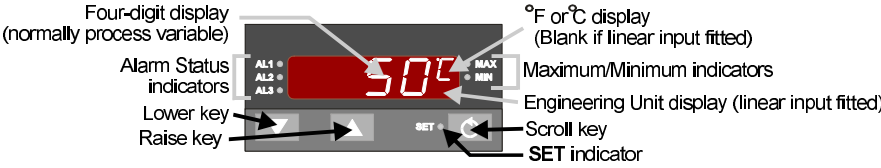


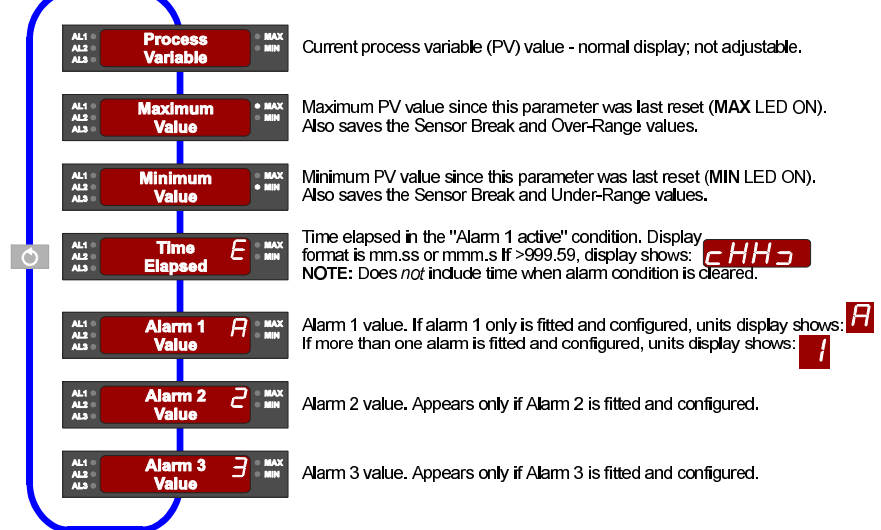
1/8-DIN PANEL INDICATOR CONCISE PRODUCT MANUAL (59235-2)

FRONT PANEL

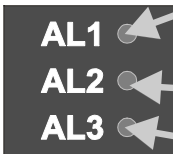


OPERATOR MODE

Typical Display Sequence (see Operator Mode Display Strategy)



Alarm Status Indication



Flashes when Alarm 1 is active. For latched alarm, flashes when Alarm 1 is latched and alarm condition exists; goes ON when Alarm 1 is latched but alarm condition is cleared

Flashes when Alarm 2 is active.

Flashes when Alarm 3 is active.

Resetting the Maximum PV Value/Minimum PV Value/Time Elapsed Value

To reset the Maximum PV Value or Minimum PV Value (to the current PV value) or the Time Elapsed value (to zero):

1. Select the required display:
2. Press the Raise key or Lower key for three seconds.

The resetting of the value is indicated for two seconds (see right) before the unit reverts to the requested display.

Resetting the Latched Alarm

If output 1 is configured to be a latched alarm output, once it becomes active it will remain active (even if the alarm condition is cleared) until reset either from the front panel or via the Remote Reset option. To reset an active latched alarm from the front panel:

1. Select the process variable display.
2. Press the Raise key or Lower key for three seconds.

The resetting of the latched alarm is indicated for two seconds (see right) before the unit reverts to the process variable display.

Error/Fault Indication



Cold Junction Compensation Disabled

If a thermocouple input is fitted and configured, cold junction compensation should be enabled (see **CONFIGURATION MODE**). If it is disabled, whenever the process variable is displayed, the unit display will be as shown on the right.



SET UP MODE



Set Up Mode operations should be performed only by personnel who are technically competent and authorised to do so.

Entry/Exit

To enter into or exit from Set Up Mode, select the process variable display, then press the Raise and Scroll keys simultaneously for three seconds. **SET** LED will come ON. *An automatic return to Operator Mode will be executed if there is no key activity in Set Up Mode for one minute.*

NOTE: If, in Operator Mode, the four-digit display shows all decimal points ON (see right), the Set Up Mode Parameters have been automatically set to their default values (probably because one or more CONFIGURATION MODE parameter has been changed. To clear this display, alter the value/setting of any Set Up Mode parameter.



