

1/16 - 1/8 DIN PROCESS CONTROLLERS CONCISE PRODUCT MANUAL (59453-4)

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

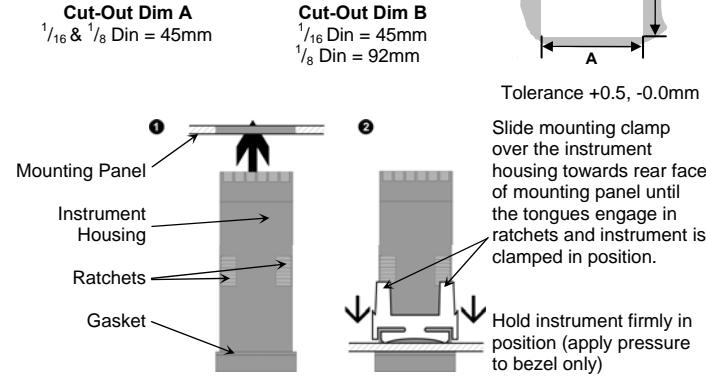
1. INSTALLATION

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:



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	
Universal input	A	NC	-		3	10	COM	OUT1
					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	
	COM		10
	NO	+	9
OUT2	COM	-	8
	NO	+	7
	NO	+	18
Output 3 (option)	RS485	RLY	SSR/LIN
	B	NO	+
	COM	COM	
Universal input	A	NC	-
	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 **Go to Conf** is displayed. Access to other menus is denied until configuration mode is completed

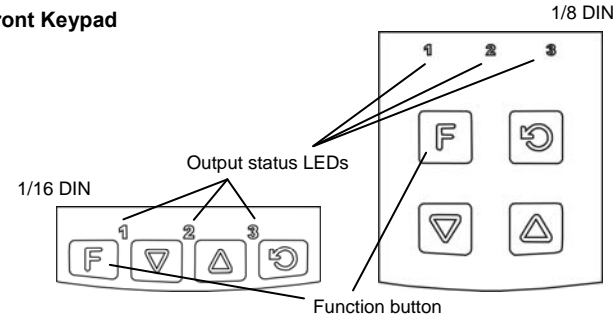
Power Connections - Mains Powered Instruments

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.

- Power up,** a self-test procedure automatically starts, all LED segments and indicators will light up momentarily. On first power up **Go to 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.
- 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
- Application set-up** Change application specific settings in 'set-up' mode, see section 7.
- 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.
- 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	Go to	Conf	Configuration & Setup required. This screen is seen at first turn on, or if hardware configuration has been changed. Press Go to enter the Configuration Mode, next press A or V to enter the unlock code number, then press Go to proceed
Input Over Range	[HH]	Normal	Process variable input > 5% over-range
Input Under Range	[LL]	Normal	Process variable input > 5% under-range
Input Sensor Break	OPEN	Normal	Break detected in process variable input sensor or wiring
Warning Alarm	ALM	Normal	Standard alarm, output latched alarm or diagnostic alarm active
Auto-tune running status	tunE	Normal	Indicates tuning is active
Profilor not running warning	n.run	Normal	Profilor not running because a segment target setpoint is not within the setpoint upper and lower limits.
Profilor running warning	CL.P	Normal	Profilor running and the setpoint upper or lower limit has been adjusted and the profilor active setpoint is now not within the setpoint upper and lower limits.
Profilor hold activated	hoId	Normal	Profilor hold activated
Profilor Segment type	SGrt	Normal	Ramp time
Profilor Segment type	SGrP	Normal	Ramp rate
Profilor Segment type	SGdt	Normal	Dwell time
Profilor Segment type	StEP	Normal	Step
Profilor 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 **Go** to scroll through the parameters, then press **A** or **V** to set the required value.

