1020 Temperature Controller Quick Start Manual PK549 (0037-75580)

This manual is intended to be a quick reference guide for basic installation requirements and an overview of the connections, wiring considerations, and general specifications for the 1020 Temperature Controller. For complete installation and operation, refer to the PK552 1020 & 1030 Hardware Installation Manual. The most current revisions may be found on the Chromalox website: www.chromalox.com

1. IMPORTANT SAFEGUARDS

⚠WARNING

ELECTRIC SHOCK HAZARD: Read and understand all instructions before installing, servicing or operating this controller. Failure to do so could result in equipment or property damage as well as personal injury and even death.

⚠WARNING

HIGH VOLTAGE is used in the operation of this equipment; DEATH ON CONTACT may result if personnel fail to observe safety precautions. Learn the areas containing high-voltage connections when installing or operating this equipment.

⚠WARNING

Be careful not to contact high-voltage connections when installing or operating this equipment. Before working inside the equipment, turn power off and ground all points of high potential before touching them.

⚠WARNING

ELECTRIC SHOCK HAZARD: Any installation involving control equipment must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code or local governing electrical code/authority, to eliminate shock hazard.

⚠CAUTION

The owner/installer must provide all necessary safety and protection devices and follow all current electrical wiring standards and regulations. Failure to do so may compromise the integrity of the controller and/or cause product failure resulting in a safety risk to operational and service personnel.

⚠CAUTION

This controller utilizes a heat sink which is designed to cool the unit during operation. Under no circumstance should air flow around the controller be compromised in any way. Failure to do so may result in the overheating of the controller, product failure, product temperatures and even fire.

⚠WARNING

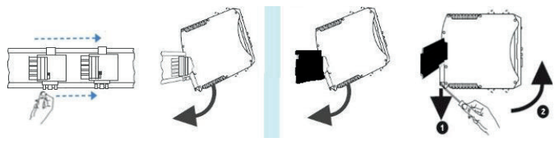
During continuous operation, the heat sink can reach very high temperatures, and keeps a high temperature even after the unit is turned off due to its high thermal inertia.

2. INSTALLATION

Installation Guidance

- Installation should only be performed by technically competent personnel.
- Standards compliance shall not be impaired when fitting into the final installation.
- It is the responsibility of the installing engineer to ensure configuration is safe.
- Local regulations regarding electrical installation & safety must be observed.
- Impairment of protection will occur if the product is used in a manner not specified by the manufacturer.
- Due to the low weight of this instrument there are no special lifting or carrying considerations.
- Designed to offer a minimum of Basic Insulation only.
- Ensure that supplementary insulation suitable for Installation Category II is achieved when fully installed.
- To avoid possible hazards, accessible conductive parts of the final installation should be protectively earthed in accordance with EN61010 for Class 1 equipment.
- Output wiring should be within a Protectively Earthed cabinet.
- Sensor sheaths should be bonded to protective earth or not be accessible.
- Live parts should not be accessible without the use of a tool.
- When fitted to the final installation, an IEC/CSA APPROVED disconnecting device should be used to disconnect both LINE and NEUTRAL conductors simultaneously.
- Do not position the equipment so that it is difficult to operate the disconnecting device.
- Ventilation slots must not be covered and adequate air circulation must be allowed.
- Use conductor sizes 30-12 AWG, minimum temp rating of cables to be 80c.

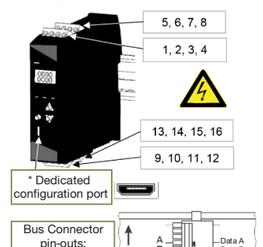
Bus Connector (Optional) **Mounting & Unmounting**



Terminal Wiring

⚠CAUTION

Check information label on housing for correct operating voltage before connecting supply to Power Inputs. Diagrams show all possible option combinations, check your exact product specification before connecting.



