 00 Scriptions 00 00 Scriptions 00	Value JC a & 40%: - 800 °C - 1472 °F 8 - 537.7 °C 9 - 999.9 °F C C C C C C C DC J Ange max (Lin=1000) Range max (Linear=0) J FEU	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum Output 4 Usage* Display Strategy Serial Communications Protocol	ro IH IUSE2 LYP2 ro2H USE3 LYP3 ro3H ro3H USE4 USE4 USE5 d .SP ProL	- Е Е Р 0_5 0_10 2_10 0_20 4_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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) put 1 except Retransmit of PV or SP is not possible. 7. 3, 4, 5, 6 or 7 (<i>refer to section 8</i>) Modbus with no parity Modbus with Cdd Parity 1.2 kbps 2.4 kbps	Range max Range min Sec or Al2 0_ 10 Range max Range min 0_ 10 Range max Range min 0_P1 A 1_d 1 0_15
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>CF</i> <i>JC</i> <i>JF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>LF</i> Note: Param Scale Upper Scale <i>Lower</i> Decim positio	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 J: -200 - 11 J: -328 - 21 J: -128.8 - J: -128.8 - K: -400 - 2 K: -128.8 - K: -128.8 - L: 0 - 762 % L: 0 - 762 % L: 32 - 1403 Decimal point Imit Range Limit al point n Y Output I Action	Display nPL e & 4 °C 5 °F 00 °C 192 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F 537.7 °C 999.9 °F int showr Display ruL dPo5 CLrL	Display See Code L.C L.F NF -FC -F SC SF EC EF E.C E.F - P2+C - Display O=xx - F - C - Time V2 er P_H - P_LO dE	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C Fordicates temperation Adjustment range Scale Range Lower to Range Maxia Range Minimu Scale Range Upper xxx, <i>I</i> =xxx.x, <i>Z</i> =x (non-temperature range Direct S to 5.00 (5 secs to alve takes to move bind stops (<i>full Open to</i> Process L Process L Deviatio	Code Code P24F PEC PEF PEC PEF PEC PEF 0_20 0_50	Codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -128 Pt100: -139 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C scription 00 Scription 00 Scription 00	Value JC a & 40%: - 800 °C - 1472 °F 8 - 537.7 °C 9 - 999.9 °F C C C C C C C DC J Ange max (Lin=1000) Range max (Linear=0) J FEU	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum Output 4 Usage* Output 5 Usage* Display Strategy Serial Communications Protocol	ro IH I 5522 E9P2 ro2H I 553 E9P3 ro3H ro3H USE4 USE4 USE5 d 5P	- Е Е Р 0_5 0_10 2_10 0_20 4_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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) put 1 except Retransmit of PV or SP is not possible. 7, 3, 4, 5, 6 or 7 (<i>refer to section 8</i>) Modbus with no parity Modbus with Odd Parity 1.2 kbps	Range max Range min Sec or Al2 0_ I0 Range max Range min 0_ I0 Range max Range min 0_P1 A I_d I
Input F Code <i>bC</i> <i>bF</i> <i>CC</i> <i>JF</i> <i>JC</i> <i>JF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>HC</i> <i>HF</i> <i>LC</i> <i>UF</i> <i>Note:</i> Param Scale <i>Upper</i> Scale <i>Lower</i> Decim positio Primar Control	Range/Type Input Typ Range B: 100 - 182 B: 211 - 331 C: 0 - 2320 J: -200 - 11 J: -328 - 21 J: -128.8 - J: -128.8 - K: -400 - 2 K: -128.8 - K: -128.8 - L: 0 - 762 % L: 0 - 762 % L: 32 - 1403 Decimal point Imit Range Limit al point n Y Output I Action	Display mPL e & e & e & e & e & e & e & e &	Display See Code L.C L.F NF - C - F - SC - SF - EC - EC - EC - Display - C - C - F - C - C - C - C - C - C - C - C	e following table for p Input Type & Range L: 0.0 - 537.7 °C L: 32.0 - 999.9 °F N: 0 - 1399 °C N: 32 - 2551 °F R: 0 - 1759 °C R: 32 - 3198 °F S: 0 - 1762 °C S: 32 - 3204 °F T: -240 - 400 °C T: -400 - 752 °F T: -128.8 - 400.0 °C T: -199.9 - 752.0 °F PtRh20% vs. 40%: 0 - 1850 °C Findicates temperat Adjustment range Scale Range Lower to Range Maxit Range Minimu Scale Range Lower to Range Upper Xxx, I=xxx.x, Z=x (non-temperature range Direct. S to S.DD (5 secs to alve takes to move b ad stops (full Open to Process L	Code Code P24F PEC PEF PE.C PE.F 0_20 4_20 0_50	Codes Input Type Range PtRh20% vs 32 - 3362 °F Pt100: -199 Pt100: -128 Pt100: -128 Pt100: -139 0 - 20 mA D 4 - 20 mA D 0 - 50 mV D 10 - 50 mV D 0 - 50 V DC 1 - 5 V DC 0 - 10 V DC 2 - 10 V DC Olution of C scription 00 Scription 00 Scription 00	Value JC 2 & 40%: - 800 °C - 1472 °F 8 - 537.7 °C 9 - 999.9 °F C C C C C C C C DC 2 2 4 2 4 2 4 2 4 2 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	Range Retransmit Output 1 Scale maximum Retransmit Output 1 Scale minimum Output 2 Usage* Linear Output 2 Range Retransmit Output 2 Scale maximum Output 3 Usage* Linear Output 3 Range Retransmit Output 3 Scale maximum Retransmit Output 3 Scale maximum Retransmit Output 3 Scale minimum Output 4 Usage* Output 5 Usage* Display Strategy Serial Communications Protocol	ro IH IUSE2 LYP2 ro2H USE3 LYP3 ro3H ro3H USE4 USE4 USE5 d .SP ProL	- Е Е Р 0_5 0_10 2_10 0_20 4_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 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) As for output 1 As for output 1 As for output 1 As for output 1 As for output 1 -1999 to 9999 (display value at which output will be minimum) As for output 1 -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be maximum) -1999 to 9999 (display value at which output will be minimum) put 1 except Retransmit of PV or SP is not possible. 7. 3, 4, 5, 6 or 7 (<i>refer to section 8</i>) Modbus with no parity Modbus with Codd Parity 1.2 kbps 2.4 kbps 4.8 kbps	Range max Range min Sec or Al2 0_ 10 Range max Range min 0_ 10 Range max Range min 0_P1 A 1_d 1 0_15

