**1/16-DIN PROCESS CONTROLLER CONCISE PRODUCT MANUAL (59300-2)**

### 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 (45n+4mm) or (1.8in+0.16) inches.

- **Mounting Panel**: Rigid panel, may be up to 6.0mm (0.25 inches) thick.
- **Cut-Out Required**: (45n+4mm) or (1.8in+0.16) inches.
- **Multiple Installation**: Instruments can be mounted side-by-side.

#### Rear Terminal Wiring

- **Diagram Shows**: All possible connections.
- **Terminals**: DC or SSR Drive.

### 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 and pressing .

- **Press**: To scroll through the parameters, then press or to set the required value.

#### Parameter Lower Display

- **Alarm Inhibit**: Options as for alarm 1
- **Alarm 1 Type**: Linear Output 1
- **Alarm 2 Type**: Linear Output 1
- **Alarm 2 Hysteresis**: Linear Output 1
- **Loop Alarm**: Linear Output 1
- **Loop Alarm Time**: Linear Output 1
- **Setpoint 1 / Setpoint 2 select**: Linear Output 1
- **Display Strategy**: Linear Output 1
- **Comms Protocol**: Linear Output 1
- **Bitrate**: Linear Output 1
- **Comms Address**: Linear Output 1
- **Config Lock Code**: Linear Output 1

#### Adjustment range

- **Range**: Linear Output 1
- **Span from setpoint**: Linear Output 1
- **Deviation Alarm**: Linear Output 1
- **Process Low Alarm**: Linear Output 1
- **Process High Alarm**: Linear Output 1
- **Alarm 2 Low value**: Linear Output 1
- **Alarm 2 High value**: Linear Output 1
- **Alarm 2 Hysteresis**: Linear Output 1
- **Alarm 2 Type**: Linear Output 1
- **Alarm 1 Low value**: Linear Output 1
- **Alarm 1 High value**: Linear Output 1
- **Alarm 1 Hysteresis**: Linear Output 1
- **Alarm 1 Type**: Linear Output 1

#### Digital Input

- **Control Action**: Modbus
- **Primary & Secondary (heat/cool)**: Modbus
- **Primary & Secondary (heat/cool)**: Modbus

#### Comms Parameters

- **ASCII**: Modbus with Odd Parity
- **Modbus with No parity**: Modbus
- **Modbus with Even Parity**: Modbus

#### Modbus Parameters

- **Address**: 1 to 255
- **Write**: 1 to 255
- **Read**: 1 to 255

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

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**Option Module Connectors**

- **Option Module**: Connectors PL and PR.
- **Protocol**: Modbus with Odd Parity.
- **Alarm Inhibit**: Options as for alarm 1.
- **Alarm 1 Type**: Linear Output 1.
- **Alarm 2 Type**: Linear Output 1.
- **Alarm 2 Hysteresis**: Linear Output 1.
- **Loop Alarm**: Linear Output 1.
- **Loop Alarm Time**: Linear Output 1.

**Parameter Lower Display**

- **Alarm Inhibit**: Options as for alarm 1.
- **Alarm 1 Type**: Linear Output 1.
- **Alarm 2 Type**: Linear Output 1.
- **Alarm 1 Hysteresis**: Linear Output 1.
- **Alarm 2 Hysteresis**: Linear Output 1.
- **Loop Alarm**: Linear Output 1.
- **Loop Alarm Time**: Linear Output 1.

**Adjustment range**

- **Range**: Linear Output 1.
- **Span from setpoint**: Linear Output 1.
- **Deviation Alarm**: Linear Output 1.
- **Process Low Alarm**: Linear Output 1.
- **Process High Alarm**: Linear Output 1.
- **Alarm 2 Low value**: Linear Output 1.
- **Alarm 2 High value**: Linear Output 1.
- **Alarm 2 Hysteresis**: Linear Output 1.
- **Alarm 1 Low value**: Linear Output 1.
- **Alarm 1 High value**: Linear Output 1.
- **Alarm 1 Hysteresis**: Linear Output 1.
- **Alarm 1 Type**: Linear Output 1.

**Digital Input**

- **Control Action**: Modbus
- **Primary & Secondary (heat/cool)**: Modbus
- **Primary & Secondary (heat/cool)**: Modbus

**Comms Parameters**

- **Address**: 1 to 255
- **Write**: 1 to 255
- **Read**: 1 to 255

**Config Lock Code**: 0 to 9999

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**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.**
### Automatic Tuning Mode

First select Automatic tuning mode to enter select mode (refer to section 2). Press or to scroll through the modes then press or to set the required value. To exit Trim Automatic tuning mode, hold down and press to return to Select mode. Pre-tuning is a single-shot routine and is thus less engaging with no complete feedforward. 

Ramp in Setup mode = Error, Pre-tune will attempt to run at every power.*

Refer to the full user guide (available from your supplier) for details on controller tuning.

### Product Information Mode

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.

### Operator Mode

This mode is entered at power on. It can also be accessed from Select mode (see section 2).

Note: All configuration mode and Setup mode parameters must be set as required before starting any operations.

Press to scroll through the parameters, then press or to set the required value. Note: Parameters in Display strategy 6 are read only, and can only be adjusted via Setup mode.

### Serial Communications

Refer to the full user guide (available from your supplier) for details of this option.

### Specifications

- **Universal Input**: > 10% resistive, except DC mA (50) and V (476).
- **Isolation**: Isolated from all outputs (except SSR) at 240V AC.
- **Digital Input**: Volt-free (or TTL): Open (2-24VDC) = SP1 or Auto, Closed (<0.8VDC) = SP2 or Manual.
- **Outputs**: Single pole double throw (SPDT): 2A resistive at 120/240V AC.
- **Isolation**: Isolated from input and output.
- **Drive Capability**: SSR > 10V into 500Ω.
- **Isolation**: Isolated from input and other SSR drive outputs.
- **Contact Type Rating**: Single pole double throw (SPDT): 2A resistive at 120/240V AC.
- **Life time**: > 500,000 operations at rated voltage/current.
- **Isolation**: Isolated from input and output.
- **Ambient Temperature**: -20°C to 60°C (Storage). 40°C to 50°C @ 80% RH.
- **Supply Voltage**: 100 - 240VAC 50/60Hz or 7.5VAC for mains powered versions. 24VAC/50VDC (option) 7.5VAC or 22 - 65VDC 5W maximum for low voltage versions.

### Environmental Standards

EMI: Complies with EN55015 and EN61326 (Susceptibility & Emissions) Safety Considerations: Complies with EN61010-1 & UL3121 Pollution Degree 1, Installation Category II Front Panel Sealing: To IP66.