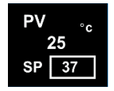
1	RS485 Data A (Rx/Tx+)	Communications
2	RS485 Data B (Rx/Tx-)	
3	Relay COM / Linear +	Output 3
4	Relay NO / Linear -	
5	Relay COM / SSR -	Output 2
6	Relay NO / SSR +	
7	L +	Power
8	N -	
9	Volt-free or TTL	Digital Input
10	Compatible	
11	Relay COM / SSR -	Output 1
12	Relay NO / SSR +	
16	Relay NC	
13	RTD	Input
14	TC / RTD / Linear +	
15	TC / RTD / Linear -	

*Never directly connect dedicated configuration socket to a USB port.

3. FRONT PANEL

Ok / Select ○ Up △ Down ▽

Display turns off after 5, 15 or 30 minutes without key presses.



Display shows PV (process variable), units, SP (setpoint), alarm/latch statuses, error & warning messages.

LEDs show respective output state: 1 2 3

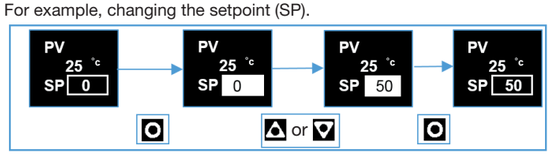
Navigation & Editing

Press △ or ▽ keys to navigate between parameters or menu items.

Press ○ to highlight and edit a parameter value.

Press △ or ▽ to change the parameter value, then press within 60 seconds to confirm change.

For example, changing the setpoint (SP).



Navigating to Setup Mode or Advance Configuration from Operator Mode:

Setup Mode - press ○ & △.

Advanced Configuration - press ○ & ▽.

Returning to Operator Mode:

Press ○ & △ to move back one level. After 120 seconds without key presses the unit returns automatically to the first Operator Mode screen.

4. SETUP

Important Note: When powered up for the first time, or after a factory reset (default) the instrument enters Setup.

The device remains in Setup, or will keep powering up back into Setup, until all parameters have been reviewed and the user exits Setup.

Some parameters may be hidden depending on configuration & hardware.

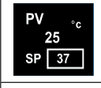
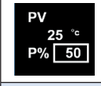
Alternatively press ○ & △ to enter Setup from Operator mode and ○ & △ to exit.

Setup Lock	Enter Code & Press ○	Default 10

Parameter	Description		Default Value
Input Type	J Thermocouple*		K Thermocouple
	-200 to 1200°C -328 to 2192°F	-128.8 to 537.7°C -199.9 to 999.9°F	
	K Thermocouple*		
	-240 to 1373°C -400 to 2503°F	-128.8 to 537.7°C -199.9 to 999.9°F	
	PT100 *		
	-199 – 800°C -328 – 1472°F	-128.8 – 537.7°C -199.9 – 999.9°F	
	B Thermocouple		
	100 to 1824°C 211 to 3315°F		
	C Thermocouple		
	0 to 2320°C 32 to 4208°F		
	L Thermocouple*		
	0 to 762°C 32 to 1403°F	0.0 to 537.7°C 32.0 to 999.9°F	
	N Thermocouple		
	0 to 1399°C 32 to 2551°F		
	R Thermocouple		
	0 to 1795°C 32 to 3198°F		
	S Thermocouple		
	0 to 1762°C 32 to 3204°F		
	T Thermocouple*		
	-240 to 400°C -400 to 752°F	-128.8 to 400.0°C -199.9 to 752.0°F	
	Linear dc		
	0 – 20mA 0 – 50mV 0 – 5V 0 – 10V	4 – 20mA 10 – 50mV 1 – 5V 2 – 10V	
Input Units	°C or °F (hidden when a linear input is used)		°C
Scale Range max & min only visible when input is a linear type.			
Input Scale Range Max.	Maximum for application working range.		1000
Input Scale Range Min.	Minimum for application working range.		0
Input Digital I/P Action	None Alarm Reset (clears latched alarms) Ctrl Enable/Disable (disables control) Ctrl Auto/Manual Pre-Tune Start/Stop Tune at SP Start/Stop		Ctrl Enable/ Disable
Output 1 Usage	Heat Cool Alarm 1	Alarm 2 Alm. 1or 2 Loop Alarm	Heat
Control Loop Alarm time is 2x Integral (PID) or Loop Alarm Time (if mode is On.Off)			
Output 2 Usage	Same options as Output 1 Usage		Alarm 1
Output 3 Usage or Linear Output Usage	Same options as Output 1 Usage		Alarm 2
	Heat Cool	PV Retx SP Retx	PV Retx
Linear Output Type	0-10V 2-10V 0-20mA	4-20mA 0-5V 1-5V	0-10V
Linear Output Scale Range Max.	Maximum PV value corresponding to maximum linear output.		Input type Max.
Linear Output Scale Range Min.	Minimum PV value corresponding to minimum linear output.		Input type Min.
Alarm 1 Value	Range minimum to range maximum, or OFF (maximum +1). OFF disables alarm. Default PV High alarm type		1373
Alarm 2 Value	Same options as Alarm 1. Default PV Low alarm type.		-240
Setpoint	Target setpoint.		0
Coms Unit Address	Modbus address from 1 to 255		1
Coms Baud Rate	1200, 2400, 4800, 9600, 19200 & 38400		9600
Coms Parity	Odd, Even or None		None
Control Auto Tuning	Off, Start Pre-Tune or Start Tune at SP *		Off