Supplementary Installation Information - Compliance shall not be impaired when fitted to the final installation.						Parameter	Lower Display		Upper Display	
- The body resp	 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. 						PhA I	Range N	Range Minimum to Range Maximum in display	
- To avoid possi protectively ear	- To avoid possible hazards, accessible conductive parts of the final installation should be protectively earthed in accordance with EN6010 for Class 1 Equipment.							. Runge n	units	Range Min
- Sensor sheath	ectively Earthed cab protective earth or r rithout the use of a t	not be accessible	e.	Band Alarm 1 value**	bal I	1 LSD to span from setpoint in display units		5		
			nnect both LINE & N		ctors	Dev. Alarm 1 value** Alarm 1	aar i	+/- \$	Span from setpoint in display units	5
- The disconned	ting device m	nust be ea	sily accessible.			Hysteresis** Alarm 2 Type**	RHY I RLR2	1	LSD to full span in display units	ا P_Lo
7 of this manua			e Goto ConF is dis enus is denied unt			High Alarm 2 value**	PhA2		Options as for alarm 1	Range Max
completed.		F - 51	£E			Low Alarm 2 value**	PLA2			Range Min
Select mode is	used to acces	ss the con	figuration and operating down 🖸 and p		ions.	Band Alarm 2 value**	Pars			5
In select mode,	press \land or	∇ to ch	oose the required m uthorised entry to C	node, press 🔘	to enter. An Setup modes.	Dev. Alarm 2 Value** Alarm 2	SJAb		Options as for alarm 1	5
Press \triangle or ∇	to enter the	e unlock o	code, then press	to proceed.		Hysteresis** Loop Alarm	RHY2 LREn		SA (disabled) or EnAb (enabled)	l d iSA
Mode	Upper Display	Lower Display		scription	Default Unlock Codes			попЕ	No alarms Inhibited	
Operator	OPtr	SLCE		al operation	None	Alarm Inhibit	Inh i	ALA I ALA2	Alarm 1 inhibited Alarm 2 inhibited	nonE
Set Up Configuration	SELP Conf	SLCE SLCE	-	is to the applicat e instrument for u				ьо£н ОРЛ	Alarm 1 and alarm 2 inhibited Valve Open	
Product Info Auto-Tuning	inFo Atun	SLCE SLCE		acturing informa Tune or Self-Tur					Valve Close Alarm 1, Direct	
Note: The instr key activity for	rument will a		turn automatically	to Operator mo	de if there is no			R I_r A2_d	Alarm 1, Reverse Alarm 2, Direct	
3. CONF	IGURAT		ODE - Conf					A2_r LP_d	Alarm 2, Reverse	
First select Con	figuration mo	de from S	elect mode <i>(refer to</i> ters, then press Δ	section 2).	e required value	Output 1 Usage*	USE I	LP_r	Loop Alarm, Direct Loop Alarm, Reverse	OPN
Press MAN to	accept the ch	hange, otł	nerwise parameter v	vill revert to prev	ious value. To			Or_d Or_r	Logical Alarm 1 OR 2, Direct Logical Alarm 1 OR 2, Reverse	
Note: Paramete	ers displaye	d depend	vn D and press s on how instrume upplier) for further	ent has been co	nfigured. Refer			Rd_d Rd_r	Logical Alarm 1 AND 2, Direct Logical Alarm 1 AND 2, Reverse	
are repeated in				uelans. Farann	elers markeu			-ELS -ELP	Retransmit SP Output Retransmit PV Output	
Parameter	Lower Display	Upper Display	Adjustment rang		Value			0_5 0_ 10	0 to 5 V DC output 0 to 10 V DC output	
