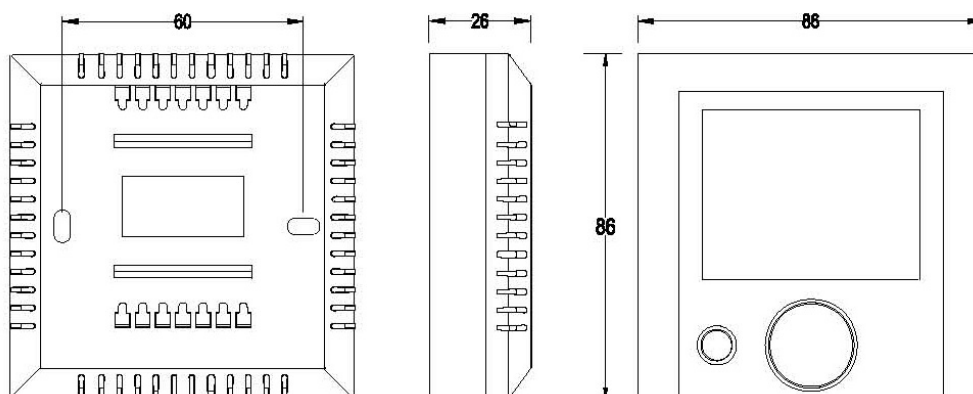


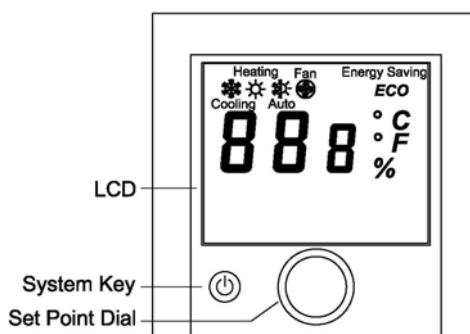
## Modbus RTU Networking Setpoint Module with LCD for Remote Controller

### Installation and Parameter Setup Manual

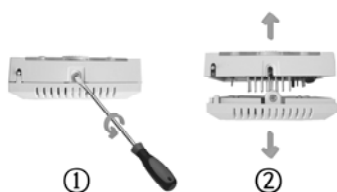
#### Dimensions in mm



#### Display Control Unit Layout

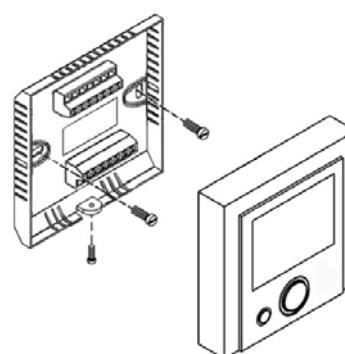


#### Cover Removal Procedure



1. Loosen the fixed screw.
2. Slightly twist the screw driver to crack open the cover from the base.
3. Hold the base firmly with one hand and remove the cover with another hand by pulling away from the base forcibly.

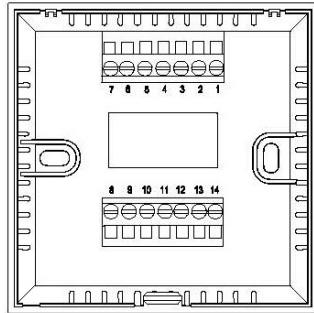
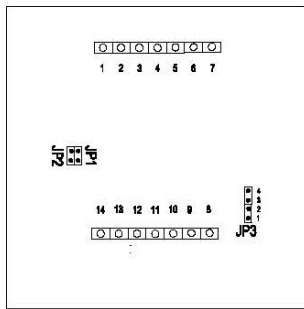
#### Mounting Details



##### Mounting

The temperature controller can be surface mounted or secured to a standard European 75 x 75 x 35 mm electrical box. See Figure 4: Mounting Details. Two mounting screws are included.

## Wiring Terminals and Jumper Settings



Jumper Settings		
Jumper Number	Jumper in Open Position	Jumper in Closed Position
JP1	With External Analog Input	With Built-in Sensor
JP2	For 2-10 VDC Output	For 0-10 VDC Output (Factory Setting)
JP3	Jumper Across Pins 1 & 2 - for Passive TE10 Series Sensor Input (Factory Setting)	Jumper Across Pins 3 & 4 - for Active 0-10 VDC Input

## Module Errors Reporting

When the following errors are reported on the LED display unit, these errors will prevent the controller from normal operation and all controller functions will be locked out:

- E-1 EEPROM read/write error
- E-2\* Temperature sensor open-circuited
- E-3 Temperature sensor short-circuited