*Start Tune at SP not available for Heat & Cool processes. When you exit if necessary, press ○ & △ to clear Control is Enabled Pop Up Alert.

5. OPERATOR MODE

Name		Details
User Screen		PV - top SP - bottom Temperature Unit - right
Manual Control		Manual Power is shown as P%.
Transmitter view enabled		Transmitter parameter = Enable, SP is hidden. **IMPORTANT:** The device still functions as a controller, using the local Setpoint. ⚠

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Advanced Thermal Technologies

PK549
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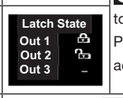
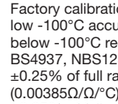
Name		Details
IMPORTANT: Visibility for parameters below must be set to Show in Operator sub-menu.		
Alarm State		To clear latches press ○ then △ to select Yes. Press ○ to accept. Alarm active Alarm set, but not active – Alarm not set
Latch State		Output Latched Latch set, but output not Latched – Latch not set
Maximum PV	To clear press ○ then △ to select Yes. Press ○ to accept.	Screens show the maximum & minimum PV reached.
Minimum PV		
Control Enable	OFF - Control output(s) disabled. (Ignored when in manual mode). ON - Control output(s) enabled.	
Manual Control Enable	OFF - Automatic control, PID or On-Off control available. ON - Manual control, Manual Power shown as P% xxx.	
Time On Remaining	On Timer	Visible when On Timer is active. See Ramp & Timers diagram.
Delay Time Remaining	Delay Timer	Visible when Delay Timer is active. See Ramp & Timers diagram.

⚠CAUTION

Do not continue your process until any issues are resolved.

Name		Details
Pop up Alerts: Warnings and Confirmations		For example, Pop Up Alert for Alarm 1. Pop Up Alerts need to be acknowledged. Press ○ and △ to clear Pop Up Alert.
Pop up Alerts: Alarm 1, Alarm 2, Alarm 1 & 2, Starting Calibration, Calibration Ongoing, Calibration Fail, Control is Enabled, Tune Error messages, Tuning in progress, Setup not Completed & Offset in use (SP offset).		
IMPORTANT: Visibility for parameters below must be set to Show in Operator sub-menu.		
Alarm	Alternates with PV to show Alarm is active.	
Latch	Alternates with PV. One or more outputs are latched on and no alarm is active.	
High	Process variable input > 5% over-range.	
Low	Process variable input > 5% under-range.	
Open	Break detected in process variable input sensor, wiring or wrong input type selected. Shows OPEN until resolved, control is off.	
Error	Selected input range is not calibrated. Shows ERROR until resolved, control is off.	
Tune	Alternates with SP. Auto-tuning is in progress.	
P%	Manual power value replaces setpoint, shows P% xxx of power.	
Ramp	Alternates with actual setpoint. Setpoint ramp is active.	
Off	Control is disabled. Control output(s) are off.	
Control Delayed	Visible when Delay Timer is active. Control output(s) are off.	
Tuning in Progress	Alternates with setpoint. Tuning is active.	
Tune Errors	Display alternates between Tune Error & Setpoint. Remains visible until Automatic Tuning is turned Off.	
	tErr1	PV within 5% of SP (for pre-tune)
	tErr2	Setpoint is ramping
	tErr3	Control is ON/OFF (not PID)
	tErr4	Control is manual
	tErr5	Tune at Setpoint not able to run
	tErr6	Sensor Break
	tErr7	Timer Running
	tErr8	Control is Disabled