Input Range/Ty Code Input T	Гуре &	Code	e following table for ہ Input Type &	Code Input T		Linear Output 1 Range	FAb I	0_20	2 to 10 V DC output 0 to 20 mA DC output	0_ 10
60 Range 61 B: 100 -		_	Range L: 0.0 - 537.7 ºC	P24F	% vs 40%:			4_20	4 to 20 mA DC output -1999 to 9999	
<i>bF</i> B: 211 - [[C: 0 - 23		L.F NC	L: 32.0 - 999.9 °F N: 0 - 1399 °C	- 32 - 330	62 ⁰F -199 - 800 ⁰C	Retransmit Output 1 Scale maximum	ro IH		(display value at which output will be maximum)	Range max
[F C: 32 - 4		NF	N: 32 - 2551 ºF	PEF Pt100: -	-328 - 1472 ºF	Retransmit Output	ro IL		-1999 to 9999 (display value at which output	Range min
	- 1200 ºC - 2192 ºF	rF	R: 0 - 1759 ºC R: 32 - 3198 ºF	4	-128.8 - 537.7 °C -199.9 - 999.9 °F	Output 2 Usage*	USE2		will be minimum) As for output 1	Sec or Al2
	.8 - 537.7 °C .9 - 999.9 °F		S: 0 - 1762 ºC S: 32 - 3204 ºF	0_20 <mark>0-20 m</mark> 4_20 <mark>4-20 m</mark>		Linear Output 2 Range	FAb5		As for output 1 -1999 to 9999	0_ 10
Р[<mark>К: –240</mark>	- 1373 ⁰C	ŧC	T: –240 - 400 ⁰C	0_50 0-50 m	NV DC	Retransmit Output 2 Scale maximum	ro2H		(display value at which output will be maximum)	Range max
<i>μ.</i> [<mark>К: –128</mark> .) - 2503 ⁰F .8 - 537.7 ⁰C	E.C	T: –400 - 752 °F T: –128.8 - 400.0 °C	0_5 0-5VI	00	Retransmit Output 2 Scale minimum	ro2L		-1999 to 9999 (display value at which output	Range min
<i>Ψ.</i> Ϝ <mark>Κ: –199</mark> . <i>L</i> ር <mark>L: 0 - 76</mark>	.9 - 999.9 ⁰F i2 ⁰C	E.F	T: –199.9 - 752.0 °F PtRh20% vs. 40%:	I_5 <u>1-5V</u> D_ 10 <mark>0-10V</mark>		Output 3 Usage*	USE3	will be minimum) As for output 1		A I_d
LF L: 32 - 1		P24C	0 - 1850 °C	2_10 2-10 V		Linear Output 3 Range	FAb3	As for output 1		0_ 10
Parameter	Lower	Upper Display	Adjustment rang			Retransmit Output 3 Scale maximum	ro3H		-1999 to 9999 (display value at which output will be maximum)	Range max
Scale Range Upper Limit	ruL		Scale Range Lower to Range Maxi	mum	Range max (Lin=1000)	Retransmit Output 3 Scale minimum	ro3L		-1999 to 9999 (display value at which output	Range min
Scale Range Lower Limit	rLL		Range Minimu Scale Range Upper	Limit -100	Range min (Linear=0)	Output 4 Usage*	USEY	As for ou	will be minimum) tput 1 except Retransmit of PV or SP is	
Decimal point position	dPoS		(non-temperature ra	inges only)	1	Output 5 Usage* Display Strategy	USES d iSP	I, i	not possible. 2, 3, 4, 5, 6 or 7 (refer to section 8)	H I_d ا
Primary Output Control Action	[trl	гЕи d гг	Reverse Direct	Acting	rEu	Serial Communications	Prot	100 глье	Modbus with no parity Modbus with Even Parity	ՐԴեո
Motor Travel Ti	me L r	Time Va	to 5.00 (5 secs to live takes to move be	etween its physic	cal I.OO	Protocol		одел. 1.2	Modbus with Odd Parity 1.2 kbps	
		P_H ,	d stops (full Open to Process H	ligh Alarm		Serial Communications		2.4	2.4 kbps	
Alarm 1Type	ALA I	P_Lo dE	Process L Deviatio		Р_Н ,	Bit Rate	bAud	4.8 9.6	4.8 kbps 9.6 kbps	4.8
		bAnd nonE	Band No a			Comms Address	Addr	19.2 I	19.2 kbps 1 to 255	1



