1. INSTALLATION

Panel-Mounting

The mounting panel must be rigid and may be up to 6.0mm (0.25 inches) thick. The cut-out required for the instrument is shown on the right. Instruments may be mounted side-by-side in a multiple installation for which the cut-out width for n instruments is (48n-4 nm) or (1.89n-0.1) inches.

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) large enough to carry the power. Use terminals for jumpers with max. 3 mm² (0.063 in²).

CAUTION: Check information label on housing for correct operating, output and input voltages. Connecting supply to Panel input fuse 100 – 200 V ac – 2000 ma – 50 to 60 Hz.

CAUTION: Turn off all power. Remove instrument by gripping the sides of the front panel and pulling the instrument out of its housing. Note its orientation.

Note: At first power-up the message LoCo CoF is displayed, as described in section 8 of this manual. Access to other menus is denied until configuration mode is completed.

2. SELECT MODE

Select mode is used to access the configuration and operation menu functions. It can be accessed at any time by holding down [C] and pressing [D].

Once in select mode, press [A] to select the required mode. An unlock code is required to prevent unauthorized entry to Configuration & Automatic Tuning modes. Press [B] to enter the correct code number, then press [D] to proceed.

Mode | Upper Display | Lower Display | Description | Default Unlock Codes
--- | --- | --- | --- | ---
Operator | OPC | SLC | Normal instrument operation | None
Set Up | SLC | SLC | Tailor settings to the application | None
Configuration | CTC | SLC | Configures the instrument for use. | 0V
Product Info | SLC | CTC | Check manufacturing information | None
Auto-Tuning | SLC | SLC | Invoke Pre-Tune or Self-Tune | None

Note: The instrument will always return automatically to Operator mode if there is no key activity for 2 minutes.

3. CONFIGURATION MODE

First select Configuration mode from Select mode (refer to section 2). Press [D] to scroll through the parameters, then press [A] or [B] to set the required value.

To accept a change [C] must be pressed, otherwise parameters revert to previous value.

To exit from Configuration mode, hold down [D] and press [C] to return to Select mode.

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

Parameters marked * are repeated in Setup Mode.

4. OUTPUTS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lower Display</th>
<th>Upper Display</th>
<th>Adjustment range</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output 1 Usage (h):</td>
<td>U: Primary (Heat) Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>U: Secondary (Cool) Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Alarm 1, Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Alarm 1, Reverse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>U: Alarm 2, Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>U: Alarm 2, Reverse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>U: Loop Alarm, Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>U: Loop Alarm, Reverse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Logical Alarm 1 OR 2, Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Logical Alarm 1 OR 2, Reverse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Logical Alarm 1 AND 2, Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Logical Alarm 1 AND 2, Reverse</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Input Ranges and Types

| See (Configuration Mode Parameter) |
| --- | --- | --- | --- |
| R: 0 – 1759 ºC | R: 0 – 1759 ºC | R: 0 – 1759 ºC | R: 0 – 1759 ºC |
| S: -128.8 – 400.0 ºC | L: -400 – 752 ºF | L: -400 – 752 ºF | L: -400 – 752 ºF |
| T: -128.8 – 400.0 ºC | T: -400 – 752 ºF | T: -400 – 752 ºF | T: -400 – 752 ºF |
| Pt: 0 – 1850 ºC | Pt: 0 – 1759 ºC | Pt: 0 – 1759 ºC | Pt: 0 – 1759 ºC |
| Pt: 0 – 1240 ºC | Pt: 0 – 1100 ºC | Pt: 0 – 1100 ºC | Pt: 0 – 1100 ºC |
| Pt: 0 – 752 ºF | Pt: 0 – 1350 ºF | Pt: 0 – 1350 ºF | Pt: 0 – 1350 ºF |
| Pt: 0 – 400.0 ºF | Pt: 0 – 2551 ºF | Pt: 0 – 2551 ºF | Pt: 0 – 2551 ºF |
| Pt: 0 – 1100 ºF | Pt: 0 – 1759 ºC | Pt: 0 – 1759 ºC | Pt: 0 – 1759 ºC |
| 1 – 5 V DC | 4 – 20 mA DC | 4 – 20 mA DC | 4 – 20 mA DC |
| 0 – 10 V DC | 0 – 10 V DC | 0 – 10 V DC | 0 – 10 V DC |
| 0 – 5 V DC | 0 – 5 V DC | 0 – 5 V DC | 0 – 5 V DC |
| | | | |
4. SETUP MODE