6. SPECIFICATIONS

IMPORTANT: Check your product code for exact hardware fitted.

PROCESS INPUT

Thermocouple Calibration:	±0.25% of full range, ±1LSD & ±1°C for Thermocouple CJC. Factory calibration is accurate 0.25% of span above -100°C, below -100°C accuracy is within +/- 0.9%. To meet 0.25% accuracy below -100°C recalibrate using procedure in full manual. BS4937, NBS125 & IEC584.
PT100 Calibration:	±0.25% of full range, ±1LSD. BS1904 & DIN43760 (0.00385Ω/Ω/°C).
DC Calibration:	±0.25% of full range, ±1LSD.
Sampling Rate:	4 per second.
Impedance:	>1MΩ resistive, except dc mA (5Ω) and V (47kΩ)
Sensor Break Detection:	Thermocouple, RTD, 4 to 20mA, 10 to 50mV, 2 to 10V and 1 to 5V ranges only. Control outputs turn off at sensor break.

DIGITAL INPUT (Isolated or Non-Isolated version)

Functions: Reset Alarm, Control Enable/Disable, Auto/Manual, Pre-Tune Start/Stop or Tune at SP Start/Stop.
Signal: Non-isolated - Open or Close only.
Isolated - Open (2 to 24Vdc) or Closed (<0.8Vdc).
Open to Closed transition = Reset, Enabled, Auto or Start.

OUTPUTS

Relay Contacts: Form C SPDT (Op 1) / Form A SPST relay (other), 2A @ 250Vac.
Relay Lifetime: >150,000 operations at rated voltage/current, resistive load.
SSR Driver Capability: SSR drive voltage >10V at 20mA
Output 3 option only: DC (Linear)
Types: 0 to 20mA, 4 to 20mA, 0 to 5V, 0 to 10V or 2 to 10V
Load Resistance: Current Output 500Ω max, Voltage Output 500Ω min.
Resolution: 8 bits in 250ms (10 bits in 1s typical, >10 bits in >1s typical).
RS485 SERIAL COMMUNICATIONS (Modbus RTU)

RS485 Serial Communications

Data Rate: 1200, 2400, 4800, 9600, 19200 or 38400 bps.

OPERATING CONDITIONS

Usage: For indoor use only, DIN-rail mounted in suitable enclosure.
Ambient Temp: <95% humidity 0°C to 55°C (Operating), –10°C to 80°C (Storage).
Relative Humidity: 20% to 95% non-condensing.
Altitude: < 2000m
Power Supply: Mains power version - 100 to 240Vac ±10%, 50/60Hz, 9VA Low voltage version - 24Vac +10/-15% 50/60Hz 9VA or 24Vdc +10/-15% 5W.

ENVIRONMENTAL

Standards: CE, UL & cUL.
EMI: EN61326-1:2013, Table 2 & Class A.

