1/16 - 1/8 DIN PROCESS CONTROLLERS CONCISE PRODUCT MANUAL (59453-2)

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

1. INSTALLATION

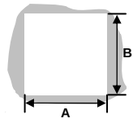
The models covered by this manual are 1/16 and 1/8 DIN case sizes. Some installation details vary between models. These differences are shown.
Note: The functions described in sections 2 thru 7 are common to all models

Panel-Mounting

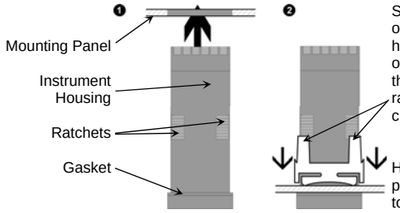
The mounting panel must be rigid, and may be up to 6.0mm (0.25inch) thick. Cut-out sizes are:

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

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



Tolerance +0.5, -0.0mm



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

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

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

Rear Terminal Wiring

USE COPPER CONDUCTORS (EXCEPT FOR T/C INPUT)
Single Strand wire gauge: Max 1.2mm (18SWG)

1/16 Din Size Instruments

Output 3 (option)	RS485	RLY	SSR/ LIN	○	6	7	○	L		Power
	B	NO	+	○	5	8	○	N		
	COM	COM		○	4	9	○	NO	-	OUT1
	A	NC	-	○	3	10	○	COM	+	
Universal input		-	+	○	2	11	○	NO	-	OUT2
		+	-	○	1	12	○	COM	+	
	RTD	mA	TC/mv/V					RLY	SSR	

1/8 Din Size Instruments

Power			L	○	12	13	○
			N	○	11	14	○
OUT1		RLY	SSR	○	10	15	○
		COM	-				
		NO	+	○	9	16	○
OUT2		COM	-	○	8	17	○
		NO	+	○	7	18	○
Output 3 (option)	RS485	RLY	SSR/ LIN	○	6	19	○
	B	NO	+				
	COM	COM		○	5	20	○
	A	NC	-	○	4	21	○
Universal input				○	3	22	○
		-	+	○	2	23	○
		+	-	○	1	24	○
	RTD	**mA**	**TC/mv/V**				

These diagrams show all possible option combinations. Check you have the right product configuration before wiring.

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

Note: At first power-up the message Goto Conf is displayed. Access to other menus is denied until configuration mode is completed

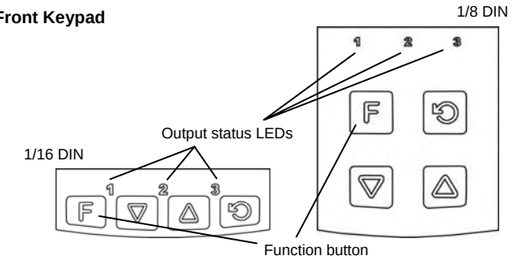
Power Connections - Mains Powered Instruments

Mains powered instruments operate from a 100 to 240V (±10%) 50/60Hz supply. Power consumption is 7.5VA. Connect the line voltage (live and neutral) via a two-pole isolating switch (preferably located near the equipment) and a 1amp anti-surge fuse. If the instrument has relay outputs with contacts carrying mains voltage, it is recommended that the relay contacts supply should be switched and fused in a similar manner, but should be separate from the instruments mains supply.

WARNING: CHECK THE INFORMATION LABEL ON THE CASE TO DETERMINE THE CORRECT VOLTAGE BEFORE CONNECTING TO A LIVE SUPPLY.

CAUTION: This equipment is designed for installation in an enclosure that provides adequate protection against electric shock

Front Keypad



2. GETTING STARTED

The main steps to get started are shown below. For information on navigation through mode menus, refer to the menu flowchart shown overleaf.

1. Power up, a self-test procedure automatically starts, all LED segments and indicators will light up momentarily. On first power up Goto Conf will be displayed, indicating configuration is required. At all other times, the instrument returns to operator mode once the self-test procedure is complete.

2. Controller configuration
Set up inputs, output, alarms and function key operation via 'configuration mode' menu, see section 7
important: this must be completed before making changes to 'set-up mode' or other modes

3. Application set-up Change application specific settings in 'set-up' mode, see section 7.

4. Tune controller If PID control is required, tune the controller via 'Auto-tuning mode' mode menu.
Note: Auto-tuning will not engage if the proportional band = 0, the setpoint is ramping or if PV is within 5% of input span away from setpoint.