Parameter Selection/Adjustment



Set Up Mode Parameter Sequence

In Set Up Mode, the SET indicator is ON and the units display shows a single-character legend identifying the parameter currently displayed.

Parameter	Legend	Adjustment Range
Alarm 1 value - one alarm fitted - more than one alarm fitted	A 1	Range Minimum to Range Maximum
Alarm 1 Hysteresis	-	1LSD to 10% of span expressed as display units
Alarm 2 value ¹ Alarm 2 Hysteresis ¹	2 -	Range Minimum to Range Maximum 1LSD to 10% of span expressed as display units
Alarm 3 value ² Alarm 3 Hysteresis ²	3 -	Range Minimum to Range Maximum 1LSD to 10% of span expressed as display units
Process Variable Offset	0	-input span of instrument
Digital Filter Time Constant	t	0.0secs. (OFF) to 100.0secs. in 0.5-sec. increments
Linear Input Decimal Point Position ³	P	0 (XXXX), 1 (XXX.X), 2 (XX.XX) or 3 (X.XXX)
Linear Input Scale Range Minimum ³	L	-1999 to 9999
Linear Input Scale Range Maximum ³	h	-1999 to 9999
Recorder Output Scale Minimum ⁴	d	-1999 to 9999
Recorder Output Scale Maximum ⁴	e	-1999 to 9999
Operator Mode Display Strategy ⁵	S	0, 1, 2, 3 or 4

Operator Mode displays (dependent upon the setting of Operator Mode Display Strategy - see above and NOTE 5 below).

1. Applicable only if Alarm 2 is fitted/configured.
2. Applicable only if Alarm 3 is fitted/configured.
3. Applicable only to DC linear input, if fitted.
4. Applicable only to Recorder Output Option, if fitted.
5. Defines the parameter sequence in Operator Mode (see table below):

Operator Mode Parameter Setting				
0	1	2	3	4
PV value	PV value	PV value	PV value	PV value
Max. PV value	Max. PV value	Alarm 1 value	Max. PV value	Max. PV value
Min. PV value	Min. PV value	Alarm 2 value *	Min. PV value	Min. PV value
Elapsed Time		Alarm 3 value *	Alarm 1 value	Elapsed Time
			Alarm 2 value *	Alarm 1 value
			Alarm 3 value *	Alarm 2 value *
				Alarm 3 value *

* If configured/fitted.

SERIAL COMMUNICATIONS

Refer to the full manual for details of this option, available from your supplier.