⚠WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Safety: UL61010-1 Edition 3, EN61010-1 Version 2010,
Pollution Degree 2 & Installation Class 2.
Protection Rating: IP20

PHYSICAL

Unit Size: Height - 99mm; Width – 22.5mm; Depth - 121mm
Ventilation: A space of 80mm must be allowed above & below each unit
Weight: 0.20kg maximum

ISOLATION

	PSU	Universal Input	Relay	SSR	Linear	RS485 Comms	Non-Isolated Digital Input	Isolated Digital Input	Config Port
PSU	■								
Universal Input		■		■			■		■
Relay									
SSR		■		■			■		■
Linear					■				
RS485 Comms						■			
Non-Isolated Digital Input		■		■			■	■	■
Isolated Digital Input							■	■	
Configuration Port		■		■			■		■

Not Applicable ■ | No Isolation ■ | Reinforced Isolation ■

7. ADVANCED CONFIGURATION

Advanced Configuration gives access to all possible parameters; however, the device hides parameters that are irrelevant to your exact product specification & configuration.

ADVANCED CONGIFURATION NAVIGATION

Enter by pressing ◯ and ▽. Press △ or ▽ to navigate to the required menu, then press ◯ to enter.

Press ◯ & △ to exit up 1 level. Depending upon which menu you enter it may be necessary to exit 2 or 3 levels for Operator Mode.

Advanced Lock	Enter Code & Press ◯	Default 20

Menus	Description
User	Includes Status, Control & Manual Mode enable/disable.
Input	Configure the process input.
User Calibration	Single or two-point calibration adjustments for the process input.
Outputs	Configuration parameters for the outputs.
Control	PID control tuning & configuration parameters.
Setpoint & Timer	Setpoint & timer settings.
Alarms	Alarm configuration.
Communication	Modbus communications settings.
Display	Lock codes and Factory Default.

Menus	Description
Operator Screens	Control what appears in Operator Mode.
Information	View serial number & manufacturing details.

User Menu

Parameter	Description	Default Value
Alarm State	 (🔔) Alarm active (🔕) Alarm set, but not active – Alarm not set	n/a
Latch State	 (🔒) Output Latched (🔓) Latch set, but output not Latched – Latch not set To clear press ◯ then △ to select Yes. Press ◯ to accept.	n/a
Maximum PV Minimum PV	Maximum and Minimum PV recorded whilst powered up or since last reset. To clear press ◯ then △ to select Yes. Press ◯ to accept.	n/a
Control enable	OFF - Control output(s) disabled. (Ignored when in manual mode) SP replaced by OFF. ON - Control output(s) enabled. Setpoint visible in User screen.	On
Manual Control Enable	OFF - Instrument in automatic control mode (PID or On-Off control). ON - Manual control ON. Power shown as Pxxx % in Operator mode, in place of SP.	Off

INPUT MENU

Parameter	Description	Default Value
Input Type	See Input Type table in SETUP	K Thermocouple
Units	Displayed as °C or °F (Units are hidden when a linear input is used)	°C
Decimal Place	0000 000.0 00.00 0.00 Not for temperature	0000
Scale Range Maximum	Maximum for application working range	Max allowed for Input Type.
Scale Range Minimum	Minimum for application working range	Min allowed for Input Type.
Filter Time	OFF or 0.5 to 100.0 seconds in 0.5 increments	2.0
CJC Enable	Enable Enables the internal thermocouple CJC (Cold Junction Compensation).	Enable
Digital I/P Action	None Alarm Reset (clears latched alarms) Ctrl Enable/Disable Ctrl Auto/Manual Pre-Tune Start/Stop Tune at SP Start/Stop (not available for heat/cool)	Ctrl Enable/ Disable

USER CALIBRATION MENU

Single-point offset or two-point calibration adjustment for process input. Can be used together, if required.

