

# Temperature Controllers




Model TEC-704 3/16 DIN

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*Simple Setpoint and Display!*

### Design Features

- \* 3/16 DIN size – 72 mm × 72 mm
- \* Laser trimmed ASIC components
- \* Short panel depth – only 2-9/16" (65 mm) required
- \* On-off or time proportional selection
- \* Digital display, 0.4" (10 mm) red LEDs
- \* Wide selection of output options
- \* High precision wire wound dial/potentiometer setpoint
- \* Sensor break protection
- \* Good performance at a very low price
- \* Agency Approval: 

**Hardware Code:** TEC-704- 

1	2	3	4	5	6	7	8
					0		0

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

#### 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  
                             F = 50 to 1100°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      G = 50 to 1400°F  
8 = 0 to 1200°C      H = 0 to 2200°F  
9 = Other

#### Control Mode BOX 4

1 = On - Off  
2 = Proportional

#### 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: 2A / 240 VAC Deviation alarm

#### 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 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

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: 500 $\Omega$

Voltage: 0 - 10 VDC, minimum load: 500K $\Omega$

### 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 Standards: EN61326

Protective Class: Front panel: IP 30

Housing and Terminals: IP 20

### Adjustment

Setpoint: Single turn wirewound potentiometer

Manual Reset: Adjustable up to 2.6% of span

Setpoint Resolution: 0.2% of span

Accuracy of Setpoint:  $\pm 2\%$  of span

Repeatability of Setpoint:  $\pm 0.1\%$  of span

### Alarm

Type: Deviation  $\pm 10\%$  of span Relay: 2A / 240 VAC

### Display

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

Output Status Indicator: Red LED lamp

Alarm Status Indicator: Red 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 1mm

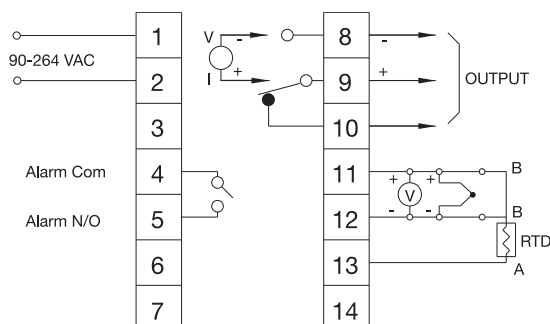
Shock: 200 m/s<sup>2</sup> (20g)

Dimensions: 2-27/32  $\times$  2-27/32  $\times$  3" (72  $\times$  72  $\times$  78 mm) H $\times$ W $\times$ D  
Depth behind panel: 2-9/16" (65 mm)

Panel Cutout: 2-11/16"  $\times$  2-11/16" (68  $\times$  68 mm) H $\times$ W

Weight: 0.53 lb. (240 grams)

### Rear Terminal Connections



### Stock and Common Part Numbers (Power Input: 90-264 VAC, Proportional mode)

Part Number	Signal Input	Range	Output	Alarm
TEC43401	J tc	50-850°F	relay	none
TEC43402	J tc	50-550°F	relay	none
TEC43403	K tc	50-850°F	relay	none
TEC43404	K tc	50-550°F	relay	none
TEC43405	J tc	50-850°F	relay	relay
TEC43406	K tc	50-850°F	relay	relay
TEC43407	RTD	50-550°F	relay	none
TEC43408	RTD	50-550°F	relay	relay
TEC43409	J tc	0-300°C	relay	none
TEC43410	J tc	0-600°C	relay	none
TEC43411	J tc	0-300°C	relay	relay
TEC43412	K tc	0-300°C	relay	none
TEC43413	K tc	0-600°C	relay	relay
TEC43414	RTD	0-300°C	relay	none
TEC43415	RTD	0-600°C	relay	relay