

Features

- Modern Appearance
- Stylish rotary dial and press button
- Large LCD with backlight
- Range 0...40°C in 0.5K step
- 0-10 VDC / 2-10 VDC output
- Retaining last entered settings on power re-sumption
- Remote temperature sensor capability
- Parameter setup manual (TSM-02 only)
- Unoccupied button (TSM-02 only)
- Customizing availability

Selectable Functions

- Selectable °C or °F temperature display
- Measured temperature off-set
- High and low set point limit
- Selectable constant display of temperature between sensing or set-point

Product Overview

TSM is an active LCD Temperature Setpoint Module energized with 24 VAC supply that is designed for use with external controllers. On-board high accuracy NTC sensor allows precision comfort control over occupied space area. Integrate with a setpoint dial and the LCD display, allows the users to adjust the setpoint temperature and to view the sensing temperature. It provides 0...10VDC signal outputs for the external controller, directly proportional to the value of setpoint temperature and sensing temperature.

Ordering

To order the TSM Series Temperature Setpoint Controller, contact the nearest Cyrus' representative. Specify the desired product code number from product overviews.



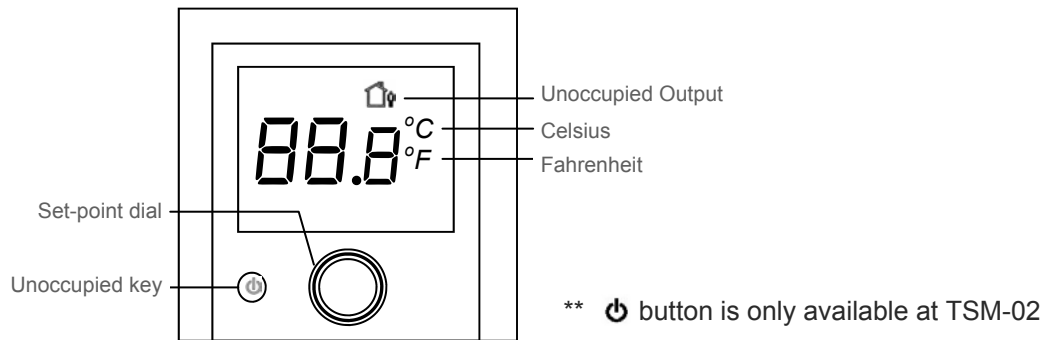
TSM-01

TSM-01 is an active LCD Temperature Setpoint Module energized by 24 VAC supply. It provides two 0...10 VDC signals to the external controllers which are directly proportional to sensing temperature and setpoint temperature. External temperature sensing port is provided.

TSM-02

TSM-02 is an active LCD Temperature Setpoint Module energized by 24 VAC supply. It provides two 0...10 VDC signals to the external controllers which are directly proportional to sensing temperature and setpoint temperature. Outside of occupant period, one-touch button will give 24 VAC signal to external controller for energy-saving and comfort purposes. TSM-02 allows authorized agent to change certain number of operating parameters.

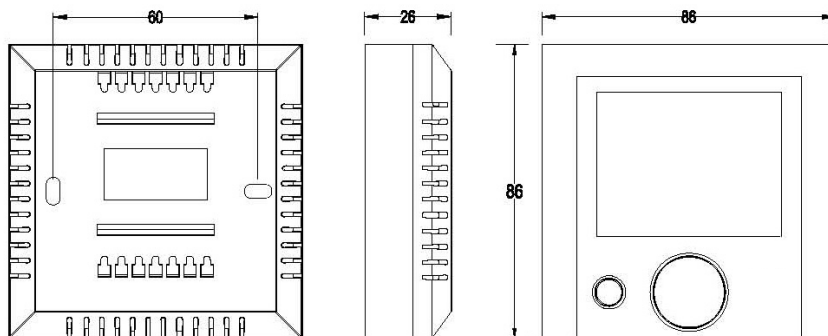
LCD Segments and Buttons



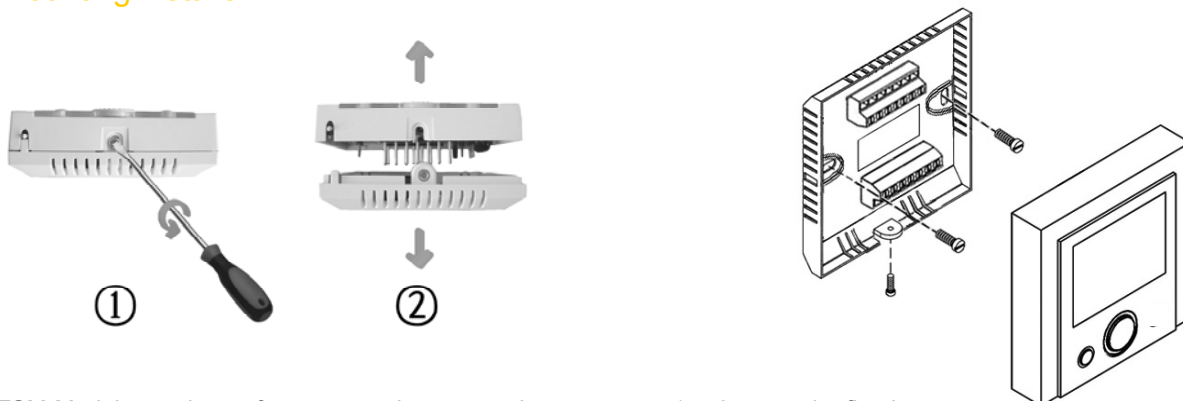
Operation Notes

Temperature Display	LCD shows measured temperature constantly except when temperature set point adjustment is being made
Backlight	The backlight will light up for 5 seconds when any button is pressed
Temperature Set-point	Increase or decrease temperature set point by rotating the adjustment dial clockwise or counter-clockwise. When the dial is rotated, the LCD shows the set point temperature
Unoccupied Button	TSM-02 provides 24 VAC output signal to external controller by pressing the ⏻ button
Parameter setup menu (TSM-02 only)	The thermostat allows authorized service agents to change certain number of operating parameters, please refer to parameter setup manual for details.