5. Operation mode: return to operation mode, the controller will now auto-tune.

3. MESSAGES AND ERROR INDICATION

These messages indicate that an error has occurred or there is a problem with the process variable signal or its wiring. The error indications are only an aid and do not remove responsibility for process safety from the operator or installer.
Caution: Do not continue with the process until any 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	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 wiring
Warning Alarm	ALMM	Normal	Standard alarm, output latched alarm or diagnostic alarm active
Auto-tune running status	tunE	Normal	Indicates tuning is active
Profiler not running warning	n.run	Normal	Profiler not running because a segment target setpoint is not within the setpoint upper and lower limits.
Profiler running warning	CL iP	Normal	Profiler running and the setpoint upper or lower limit has been adjusted and the profiler active setpoint is now not within the setpoint upper and lower limits.
Profiler hold activated	ho ld	Normal	Profiler hold activated
Profiler Segment type	SGrt	Normal	Ramp time
Profiler Segment type	SGrP	Normal	Ramp rate
Profiler Segment type	SGdt	Normal	Dwell time
Profiler Segment type	StEP	Normal	Step
Profiler segment type	End	Normal	End

4. SERIAL COMMUNICATIONS

A separate application note is available for Modbus parameters.

5. OPERATOR MODE

This mode is entered at power on, or accessed from Select mode *(see section 2).*
Note: All Configuration mode and Setup mode parameters must be set as required before starting normal operations.
Press to scroll through the parameters, then press or to set the required value.
Note: All Operator Mode parameters in Display strategy 6 are read only (see d iSP 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	SP	1, 3, 4, 5 & 6	Target value of SP *Adjustable except in Strategy 6*
Actual SP Value	SPrP	rP is not OFF	Actual (ramping) value of selected SP. *Read only*
Ramp Rate	rP	SPr 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** indicator will also show on the upper display on the process variable screen.	Alarm 2 active L2'1 — Alarm 1 active Loop Alarm active
Warning alarm active	ALdG	These are the diagnostic alarms.	123i 1 = If output 1 actuations alarm active 2 = If output 2 actuations alarm active 3 = If output 3 actuations alarm active i = If Input is over ambient temperature
Latching output alarm active	ALOL	These are the output latching alarms.	OL1_ = Latching alarm 1 active OL_2 = Latching alarm 2 active OL12 = Latching alarm 1 and 2 lactive
Segment Number	SGnb	If Profile running	Current Segment number of active profile. *Read only.*
Target SP value	SGtS	If Profile Running	Target Setpoint of current Segment. *Read only*
Time remaining	SGtr	If Profile Running	Time remaining for current segment. *Read only.* *Format: MM.SS or HH.MM*
Cycles Remaining	cycL	If Profile Running	Cycles remaining or INF for infinite. Read only.
Delay time remaining	dELy	If profiler started but not yet running.	Start delay time remaining. Read only.
Profiler reset	P rSt	If profiler has ended and PrrE = COFF or PrrE = MSP or PrEA = CoFF or PrEA = MSP or the user has stopped the profile from profiler control or the function key.	Profiler reset. YES no When the display shows End a YES will reset the profiler and restore control or SP to the controller . If PrEA = GCSP or PrrE = GCSP then End will only be shown for 30 seconds and this screen will not be shown. If the Func is set to Pct 1 then the user can use the function key as well to reset the profiler.
Events Active	SGEA	If Profile Running and any events active	Shows numbers of Events Active.

Manual Control

If Func is set to MAN then manual control can be selected/de-selected by pressing F in the Operator mode.
While in Manual Control mode, the lower display will show P*xxx* (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.***

Profiler Control

If Func is set to Pct 1 then the F key will operate the profiler as follows:

1. Profiler will run.
2. If the profiler is running – press the key, the profiler will hold.
3. If the profiler is running or in hold and you press the key for 5 seconds then the profiler will be stopped.
4. When the display shows End then pressing the key will remove the message and reset the profiler and restore control or SP to the controller if PrrE = COFF or PrrE = MSP or PrEA = CoFF or PrEA = MSP or the user has stopped the profile from profiler control or the function key. If PrEA = GCSP or PrrE = GCSP then End will only be shown for 30 seconds and the key will clear if pressed but no profiler reset is activated.

