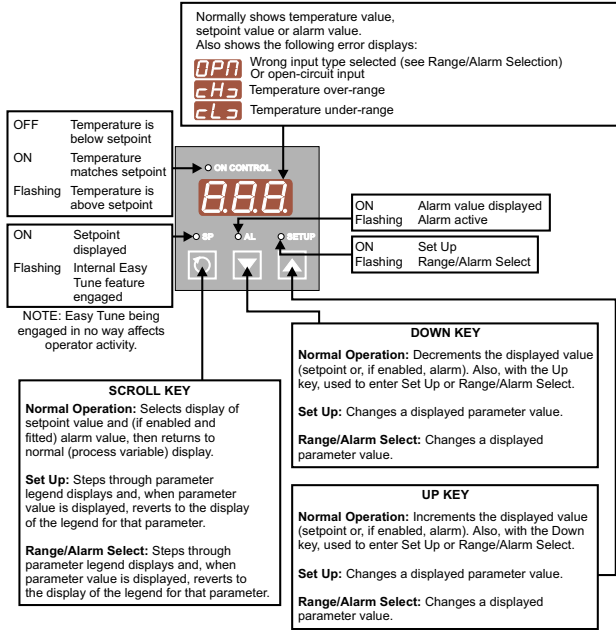


1/16-DIN SIMPLIFIED CONTROLLER CONCISE PRODUCT MANUAL (59224-4)

OPERATING MODE

Note: Set all Range/Alarm and Setting Up parameters as desired before starting normal operations.



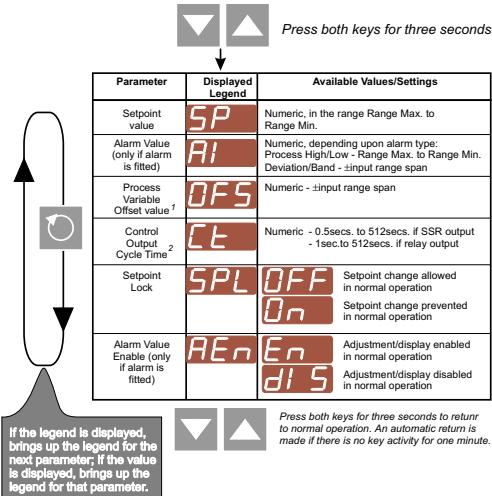
Front Panel

Adjusting Setpoint and Alarm Value

The normal display shows temperature value. Use the Scroll key to select display of setpoint value and (if enabled - see **SETTING UP**) alarm value. If adjustment of these parameters is enabled (see **SETTING UP**), use the Up/Down keys to adjust the displayed parameter value. Use the Scroll key to restore the temperature value display.

SETTING UP

NOTE: Set all Range/Alarm parameters as desired before starting Setup operations.



NOTES ON SETTING UP

1. The Process Variable (PV) Offset modifies the actual process variable (PV) value as follows:

$$\text{Modified PV} = \text{Actual PV} + \text{PV Offset}$$

The modified PV value is used for all PV-dependent functions (control, display, alarm). Choose this value with care; it is, in effect, a calibration adjustment. **There is no indication when this parameter is in effect (i.e. has been set to a non-zero value).**

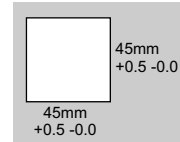
2. The cycle time required is dependent upon the process being controlled and the type of output being used. For a relay output, the cycle time should be as large as possible (whilst remaining compatible with the process control requirements) to maximise relay life. For an SSR output, the cycle time may have a lower value.

INSTALLATION

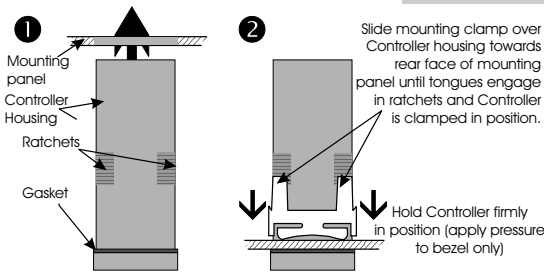
CAUTION: Installation should only be performed by personnel who are technically-competent and authorised to do so. Local Regulations regarding electrical installation & safety must be observed.