Parameter	Description	Default Value
Offset	Shifts the input value up or down by a single offset amount across the entire range.	0
Low Point	Enter value at which the low point error was measured.	Lower Limit
Low Offset	Enter equal, but opposite offset value to the observed low point error.	0
High Point	Enter value at which the high point error was measured.	Upper Limit
High Offset	Enter an equal, but opposite offset value to the observed high point error.	0

OUTPUTS MENU

Parameter	Description		Default Value
Outputs 1 & 2			
Useage	Heat, Cool, Alarm 1	Alarm 2, Alm. 1 or 2 Loop Alarm	Heat
Control Loop Alarm is set as 2x Integral (PID) or Loop Alarm Time (On.Off control)			
Alarm Action	Direct - Output active when alarm triggers Reverse - Output active when alarm not triggered		Direct
Latching	Off - Alarm doesn't latch On – Alarm latches & needs to be cleared		Off
LED Indicator	Direct - LED Indicator lit when output is active Reverse - LED Indicator lit when output inactive		Direct
Output 3 or Linear Output (3rd output - either Relay/SSR driver (Output 3) or Linear.)			
Output 3 Usage	Output 3 - same as Output 1 - Usage		Output 3: Alarm 2
Linear Output Usage	Heat Cool	PV Retransmit SP Retransmit	Linear: PV Retransmit
Output 3 Alarm Action	Same as Output 1 - Alarm Action		Direct
Output 3 Alarm Latching	Same as Output 1 - Alarm Latching		Off
Output 3 LED Indicator	Same as Output 1 - LED Indicator		Direct
Linear Output Type	0-10V, 2-10V 0-20mA	4-20mA 0-5V, 1-5V	0-10V
Linear Outp Scale Range Max.	Display value for max. output, -1999 to 9999		Input type Max
Linear Outp Scale Range Min.	Display value for min. output, -1999 to 9999		Input type Min

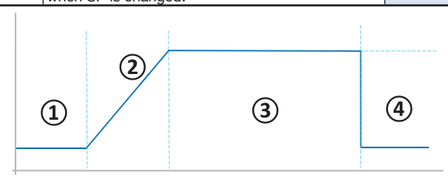
CONTROL MENU

PID control tuning & configuration & Loop Alarm. Hidden if no control outputs are set.

Parameter	Description	Default Value
Proportion Heat Band Proportion Cool Band	ON/OFF (0.0) or PID control in display units. 1 to 9999 - 0 decimal places 0.1 to 999.9 - 1 decimal place 0.01 to 99.99 - 2 decimal places 0.001 to 9.999 - 3 decimal places	161
Auto Reset (Integral)	0.01 to 99.59. and OFF (0.00) (minutes & seconds).	5.00
Rate (Derivative)	0.01 to 99.59 or OFF (0.00) (min. & sec.).	1.15
Overlap/Deadband	In display units, range -20 to +20% of Heat & Cool Proportional Band. 0 is Off.	0
Differential (On/Off)	Visible when using On/Off control. In display units centred about the setpoint. Range: 0.1% to 10.0% of input span	8
Loop Alarm Time	Visible when On/Off control & Loop Alarm assigned to an output. Sets time before the loop alarm triggers. (min. & sec.)	99.59
Manual Reset (Bias)	Manual Reset 0 to 100% (-100% to 100% if heat/cool control)	25%
Heat Cycle Time Cool Cycle Time	0.1 to 512.0 seconds	32.0
Output Interlock	Prevents simultaneous activation of both heat & cool outputs. On / Off Only set to On if Overlap/Deadband = 0.	Off
Heat Power Limit	% power upper limit 0 to 100%	100%
Cool Power Limit	% power upper limit 0 to 100%	100%
Power Up Action	Last - Powers up with control enable in the same state as on power off or power failure. On - Always powers up with control enabled.	Last
Automatic Tuning	Off, Start Pre-Tune, Start Tune at SP *	Off
*Start Tune at SP not available for Heat & Cool process.		