Profiler configuration fast access

Press for 3 seconds to move to profiler configuration mode.

Software messages

If a process variable error occurs then software messages will be shown. If the process variable is ok then it will alternate with the highest priority software message active.

Message	Priority	Reason
ALMM	1	Software alarm for loop alarm, alarm 1, alarm 2, latching alarm or diagnostics alarm.
tunE	2	Pre-tune active.
ho ld	3	Profiler hold activated.
n.run	4	Profiler not running because a segment target setpoint is not within the setpoint upper and lower limits.
CL iP	4	Profiler running and the setpoint upper or lower limit has been adjusted and the profiler active setpoint is now not within the setpoint upper and lower limits.
SGrt	4	Profiler segment type ramp time.
SGrP	4	Profiler segment type ramp rate.
SGdt	4	Profiler segment type dwell time.
StEP	4	Profiler segment type step.
End	4	Profiler segment type end. If PrEA = GCSP or PrrE = GCSP then End will only be shown for 30 seconds.

Clearing Latched Output Alarms

Press or or 3 seconds on the ALOL screen.

If clearing a latched alarm and the same alarm is still active then the alarm will re-latch.

Latching alarms are cleared on a change of LtPS but if the same alarm is still active then the alarm will re-latch.

If the alarms are shown as latched on the display and the user changes the output usage not to include the latched alarm then the alarm latched will still be shown on the display until cleared.

6. 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 *(0.00385ohm/ohm/°C).*
DC Calibration:	0.1% of full range, 1LSD.
Sampling Rate:	4 per second.
Impedance:	>10Mohm resistive, except DC mA (5ohm) and V (47kohm).
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) by at least BASIC isolation. 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. Isolated from Mains Power Input by Re-inforced Safety Isolation.

OUTPUTS

Output 1 and 2 are available as SPST relay or SSR Driver.
Output 3 is available as not fitted, SPDT relay, SSR Driver, DC Linear or RS485 variant.

RELAY 1 or 2

Contacts:	Single pole single throw (SPST); 2A resistive at 120/240VAC.
Lifetime:	>300,000 operations at rated voltage/current.
Isolation:	Basic Isolation from universal input and SSR outputs.

RELAY 3 (OPTION)

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

SSR Driver 1, 2 or 3(OPTION)

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

DC LINEAR OUTPUT 3

Resolution:	8 bits in 250mS (10 bits in 1s typical, >10 bits in >1s typical).
Isolation:	Basic safety isolation from Universal input and SSR. Reinforced safety isolation to Mains and Relay Circuits.

SERIAL COMMUNICATIONS

Physical:	RS485, at 1200, 2400, 4800, 9600, 19200 or 38400 bps.
Protocols:	ModbusRTU.
Isolation:	Basic safety isolation from Universal input and SSR. Reinforced safety isolation to Mains and Relay Circuits.

OPERATING CONDITIONS (FOR INDOOR USE)

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

ENVIRONMENTAL

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

PHYSICAL

Front Bezel Size:	1/16 Din = 48 x 48 mm, 1/8 Din = 48 x 96 mm
Depth Behind Panel:	70mm with sealing gasket fitted.
Weight:	0.21kg maximum.

7. MENU NAVIGATION IS SHOWN NEXT PAGE

Front Keypad

hold [⟲] & press [▲]

Select Mode

Unit returns to operator mode if no activity for 2 mins

Operator → Setup → Configuration → User Calibration → Product info → Auto-Tuning → Profile Configuration → Profile Setup → Profile Control → Diagnostics

Unlock Code: Setup 10 | Configuration 20 | User Calibration 30 | Auto-Tuning 0 | Profile Configuration 0 | Diagnostics 40

Press [⟲] to scroll
Press [▲] or [▼] to select
Hold [⟲] and press [▲] to return to Select Mode

Note: 'Configuration mode' parameters must be set before making changes.