C-6-	ւ_նվ	- 1									
LOCH	r_0	Read onl	у	r_bi							
0 00	r5P	r5P Remote Setpoint (basic)									
	P in	Valve Position Indica	ation (<i>basic</i>)	۴ ۳							
0.00		Remote Setpoir	nt (<i>Full</i>)	P "							
n 16		Valve Position Indic	ation (<i>Full</i>)	F #							
	d 15 I	Setpoint 1 / Setpoin	t 2 select**	d ıS							
	d iAS	Automatic / Manu	al select	ריט							
	۲. P	Setpoint 1 / Setpoin	t 2 select**								
2J, P	d iAS	Automatic / Manu	al select	d (r 9							
	ק ייצ	Remote / Local set	point select								
	0-50	0 to 20 mA DC									
	4_20	4 to 20 mA DC	; input								
	0_ 10										
r 10P	r 10P	ר יחף							2_ 10	2 to 10 V DC	
			0_5	0 to 5 V DC i	0_ I(
	1_5	1 to 5 V DC input									
								100	0 to 100mV DC input	Available on	
	Pot	Potentiometer (2KΩ minimum)	full Aux. (Slot B) only								
rSPu	-1999	to 9999. Remote SP for	max. input	Range max							
rSPL				Range mir							
rSPo	Constrai	Ĺ									
CLoc	0 to	9999. Unlock Code for	his mode	25							
	г :nР SPu SPL SPo	Latin r_0 R iPR F ron R iPR P in d iG i d	Lot n r_0 Read only R IPR -r5P Remote Setpoin P In Valve Position Indica R IPR -r5P Remote Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I -d IS I Setpoint 1 / Setpoin J IG I O 10 Setpoint 1 / Setpoin -d IS I J IG I O 10 O to 20 mA DO -d IS I J ID I O to 10 V DC -2 IO J ID I O to 10 V DC -2 IO J IS I 1 to 5 V DC i -10 O to 10 V DC ID II I O to 100mV DC input Potentiometer Pot -1999 to 9999. Remote SP for -1999 to 9999. Remote SP for rSPo Constrained within Scale Range Range Lower limits	Lation r_0 Read only R IPR rSP Remote Setpoint (basic) P In Valve Position Indication (basic) R IPB rSP Remote Setpoint (Full) P In Valve Position Indication (Full) P In Valve Position Indication (Full) d IG I d IS I Setpoint 1 / Setpoint 2 select** d IG I d IS I Setpoint 1 / Setpoint 2 select** d IG I d IS I Setpoint 1 / Setpoint 2 select** d IG I d IS I Setpoint 1 / Setpoint 2 select** d IG I d IS I Setpoint 1 / Setpoint 2 select** d IG I d IS I Setpoint 1 / Setpoint 2 select d IG I d IS I Setpoint 1 / Setpoint 2 select** d IG I d IS I Setpoint 1 / Setpoint 2 select d IG I G IS I Naturatic / Manual select d IG I O IO 0 to 20 mA DC input Isect I I I I I I I I I I I I I I I I I I I							

