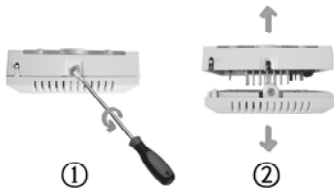


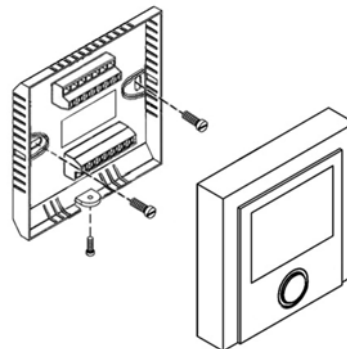
## EXT-MC-TC25 Modulating Temperature Controllers with Digital Display Installation and Operation Instructions

### 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.

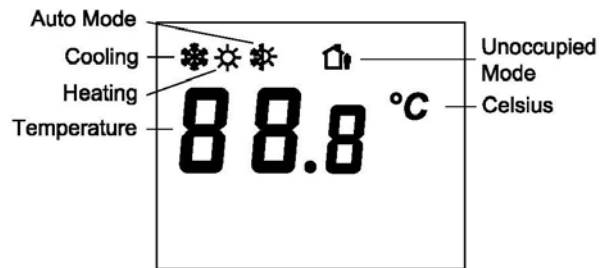
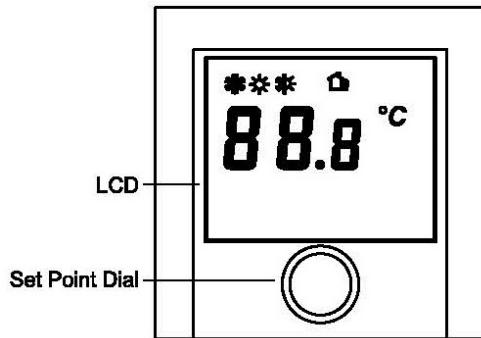
### Mounting Details



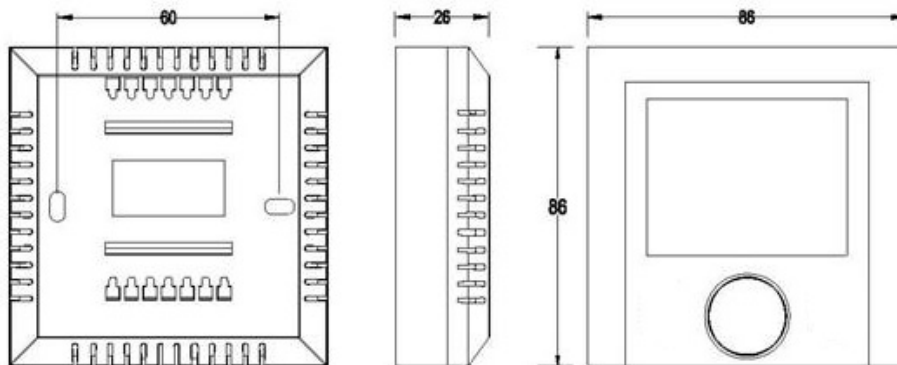
#### Mounting

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.

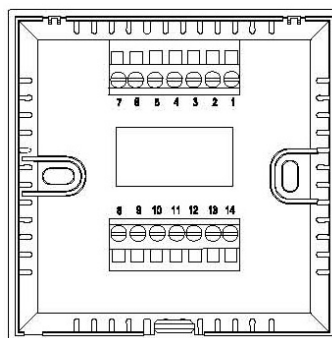
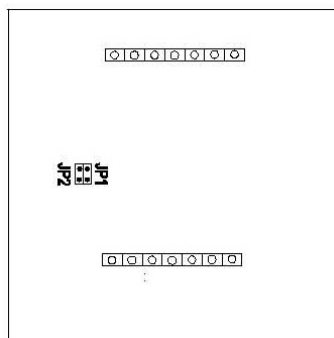
### Display Control Unit and LCD Layout



### Dimensions in mm



### Wiring Terminals and Jumper Settings



JUMPER SETTINGS		
	JUMPER IN OPEN POSITION	JUMPER IN CLOSED POSITION*
JP1	With External Sensor	With Built-in Sensor
JP2	For 2-10 VDC Output	For 0-10 VDC Output
Note: * Factory settings		

## Controller 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 cut open and external sensor is used, E-2 means the external sensor may have been disconnected from Terminals SR1 and GND. 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 without jumper JP1 being cut and external sensor being installed, return the thermostat to the manufacturer for repair.

