

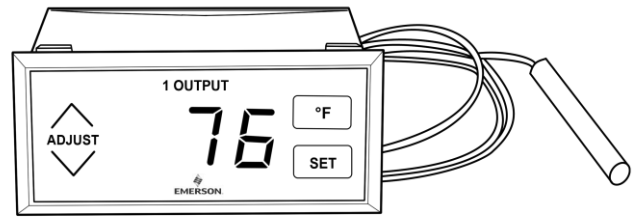
General Description & Applications

The TC-110 series panel mount temperature controllers provide temperature display, relay control, and feature programmable set points, high and low set point limits, differentials and calibration. Applications for use include heating, cooling, refrigeration, HVAC, food service, medical and industrial equipment.

Features

- Membrane touch-pad programming
- 0.56" high red LED display
- Programmable set point(s) and differential(s)
- Panel mount enclosure
- Current Temperature Display
- LED relay status indicator
- Easy programming via LED display prompts
- Tamper resistant programmable set point limit
- Temperature Sensor included
- Uses model TS-10PTC-3 sensor

TC-110 Series Panel Mount Temperature Controllers

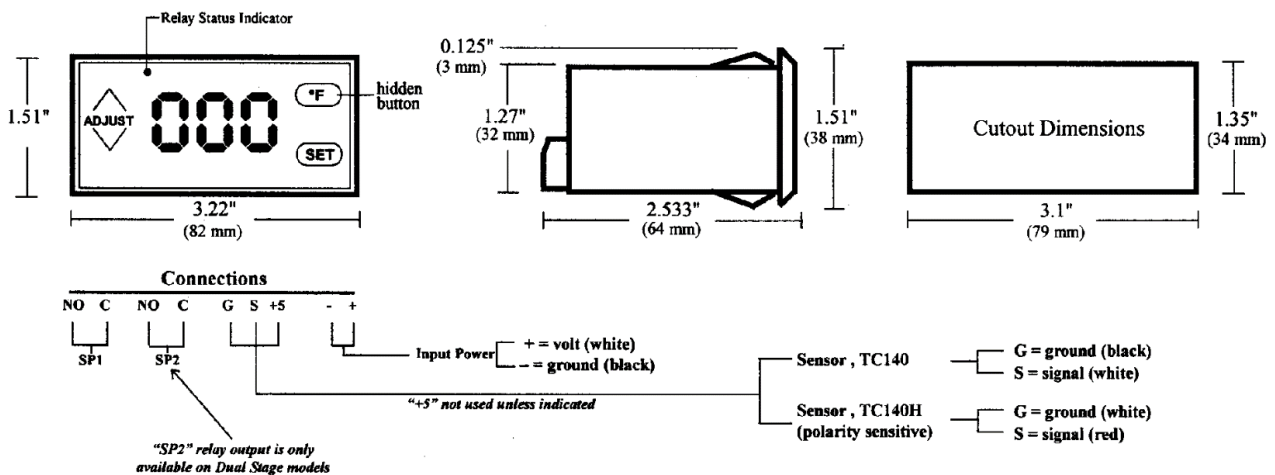


Specifications

Power requirements: 24 VAC standard
Relay status indicator: Lit while relay is activated
Relay(s) contact rating: SPST relay, 10 amp (120 VAC resistive)
Ambient operating temperature range: 20° to 158° F, -6° to 70° C
Ambient operating humidity range: 90% non-condensing

Accuracy: $\pm 1^\circ \text{F}$, $\pm 1^\circ \text{C}$
Connectors: Screw type terminal block for all connections.
Temperature sensor range: TS-10PTC-3 sensor standard -67° F to 302° F (-55° C to 150° C). Sensor is on a 36" (.91m) 26 AWG wire and sensor is encased in a nickel plated brass cap. Sensor can be extended up to 100ft (30.5m) using 18-26 gauge, two conductor wire.
Agency approvals: U.L. and C.U.L recognized, NSF

Dimensions & Wiring



Programming Instructions

- A. SET POINT(S)
1. To start the programming sequence, press the SET button once. Unit displays “SP1” (set point 1).
 2. Press the SET button again to display SP1 Value.
 3. To program an increase or decrease in SP1, press the appropriate ADJUST arrow.
 4. Repeat steps 1 thru 3 for SP2 (set point 2, dual stage model only).
 5. To complete the programming sequence, press the SET button until the screen goes blank. After five seconds, the unit will automatically display sensor temperature.

IMPORTANT: If the programming sequence is interrupted for more than 15 seconds or not completed to the blank screen stage, the unit will automatically revert to the temperature display mode WITHOUT acknowledging any new values (tamper resistant feature).

B. DIFFERENTIAL(S), HIGH/LOW SETPOINT LIMITS AND CALIBRATION – To program these parameters, press and hold the “hidden” button located behind the “°F” symbol and the up arrow for 3-4 seconds or until dF1 appears (instead of the SET button), and repeat the programming procedure described in step A using the “°F” hidden button to advance through the menu instead of the SET button.

1. Differential “dF1” - setting a positive differential value will close the NO (normally open) relay(s) on temperature fall (heating applications) and open the relay(s) on temperature rise. A negative differential setting will close the NO relay(s) on temperature rise (cooling applications) and open the relay(s) on temperature fall. Differential is programmable from -30 ° to +30 °. DO NOT SET DIFFERENTIAL AT “0”.
2. High and Low Set point Limits “HI” and “LO” – allow you to limit the range in which the set points can be programmed. Also, by programming the high and low set point limit values to the same number, a tamper-resistant fixed set point is established.
3. Calibration “CAL” – Controller calibration can be programmed ± 30 degrees. Unit is factory calibrated to a certified standard.

Ordering Information

The TC-110 Series Temperature Controller is available in several different configurations. Custom configurations are available for different relays, customized programming options, different voltage requirements or custom sensor options. Input voltage refers to the voltage required for the unit to operate.

The following part numbers are generally stocked and ready for shipment.

<u>Model</u>	<u>Relay Outputs</u>	<u>°F or °C</u>	<u>Sensor Type</u>	<u>Input Voltage</u>
TC110S24-R	1, 10 amp relays (120VAC resistive)	°F	PTC	24 VAC
TC110D24-R	1, 10 amp relays (120VAC resistive)	°F	PTC	24 VAC

Custom Design & Modifications

In addition to standard models, Emerson Control Products specializes in complete custom design and manufacture of electronic controls. Modifications of our standard controls are also available. Please contact our Customer Service department to arrange for a consultation of your specific project and application.

Warranty

Emerson Control Products warrants its products to be free from defects in material and workmanship under normal use for one year and is not responsible for consequential damages or installation costs of any nature. Exposure to contaminants and extreme environmental conditions such as moisture, temperature, chemicals, etc. may cause the unit to degrade or fail. Emerson Control Products accepts no liability for product applications or customer application testing.