Note: $d \cdot G^2$ has priority over $d \cdot G \cdot if$ both are configured for the same usage. If $d \cdot G \cdot or d \cdot G^2 = d \cdot S I$ the remote setpoint (RSP) input is disabled.

4. SETUP MODE - SELP

Note: Configuration must be completed before adjusting Setup parameters. First select Setup mode from Select mode (refer to section 2). The MAN LED will light while in Setup mode. Press D to scroll through the parameters, then press D or to set the required value. To exit from Setup mode, hold down D and press D 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	Filt	0.0 (<i>Off</i>) or 0.5 to 100.0 secs.	2.0
Process Variable Offset	OFFS	±Span of controller	0
Primary Proportional Band	РЬ_Р	0.5 to 999.9 % of input span	10.0
Automatic Reset (Integral Time)	Arst	0.0 I to 99.59 (1 sec to 99 mins 59 secs)	5.00
Rate (Derivative Time)	rAFE	0.00 to 99.59 (OFF to 99 mins 59 secs)	0.00
Setpoint Upper Limit	SPul	Current Setpoint to Range max	R/max
Setpoint Lower limit	SPLL	Range min to Current Setpoint	R/min
Minimum Motor On Time	Łon	0.0 secs to (Motor Travel Time / 10) secs. The minimum drive effort to begin moving valve.	0.0
Set Valve Open Position	Pcul	See instructions below to set the	Max. Aux.
Set Valve Closed Position	PcLL	valve's fully open and closed positions.	Min. Aux.
Valve Open Limit	PiuL	P ILL +1 to IOD. The maximum position valve will be driven to	100
Valve Closed Limit	P ill	D to P uL -1. The minimum position valve will be driven to	0
High Alarm 1 value	PhA I	Bongo Minimum to Bongo Movimum	R/max
Low Alarm 1 value	pla i	Range Minimum to Range Maximum	R/min
Deviation Alarm 1 Value	dal I	±Span from SP in display units	5
Band Alarm 1 value	bal I	1 LSD to span from setpoint	5
Alarm 1 Hysteresis	AHY I	1 LSD to full span in display units	1
High Alarm 2 value	PhA2	Dange Minimum to Dange Meximum	R/max
Low Alarm 2 value	PLR2	Range Minimum to Range Maximum	R/min
Deviation Alarm 2 Value	9875	\pm Span from SP in display units	5
Band Alarm 2 value	Pars	1 LSD to span from setpoint	5
Alarm 2 Hysteresis	AH75	1 LSD to full span in display units	1
Auto Pre-tune	APE		
Auto/manual Control selection	PoEn	d ,SR (disabled) or	
Setpoint Select shown in Operator Mode	SSEn	EnRb (enabled)	d iSA
Setpoint ramp adjustment shown in Operator Mode	SPr		
SP Ramp Rate Value	rP	1 to 9999 units/hour or Off (blank)	Off
Setpoint Value	SP	Scale range upper to lower limits. (when dual or remote setpoint	Scale
Local Setpoint Value	_LSP	options are used, SP is replaced by	Scale Range Minimum
Setpoint 1 Value	_SP 1	SP I & SP2 or LSP	

Setpoint 2 Value	_5P2	 or before the legend indicates the currently active SP) 	
Setup Lock Code	SLoc	0 to 9999	10

Setting the Valve Opened & Valve Closed Positions

With **PcuL** in the lower display press . The top display shows oPnG.

Press Δ to drive open the valve until it reaches the "fully open" end stop.

Press E. The top display will go *Blank* and the Auxiliary Input value will be measured and stored as the value equal to the fully open valve position.