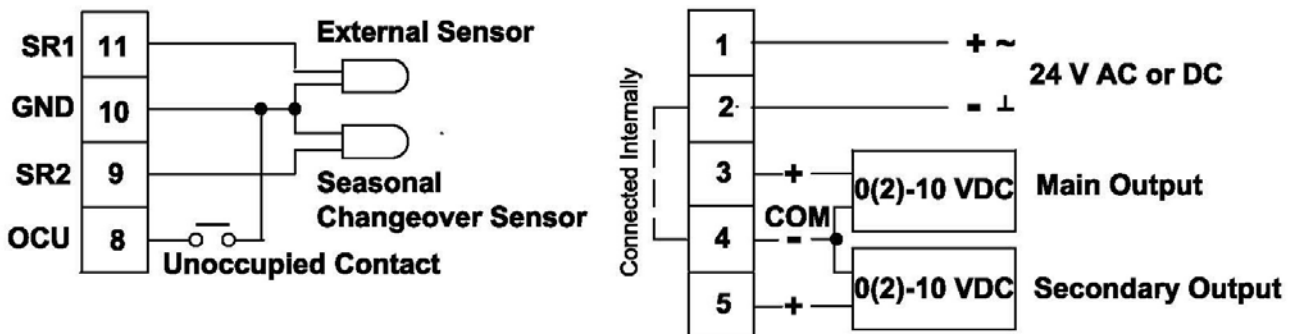
## Application Notes

- On a single-output cool only or heat only unit, i.e. a unit with only main output being available, connecting a shunting wire between terminals SR2 and GND forces the unit to go into heating mode.
- On a single-output cool only or heat only unit, connecting a TE10-1 or TE10-2 changeover sensor between terminals SR2 and GND will automatically switch the unit between cooling and heating mode. When the sensor temperature exceeds 30°C, the controller enters into heating mode.
- On a dual-output unit, the main output is always associated with the cooling controlled device and the secondary output with the heating controlled device.
- Move jumper JP1 to open position if external sensor is wired to SR1 and GND.
- Move jumper JP2 to open position if 2-10 VDC proportional output is required.
- The changeover sensor should be wrapped around the supply water pipe when associated with a water system.
- 22 or 24 AWG twisted shielded pair double-insulated cable is recommended as remote sensor wiring and its length must not exceed 25 m.
- Do not bundle and run power wiring and remote sensor wiring in the same conduit.
- Unoccupied contact closure activates unoccupied mode.
- When using either or both of the external temperature and changeover sensors, run the wires away from any electric motors or power wiring. Failure to do so may result in poor thermostat performance due to electrical noise.
- It is highly recommended that the 24 V power supply is interlocked to the air-conditioning system so that the controller is shut down when the air-conditioning system is turned off.

## Operation Notes

- The controller is always turned on and in active operating mode when power supply is connected.
- LCD displays ambient temperature constantly. When increasing or decreasing temperature set point value by rotating the adjustment dial clockwise or counter-clockwise, the LCD shows the set point value. Will return to ambient temperature display when the adjustment dial is passive for 5 seconds.
- In unoccupied mode, the factory temperature set points are 26 °C for cooling and 16 °C for heating.
- Unoccupied mode can be activated in the following manner when the unoccupied contact closes:
  - For single-output models with auto seasonal changeover, the unoccupied cooling or heating mode is determined by the status of the SR2 seasonal changeover sensor and the proportional output is activated according to the measured temperature.
  - For dual-output models, the unoccupied cooling or heating mode is always determined by the measured temperature and proportional output is also activated according to the measured temperature.
  - When unoccupied mode is activated, the adjustment dial is locked out and no set point value can be entered.

## Wiring Diagrams



NOTE: Seasonal changeover sensors applicable to TC25-A1 models only