Panel-Mounting

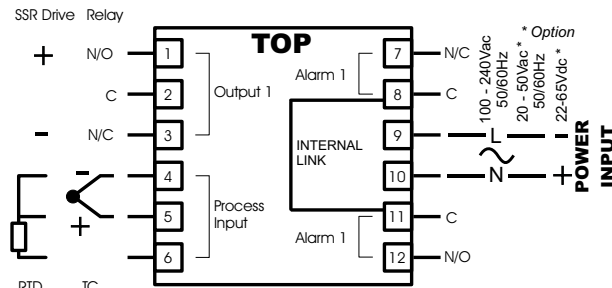
The mounting panel must be rigid and may be up to 6.0mm (0.25 inches) thick. The cut-outs required for the Controllers are shown on the right. Controllers may be mounted side-by-side in a multiple installation for which the cut-out width (for n Controllers) is (48n - 4)mm or (1.89n - 0.16) inches.



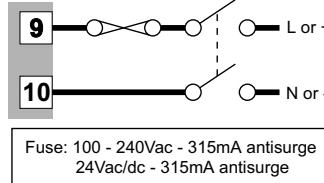
The panel-mounting procedure is shown below:



Rear Terminal Connections



RECOMMENDED MODE OF POWER CONNECTION



RANGE/ALARM SELECTION

CAUTION: The parameters in this mode must be adjusted only by personnel technically-competent and authorised to do so.

Entry

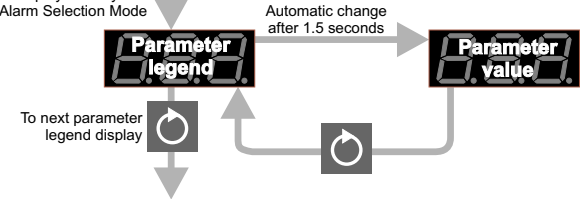
Range/Alarm Selection Mode is entered as follows:

- Press the Scroll and Up keys till the display flashes.
- When the display starts to flash, release the Scroll and Up keys and press the Down key. The SET indicator will then start to flash and the legend of the first parameter in the sequence (Input Type and Range) will be displayed; 1.5 seconds later the value for that parameter will be displayed.

Parameter Selection/Adjustment

In this mode, the Scroll key is used to select the required display, as follows:

From previous parameter legend display or entry into Range/Alarm Selection Mode



Once the required parameter value is displayed, the Up/Down keys can be used to alter that value; new values are implemented immediately. The parameter sequence is:

Parameter	Displayed Legend	Available Values																																										
Input Type and Range	InP	<table border="1"> <thead> <tr> <th colspan="2">Temperature Units</th> <th colspan="2">Input Range Maximum¹</th> </tr> <tr> <th>Value</th> <th>Units</th> <th>Value</th> <th>Max.</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>°C</td> <td>5</td> <td>500</td> </tr> <tr> <td>1</td> <td>°F</td> <td>1</td> <td>500</td> </tr> <tr> <td>2</td> <td></td> <td>200</td> <td>600</td> </tr> <tr> <td>3</td> <td></td> <td>300</td> <td>700</td> </tr> <tr> <td>4</td> <td></td> <td>400</td> <td>800</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Value</th> <th>Input Sensor Type</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Thermocouple Type J/L</td> </tr> <tr> <td>2</td> <td>Thermocouple Type K</td> </tr> <tr> <td>3</td> <td>Thermocouple Type N</td> </tr> <tr> <td>4</td> <td>Thermocouple Type T²</td> </tr> <tr> <td>5</td> <td>RTD (-50 to Range Max.)</td> </tr> <tr> <td>6</td> <td>RTD 0.0 to Range Max. - 1 decimal position¹</td> </tr> </tbody> </table> <p>NOTES: 1. The RTD range will always be 0.0 - 99.9, whatever the Range Maximum setting may be. 2. Absolute Range Max. = 400°C (700°F) for TC Type T.</p>	Temperature Units		Input Range Maximum ¹		Value	Units	Value	Max.	0	°C	5	500	1	°F	1	500	2		200	600	3		300	700	4		400	800	Value	Input Sensor Type	1	Thermocouple Type J/L	2	Thermocouple Type K	3	Thermocouple Type N	4	Thermocouple Type T ²	5	RTD (-50 to Range Max.)	6	RTD 0.0 to Range Max. - 1 decimal position ¹
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Control Action	CLP dP ro do	Reverse-acting PID control Direct-acting PID control Reverse-acting ON/OFF control Direct-acting ON/OFF control																																										
Alarm Type and Action (available only if an Alarm Option is fitted) NOTE: The operation of the different types of alarm is illustrated overleaf.	ALP PLd EdE BRd PHr PLr dEr BRr	Process High Alarm, direct-acting Process Low Alarm, direct-acting Deviation Alarm, direct-acting Band Alarm, direct-acting Process High Alarm, reverse-acting Process Low Alarm, reverse-acting Deviation Alarm, reverse-acting Band Alarm, reverse-acting																																										