Press 🧕 The lower display shows **PcLL**. Press 🎆 . The top display shows **cLSG**.

Press V to drive closed the valve until it reaches the "fully closed" end stop.

Press . The top display will go *Blank* and the Auxiliary Input value will be measured and stored as the value equal to the fully closed valve position.

5. AUTOMATIC TUNING MODE - ALun

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 **APL** 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.

Parameter	Lower Display	Upper Display	Defau Valu	
Pre-Tune	Ptun	On or OFF . *Pre-tune will not engage if setpoint is	ŊF	
Self-Tune	Stun	ramping, or the PV is less than 5% of input span from the setpoint . Indication remains DFF	ŰF	
Tune Lock	ELoc	0 to 9999		

6. PRODUCT INFORMATION MODE - InFo

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

Parameter	Lower Display	Upper Display	Description		
Input type	In_ I	Uni	Universal inpu		
		nonE	No option fitted		
		<u> </u>	Relay outpu		
Option 1 module type fitted	0Pn I	55r	SSR drive outpu		
		נר י	Triac outpu		
		Lin	Linear DC voltage / current outpu		
		попЕ	No option fittee		
		drLy	Dual Relay outpu		
		<u> </u>	Relay outpu		
Option 2 module type fitted	0Pn2	55r	SSR drive outpu		
		Er i	Triac outpu		
		Lin	Linear DC voltage / current outpu		
		dc24	Transmitter power supply		
Option 3 module type fitted	0Pn3	As			
		nonE	No option fittee		
Auxiliary Option A module	0Pn8	r485	RS485 communications		
type fitted	0, 1,1,1	ы С	Digital Input		
		rSP i	Auxiliary Input <i>(basic)</i>		
Auxiliary Option B module	00	попЕ	No option fittee		
type fitted	ОРпь	r5P i	Auxiliary Input <i>(full</i> and Digital Input 2		
Firmware type	FUJ		Value displayed is firmware type number		
Firmware issue	155		alue displayed is firmware issue number		
Product Revision Level	PrL	V	/alue displayed is Product Revision leve		
Date of manufacture	40rn		Manufacturing date code (mmyy		
Serial number 1	Sn I		First four digits of serial number		
Serial number 2	5-2	1	Middle four digits of serial number		
Serial number 3	5-3	1	Last four digits of serial numbe		

7. MESSAGES & ERROR INDICATIONS

These messages indicate that an error has occurred, or there is a problem with the process variable input connection or signal. Caution: D

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 enter the unlock code number, then press to proceed				

Parameter	Upper Display	Lower Display				
Input Over Range	CHHJ	Normal	Process variable input > 5% over-range			
Input Under Range	CLLJ	Normal	Process variable input >	> 5% under-range		
Input Sensor Break	OPEN	Normal	Break detected in process variable input sensor or wirit			
Aux. Over Range	Normal	[HH] **	Auxiliary input over-range	** also seen wherever Aux		
Aux. Under Range	Normal	[LL] **	Auxiliary input under-range			
Auxiliary Input Break	Normal	0PEN **	Break detected in Auxiliary value wou input signal			
Option 1 Error		0Pn I	Opti	ion 1 module fault		
Option 2 Error		0Pn2	Opti	ion 2 module fault		
Option 3 Error	Err	0Pn3	Option 3 module fault			
Option A Error		OPnA	Option A fault or Aux fitted in both A & B			
Option B Error		OPnb	Opti	on B module fault		

