

# Temperature Controllers



Models TEC-905 & TEC-900 1/16 DIN

## Model TEC-905 1/16 DIN Controller & Model TEC-900 1/16 DIN Indicator Only



Simple Setpoint and Display!



Display only!

### 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
- \* Universal power input, 90-264 VAC
- \* Sensor break protection
- \* Good performance at a very low price
- \* Model TEC-905 control with pushwheel setpoint
- \* Model TEC-900 indicator only

### Agency Approvals:



File #:  
E244198

Temperature Controller  
Hardware Code: TEC-905-

1	2	3	4	5	6	7	8
					0	0	0

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

Temperature Indicator  
Hardware Code: TEC-900-

1	2	3	4	5	6	7	8
			0	0	0	0	0

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

#### Power Input BOX 1

4 = 90-264 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

#### Control Mode BOX 4

(TEC-905 only)

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

#### Range code (TEC-905 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.

#### Range code (TEC-900 only) BOX 3

**Thermocouple**  
A = 0 to 1200°F – Type J  
B = 0 to 600°C – Type J  
C = 0 to 2000°F – Type K  
D = 0 to 1100°C – Type K  
**RTD**  
E = -32 to 752°F  
F = 0 to 400°C

#### Output 1 (TEC-905 only) 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

### Power Input

**Standard:** 90-264 VAC, 50/60 Hz, 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 / 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 (for TEC-905 only)

**Relay Rating:** 240 VAC, 5 Amp

**SSR drive:** Pulsed DC, 20 V at 20 mA maximum

**Current:** 4 - 20 mA, 0 - 20 mA, maximum load: 500Ω

**Voltage:** 0 - 10 VDC, minimum load 500KΩ

### Control (for TEC-905 only)

**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 (for TEC-905 only)

**Setpoint:** 3-digit or 4-digit pushwheel switch

**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

**Process Indicator:** 3-1/2 digit, 0.4" / 10 mm red LED display

**Output Status Indicator:** Red LED lamp (for TEC-905 only)

### 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 1mm

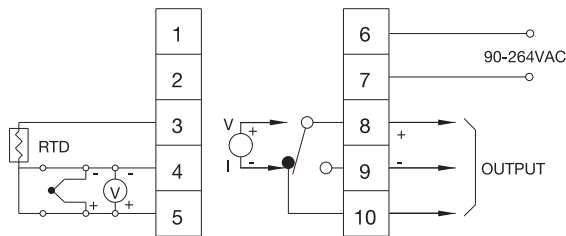
**Shock:** 200 m/s<sup>2</sup> (20g)

**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



**NOTE:** Terminals 8, 9 and 10 are not used for Model TEC-900.

### TEC-905 Stock and Common Part Numbers

(Power Input: 90-264 VAC, Proportional Mode)

Part Number	Signal Input	Range	Output
TEC17511	J tc	0-999°F	relay
TEC17512	J tc	0-499°F	relay
TEC17513	K tc	0-1999°F	relay
TEC17514	K tc	0-999°F	relay
TEC17515	J tc	0-499°C	relay
TEC17516	J tc	0-299°C	relay
TEC17517	K tc	0-999°C	relay
TEC17518	K tc	0-499°C	relay
TEC17519	RTD	0-999°F	relay
TEC17520	RTD	0-499°C	relay

### TEC-900 Stock and Common Part Numbers

(Power Input: 90-264 VAC, Indicator Only)

Part Number	Signal Input	Range
TEC17021	J tc	0-1200°F
TEC17022	K tc	0-2000°F
TEC17023	J tc	0-600°C
TEC17024	K tc	0-1100°C
TEC17025	RTD	32-752°F
TEC17026	RTD	0-400°C