Note: Configuration must be completed before adjusting Setup parameters.
First select Setup mode from Select mode (refer to section 2). While in Setup Mode, press [ ] or [ ] to select the required value. To exit from Setup mode, hold down [ ] and press [ ] to return to Select mode. Note: These parameters are all read only.

Parameter Displays depends on how firmware has been configured.

5. AUTOMATIC TUNING MODE

First select Automatic tuning mode from Select mode (refer to section 2). Press [ ] to scroll through the parameters, then press [ ] or [ ] to set the required value. To exit from Automatic tuning mode, hold down [ ] and press [ ] to return to Select mode. Pre-tune is a single-shot routine and is thus self-disengaging when complete. If [ ] in Setup mode = enabled, Pre-tune will attempt to run at every power up.

Parameter Lower Display Upper Display Adjustment Range Default
Pre-tune Off or 0.5 to 100.0 secs
Self-tune Off
Auto-Tune time constant 0.01 to 0.100.0 secs

6. ERROR/FAULT INDICATIONS

First select Product information mode from Select mode (refer to section 2). Press [ ] to view each parameter. To exit from Product information mode, hold down [ ] and press [ ] to return to Select mode. Note: These parameters are all read only.

Parameter Lower Display Upper Display Description
Input type
Option 1 module type fitted
Option 2 module type fitted
Option 3
Option A
Firmware type
Firmware issue
Product Revision Level
Date of manufacture
Serial number 1
Serial number 2
Serial number 3

7. OPERATOR MODE

This mode is entered at power on. It can also be accessed from Select mode (see section 2). Note: All configuration and setup mode parameters must be set as required before starting normal operations.

8. SPECIFICATIONS

Universal Input

Parameter Upper Display Lower Display Description
Configuration & Setup required. Seen at first turn on of firmware configuration changed. Press [ ] to enter the Configuration mode, next press [ ] or [ ] to enter the unlock code number, then press [ ] to proceed.
Over Range
Under Range
Sensor Break
Sensor Break, Normal Break in input sensor or wiring
Option 1 Error
Option 2 Error
Option 1 module fault
Option 2 module fault

Input: >10mA resistive, except DC mA (552) and 4–20mA.
Isolation: Isolated from relay outputs and power supply at 240VAC.

Outputs

Relay Contact Type/Rating: Single pole double throw (SPDT); 2A resistive at 120/240VAC.
Lifetime: >500,000 operations at rated voltage/current.
Isolation: Isolated from input, other relay outputs and power supply at 240VAC.

Operating Conditions for Indoor Use

Ambient Temperature: 0°C to 55°C (Operating)
Ambient Temperature: -20°C to 80°C (Storage)
Relative Humidity: 20% - 95% non-condensing
Supply Voltage: 100 - 240VAC 50/60Hz 7.5VA for mains powered versions.

Environmental

Standards: CE, UL, LEC
EMI: Complies with EN61326 (Susceptibility & Emissions)
Safety Considerations: Complies with EN61010-1 & UL3121
Pollution Degree 2, Installation Category II
Front Panel Sealing: To IP66

Physical

Dimensions Depth: 110mm (behind panel)
Front panel height: 48mm
Front panel width: 48mm
Weight: 0.21kg maximum

Manual Control

# Pxx is set in Setup mode, manual control can be selected/or deselected by pressing the [ ] key while in Operator mode. The indicator will flash while in the instrument is in Manual Control mode and the lower display will show Pxx (where xxx is the current manual power level). Switching to/from manual mode is via Bumpless Transfer. Press [ ] or [ ] to set the required output power. Caution: Not restricted by [Pxx] limit.