Note: All Operator Mode parameters in Display strategy 6 are read only (see d.SP 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 <i>Local Setpoints are adjustable in Strategy 2</i>
PV Value	Actual SP Value	3 & 6 (initial screen)	PV and actual value of selected SP (e.g. ramping SP value). <i>Read only</i>
PV Value	(Blank)	4 (initial screen)	Process variable only <i>Read only</i>
Active SP Value	(Blank)	5 (initial screen)	Target value of selected setpoint only. <i>Read only</i>
SP Value	SP	1, 3, 4, 5 & 6	Target value of SP <i>Adjustable except in Strategy 6</i>
Actual SP Value	SPrP	rP is not OFF	Actual (ramping) value of selected SP. <i>Read only</i>
Ramp Rate	rP	SPr enabled in Setup mode	SP ramping rate, in units per hour <i>Adjustable except in Strategy 6</i>
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 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	ALdL	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. <i>Read only.</i>
Target SP value	SGtS	If Profile Running	Target Setpoint of current Segment. <i>Read only</i>
Time remaining	SGtr	If Profile Running	Time remaining for current segment. <i>Read only.</i> <i>Format: MM.SS or HH.MM</i>
Cycles Remaining	cycl	If Profile Running	Cycles remaining or INF for infinite. <i>Read only.</i>
Delay time remaining	dELy	If profilor started but not yet running.	Start delay time remaining. <i>Read only.</i>
Profilor reset	P_rSt	If profilor has ended and PrrE = CoFF or PrrE = rPSP or PrrE = rPSP or the user has stopped the profile from profilor control or the function key.	When the display shows End a YES will reset the profilor and restore control or SP to the controller. If PrrE = 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 I then the user can use the function key as well to reset the profilor.
Events Active	SGEA	If Profile Running and any events active	Shows numbers of Events Active.

Manual Control

If **Func** is set to **rMAN** 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 **Pxxx** (where xxx is the current manual power level). Switching to/from manual mode is via Bumpless Transfer. Press **A** or **V** to set the required output power. **CAUTION: Manual power level is not restricted by the DPUL power limit.**

Profilor Control

If **Func** is set to **Pct I** then the **F** key will operate the profilor as follows:

- Profilor will run.
- If the profilor is running – press the key, the profilor will hold.
- If the profilor is running or in hold and you press the key for 5 seconds then the profilor will be stopped.
- When the display shows **End** then pressing the key will remove the message and reset the profilor and restore control or SP to the controller if **PrrE = CoFF** or **PrrE = rPSP** or **PrrE = rPSP** or the user has stopped the profile from profilor control or the function key. If **PrrE = GcSP** or **PrrE = GcSP** then **End** will only be shown for 30 seconds and the key will clear if pressed but no profilor reset is activated.

Profilor configuration fast access

Press **Go** for 3 seconds to move to profilor 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
ALM	1	Software alarm for loop alarm, alarm 1, alarm 2, latching alarm or diagnostics alarm.
tunE	2	Pre-tune active.
hoId	3	Profilor hold activated.
n.run	4	Profilor not running because a segment target setpoint is not within the setpoint upper and lower limits.
CL.P	4	Profilor running and the setpoint upper or lower limit has been adjusted and the profilor active setpoint is now not within the setpoint upper and lower limits.
SGrt	4	Profilor segment type ramp time.
SGrP	4	Profilor segment type ramp rate.
SGdt	4	Profilor segment type dwell time.
StEP	4	Profilor segment type step.
End	4	Profilor segment type end. If PrrE = GcSP or PrrE = GcSP then End will only be shown for 30 seconds.

Clearing Latched Output Alarms

Press **A** or **V** or 3 seconds on the **ALdL** 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 **LEP5** 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: ±0.1% of full range, ±1LSD (±1°C for Thermocouple CJC).
Calibration: 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 **[▲]**

[○]

[○PTr] Operator
[SLCt]

[SEtP] Setup
[SLCt]

[ConF] Configuration
[SLCt]

[uSrC] User Calibration
[SLCt]

[inFo] Product info
[SLCt]

[Autn] Auto-Tuning
[SLCt]

[P.ConF] Profile Configuration
[SLCt]

[P.SEtP] Profile Setup
[SLCt]

[P.CtI] Profile Control
[SLCt]

[d.IAG] Diagnostics
[SLCt]