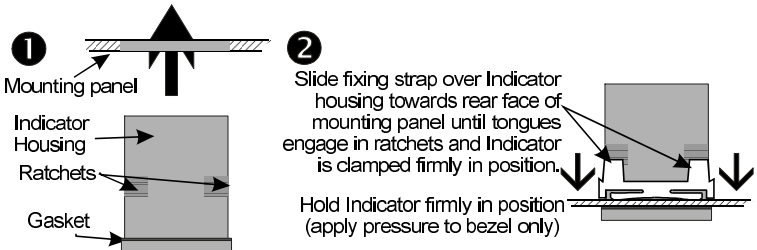
INSTALLATION



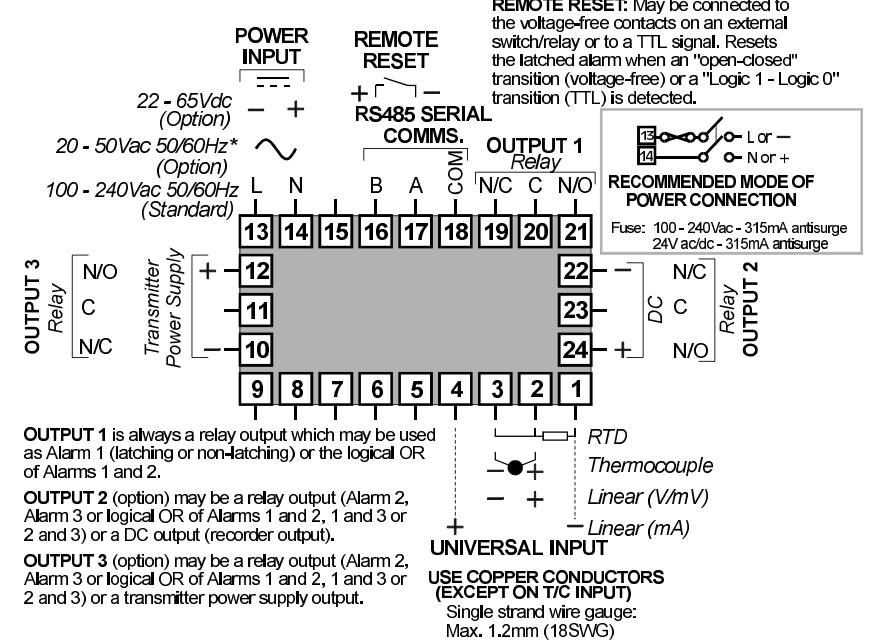
All installation work should be performed only by personnel who are technically competent and authorised to do so. Local Regulations regarding electrical installation & safety must be observed.

Panel-Mounting

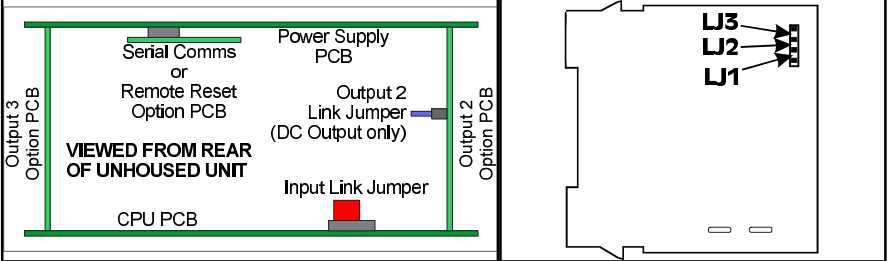
The mounting panel must be rigid and may be up to 6mm (0.25 inches) thick. The cut-out required for the Indicator is shown on the right. Several Indicators may be mounted side-by-side in a multiple installation for which the cut-out width (for n Indicators) is (96n - 4) millimetres. The panel-mounting procedure is shown below.



Rear Terminals



Selection of Input Type

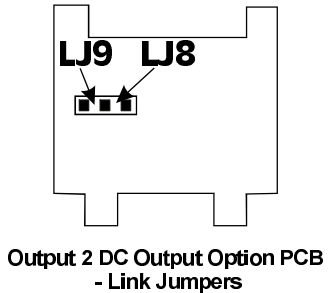


PCB Positions	CPU PCB Link Jumpers
Input Type	Link Jumpers Fitted (CPU PCB)
RTD or DC (mV)	None (Parked)
Thermocouple	LJ3
DC (mA)	LJ2
DC (V)	LJ1

Selection of Output 2/Output 3 Type

Output type is determined by the type of Output Option PCB fitted in the appropriate position (see PCB Positions illustration above). Output 3 may be a relay output or a Transmitter Power Supply output. Output 2 may be a relay output or a DC output; in the latter case, the DC output range is determined by link jumpers on the Output 2 DC Output Option PCB:

DC Output Range	Link Jumper Fitted
0 - 10V	LJ8
0 - 20mA	LJ9
0 - 5V	LJ8
4 - 20mA	LJ9

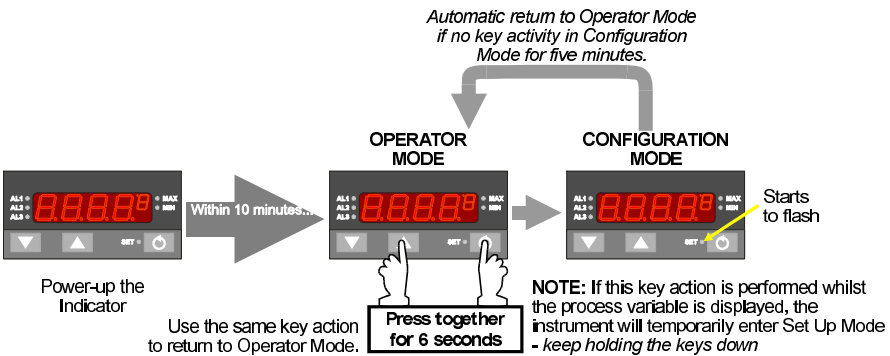


CONFIGURATION MODE



These operations should be performed only by personnel who are technically competent and authorised to do so.

