

### Models TEC-404 & TEC-405 1/4 DIN Temperature Controllers



With Dial or Pushwheel Setpoint and Display!

#### Agency Approvals



#### Potentiometer Setpoint Hardware Code: TEC-404-



A Part Number based on the hardware code and any software pre-programming will be issued at time of order.

**Standard lead time is stock to 2 weeks.**

#### Pushwheel Setpoint Hardware Code: TEC-405-



A Part Number based on the hardware code and any software pre-programming will be issued at time of order.

**Standard lead time is stock to 2 weeks.**

#### Power Input BOX 1

**4** = 90-264 VAC 50/60 Hz  
**5** = 20-32 VAC 50/60 Hz, 20 - 32 VDC

#### Signal Input BOX 2

**1** = Thermocouple: Type J  
**2** = Thermocouple: Type K  
**3** = RTD: 100 ohm PT, DIN 0.00385  
**4** = RTD: 100 ohm PT, JIS 0.00392  
**9** = Other

#### Standard Range Code

(TEC-404 only)

BOX 3

**4** = 0 to 300°C      **C** = 50 to 550°F  
**6** = 0 to 600°C      **E** = 50 to 850°F

Below available for large volume orders.  
Consult Tempco for more information.

**2** = 0 to 100°C      **A** = 50 to 200°F  
**3** = 0 to 200°C      **B** = 50 to 400°F  
**5** = 0 to 400°C      **D** = 50 to 750°F  
**7** = 0 to 800°C      **F** = 50 to 1100°F  
**8** = 0 to 1200°C      **G** = 50 to 1400°F  
**9** = Other              **H** = 0 to 2200°F

#### Range code (TEC-405 only)

BOX 3

**X** = 0 to 499°F      **C** = 0 to 299°C  
**V** = 0 to 999°F      **E** = 0 to 499°C  
**W** = 0 to 1999°F      **H** = 0 to 999°C

Other ranges are available for large volume orders. Consult Tempco for more information.

#### Control Mode BOX 4

**1** = On - Off (used for valves & solenoids)  
**2** = Proportional (common for electric heaters)

#### Output 1 BOX 5

**1** = Relay: 5A / 240 VAC  
**2** = Pulse DC for SSR drive: 20 VDC (20 mA max)  
**3** = 4-20 mA, linear (max load 500 ohms)  
**4** = 0-20 mA, linear (max load 500 ohms)  
**5** = 0-10 VDC, linear (min. impedance 500K ohms)  
**9** = Other

#### Output 2 BOX 6

**0** = Not Available

#### Alarm BOX 7

**0** = None  
**1** = Relay: 3A / 240 VAC Deviation alarm

#### Communication BOX 8

**0** = Not Available

### Power Input

Standard: 90 - 264 VAC, 50/60 Hz, 5VA  
 Optional: 20 - 32 VAC 50/60 Hz, 20 - 32 VDC, 5VA

### Signal Input

Accuracy:  $\pm 1.0\%$  of full scale at 77°F/25°C  
 Thermocouple: Type J or K  
 RTD: 3-wire Pt100 DIN or JIS  
 Sampling Rate: 3 samples per second  
 Cold Junction Compensation:  $\pm 0.1^\circ\text{C}$  /  $1^\circ\text{C}$   
 Common Mode Rejection Ratio (CMRR): 120 dB  
 Normal Mode Rejection Ratio (NMRR): 60 dB  
 Sensor Break Protection: Upscale

### Output 1

Relay Rating: 5 Amp, 240 VAC  
 SSR drive: Pulsed DC, 20 V at 20 mA maximum  
 Current Loop: 4 - 20 mA, 0 - 20 mA, maximum load: 500Ω  
 Voltage: 0 - 10 VDC, minimum load 500 KΩ

### Control

Proportional Band: 2.2% of span  
 ON-OFF Hysteresis: 1% of span  
 Cycle time: 20 seconds for relay output, 1 second for pulsed voltage output, 0.02 second for linear current or voltage output  
 Control Action: Reverse Action

