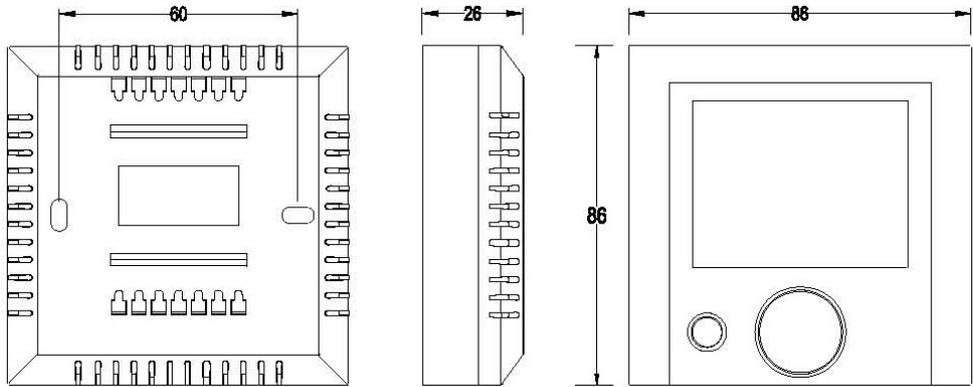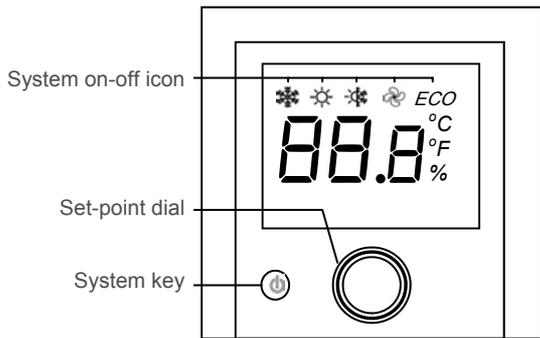## Modbus RTU Networking Setpoint Module with LCD for Remote Controller
Installation and Parameter Setup Manual
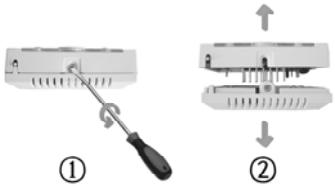
Dimensions in mm

Display Control Unit Layout

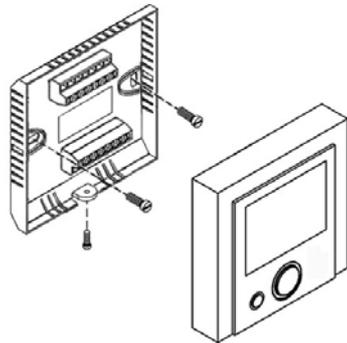System on-off icon

Set-point dial

System key

Cover Removal Procedure

① ②

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.

1

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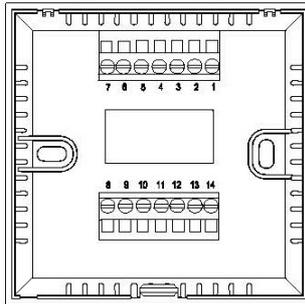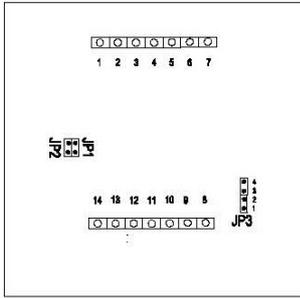
Jumper Settings		
Jumper Number	Jumper in Open Position	Jumper in Closed Position
JP1	With External Analog Input	With Built-in Sensor
JP2	For 2-10 VDC Output	For 0-10 VDC Output (Factory Setting)
JP3	Jumper Across Pins 1 & 2 - for Passive TE10 Series Sensor Input (Factory Setting)	Jumper Across Pins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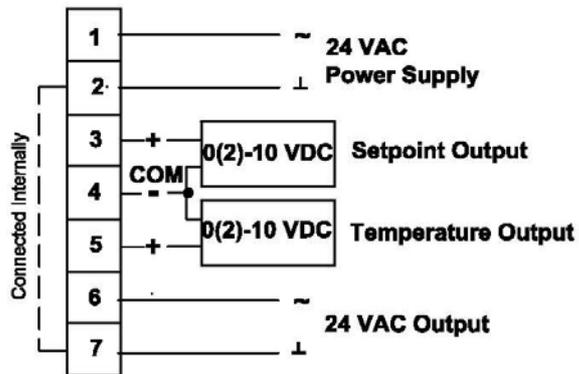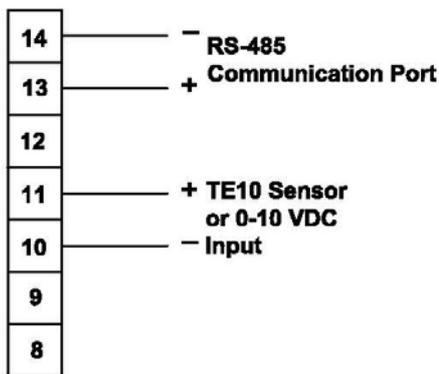
Operation Notes

- 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
2	Configuration of input	201 = active 0-10 VDC device when JP3 at pins 3&4 202 = TE10 temp. sensor when JP3 at pins 1&2 (factory setting)
3	Engineer unit	3-C = °C (factory setting) 3-F = °F 3-P = % 3-0 = no specified unit
4	Low-end value of sensing device readout	From -50 (when 202 and 3-C are set, factory setting = 0) or -99 (when 201 and 3-C or 201 and 3-F or 201 and 3-0 are set), or -58 (when 202 and 3-F are set) or 0 (when 201 and 3-P are set) To High-end value of X1 minus 4
5	High-end value of sensing device readout	From Low-end value plus 4 units To +110 (when 202 and 3-C are set, factory setting = 50) or +999 (when 201 and 3-C or 201 and 3-F or 201 and 3-0 are set), or +230 (when 202 and 3-F are set) or +100 (when 201 and 3-P are set)
10	Controller address setting	To set the slave device address from 1 to 32 (Default 255)
A	Low-end value of set-point range	From low-end value of sensing device readout To high-end value of set-point range minus 4 units
b	High-end value of set-point range	From low-end value of set-point range plus 4 units To high-end value of sensing device readout
H	Display offset for readout value	-50 to +99 (factory setting = 0)
n	Display icon for system on-off status	n-1 = LCD is shut down while status is OFF (factory setting) n-2 = Cooling n-3 = Heating n-4 = Auto n-5 = Fan n-6 = ECO
u	Constant display of X1 input or local set-point value	u-1 = constant display of X1 input readout (factory setting) u-2 = constant display of set-point value
rS	Restoration of default factory settings	rS1 = Retain current settings (factory setting) rS2 = Restore default factory settings