Entry/Exit



Parameter Selection and Editing

①

Use to select parameter

②

Use to adjust parameter value (display will flash)

③

Press to accept new value

④

Press to confirm (display becomes static)

to display:

NOTE: In Step 4, if any key other than the Raise key is pressed, the original parameter value is retained.

Configuration Mode Parameter Sequence

Parameter	Legend	Adjustment Range
Input Range		Defined by four-digit code (see Input Codes below).
Alarm 1 Type		Process High Alarm Process Low Alarm
Alarm 2 Type		Not used Process High Alarm Process Low Alarm
Alarm 3 Type		Not used Process High Alarm Process Low Alarm
Output 1 Use		Alarm 1, non-latching, direct-acting Alarm 1, non-latching, reverse-acting Alarm 1, latching, direct-acting Alarm 1, latching, reverse-acting Logical OR of Alarms 1/2, direct-acting Logical OR of Alarms 1/2, reverse-acting
Output 2 Use ¹		Alarm 2, direct-acting ⁵ Alarm 2, reverse-acting ⁵ Alarm 3, direct-acting ⁵ Alarm 3, reverse-acting ⁵ Logical OR of Alarms 1/2, direct-acting ⁵ Logical OR of Alarms 1/2, reverse-acting ⁵ Logical OR of Alarms 1/3, direct-acting ⁵ Logical OR of Alarms 1/3, reverse-acting ⁵ Logical OR of Alarms 2/3, direct-acting ⁵ Logical OR of Alarms 2/3, reverse-acting ⁵ Recorder Output (PV) ⁶
Output 3 Use ²		Alarm 2, direct-acting ⁷ Alarm 2, reverse-acting ⁷ Alarm 3, direct-acting ⁷ Alarm 3, reverse-acting ⁷ Logical OR of Alarms 1/2, direct-acting ⁷ Logical OR of Alarms 1/2, reverse-acting ⁷ Logical OR of Alarms 1/3, direct-acting ⁷ Logical OR of Alarms 1/3, reverse-acting ⁷ Logical OR of Alarms 2/3, direct-acting ⁷ Logical OR of Alarms 2/3, reverse-acting ⁷ Transmitter Power Supply ⁸
Communications Baud Rate ³		1200, 2400, 4800 or 9600 Baud
Communications Address ³		1 to 32

Parameter	Legend	Adjustment Range
Communications Protocol ³		ASCII MODBUS, odd parity MODBUS, even parity MODBUS, no parity
Cold Junction Compensation Enable/Disable ⁴		Enabled Disabled

- NOTES
- Applicable only if Output 2 is configured/fitted.
 - Applicable only if Output 3 is configured/fitted.
 - Applicable only if the serial communications option is configured/fitted.
 - Applicable only if a thermocouple input is configured/fitted.
 - Applicable only if Output 2 is configured as a relay output.
 - Applicable only if Output 2 is configured as a DC linear output.
 - Applicable only if Output 3 is configured as a relay output.
 - Applicable only if Output 3 is configured as a transmitter power supply output.

Input Codes

Thermocouple Inputs								
Type	Range	Code	Type	Range	Code	Type	Range	Code
R	0 - 1650°C	1127	T	-200 - 262°C	1525	L	0 - 450°C	1817
R	32 - 3002°F	1128	T	-328 - 503°F	1526	L	32 - 841°F	1818
S	0 - 1649°C	1227	T	0.0 - 260.6°C	1541	L	0 - 762°C	1819
S	32 - 3000°F	1228	T	32.0 - 501.0°F	1542	L	32 - 1403°F	1820
J	0.0 - 205.4°C	1415	K	-200 - 760°C	6726	B	211 - 3315°F	1934
J	32.0 - 401.7°F	1416	K	-328 - 1399°F	6727	B	100 - 1824°C	1938
J	0 - 450°C	1417	K	-200 - 1373°C	6709	N	0 - 1399°C	5371
J	32 - 842°F	1418	K	-328 - 2503°F	6710	N	32 - 2550°F	5324
J	0 - 761°C	1419	L	0.0 - 205.7°C	1815			
J	32 - 1401°F	1420	L	32.0 - 402.2°F	1816			