SETPOINT MENU

Parameter		Description	Default Value
Enable Timer	Enabled	Enables the Delay and On Timers. Applies at next power-up / control enable.	Disabled
	Disabled	Delay and On Timers ignored. (Setpoint ramping still functions.)	
Delayed Start Time		Time from power-up or control enable before control begins from 00.01 to 99.59. or OFF (0.00. (hours & minutes) If OFF control starts immediately.	OFF
Ramp Rate		Rate actual setpoint changes from current PV to target setpoint following power-up or control enable. From 0.001 to 9999 or OFF (10 000) (Units / hr). Any setpoint changes also follow this rate.	OFF
On Time		Time the target setpoint will be maintained once reached, from 00.01 to 99.59 or Off (00.00) (hrs. & mins) Infinite (100.00) - control remains on indefinitely.	Infinite
Upper Limit		Used to limit the Maximum setpoint value.	Scale Range Max.
Lower Limit		Used to limit Minimum setpoint value.	Scale Range Min.
Offset		Offsets the setpoint. For use in multi-zone setpoint slave applications. Offset in use pop-up appears when SP is changed.	0



Ramp & Timers diagram – delay, ramp and timer

1. From power up or control enable the unit delays process control until the Delay Timer expires (time set by Delayed Start Time).
2. Setpoint ramps from the current PV to the target setpoint at Ramp Rate (Ramp indicates ramping). If Ramp Rate is OFF the active setpoint steps directly to target setpoint.
3. When the active setpoint reaches the target setpoint, the On Timer counts down (time set by On Time).
4. When the On Timer finishes the control switches off. If On Time is set to INF then the control stays on.

ALARMS MENU

Parameter	Description		Default Value
Alarm 1			
Type	None, PV high PV Low	Deviation Band	PV High
Value	Range minimum to range maximum, or OFF (maximum +1). OFF disables alarm.		1373
Hysteresis	0 to full span		1
Alarm 2			
Type	Same options as alarm 1		PV Low
Value			-240
Hysteresis			1
Alarm Inhibit temporarily deactivates alarms at power-up & on change in setpoint.			
Alarm Inhibit	None, Alarm 1, Alarm 2, Alarm 1 & 2		None
Alarm PV Notification	None, Alarm 1, Alarm 2 Alarm 1 & 2		Alarm 1 & 2
Sensor Break Alarm	On - activates both alarms, if configured, when a sensor break is detected.		Off

COMMUNICATIONS MENU

Modbus communications settings, only shown when RS485 option is fitted.

Parameter	Description	Default Value
Unit Address	Modbus address from 1 to 255	1
Baud Rate	Coms data rate in kbps 1200, 2400, 4800, 9600, 19200 & 3840	9600
Parity	Parity checking: Odd, Even or No	None

DISPLAY MENU

Lock codes & Factory Defaults.

Parameter	Description	Default Value
Setup Unlock Code	View & adjust Setup lock code. From 1 to 9999 or Off for no lock code.	10
Advanced Unlock Code	View & adjust Advanced lock code. From 1 to 9999 or Off for no lock code.	20
Screen Timeout	Screensaver time 5, 15 or 30 mins.	5
Selected language	Display language, 2 available – English plus either German or French.	English
Transmitter	Transmitter view Enable hides the setpoint. ⚠ **IMPORTANT:** The device still functions as a controller even though SP is hidden. For transmitter function, Linear Output – Usage must be PV Retransmit or SP Retransmit.	Disable
Reset to Defaults	Reset parameters back to factory defaults. To clear press ◯ then ▽ to select Yes. Press ◯ to accept.	

OPERATOR SCREENS MENU

Controls what appears in Operator Mode.

Parameter	Description	Default Value
Control Enabled	Hide or Show parameters in Operator Mode.	Hide
Manual Ctrl Enabled		Hide
Alarm State		Hide
Latch State		Show
Maximum PV		Hide
Minimum PV		Hide
Remaining On Time		Hide
Remaining Delay Time		Hide

INFORMATION MENU (READ ONLY)

Controls what appears in Operator Mode.

Parameter	Description
PRL	The hardware/software revision level.
DOM	Date of manufacture (mmyy).
FW Version FW Type	The firmware version number & code type.
Serial	Instrument serial number.
Out1	SSR (SSR driver) or Relay.
Out2	SSR (SSR driver) or Relay
Out3	None, SSR (SSR driver), Relay or Linear.
Comm	Comms option - Fitted or None.
DI	Digital Input options – Iso (isolated) or NonIs (non-isolated).