Parameter	Lower Display	Upper Display Adjustment Range & Description		Default Value
Control Select	CntL	Auto	Automatic control	Auto
		MAN	Manual control	
Input Filter Time Constant	F iLt	OFF or 0.5 to 100.0 secs		2.0
Primary Power	PPuJ	Current power levels *(read only)*		N/A
Secondary Power	SPuJ			
Primary Proportional Band	Pb_P	0 (ON/OFF) and 0.5% to 999.9% of input span in range units – defaults to 10% of range span		140
Secondary Proportional Band	Pb_S			
Automatic Reset (Integral Time)	ArSt	1 sec to 99 mins 59 secs and OFF		5.00
Rate (Derivative Time)	rAtE	00 secs 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 iFF	0.1% to 10.0% of input span centred about the setpoint. Entered in range units – defaults to 0.5% of range span.		1
Secondary ON/OFF Diff.	d iF5			
Prim. & Sec. ON/OFF Differential	d iFF			
Setpoint Upper Limit	SPuL	Current Setpoint to Range max		R/max
Setpoint Lower limit	SPLL	Range min to Current Setpoint		R/min
Primary Output Power Limit	OPuL	0% to 100% of full power		100
Output 1 Cycle Time	Ct1	0.1 to 512 secs in 0.1 second increments for SSR 0.5 to 512 secs in 0.1 second increments for Relay		32.0
Output 2 Cycle Time	Ct2			
Output 3 Cycle Time	Ct3			
High Alarm 1 value	PhA1	Range Minimum to Range Maximum		R/max
Low Alarm 1 value	PLA1			R/min
Deviation Alarm 1 Value	dAL1	±Span from SP in display units		5
Band Alarm 1 value	bAL1	1 LSD to span from setpoint		5
Alarm 1 Hysteresis	AHy1	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 i	1 sec to 99 mins. 59secs		99.59
Auto Pre-tune	APt	**diSA** (disabled) or **EnAb** (enabled)		d iSA
Setpoint ramp adjustment shown in Operator Mode	SPr			
SP Ramp Rate Value	rP	1 to 9999 units/hour or Off		Off
Setpoint Value	SP	Scale range upper to lower limits.		Scale Range Minimum
Setup Lock Code	SLoc	0 to 9999		10

Note: Defaults to ºF for USA units. Defaults to ºC for non USA units. The Configuration Mode parameters, Scale Range, Upper Limit and Scale Range Lower Limit, can be used to restrict range.

Press [⟲] to scroll
Press [▲] or [▼] to select. Press [F] to accept the parameter change
Hold [⟲] and press [▲] to return to Select Mode

Note: Parameters displayed depend on the options selected. Parameters marked * are repeated in 'set-up' 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 ºC	LC	L: 0 - 762 ºC	P2HC	PtRh20% vs. 40%: 0 - 1850 ºC
bF	B: 211 - 3315 ºF	LF	L: 32 - 1403 ºF	P2HF	PtRh20% vs 40%: 32 - 3362 ºF
CC	C: 0 - 2320 ºC	L_C	L: 0.0 - 537.7 ºC	PtC	Pt100: –199 - 800 ºC
CF	C: 32 - 4208 ºF	L_F	L: 32.0 - 999.9 ºF	PtF	Pt100: –328 - 1472 ºF
dC	D: 0 - 2315 ºC	nC	N: 0 - 1399 ºC	Pt_C	Pt100: –128.8 - 537.7 ºC
dF	D: 32 - 4199 ºF	nF	N: 32 - 2551 ºF	Pt_F	Pt100: –199.9 - 999.9 ºF
JC	J: –200 - 1200 ºC	rC	R: 0 - 1759 ºC	0_20	0 - 20 mA DC
JF	J: –328 - 2192 ºF	rF	R: 32 - 3198 ºF	4_20	4 - 20 mA DC
J_C	J: –128.8 - 537.7 ºC	SC	S: 0 - 1762 ºC	0_50	0 - 50 mV DC
J_F	J: –199.9 - 999.9 ºF	SF	S: 32 - 3204 ºF	10_50	10 - 50 mV DC
bC	K: –240 - 1373 ºC	t_C	T: –240 - 400 ºC	0_5	0 - 5 V DC
bF	K: –400 - 2503 ºF	tF	T: –400 - 752 ºF	1_5	1 - 5 V DC
b_C	K: –128.8 - 537.7 ºC	t_C	T: –128.8 - 400.0 ºC	0_10	0 - 10 V DC
b_F	K: –199.9 - 999.9 ºF	t_F	T: –199.9 - 752.0 ºF	2_10	2 - 10 V DC