_		Display Display		UNIVERSAL INPUT					
0	Input Over Rar	0		Normal		Process variable input > 5	5		
	Input Under Ra	ange	כננט	Normal		ocess variable input > 5%	\$	Thermocouple Calibration:	±0.1% of full range, ±1LSD (±1°C for Thermocouple CJC). BS4937, NBS125 & IEC584.
	Input Sensor B	Break	OPEN	Normal	break de	tected in process variable	e input sensor or wiring.		$\pm 0.1\%$ of full range, ± 1 LSD.
	Aux. Over Ran	ge	Normal	[HH] **	Auxil	iary input over-range ** a	also seen		BS1904 & DIN43760 (0.00385Ω/Ω/°C).
	Aux. Under Ra	inge	Normal	[LL] **		ry input under-range wh	erever Aux	DC Calibration:	$\pm 0.1\%$ of full range, ± 1 LSD.
	Auxiliary Input	Break	Normal	0PEN **	Break	detected in Auxiliary	lue would be played	Sampling Rate:	4 per second.
		Broan	Terma			input signal		Impedance:	>10M Ω resistive, except DC mA (5 Ω) and V (47k Ω).
	Option 1 Error Option 2 Error			0Pn 1 0Pn2			1 module fault 2 module fault	Sensor Break Detection:	Thermocouple, RTD, 4 to 20 mA, 2 to 10V and 1 to 5V ranges only. "Close Valve" outputs turn ON.
	Option 2 Error		Err	OPn3			3 module fault	Isolation:	Isolated from all outputs (except SSR driver).
	Option 3 Error		211	OPnR	0	ption A fault or Aux fitted			Universal input must not be connected to operator accessible circuits
	Option B Error			OPnb		•	B module fault		if relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required.
	· ·					·			
	8. OPE	RATC	OR MO	DE -	UPEr				
						n Select mode (see section		Calibration: Sampling Rate:	±0.25% of input range ±1 LSD. 4 per second.
	Note: All Cont before starting				up mode p	arameters must be set	as required	Sensor Break	4 to 20 mA, 2 to 10V and 1 to 5V ranges only. Valve control outputs
		-	-		rs, then pre	ess \triangle or ∇ to set the	required	Detection:	turn off if RSP is the active SP.
	value.		0					Isolation:	Slot A - Basic isolation, Slot B - Reinforced safety isolation from other
-14	Note: All Oper	rator M	ode para	ameters i	n Display s	strategy 6 are read only	in SP in، See d'		inputs and outputs.
ılt ıe		,.				via Setup mode.	Description	DIGITAL INPUTS	
	Upper Display	Low Displ		When Vi	tegy and sible		Description	Volt-free(or TTL):	Open(2 to 24VDC) = SP1, Local SP or Auto Mode, Closed(<0.8VDC) = SP2, Remote SP or Manual Mode.
F		Active				PV and target value		Isolation:	Reinforced safety isolation from inputs and other outputs.
	PV Value	Value	1	& 2 (initia	l screen)	Local Setpoints an			
0		Actual				PV and actual value	Strategy 2 of selected SP	OUTPUTS	
	PV Value	SP Va		& 6 (initia	screen)	(e.g. ramping SP value		Relay	
	PV Value	(Blank	.)	4 (initial s	creen)	Proces	s variable only	Contact Type & Rating:	Single pole double throw (SPDT); 2A resistive. 120VAC max. (240V for alarm or <u>indirect</u> switching of valves).
	Active SP		·	•		Target value of selected	Read only	Lifetime:	>500,000 operations at rated voltage/current.
	Value	(Blank) :	5 (initial s	creen)		Read only	Isolation:	Basic Isolation from universal input and SSR outputs.
		Auxilia		7 (initial a	ara an 1	PV and Valve Po		Dual Relay	· · ·
on	PV Value	Input Value		7 (initial s	creen)		Read only	Contact Type &	2 x single pole single throw, with shared common; 2A resistive.
		Ī	1&3	3 - 7 if dig	ital input is	Targ	get value of SP	Rating:	120VAC max. (240V for alarm or <u>indirect</u> switching of valves).
ut	SP Value	SP	not		d RSP not	Adjustable excep	ot in Strategy 6	Lifetime: Isolation:	>200,000 operations at rated voltage/current. Reinforced safety isolation from inputs and other outputs.
ed				configu		Torgo	et value of SP1	SSR Driver	Remoted safety isolation non inputs and other outputs.
ut	SP1 Value	_5P	-	gital input	= 0 i Ci . SP = SP1	Adjustable excep		Drive Capability:	SSR drive voltage >10V into 500Ω min.