Dimensions in mm



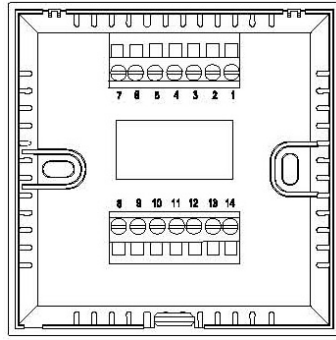
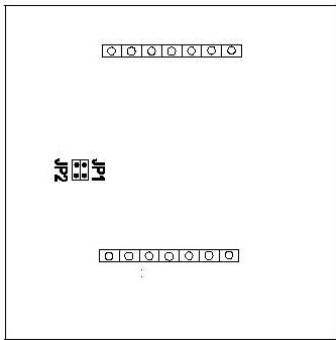
Mounting Details



TSM Module can be surface mounted or secured to a standard European 75 x 75 x 35 mm electrical box.

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.

Wiring Diagram & 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

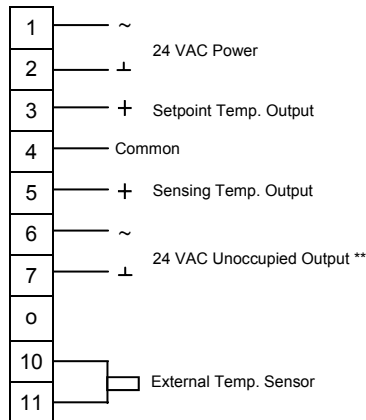
Note: JP2 is available in 0-10 VDC/2-10 VDC output models only. Factory setting is 0-10 VDC.

Wiring Diagrams and Additional Application Notes

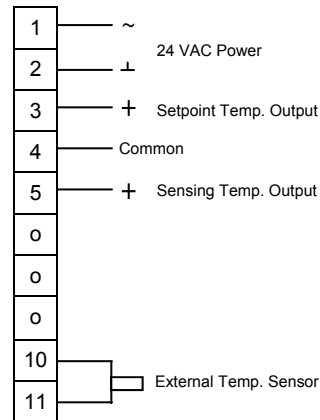
- TSM Temperature Setpoint Module is always turned on when power supply is connected.
- 0...10 VDC output of terminal 3 and 4 is directly proportional temperature setpoint.
- 0...10 VDC output of terminal 4 and 5 is directly proportional sensing temperature.
- Pressing unoccupied button to active the 24 VAC output at terminal 6 and 7 (only available on TSM-02).
- Remove jumper JP1 if external sensor is wired to terminals 10 and 11.
- Remove jumper JP2 if 2-10 VDC proportional output is required.
- 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. Failure to do so may result in poor thermostat performance due to electrical noise.

WARNING

Incorrect wiring connection may cause permanent equipment damages to the thermostat



TSM-02



TSM-01

Setup Manual

Function	Symbol	Description
MCU firmware (software) revision level	0	Appears after entering the setup menu
Choice of temperature engineering unit	1	1-C = °C (factory setting) 1-F = °F
Offset adjustment of temperature indication (field recalibration of measured temperature)	3	3-2 = temperature indication plus 2 degrees 3-1 = temperature indication plus 1 degree 3-0 = no offset (factory setting) 3-1 = temperature indication minus 1 degree 3-2 = temperature indication minus 2 degrees
Upper temperature set point limit setting	E	To set upper setpoint limit, adjustable between current lower set point limit value and 40°C (99°F), factory setting 40°C (99°F). The program is set such that there is always a minimum separation of 4 degrees maintained between the upper occupied set point limit value and the lower set point limit value.
Lower temperature set point limit setting	F	To set lower setpoint limit, adjustable between current upper set point limit value and 0°C (32°F), factory setting 0°C (32°F). The program is set such that there is always a minimum separation of 4 degrees maintained between the upper occupied set point limit value and the lower set point limit value.
Choice of constant display of ambient temperature or temperature set point value	u	u-1 = constant display of ambient temperature (factory setting) u-2 = constant display of set point value
Restoration of default factory settings	f5	f5-1 = Retain current settings (factory setting) f5-2 = Restore default factory settings

Technical Specifications

Product Model	See TSM Product Overviews
Power Requirements	24 V ±15% 50/60 Hz
Sensing Element	NTC thermistor, 10 kΩ@25°C
Temperature Display Range	0-40°C in 0.5 K increments: accuracy ±1 K
Temperature Set Point Range	0-40°C in 0.5 K increments, initial factory setting at 22°C
Electrical Ratings	20 VA @ 24 VAC for Unoccupied output Minimum 50,000 Ω output impedance for 0-10 VDC models
Body Material	Self-extinguishing, molded ABS
Ambient/Storage Temperature Limits	0 to 50 °C / -30 to 50 °C, 10% to 90% RH non-condensing
Agency Approval	CE Mark compliant to EMC and low voltage directives
Shipping Weight	120 g
Dimensions	See Dimensions drawing in mm

The specification above are normal and conform to generally acceptable industry standard. Cyrus is not responsible for damages resulting from misapplication or misuse of its products.