Panel-Mounting
The mounting panel must be rigid, and may be up to 0.6mm (0.025"") thick. Cut-out sizes are:
Cut-Out Dim A: 45mm x 45mm
Cut-Out Dim B: 32mm x 32mm
For multiple instruments mounted side-by-side, cut-out A is 48.4mm (1.90"") or 56.4mm (2.2""); cut-out B is 42mm x 42mm.
• Tolerance ±0.5mm
1. Insert instrument into the panel
2. Hold front bezel firmly (without pressing on display or reel-feeding mounting clamp.
3. Push clamp forward, using a tool if necessary until gasket is compressed and instrument held in position.

CAUTION: For an effective IP66 & NEMA 4X seal against dust and moisture, ensure gasket is well compressed against the panel, with the 4 tongues located in the same ratchet slot.

Rear Terminal Wiring
USE COPPER CONDUCTORS (EXCEPT FOR TC INPUT). CABLE RATING 26/7 CMI
Single Strand wire gauge: Max 1.2mm (18WG).

Option Module Connectors

3. CONFIGURATION MODE - Conf

First select Configuration mode from Select mode (refer to section 2).
Press to scroll through the parameters. While this key is pressed, and up to 1 second after, the parameter legend is shown, followed by the current value.
Press or to set the required value. Press to display select parameter, press to accept the change, change parameter until wanted parameter is shown. To exit Configuration mode, hold down and press to return to Select mode.

Parameter: [ ] - key to enter parameters. Refer to user guide (available from your supplier) for details. Parameters marked * repeat in Setup Mode.

**Parameter List**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lower Value</th>
<th>Upper Value</th>
<th>Default Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm 1 Type</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>High Alarm 1</td>
</tr>
<tr>
<td>Alarm 2 Type</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>High Alarm 2</td>
</tr>
<tr>
<td>Alarm 3 Type</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>High Alarm 3</td>
</tr>
<tr>
<td>Alarm 4 Type</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>High Alarm 4</td>
</tr>
</tbody>
</table>

**Set Value**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm 1</td>
<td>L</td>
</tr>
<tr>
<td>Alarm 2</td>
<td>L</td>
</tr>
<tr>
<td>Alarm 3</td>
<td>L</td>
</tr>
<tr>
<td>Alarm 4</td>
<td>L</td>
</tr>
</tbody>
</table>

**Adjustment Range & Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Adjustment Range &amp; Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm 1, 2, 3, 4 (as selecting)</td>
<td>L (L) = Target value to adjust</td>
</tr>
</tbody>
</table>

**Units of Display Value**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm 1, 2, 3, 4</td>
<td>mV</td>
</tr>
</tbody>
</table>

**Diagram and Table**

- **Diagram Description**
  - Shows all possible option combinations. The actual connections required depends on the model and options fitted.
- **Table Description**
  - Shows selectable parameters and their corresponding values.

**Supplementary Information**

- Designed to offer a minimum of Basic Installation only & compliance shall not be impaired when fitted to the final installation. 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 protected earthed in accordance for Class I Equipment. Output wiring should be within a Protecting Conductor & sensor sheaths should be bonded to protective earth or not be accessible.

- Live parts should not be accessible without the use of a tool.

- A disconnecting device should disconnect both LINE & NEUTRAL conductors simultaneously. The disconnecting device must be easily accessible.

**Diagram**

- Shows the connection points for the different models and their corresponding outputs.

**Table**

- Lists the available parameters and their corresponding values.

**Text**

- Provides detailed instructions on how to configure the device.

**Figure**

- Illustrates the layout and connections of the device.

**Legend**

- Describes the units of display value for different parameters.

**Notes**

- Provides additional information and notes.

**Options**

- Lists optional accessories and their descriptions.
6. OPERATOR MODE - DPL

This mode is entered at power on, or as selected from Select mode (see section 2). Note: All calibration modes and Setup parameters are only available after selecting normal operating modes. Press [AI] to scroll through the parameters (white key is pressed). Hold for 1 sec after an item is shown, then the current value. Press [AI] or [SF] to change the value.

To exit from Setup mode, hold down [AI] on [SF] to Select mode.

Note: Parameters displayed depends on how instrument has been configured.

8. SERIAL COMMUNICATIONS

Digital Input
Voltage Range: 20 to 280Vrms (47 to 63Hz).
Current Rating: 0 to 1A in state at 25°C (0-15A at 30°C).
Isolation: >5000Vrms applied at rated voltage/circuit.
Relay Contact Type & Rating: Single pole single throw (SPST), latching or non-latching action (selectable); 2A resistive at 120VAC/50/60Hz.
Isolation: >5000Vrms applied at rated voltage/circuit.
Digital Output
Isolation: >5000Vrms applied at inputs and outputs.
SSR Driver
Drive Capability: SSR drive voltage >10V into 500Ω.
Isolation: >5000Vrms applied from digital input or SSR driver.
Operator Interface
Select a function from the menu and press [AI] for next step. The menu is closed after 3 seconds.
Linear DC
Accuracy: ±0.25% (250Ω & 2500Ω) ± 2 degrees. Degrades linearly ±3% for increasing current (No specification limits).
Resolution: 8 bits in 250mΩ (10 bits in 1Ω, >10 bits in >1Ω).
Isolation: >5000Vrms applied from inputs and outputs.
Transmitter
Power Supply: 24V Ty PU Module; Unregulated 20 to 29V DC into 910Ω
Linear Output Module: Resistor of 10Ω to 15Ω into 5000Ω.
Isolation: >5000Vrms applied from inputs and outputs.
Serial Communications (RS485)
Physical: 1200, 2400, 4800 or 9600 bps.
Protocols: Modbus & West ASCII.
Isolation: >5000Vrms applied from inputs and outputs.