ut				gital input		Targe	et value of SP2	Isolation:	Not isolated from universal input or other SSR driver outputs.
ut	SP2 Value	_5P			SP = SP2	Adjustable excep		Triac	· · ·
ed				RSP fit			of local setpoint	Operating Voltage:	20 to 140Vrms (280V max. for alarm or indirect switching of valves)
ut	Local SP Value	_LS	P	_ or 🗐 lit		Adjustable excep	pt in Strategy 6		@ 47 to 63Hz.
out			6	active SP		Tanatuslus of a		Current Rating:	0.01 to 1A (full cycle rms on-state @ 25°C); derates linearly above 40°C to 0.5A @ 80°C.
out	Remote SP	51	ρ	RSP fit		Target value of re	emote setpoint Read only	Isolation:	Reinforced safety isolation from inputs and other outputs.
out	Value			active SP				DC Linear	
out				-		Selects local/remote		Resolution:	8 bits in 250mS (10 bits in 1s typical, >10 bits in >1s typical).
2			RSP	is fitted v	digital input	LSP = local SP, -5		Isolation:	Reinforced safety isolation from inputs and other outputs.
2 ad	, ت، ا	SPS			and 55En	$d \cdot \mathbf{G} \cdot = $ selection via		Transmitter PSU	
ed ns	LSP or rSP	583		is enabl	ed in	configured). Note: se		Power Rating:	19 to 28V DC (24V nominal) into 910 Ω minimum resistance.
ut*				Setup m	loge		n changes to	Isolation:	Reinforced safety isolation from inputs and other outputs.
						Adjustable excep	pt in Strategy 6	SERIAL COMMU	
<i>:)*</i> ed	Actual SP Value	SPr	ρ	-P is not	blank		mping) value of SP. <i>Read only</i>	Physical:	RS485, at 1200, 2400, 4800, 9600 or 19200 bps.
III)				SPr enat		SP ramping rate, in		Protocol:	Modbus RTU.
2*	Ramp Rate	- የ		Setup m		Adjustable excep		Isolation:	Reinforced safety isolation from all inputs and outputs.
er				n one or r	nore	Alarr	m 2 active		NDITIONS (FOR INDOOR USE)
er vel	Active Alarm Status	ALS		ns are act ALM indi		LŻ I — Alarm	1 active	Ambient Temperature:	0°C to 55°C (Operating), -20°C to 80°C (Storage).
vel	Julus			will also f		Loc	op Alarm active	Relative Humidity:	20% to 95% non-condensing.
<i>y)</i> er	Manual Valv	e Con	trol					Altitude:	<2000m
er	If PoEn is set t	o EnAL	in Setup			rol can be selected/de-se			100 to 240VAC ±10%, 50/60Hz, 7.5VA
er	pressing the	🖩 key ir	n Operato	or mode, v	via serial co	ommunications, or by cha	anging the	Power:	(for mains powered versions), or
		tal input	t if d 10 1	or d ,G2	has been c	configured for d IRS in Co	onfiguration		20 to 48VAC 50/60Hz 7.5VA or 22 to 65VDC 5W (for low voltage versions).
	mode. While in Manua	al Contr	ol mode	the 🎽 i	ndicator wil	I flash and the lower disp	play will show	ENVIRONMENTA	
_	rnAn. If Valve	e Positio	on Indica	tion is cor	nfigured, th	e lower display will show	Pxxx instead	Standards:	CE, UL, cUL & CSA.
	of ГЛА п, whe	re xxx i	s the valv	e positio	n as read b	y the Auxiliary Input. PD		EMI:	Complies with EN61326-1:2013
_	valve is fully clo	osed, P	100 mea	ans the va	alve is fully	opened.		Safety	Complies with UL61010-1 Edition 3, EN61010-1 Version 2010 & CSA
n		oue th	Nolue -	otor := 4	"or " -'	ection or 🔽 to move the	a value met	Considerations:	22.2 No 1010.192. Pollution Degree 2, Installation Category II.
is	in the "close" d	irection	, vaive m . Keep pr	ressing th	e key until t	to move the the desired valve position	e valve motor n is achieved	Front Panel Sealing:	To IP66 & NEMA 4X when correctly mounted – see section 1
on				J		,		PHYSICAL	
ne to	9. SERI	AL C	омм	JNICA	TIONS			Front Bezel Size:	¹ / ₁₆ Din = 48 x 48mm, ¹ / ₈ Din = 96 x 48mm, ¹ / ₄ Din = 96 x 96mm.
to er,						supplier) for details.		Depth Behind Panel:	: ¹ / ₁₆ Din = 110mm, , ¹ / ₈ & ¹ / ₄ Din = 100mm.
ed						S485 port at the same t	time.	Weight:	0.21kg maximum.
- 1								1	

10. SPECIFICATIONS