Scale Range Upper Limit	rUL	Scale Range Lower Limit +100 to Range Maximum		Range max (Lin=100.0)
Scale Range Lower Limit	rLL	Range Minimum to Scale Range Upper Limit -100		Range min (Linear=0.0)
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 1Type	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	Options as for alarm 1		P_Lo
High Alarm 2 value*	PhA2			Range Max
Low Alarm 2 value*	PLA2			Range Min
Band Alarm 2 value*	bAL2			5
Dev. Alarm 2 Value*	dAL2	Options as for alarm 1		5
Alarm 2 Hysteresis*	AHy2			1
Loop Alarm	LAEn	d iSA (disabled) or EnAb (enabled)		d iSA
Loop Alarm Time*	LAt i	1 sec to 99 mins. 59secs		99.59
Alarm Inhibit	Inh i	nonE	No alarms Inhibited	nonE
		AL1	Alarm 1 inhibited	
		AL2	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	
		A1Ld	Alarm 1, Direct Latching	
		A1Lr	Alarm 1, Reverse Latching	
		A2Ld	Alarm 2, Direct Latching	
		A2Lr	Alarm 2, Reverse Latching	
		Evn1	Event 1	
		Evn2	Event 2	
Output 2 Usage	USE2	Options same as Output 1 Usage		A1_d
Output 3 Usage	USE3	Options same as Output 1 Usage		A2_d
Linear Output 3 Usage	USE3	Pri	Primary Power	rEtP
		SEc	Secondary Power	
		rEtS	Recorder SP	
		rEtP	Recorder PV	
Linear Output 3 Range	tyP3	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	

Press [⟲] to scroll
Hold [⟲] and press [▲] to return to Select Mode

Note: All parameters are read only

Parameter	Lower Display	Upper Display	Description
Input type	In_1	Un i	Universal input
Option 1 type	OPn1	rLY	Relay output
		SSr	SSR drive output
Option 2 type	OPn2	As Option 1	
Option 3 type	OPn3	nonE	Not fitted
		rLY	Relay output
		SSr	SSR drive output
		Lin	Linear DC voltage / current output
		r485	RS485 communications
Firmware type	FUJ	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	dUMm	Manufacturing date code *(mmyy)*	
Serial number 1	Sn1	First four digits of serial number	
Serial number 2	Sn2	Middle four digits of serial number	
Serial number 3	Sn3	Last four digits of serial number	

Press [⟲] to scroll
Press [▲] or [▼] to select
Hold [⟲] and press [▲] to return to Select Mode

Parameter	Lower Display	Upper Display Adjustment Range & Description		Default Value
User Calibration Type	CALt	nonE	No user adjustment	nonE
		SnGL	Single (PV offset)	
		duAL	Dual (High and low PV offset)	
Process Variable Offset	OFFS	±Span of controller		0
Low Calibration Point	L_CAL	Set range point to apply Low offset		R/min
Low Offset	L_OFF	±Span of controller		0
High Calibration Point	H_CAL	Set range point to apply High offset		R/max
High Offset	H_OFF	±Span of controller		0
User Calibration Lock Code	U_Loc	0 to 9999		30

Press [⟲] to scroll
Press [▲] or [▼] to select
Hold [⟲] and press [▲] to return to Select Mode

Note: Automatic tuning will not engage if either the proportional band = 0, the setpoint is ramping or PV is within 5% of input span from setpoint.

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
Tune Lock	tLoc	0 to 9999	0

Retransmit Output 3 Scale maximum	roSH	-1999 to 9999 (display value at which output will be maximum)		Range max
Retransmit Output 3 Scale minimum	roSL	-1999 to 9999 (display value at which output will be minimum)		Range min
Function key	Func	nonE	No function	nonE
		MAN	Function key enables manual power	
		Pst i	Profiler control	
		Ptun	Pre-tune	
Latch power down save	LtPS	d iSA	Do not save the latching alarm status on power-down	d iSA
		EnAb	Save the latching alarm status on power-down	
Display Strategy	d iSP	1, 2, 3, 4, 5 or 6 *(refer to section 14)*		1
Serial Communications Protocol	Prot	Mbn	Modbus with no parity	Mbn
		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	
		38.4	38.4 kbps	
Comms Address	Addr	1 to 255		1
Comms Write	CoEn	r_Ud	Read/Write	r_Ww
		r_O	Read only	
Configuration Lock Code	CLoc	0 to 9999		20

Press [⟲] to scroll
Press [▲] or [▼] to select
Hold [⟲] and press [▲] to return to Select Mode

Note: If a user stops a program within profile control mode or by the function key control will be switched off, a reset will be required to restart control in the reset screen in 'operator mode' via the function button.

