

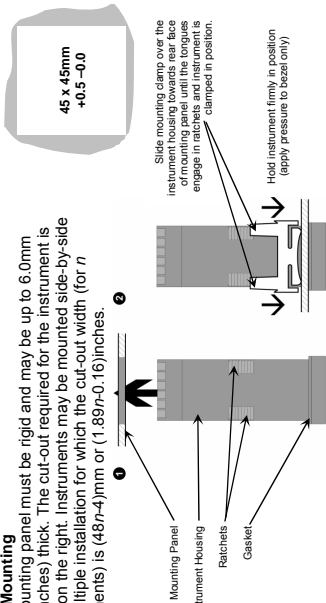
1/16-DIN PROCESS CONTROLLER (59300-2)

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

1. INSTALLATION

Panel-Mounting

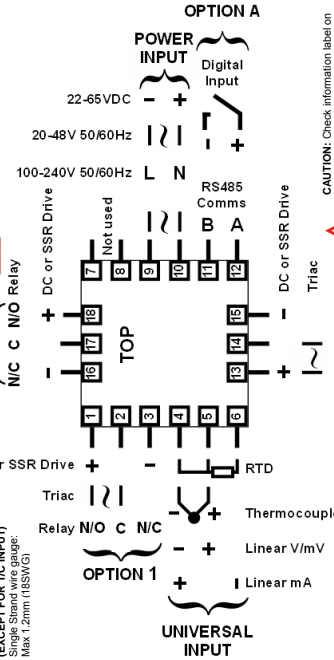
The mounting panel must be rigid and may be up to 6.0mm (0.25 inches) thick. The cut-out required for the instrument is shown on the right. Instruments may be mounted side-by-side in a multiple installation for which the cut-out width (for *n* instruments) is (48*n*-4)mm or (1.89*n*-0.16)inches.



CAUTION: Do not remove the panel gasket; it is a seal against dust and moisture.

Rear Terminal Wiring

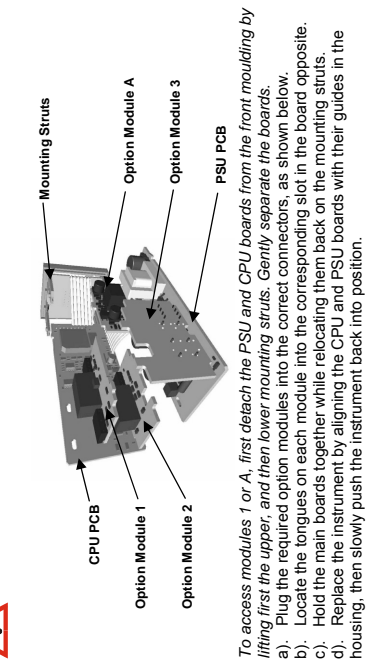
USE COPPER CONDUCTORS (min. 20 AWG) Single Strand wire gauge: Max 1.2mm (18SWG)



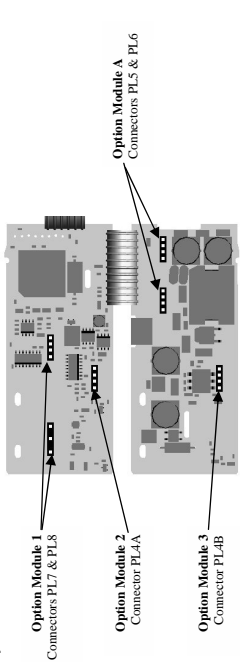
CAUTION: Check information label on housing for correct operating voltage before connecting supply to Power Input. Power Input range: 24-48V ac/dc - 315mA anti-surge

Installing Option Modules

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.**



Option Module Connectors



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 **SEL** and pressing **DEL**. Once in select mode, press **DEL** or **SEL** to select the required mode. An unlock code is required to prevent unauthorised entry to Configuration, Setup & Automatic Tuning modes. Press **DEL** or **SEL** to enter the correct code number, then press **DEL** to proceed.

| Mode | Upper Display | Lower Display | Description | Default | Unlock Codes |
|---------------|---------------|---------------|-------------------------------------|---------|--------------|
| Operator | OPPr | SLCt | Normal instrument operation. | None | None |
| Set Up | SELP | SLCt | Tailor settings to the application. | 10 | 20 |
| Configuration | Conf | SLCt | Configures the instrument for use. | None | None |
| Product Info | rfo | SLCt | Check manufacturing information. | None | None |
| Auto-Tuning | Autv | SLCt | Invoke Pre-Tune or Self-Tune. | 0 | 0 |

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 **SEL** to scroll through the parameters, then press **DEL** or **SEL** to set the required value. To accept a change **DEL** must be pressed, otherwise parameter will revert to previous value. To exit from Configuration mode, hold down **SEL** and press **DEL** to return to Select mode. **Parameters displayed depends on how instrument has been configured. Parameters marked * are repeated in Setup Mode.**

