Note: Option modules are automatically detected at power up.

### 1. INSTALLATION

#### Installing Option Modules

To access module 1, press A and detach the PSU and CPU boards from the front by lifting up the upper, and then lower mounting studs. Gently advance the warmend.

- **a.** Plug the required option modules into the correct connectors, as shown below.
- **b.** Locate the module tongues in the corresponding slot on the opposite side.
- **c.** Hold the main boards together while relocating back.-4mm wide.

#### Option Module Connectors

- **Output Slot 1 Connectors**
- **Option Slot 1 Connectors**
- **Output Slot 2 Connectors**
- **Option Slot 2 Connectors**

#### Panel-Mounting

The mounting panel must be rigid, and may be up to 6.0mm (0.240in) thick. For multiple instruments mounted side-by-side, cut-out is 48mm wide.

#### Mounting Panel

- **Mounting Strategy**
- **Mounting Panel**

#### Gaskets

- **Gasket Material**

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

### 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 Mode and pressing Enter.

- **Select mode:** Press to choose the required mode, press to enter.
- An unlock configuration may be authorized with a [Configuration, Setup] mode.
- Press to enter the unlock code, then press to proceed.

### 3. CONFIGURATION MODE

First set Configuration mode from Select mode (refer to section 2), press to scroll through the parameters, then press to set the required value. Press to accept the change, otherwise the parameter will revert to previous value. To exit Configuration mode, hold down and press to return to Select mode.

**Note:** Parameters displayed depends on how instrument has been configured. Refer to user guide available from supplier for further details. Parameters marked * are reserved in Setup mode.

### 4. SETUP MODE

**Note:** Configuration must be completed before adjusting Setup parameters. First select Setup mode from Select mode (refer to section 2). The Manitou LED will light up in Setup mode. Press to scroll through the parameters, then press to set the required value.

- Exit from Setup mode, hold down and press to return to Select mode.

**Note:** Parameters displayed depends on how instrument has been configured. Refer to user guide available from supplier for further details. Parameters marked * are reserved in Setup mode.
5. AUTOMATIC TUNING MODE

First select Automatic tuning mode from Select mode (refer to section 2). Press [tun] to scroll through the modes, then press [tun] again to select the required value.

To exit from Automatic tuning mode, hold down [tun] and press [tun] to return to Select mode.

Pre-tune is a single-shot routine and is thus self-correcting when complete. If [tun] is pressed in Setup mode ([tun] is enabled), the pre-tuning process will attempt to run at every power up.

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

6. PRODUCT INFORMATION MODE

First enter Product information mode from Select mode (refer to section 2). Press [tun] to scroll through the parameters, then press [tun] again to select the required parameter.

Note: These parameters are all read only.

7. MESSAGES & ERROR INDICATIONS

These messages indicate that an error has occurred or there is a problem with the process variable input signal or a wiring fault. The alarm will not continue with the process unless the issue is resolved.

8. OPERATOR MODE

This mode is entered at power up, or accessed from Select mode (see section 2). Press [tun] to scroll through the parameters, then press [tun] again to select the required value.

Note: All Configuration mode parameters in Setup mode are read only, and may be required before starting normal operations.

9. SOFTWARE FEATURES

Soft start is used when a gentle start-up phase is required before rising to the full working temperature. During soft start, a dedicated soft start setpoint (SSS) is used that controls the process to a lower temperature. The period for which the soft start setpoint is applied is set by Soft Start Time (SSST).

10. PROGRAMMABLE SENSOR BREAK

When the Programmable Sensor Break feature is enabled, and a sensor break is detected, the output is set to the Pre-Specified Power Output value.

11. HEATER BREAK ALARMS

The heater current monitor is used to diagnose faults in the heater elements. A Low Heater Break Alarm is typically used for early detection of heater element failure; it detects whether the heater current is lower than it should be. A High Heater Break Alarm can sometimes be useful for detecting partial shorts between heater elements, etc. It detects whether the heater current is higher than it should be. Short Circuit Heater Break Alarm is typically used to detect if the heater control device is stuck in the ON condition – warn relay contacts stuck, shorted SSR, etc. This alarm is based on the heater current acquired whilst the Output is off. When soft start is enabled, the heater output is cycled very fast, and a valid heater current reading may not be possible.

12. SERIAL COMMUNICATIONS

To refer the full user guide (available from your supplier) for details.

13. SPECIFICATIONS

14. ENVIRONMENTAL

For low voltage versions

For high voltage versions