3. SPECIFICATIONS

Universal Input
Thermocouple: ±1.0% of range, ±1LSB (±0°C for Thermocouple CJC).
PT100 Calibration: ±1.0% of full range.
0/4 to 20mA Calibration: ±0.1% of range, ±0.5LSB/3% (±0.3°C for PT100/100Ω input). DC Calibration: ±1.0% of range, ±1LSB.
Sampling Rate: 4 per second.
Impedance: ±100Ω for ±0.5V (SO) or ±100Ω for ±0.1V (SH) inputs.
Sensor Detection: Thermocouple, RTD, ±20mA, 2 to 10V and 1 to 5V ranges only. Detection: SSR driver, alarm activity for mA or DC sensor break.
Isolation: Isolated from all outputs (except SSR driver).

Universal input must not be connected to operator accessible circuits if simple relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required.

4. ENVIRONMENTAL

Standards: CE, UL & CUL
Front Panel Sealing: IP65 & NEMA 4X when correctly mounted – refer to section 1.

5. MESSAGES & ERROR INDICATIONS

These messages indicate that the instrument may require attention, or there is a problem with the data. Press [SF] to scroll through the parameters (white key is pressed). Hold for 1 sec after an item is shown, then the current value. Press [AI] or [SF] to change the value.

Caution: Do not proceed with the process unless the issue is resolved.

Alarm Indication
If the Active Alarm Status screen indicates any active alarms, in addition, the associated Alarm LED flashes. For latching alarm outputs, the LED flashes when the alarm condition exists, and goes ON when the alarm condition is no longer present if the output has not yet been reset.

Re-setting Latched Alarm Outputs
Any latched outputs cannot be reset if the Process variable or Alarm Status screens are being displayed, by pressing the [SF] or [AI] key, via the Digital Input (if fitted) or with a communications command to the correct parameter number shown in the main display. The SET LED indicator is ON in Operator Mode, Flashing in Configuration Mode ON and OFF when alarm condition or SSR output is on.

Isolation: Isolated from all outputs (except SSR driver).

Additional 8-bit Input Indicators and Display/LEDs
In Operator Mode, a Units display shows 0 if temperature values are shown. It is also used in other modes if configured for an 8-bit parameter (any bit combination) shown in the main display. The SET LED indicator is ON in Operator Mode, Flashing in Configuration Mode ON and OFF when alarm condition or SSR output is on.

Multi-point Scaling
When enabled (PS1 - PSn), up to 9 breakpoints can be set to control inputs to the instrument to 9 different signals.
For the breakpoint, the input scale value $S_{BP_i}$ is entered in $0$ in input span, followed by the value to be shown in $S_{BP_i}$ (in display units).
Each breakpoint’s input scale value must be higher than the previous display value, but the display values can be higher or lower. Any scale value set to 100% becomes the last in the series.

Tare Feature
When Tare is enabled (PS1 - PSn), it can be used to set the displayed value to zero automatically by taking the reading and subtracting the tare value from it. This process variable is shown if the output has not yet been reset.
Press $+$ or $-$ to change the process variable until the display shows $S_{TP}$ Release both keys and press $+$ within 3 seconds to confirm the request. The display returns to input signal changes.

5. PRODUCT INFORMATION - INFO

First select Product information mode from Select mode (see section 2). Press [AI] to scroll through the parameters. After selecting the parameter number, display = blank, then press [SF] to return to input mode. Note: Some text is not all read only.

Parameter Description
[AI] Rest or Tare occurs on high (24V to AC) to low <0VAC, or
Volt-Free Contacts: Open to Closed transition.

8. SERIAL COMMUNICATIONS

Universal input must not be connected to operator accessible circuits if simple relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required.

Digital Input
Voltage Range: 20 to 280Vrms (47 to 63Hz).
Current Rating: 0 to 1A in state at 25°C (0-15A at 30°C).
Isolation: >5000Vrms applied from inputs and outputs.
SSR Driver
Drive Capability: SSR drive voltage >10V into 500Ω.
Isolation: >5000Vrms applied from universal input or SSR driver.
Operator Interface
Select a function from the menu and press [AI] for next step. The menu is closed after 3 seconds.
Linear DC
Accuracy: ±0.25% (250Ω & 2500Ω) ± 2 degrees. Degrades linearly ±3% for increasing current (No specification limits).
Resolution: 8 bits in 250mΩ (10 bits in 1Ω, >10 bits in >1Ω).
Isolation: >5000Vrms applied from inputs and outputs.
Transmitter
Power Supply: 24V Ty PU Module; Unregulated 20 to 29V DC into 910Ω
Linear Output Module: Resistor of 10Ω to 15Ω into 5000Ω.
Isolation: >5000Vrms applied from inputs and outputs.
Serial Communications (RS485)
Physical: 1200, 2400, 4800 or 9600 bps.
Protocols: Modbus & West ASCII.
Isolation: >5000Vrms applied from inputs and outputs.

You cannot connect more than 4 RS485 port at the same time.