| Parameter | Lower Display | Upper Display | Adjustment range | Default |
|-------------------------------|---------------|---------------|--|--|
| Input Range/Type | rnPt | | See following table for possible codes | J/T/C |
| Scale Range | rUL | | Scale Range Lower Limit + 100 to Range Max | Range max (Lin=1000) |
| Upper Limit | rLL | | Range Min. to Scale Range Upper Limit - 100 | Range min (Linear=0) |
| Scale Range | dP5 | | 0=XXX.X, 1=XXX.X, 2=XX.XX, 3=X.XXX (non-temperature ranges only) | 1 |
| Decimal point position | CLtP | 5nL | Primary (heat) only | 5nL |
| Control Type | rEUL | rEu | Primary & Secondary (heat/cool) | rEu |
| Primary Output Control Action | dPr | | Reverse Acting | |
| Alarm 1 Type | ALH1 | | Direct Acting | P_H1 |
| | P_Lo | | Process High Alarm | |
| | dE | | Process Low Alarm | |
| | bAnd | | Deviation Alarm | |
| | nonE | | Band Alarm | |
| | | | No alarm | |
| High Alm 1 value* | PHR1 | | Range Min. to Range Max in display units | Range Max |
| Low Alm 1 value* | PLR1 | | in display units | Range Min |
| Band Alm 1 value* | bAL1 | | 1 LSD to span from setpoint in display units | 5 |
| Dev. Alm 1 value* | dAL1 | | +/- Span from setpoint in display units | 5 |
| Alm 1 Hysteresis* | AHY1 | | 1 LSD to full span in display units | 1 |
| Alarm 2 Type* | ALR2 | | | P_Lo |
| High Alm 2 value* | PHR2 | | | Range Max |
| Low Alm 2 value* | PLR2 | | | Range Min |
| Band Alm 2 value* | bAL2 | | | 5 |
| Dev. Alm 2 Value* | dAL2 | | | 5 |
| Alm 2 Hysteresis* | AHY2 | | | 1 |
| Loop Alarm | LALn | | | d_SFR (disabled) or EnrAb (enabled) |
| Loop Alarm Time* | LALt | | | 1 sec to 99 mins. 59secs (only applies if primary proportional band = 0) |

| Parameter | Lower Display | Upper Display | Adjustment range | Default |
|-----------------------------------|---------------|----------------|---|------------|
| Alarm Inhibit | INH1 | nonE | No alarms inhibited | nonE |
| | | ALR1 | Alarm 1 inhibited | |
| | | ALR2 | Alarm 2 inhibited | |
| Output 1 Usage | USE1 | both | Alarm 1 and alarm 2 inhibited | P_r1 |
| | | Pr1 | Primary (Heat) Power | |
| | | SCc | Secondary (Cool) Power | |
| | | RI_d | Alarm 1, Direct | |
| | | RI_r | Alarm 1, Reverse | |
| | | RI_d | Alarm 2, Direct | |
| | | RI_r | Alarm 2, Reverse | |
| | | LP_d | Loop Alarm, Direct | |
| | | LP_r | Loop Alarm, Reverse | |
| | | OR_d | Logical Alarm 1 OR 2, Direct | |
| | | OR_r | Logical Alarm 1 OR 2, Reverse | |
| | | RD_d | Logical Alarm 1 AND 2, Direct | |
| | | RD_r | Logical Alarm 1 AND 2, Reverse | |
| | | rEES | Retransmit SP Output | |
| | | rEES | Retransmit PV Output | |
| Linear Output 1 Range | LtYP1 | 0.5 | 0 - 5 V DC output 1 | 0..10 |
| | | 0..10 | 0 - 10 V DC output | |
| | | 2..10 | 2 - 10 V DC output | |
| | | 0..20 | 0 - 20 mA DC output | |
| | | 4..20 | 4 - 20 mA DC output | |
| Retransmit Output 1 Scale maximum | roIH | | -1999 to 9999 (display value at which output will be maximum) | Range max |
| Retransmit Output 1 Scale minimum | roIL | | -1999 to 9999 (display value at which output will be minimum) | Range min |
| Output 2 Usage | USE2 | | As for output 1 | Sec or AL2 |
| Lin. O/P 2 Range | LtYP2 | | | 0..10 |
| Retransmit Output 2 Scale maximum | roZH | | -1999 to 9999 (display value at which output will be maximum) | Range max |
| Retransmit Output 2 Scale minimum | roZL | | -1999 to 9999 (display value at which output will be minimum) | Range min |
| Output 3 Usage | USE3 | | As for output 1 | AL_d |
| Linear Output 3 Range | LtYP3 | | | 0..10 |
| Retransmit Output 3 Scale maximum | roZH | | -1999 to 9999 (display value at which output will be maximum) | Range max |
| Retransmit Output 3 Scale minimum | roZL | | -1999 to 9999 (display value at which output will be minimum) | Range min |
| Display Strategy | d_Sp | 1,2,3,4,5 or 6 | (refer to section 7) | 1 |
| Comms Protocol | Prot | ASC1 | ASCII | r7bn |
| | | r7bn | Modbus with no parity | |
| | | r7bE | Modbus with Even Parity | |
| | | r7bO | Modbus with Odd Parity | |
| Bit rate | bAud | 1,2 | 1.2 kbps | 4.8 |
| | | 2,4 | 2.4 kbps | |
| | | 4,8 | 4.8 kbps | |
| | | 9,6 | 9.6 kbps | |
| | | 19,2 | 19.2 kbps | |
| Comms Address | Addr | 1 | 1 - 255 (Modbus), 1-99 (ASCII) | 1 |
| Comms Write | CoEn | | Read only or read/write | r_LoJ |
| Digital Input Usage | d_ID1 | d_A51 | Setpoint 1 / Setpoint 2 select | d_S1 |
| | | d_A5 | Automatic / Manual select | |
| Config Lock Code | [Loc | | 0 to 9999 | 20 |

Note: Refer to the full user guide (available from your supplier) for further details on these parameters.

