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**

**Design Features**
- 1/16 DIN size – 48 mm x 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

**Non-Indicating Control!**

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

**Agency Approvals**

**Hardware Code: TEC-901**

- 1
- 2
- 3
- 4
- 5
- 0
- 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.**

**With Hi-Low LEDs**

**Hardware Code: TEC-902**

- 1
- 2
- 3
- 4
- 5
- 0
- 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**
  - 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

**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

**View Product Inventory @ www.tempco.com**
Power Input
100 - 130 VAC, 50/60 Hz, 5VA
200 - 240 VAC, 50/60 Hz, 5VA

Signal Input
Accuracy: ±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: ±0.1°C / 1°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: ±2% of span
Repeatability of Setpoint: ±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/s² (20g)
Dimensions: 1-7/8 × 1-7/8 × 3-3/4" (48 × 48 × 94 mm) H × W × D
Panel Cutout: 1-25/32 × 1-25/32" (45 × 45 mm) H × W
Weight: 0.42 lb. (190 grams)

Non-Indicating

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Signal Input</th>
<th>Range</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEC17101</td>
<td>J tc</td>
<td>50-850°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17102</td>
<td>J tc</td>
<td>50-550°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17103</td>
<td>K tc</td>
<td>50-850°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17104</td>
<td>K tc</td>
<td>50-550°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17105</td>
<td>RTD</td>
<td>50-550°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17106</td>
<td>J tc</td>
<td>0-300°C</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17107</td>
<td>J tc</td>
<td>0-600°C</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17108</td>
<td>K tc</td>
<td>0-300°C</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17109</td>
<td>K tc</td>
<td>0-600°C</td>
<td>relay</td>
</tr>
</tbody>
</table>

With Hi/Low LEDs

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

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<tbody>
<tr>
<td>TEC17201</td>
<td>J tc</td>
<td>50-850°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17202</td>
<td>J tc</td>
<td>50-550°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17203</td>
<td>K tc</td>
<td>50-850°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17204</td>
<td>K tc</td>
<td>50-550°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17205</td>
<td>RTD</td>
<td>50-550°F</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17206</td>
<td>J tc</td>
<td>0-300°C</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17207</td>
<td>J tc</td>
<td>0-600°C</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17208</td>
<td>K tc</td>
<td>0-600°C</td>
<td>relay</td>
</tr>
<tr>
<td>TEC17209</td>
<td>RTD</td>
<td>0-300°C</td>
<td>relay</td>
</tr>
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