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Profile Number	ProG	Select Profile: 1 or 2		1
Profile: Start Point	PrSP	c_SP	Start at Current Setpoint	c_SP
		c_PU	Start at Current PV	
Profile: Recovery method	PrrE	CoFF	Controller Off	CoFF
		rPrF	Restart Profiler	
		MASP	Maintain last profile SP	
		GCSP	Goto ControllerSP	
		CPrF	Continue Profile	
Profile: End Action	PrEA	CoFF	Controller Off	CoFF
		MASP	Maintain last profile SP	
		GCSP	Goto ControllerSP	
Profile: Timebase	bASE	Hour	Hours/Minutes	Hour
		MSec	Minutes/Seconds	
Profile: Auto hold type	Ho ld	nonE	No auto hold	nonE
		HiGh	Above setpoint, hold if too high	
		LOW	Low setpoint, hold if too low	
		bAd	Band, hold if too high or low	
Profile: Auto hold valid type	HoLP	ALL	Auto hold in all segments	SGdt
		SGdt	Auto hold Only on dwell segments	
Profile: Auto hold band value	bAd	The distance from the setpoint 1-99 with range decimal point.		5
Segment Number	SGnb	Indicates Segment being configured		
Segment: Type	SGtP	SGrt	Ramp time	SGrt
		SGrP	Ramp Rate	
		SGdt	Dwell time	
		StEP	Step	
		End	End	
Segment: Target SP	SGtS	-1999 to +9999 with range decimal point.		0
Segment: Ramp time	SGrt	00.01 to 99.59		00.01
Segment: ramp rate	SGrP	1 to 9999 units per hour with range decimal point.		1
Segment: Dwell time	SGdt	00.01 to 99.59		00.01
Segment: Event Active	SGEt	E___	No Events	E___
		E1__	Event 1 Active	
		E_2_	Event 2 Active	
		E12_	Events 1 and 2 Active	
Profile Lock Code	PLoc	0 to 9999		0

Press [⟲] to scroll
Press [▲] or [▼] to select. Press [F] to accept the parameter change
Hold [⟲] and press [▲] to return to Select Mode

Parameter	Lower Display	Upper Display Upper Display Adjustment range & Description	Default Value
Profile to run	ProG	1 or 2	1
Profile cycles	cycL	1 to 9999 then INF for an infinite loop – number of times to repeat the profile.	1
Profile start delay	dELY	00.00 to 99.59 (HH:MM)	00.00

Press [⟲] to scroll
Press [▲] or [▼] to select. Press [F] to accept the parameter change
Hold [⟲] and press [▲] to return to Select Mode

Parameter	Lower Display	Upper Display Adjustment range & Description	Default Value
Profiler control action	Pst i	run	Run the profiler	StoP
		Hold	Hold profile running – Option when profiler running.	
		StoP	Stop profile running	

Press [⟲] to scroll
Press [▲] or [▼] to select
Hold [⟲] and press [▲] to return to Select Mode

Note: Note: The ambient over-temperature warning can only be used with thermocouple sensor types.

Parameter	Lower Display	Upper Display Adjustment Range & Description	Default Value
Actuator Life Warning Enable	ActtE	d iSA (disabled) or EnAb (enabled)	d iSA
Output 1 Count Reset	OP 1r	YES or no	no
Output 1 Actuations	OP 1c	Count of output 1 actuations (1000's) Read only	
Actuator Warning Level Output 1	OP 1A	Number (1000's) of actuations before warning for output 1	150
Output 2 Count Reset	OP2r	YES or no	no
Output 2 Actuations	OP2c	Count of output 2 actuations (1000's) Read only	
Actuator Warning Level Output 2	OP2A	Number (1000's) of actuations before warning for output 2	150
Output 3 Count Reset	OP3r	YES or no	no
Output 3 Actuations	OP3c	Count of output 3 actuations (1000's) Read only	
Actuator Warning Level Output 3	OP3A	Number (1000's) of actuations before warning for output 3	150
Ambient Over-temperature Alarm Enable	OtEn	d iSA (disabled) or EnAb (enabled)	d iSA
Diagnostics lock code	dLOC	0 to 9999	40