[uLoC] Unlock Code **10**

[uLoC] Unlock Code **20**

[uLoC] Unlock Code **30**

[uLoC] Unlock Code **0**

[uLoC] Unlock Code **0**

[uLoC] Unlock Code **0**

[uLoC] Unlock Code **40**

Select Mode

Unit returns to operator mode if no activity for 2 mins

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	CnL	Auto Manual	Automatic control Manual control	Auto
Input Filter Time Constant	Filt	0 or 0.5 to 100.0 secs		2.0
Primary Power	PPW	Current power levels (read only)		N/A
Secondary Power	SPW			
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		14.0
Secondary Proportional Band	Pb.S			
Automatic Reset (Integral Time)	Rst	1 sec to 99 mins 59 secs and OFF		5.00
Rate (Derivative Time)	rDt	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)	bRS	0%(-100% if dual control) to 100%		25
Primary ON/OFF Differential	dFP	0.1% to 10.0% of input span centred about the setpoint. Entered in range units - defaults to 0.5% of range span.		7
Secondary ON/OFF Diff.	dFS			
Prim. & Sec. ON/OFF Differential	dFF			
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		32.0
Output 2 Cycle Time	Ct2	0.5 to 512 secs in 0.1 second increments for Relay		
Output 3 Cycle Time	Ct3			
High Alarm 1 value	PhR1	Range Minimum to Range Maximum		R/max
Low Alarm 1 value	PlR1			R/min
Deviation Alarm 1 Value	dRL1	+/- Span from SP in display units		5
Band Alarm 1 value	bRL1	1 LSD to span from setpoint		5
Alarm 1 Hysteresis	RH1	1 LSD to full span in display units		1
High Alarm 2 value	PhR2	Range Minimum to Range Maximum		R/max
Low Alarm 2 value	PlR2			R/min
Deviation Alarm 2 Value	dRL2	+/- Span from SP in display units		5
Band Alarm 2 value	bRL2	1 LSD to span from setpoint		5
Alarm 2 Hysteresis	RH2	1 LSD to full span in display units		1
Loop Alarm Time	LRT	1 sec to 99 mins. 59secs		99.59
Alarm message inhibit	noRL	dISA (disabled) or EnAB (enabled)		dISA
Auto Pre-tune	APt	dISA (disabled) or EnAB (enabled)		dISA
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

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		
Code	Input Type & Range	Code	Input Type & Range	
bC	B: 100 - 1824 °C	LC	L: 0 - 762 °C	P24C
bF	B: 211 - 3315 °F	LF	L: 32 - 1403 °F	P24F
CC	C: 0 - 2320 °C	LC	L: 0.0 - 537.7 °C	PtC
CF	C: 32 - 4208 °F	LF	L: 32.0 - 999.9 °F	PtF
dC	D: 0 - 2315 °C	NC	N: 0 - 1399 °C	PtC
dF	D: 32 - 4199 °F	NF	N: 32 - 2551 °F	PtF
JC	J: -200 - 1200 °C	RC	R: 0 - 1759 °C	D.20
JF	J: -328 - 2192 °F	RF	R: 32 - 3198 °F	U.20
JL	J: -128.8 - 537.7 °C	SL	S: 0 - 1762 °C	U.50
JF	J: -199.9 - 999.9 °F	SF	S: 32 - 3204 °F	I0.50
KC	K: -240 - 1373 °C	TC	T: -240 - 400 °C	0.5
KF	K: -400 - 2503 °F	TF	T: -400 - 752 °F	1.5
KL	K: -128.8 - 537.7 °C	TL	T: -128.8 - 452.0 °C	0.10
KF	K: -199.9 - 999.9 °F	TF	T: -199.9 - 752.0 °F	2.10
Scale Range Upper Limit	rUL	Scale Range Lower Limit +100 to Range Maximum	Range max (Lin=100.0)	
Scale Range Lower Limit	rLL	Scale Range Upper Limit -100 to Range Minimum	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 duRL Primary & Secondary (e.g. heat & cool)		SnGL
Primary Output Control Action	CtP.L	rEu Direct Acting d.r Direct Acting		rEu
Alarm 1 Type	ALR1	P.H Process High Alarm P.L Process Low Alarm dE Deviation Alarm bAnd Band Alarm nonE No alarm		P.H
High Alarm 1 value*	PhR1	Range Minimum to Range Maximum in display units	Range Max	
Low Alarm 1 value*	PlR1		Range Min	
Band Alarm 1 value*	bRL1	1 LSD to span from setpoint in display units		5
Dev. Alarm 1 value*	dRL1	+/- Span from setpoint in display units		5
Alarm 1 Hysteresis*	RH1	1 LSD to full span in display units		1
Alarm 2 Type*	ALR2	Options as for alarm 1		P.LG
High Alarm 2 value*	PhR2		Range Max	
Low Alarm 2 value*	PlR2		Range Min	
Band Alarm 2 value*	bRL2			5
Dev. Alarm 2 Value*	dRL2			5
Alarm 2 Hysteresis*	RH2			1
Loop Alarm	LARn	dISA (disabled) or EnAB (enabled)		dISA
Loop Alarm Time*	LRT	1 sec to 99 mins. 59secs		99.59
Alarm Inhibit	Inh	nonE No alarms inhibited ALR1 Alarm 1 inhibited ALR2 Alarm 2 inhibited both Alarm 1 and alarm 2 inhibited		nonE
Output 1 Usage	USE1	P.r Primary Power SEc Secondary Power AL1.d Alarm 1, Direct AL1.r Alarm 1, Reverse AL2.d Alarm 2, Direct AL2.r Alarm 2, Reverse LP.d Loop Alarm, Direct LP.r Loop Alarm, Reverse DR.d Logical Alarm 1 OR 2, Direct DR.r Logical Alarm 1 OR 2, Reverse AL1.d Logical Alarm 1 AND 2, Direct AL1.r Logical Alarm 1 AND 2, Reverse AL1.d Alarm 1, Direct Latching AL1.r Alarm 1, Reverse Latching AL2.d Alarm 2, Direct Latching AL2.r Alarm 2, Reverse Latching Evn1 Event 1 Evn2 Event 2		P.r
Output 2 Usage	USE2	Options same as Output 1 Usage		AL.d
Output 3 Usage	USE3	Options same as Output 1 Usage		AL.d
Linear Output 3 Usage	USE3	P.r Primary Power SEc Secondary Power rEtS Recorder SP rEtP Recorder PV		rEtP
Linear Output 3 Range	LYP3	0.5 0 to 5 V DC output 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		0.10