Return to Normal Operation

- Select a parameter legend display.
- During the 1.5-second legend display, press the Up and Down keys simultaneously for three seconds.

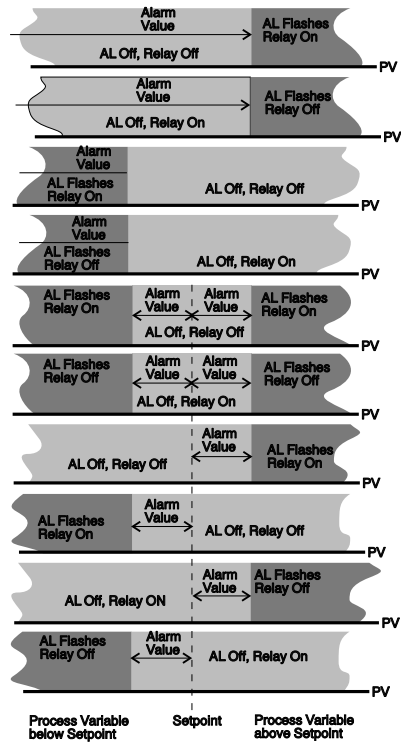
NOTE: An automatic return is made to normal operation if there is no key activity in Range/Alarm Selection mode for one minute.

Default Indication



This display (all decimal points ON) indicates that all Setting Up parameters have been set to their default values (caused by a change to one or more of the critical Range/Alarm Selection parameters). To clear this display, alter one of the Setting Up parameters.

ALARM OPERATION



SPECIFICATION

UNIVERSAL INPUT

Input Impedance: Greater than 100MΩ resistive,
Isolation: Isolated from all outputs (except SSR) at 240V AC.

OUTPUTS

Relay

Contact Type/Rating: Single pole double throw (SPDT); 2A resistive at 120/240V AC.
Lifetime: >500,000 operations at rated voltage/current. Isolated from all other inputs/outputs.

SSR Drive/TTL

Drive Capability: SSR = 0 to 10V nominal into 500Ω min.
Isolation: Not isolated from input. Isolated from Supply and Relay Outputs

OPERATING CONDITIONS FOR INDOOR USE

Ambient Temperature (Operating): 0°C to 55°C
Ambient Temperature (Storage): -20°C to 80°C
Altitude: <2000m
Relative Humidity: 20% - 95% non-condensing
Supply Voltage: 100 - 240Vac 50/60Hz (standard) 7.5VA 20 - 50Vac 50/60Hz (option) 7.5VA or 22 - 65Vdc (option) 5W maximum.

ENVIRONMENTAL

Approvals: CE, UL & cUL
EMI Susceptibility: Complies with EN61326-1:2013
EMI Emissions: Complies with EN61326-1:2013.
Safety Considerations: Complies with UL61010-1 Edition 3.
Front Panel Sealing: To IP66.

PHYSICAL Depth: 110mm (behind panel)

Dimensions Front Panel: Width: 48mm
Height: 48mm

Weight: 0.21kg maximum

Safety and Warning Symbols



Risk of electric shock.



Caution, refer to the manual.



Alternating or direct current could be present.



Equipment protected through-out by double insulation.