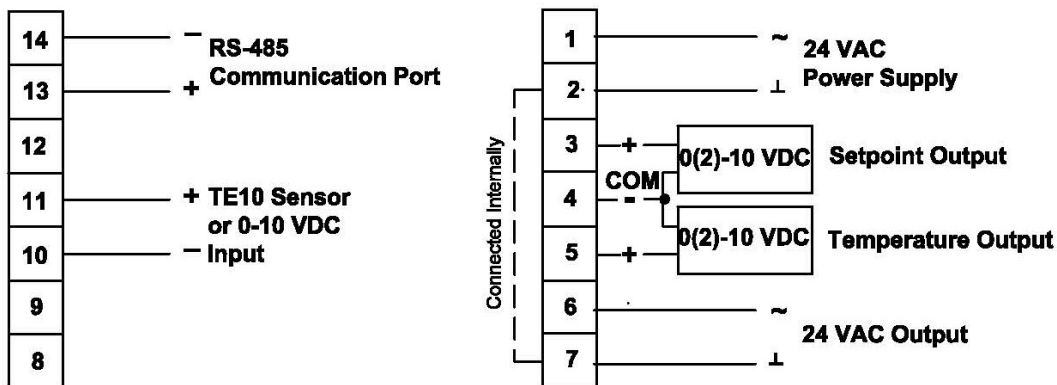
\* If jumper JP1 is at open position and external sensor is used, E-2 means the external sensor may have been disconnected from Terminals 10 and 11. Check the external sensor's connectivity and resistive value. If E-2 error is still reported, return the thermostat to the manufacturer for repair.

When the error E-1 or E-3 is reported or when the error E-2 is reported with jumper JP1 at open position and external sensor being installed, return the thermostat to the manufacturer for repair.

## Application Notes

- Move jumper JP1 to open position if external analog input is wired to Terminals 10 and 11.
- Move jumper JP2 to open position if 2-10 VDC proportional output is required.
- Move JP3 to Pins 1 and 2 if external passive TE Series temperature sensor is used.
- Move JP3 to Pins 3 and 4 if external active 0-10 VDC analog input is used.
- 22 or 24 AWG twisted shielded pair double-insulated cable is recommended as external sensor wiring and its length must not exceed 25 m.
- Do not bundle and run power wiring and external sensor wiring in the same conduit.
- When using the external temperature sensor, run the wires away from any electric motors or power wiring. Failure to do so may result in poor module performance due to electrical noise.
- For standard models, It is highly recommended that the 24 VAC power supply is interlocked to the air-conditioning system so that the module is shut down when the air-conditioning system is turned off.

## Wiring Diagrams



## Operation Notes

- LCD displays measured temperature or analog input constantly except when setpoint adjustment is being made.
- The backlight will turn on for 5 seconds when the adjustment dial is being rotated.
- Increase or decrease setpoint by rotating the adjustment dial clockwise or counter-clockwise. During the dial rotation, the LCD shows the setpoint value.
- Activate or deactivate the 24 VAC output by pressing momentarily the system key. An icon will be displayed on the LCD screen when the 24 VAC output is on.
- The module allows authorized service agent only to change the following operating parameters in the field:

## Parameter Setup Procedure

1. The parameter setup menu is accessible when the module is energized.
2. Press and hold the system key for 5 seconds to enter into the parameter setup menu.
3. After entering into the setup mode, press the system key consecutively to access the various operating parameters which are displayed in sequence as shown below and flash. The various operating parameters to be set are indicated by the 3-digit indicator. Each parameter function is included in the table as shown below.
4. Rotate the adjustment dial clockwise or counter-clockwise to change the value of the desired parameter when function symbol is flashing.
5. The new value will be saved and return to the flashing mode after 2 seconds.
6. Continue entering new values of other operating parameters when the function symbol is still flashing.
7. Press and hold the system key for 2 seconds will resume to operating mode with new parameter values.
8. The module will exit setup mode automatically with new parameter values saved if and when there is no key operation in 30 seconds during setup mode.

Symbol	Function	Description
0	MCU firmware revision level	Firmware revision 0x.x appears after entering the setup menu
1	Controller MAC address setting	To set the device MAC address from 01 to 32 (10 1 to 132), default setting 255 (1FF)
2	Configuration of analog input	20 1 = active 0-10 VDC when JP3 is shorted between 3 & 4 20 2 = passive TE10 Series NTC sensor when JP3 is shorted between 1 & 2 (factory setting)
3	Choice of engineering unit	3- C = °C (factory setting) 3- F = °F 3- P = % 3- 0 = no specified unit
4	Low-end value of analog input readout	From: -50 (when 20 2 and 3- C are set), factory setting = 0 or -99 (when 20 1 and 3- C, 20 1 and 3- F, or 20 1 and 3- 0 are set), default setting = 0 or -58 (when 20 2 and 3- F are set), default setting = 58 or 0 (when 20 1 and 3- P are set) To: current high-end value of analog input minus 4 units
5	High-end value of analog input readout	From: current low-end value of analog input plus 4 To: 1 10 (when 20 2 and 3- C are set), factory setting = 50 or 999 (when 20 1 and 3- C, 20 1 and 3- F, or 20 1 and 3- 0 are set), default setting = 50 or 230 (when 20 2 and 3- F are set), default setting = 230 or 100 (when 20 1 and 3- P are set)
6	Low-end value of setpoint range	From low-end value of analog input readout to high-end value of setpoint range minus 4 units
7	High-end value of setpoint range	From low-end value of setpoint range plus 4 units to high-end value of analog input readout
8	Choice of display icon to show on-off status	8- 1 = none (factory setting) 8- 2 = cooling 8- 3 = heating 8- 4 = auto 8- 5 = fan 8- 6 = ECO
9	Display offset for analog input readout value	-50 to 99, factory setting = 0
u	Choice of constant display of X1 input or setpoint value	u- 1 = constant display of X1 input value (factory setting) u- 2 = constant display of setpoint value
r5	Restoration of default factory settings	r5 1 = Retain current settings (factory setting) r5 2 = Restore default factory settings