### Approval Standards

Safety Standard: UL3121-1  
 EN61326

Protective Class: Front panel: IP 30  
 Housing and Terminals: IP 20

### Adjustment

Setpoint: Single turn wirewound potentiometer (TEC-404)  
 Setpoint Resolution: 0.2% of span  
 Accuracy of Setpoint:  $\pm 2\%$  of span  
 Repeatability of Setpoint:  $\pm 0.1\%$  of span  
 Setpoint: 3-digit or 4-digit pushwheel switch (TEC-405)  
 Manual Reset: Adjustable up to 2.6% of span  
 Setpoint Resolution:  $\pm 1$  Least Significant Digit  
 Accuracy of Setpoint:  $\pm 1\%$  of span  
 Repeatability of Setpoint:  $\pm 1$  Least Significant Digit

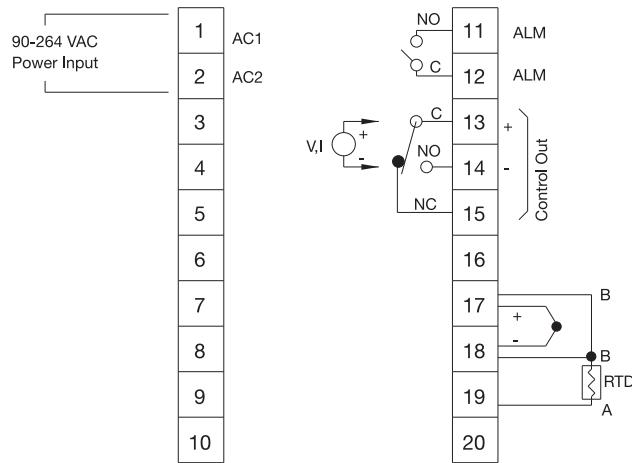
### Display

Single 4-digit LED Display: 0.56" (14 mm) Red

### Environmental and Physical

Operating Temperature: 32 to 122°F (0 to 50°C)  
 Humidity: 0 to 90% RH, non-condensing  
 Dielectric Strength: 2000 VAC, 50/60 Hz for 1 minute  
 Vibration: 10 - 55 Hz, amplitude 1 mm  
 Shock: 200 m/s<sup>2</sup> (20g)  
 Dimensions: 3-3/4 × 3-3/4 × 2-9/16" (96 × 96 × 65 mm) H×W×D  
 Depth behind panel: 2" (53 mm)  
 Panel Cutout: 3-5/8" × 3-5/8" (92 × 92 mm) H×W  
 Weight: 0.55 lb. (250 grams)

### Rear Terminal Connections



### Potentiometer Setpoint TEC-404 Stock and Common Part Numbers (Power Input: 90-264 VAC, Proportional Mode)

Part Number	Signal Input	Range	Output	Alarm
TEC57401	J tc	50-850°F	relay	none
TEC57402	J tc	50-550°F	relay	none
TEC57403	K tc	50-850°F	relay	none
TEC57404	K tc	50-550°F	relay	relay
TEC57405	RTD	50-550°F	relay	none
TEC57406	J tc	0-300°C	relay	none
TEC57407	J tc	0-600°C	relay	none
TEC57408	K tc	0-300°C	relay	none
TEC57409	K tc	0-600°C	relay	none

### Pushwheel Setpoint TEC-405 Stock and Common Part Numbers (Power Input: 90-264 VAC, Proportional Mode)

Part Number	Signal Input	Range	Output	Alarm
TEC57511	J tc	0-999°F	relay	none
TEC57512	J tc	0-499°F	relay	none
TEC57513	K tc	0-1999°F	relay	none
TEC57514	K tc	0-999°F	relay	none
TEC57515	J tc	0-499°C	relay	none
TEC57516	J tc	0-299°C	relay	none
TEC57517	K tc	0-999°C	relay	none
TEC57518	K tc	0-499°C	relay	none
TEC57519	RTD	0-999°F	relay	none
TEC57520	RTD	0-499°C	relay	none