RTD Inputs							
Range	Code	Range	Code	Range	Code	Range	Code
0 - 800°C	7220	-100.9 - 100.0°C	2230	0.0 - 100.9°C	2295	-328 - 402°F	2298
32 - 1471°F	7221	-149.7 - 211.9°F	2231	32.0 - 213.6°F	2296	-100.9 - 5373.3°C	7222
32 - 571°F	2229	0 - 300°C	2251	-200 - 206°C	2297	-149.7 - 999.1°F	7223

DC Linear Inputs							
Range	Code	Range	Code	Range	Code	Range	Code
0 - 20mA	3413	0 - 50mV	4443	0 - 5V	4445	0 - 10V	4446
4 - 20mA	3414	10 - 50mV	4499	1 - 5V	4434	2 - 10V	4450

Hardware Definition Code

With the Indicator in Configuration Mode, press the Scroll and Lower keys simultaneously to display this code:

Input Type

1 = RTD/Linear DC (mV)
2 = Thermocouple
3 = Linear DC (mA)
4 = Linear DC (V)

Output 3 Type

0 = Not fitted
1 = Relay
8 = Transmitter Power Supply

Output 2 Type

0 = Not fitted
1 = Relay
3 = DC (0 - 10V)
4 = DC (0 - 20mA)
5 = DC (0 - 5V)
7 = DC (4 - 20mA)

Output 1 is always a relay output

This may be adjusted in the usual manner. Use the Scroll and Lower keys to return to Configuration Mode.

Hardware Option

Whilst the Hardware Definition Code is displayed, press the Scroll key to show the Hardware Option currently configured, one of the following:

No option fitted

RS485 Comms option fitted

Remote Latch Reset option fitted

This may be adjusted in the usual manner. Use the Scroll key to return to the Hardware Definition Code display.

SPECIFICATION

UNIVERSAL INPUT

Type:	Thermocouple, RTD or DC Linear
Input Impedance:	Greater than 100MΩ resistive, except for DC mA (4.7kΩ) and V (47kΩ) inputs.
Isolation:	Isolated from all outputs at 240V AC.
Sensor Break:	Detected within two seconds..
Accuracy:	±0.25% of span ±1 LSD. CJC better than ±0.7°C.

REMOTE RESET INPUT (OPTION)

Type:	Voltage-free or TTL-compatible.
May be connected to:	External switch/relay contacts (voltage-free) or TTL signal.
Reset Caused By:	"open-closed" transition (voltage-free) or "Logic 1 - Logic 0" transition (TTL).

Voltage Free Operation:

Max. Contact Resistance (Closure):	50Ω
Min. Contact Resistance (Open):	5000Ω

TTL Operation:

Max. Voltage for "0":	0.8V
Min. Voltage for "0":	-0.6V
Min. Voltage for "1":	2.0V
Max. Voltage for "1":	24.0V

OUTPUTS

Relay

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

DC

Resolution:	8 bits in 250mS (10 bits in 1s typical, >10 bits in >1s typical).
Isolation:	Isolated from all other inputs and outputs.

Transmitter Power Supply Option

Output:	20 - 28V DC (24V DC nominal).
Minimum Load Impedance:	910Ω (22mA @ 20V DC).

OPERATING CONDITIONS FOR INDOOR USE

Ambient Temperature (Operating):	0°C to 55°C
Ambient Temperature (Storage):	-20°C to 80°C
Relative Humidity:	20% - 95% non-condensing
Supply Voltage:	100 - 240V AC 50/60Hz (standard) 7.5VA 20 - 50V AC 50/60Hz (option) 7.5VA or 22 - 65V DC (option) 5W.

ENVIRONMENTAL.

Approvals:	CE, UL, ULC
EMC:	Certified to EN61326.
Safety Considerations:	Complies with EN61010-1.
Front Panel Sealing:	To IP66.

PHYSICAL

Dimensions:	Depth - 100mm (behind panel)
Front Panel:	Width - 96mm Height - 48mm

Weight:	0.21kg maximum
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