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	Un	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	FLW	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	dMm	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	CRt	SnGL Single (PV offset) duRL Dual (High and low PV offset)		nonE
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	ULoc	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	ELoc	0 to 9999	0

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	PrnG	Select Profile: 1 or 2		1
Profile: Start Point	PrSP	c.SP Start at Current Setpoint c.PU Start at Current PV		c.SP
Profile: Recovery method	PrRE	C.OFF Controller Off r.P.F Restart Profiler M.N.S.P Maintain last profile SP G.C.S.P Goto ControllerSP C.P.F Continue Profile		C.OFF
Profile: End Action	PrEA	C.OFF Controller Off M.N.S.P Maintain last profile SP G.C.S.P Goto ControllerSP		C.OFF
Profile: Timebase	PrTSE	Hour Hours/Minutes Min Minutes/Seconds		Hour
Profile: Auto hold type	PrHoId	nonE No auto hold H.H Above setpoint, hold if too high L.L Low setpoint, hold if too low bAR Band, hold if too high or low		nonE
Profile: Auto hold valid type	PrHoLP	ALL Auto hold in all segments SGdt Auto hold Only on dwell segments		SGdt
Profile: Auto hold band value	PrbAR	The distance from the setpoint -1.99 with range decimal point.		5
Segment Number	SGnB	Indicates Segment being configured		
Segment Type	SGtP	SGr Ramp rate SGR Ramp Rate SGdt Dwell time StP Step End End		SGr
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.1 Event 1 Active E.2 Event 2 Active E.12 Events 1 and 2 Active		E...
Profile Lock Code	PrLoc	0 to 9999		0

Parameter	Lower Display	Upper Display	Default Value
Profile to run	PrnG	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	PcI	run Run the profiler hoId Hold profile running - Option when profiler running. StoP Stop profile running		StoP

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	ActE	dISA (disabled) or EnAB (enabled)		dISA
Output 1 Count Reset	OP1r	YES or no		no
Output 1 Actuations	OP1c	Count of output 1 actuations (1000's) Read only		
Actuator Warning Level Output 1	OP1A	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	OEEn	dISA (disabled) or EnAB (enabled)		dISA
Diagnostics lock code	dLOC	0 to 9999		40

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

Retransmit Output 3 Scale maximum	ro3H	-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 3 Scale minimum	ro3L	-1999 to 9999 (display value at which output will be minimum)	Range min
Function key	Func	nonE No function M.N.S.P Function key enables manual power PctI Profiler control PtUn Pre-tune	nonE
Latch power down save	LtPS	dISA Do not save the latching alarm status on power-down EnAB Save the latching alarm status on power-down	dISA
Display Strategy	dSP	1, 2, 3, 4, 5 or 6 (refer to section 5)	1
Serial Communications Protocol	PrOt	MbN Modbus with no parity MbeE Modbus with Even Parity MboO Modbus with Odd Parity	MbN
Serial Communications Bit Rate	PrBd	1.2 1.2 kbps 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	4.8
Comms Address	RAdr	1 to 255	1
Comms Write	CoEn	r.W Read/Write r.O Read only	r.W
Configuration Lock Code	CLoc	0 to 9999	20