

# Temperature Controllers



Models TEC-901 & TEC-902 1/16 DIN

## Models TEC-901 & TEC-902 (with Hi-Low LED Indicators) 1/16 DIN Temperature Controllers



*Non-Indicating Control!*



*Shows Process Temperature Deviation with Hi/Low LEDs!*

### Design Features

- \* 1/16 DIN size – 48 mm × 48 mm
- \* Short panel depth – only 3-3/8" (86 mm) required
- \* Laser trimmed ASIC components
- \* On-off or time proportional selections
- \* Wide selection of output options
- \* Dial/Potentiometer setpoint
- \* Sensor break protection
- \* Good performance at a very low price
- \* Model TEC-901 temperature control
- \* Model TEC-902 temperature control with process temperature Hi-Low LED indicators

Agency Approvals



Hardware Code: TEC-901-



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.**

With Hi-Low LEDs

Hardware Code: TEC-902-



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

- 1 = 100-130 VAC, 50/60 Hz
- 2 = 200-240 VAC, 50/60 Hz

#### 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 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

#### 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

- Alarm BOX 7
- Communication BOX 8
- 0 = Not Available

**⚠ WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



### Power Input

100 - 130 VAC, 50/60 Hz, 5VA  
200 - 240 VAC, 50/60 Hz, 5VA

### Signal Input

Accuracy:  $\pm 2.0\%$  of full scale at 77°F/25°C  
Thermocouple: Type J or K  
RTD: 3-wire Pt100 DIN or JIS  
Sampling Rate: 3 samples / 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: 240 VAC, 5 Amp  
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 500KΩ

### 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  
Protective Class: Front panel: IP 30  
Housing and Terminals: IP 20  
EMC: EN61326

### Adjustment

Setpoint: Single turn wirewound potentiometer  
Setpoint Resolution: 0.2% of span  
Accuracy of Setpoint:  $\pm 2\%$  of span  
Repeatability of Setpoint:  $\pm 0.1\%$  of span

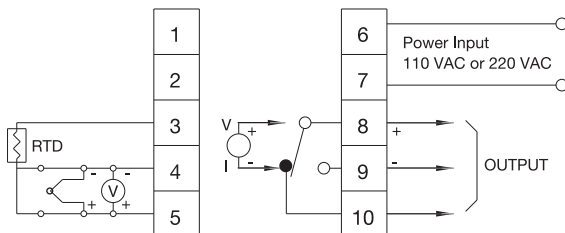
### Display

Process Indicator: TEC-902: Hi/Lo LED indicators  
TEC-901: None  
Status Indicator: ON (red) LED lamp, OFF (green) LED lamp

### 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: 1-7/8 × 1-7/8 × 3-3/4" (48 × 48 × 94 mm) H×W×D  
Depth behind panel: 3-3/8" (86 mm)  
Panel Cutout: 1-25/32" × 1-25/32" (45 × 45 mm) H×W  
Weight: 0.42 lb. (190 grams)

### Rear Terminal Connections



### Non-Indicating

#### TEC-901 Stock and Common Part Numbers (Power Input: 200-240 VAC, Proportional mode)

Part Number	Signal Input	Range	Output
TEC17101	J tc	50-850°F	relay
TEC17102	J tc	50-550°F	relay
TEC17103	K tc	50-850°F	relay
TEC17104	K tc	50-550°F	relay
TEC17105	RTD	50-550°F	relay
TEC17106	J tc	0-300°C	relay
TEC17107	J tc	0-600°C	relay
TEC17108	K tc	0-300°C	relay
TEC17109	K tc	0-600°C	relay

### With Hi/Low LEDs

#### TEC-902 Stock and Common Part Numbers (Power Input: 200-240 VAC, Proportional mode)

Part Number	Signal Input	Range	Output
TEC17201	J tc	50-850°F	relay
TEC17202	J tc	50-550°F	relay
TEC17203	K tc	50-850°F	relay
TEC17204	K tc	50-550°F	relay
TEC17205	RTD	50-550°F	relay
TEC17206	J tc	0-300°C	relay
TEC17207	J tc	0-600°C	relay
TEC17208	K tc	0-600°C	relay
TEC17209	RTD	0-300°C	relay