Smart Loop-Powered RTD In-Head Temperature Transmitter

TX12

- User Trim—Null Out Sensor Error
- Unique Pushbutton Configuration Without PC
- High Stability
- Programmable Burnout
- LED Sensor Fail Indicator
- Reconfigure in Seconds

The TX12 head mounted temperature transmitter connects to any standard Pt100 resistance sensor and converts the linearized temperature to a 4 to 20 mA signal. The transmitter is a two wire device, and is fully configurable by the user, over a wide temperature range, with the aid of a simple pushbutton. This new TX12 design incorporates additional configuration menus, allowing the user to push button trim the transmitter output at both zero and span, ideal for trimming out sensor errors. The transmitter's advanced circuitry guarantees high stability over the wide operating ambient temperature ranges experienced by head mounted devices.

One of the transmitters features is the program LED, which provides visual indication of sensor fault when in normal operation and is also used to guide the operator through the simple menus during configuration.

Specifications

**Input**
- **Sensor Type:** Pt100, 100 Ω @ 0°C 2- or 3-wire
- **Sensor Range:** -200 to 850°C (-328 to 1562°F)
- **Sensor Connection:** Screw terminal
- **Minimum Span:** 25°C (77°F)
- **Linearization:** BS EN 60751 (IEC 751) standard/JISC 1604
- **Measurement Accuracy:** 0.1°C ±0.05% of reading

**Output**
- **Thermal Drift:** 25 ppm/°C
- **Excitation Current:** <200 uA
- **Lead Resistance Effect:** 0.002°C/Ω
- **Maximum Lead Resistance:** 20 Ω per leg

**Specifications**
- **Update Time:** 500 mS
- **Response Time:** 1 second
- **Start Up Time:** 4 seconds (1 out < 4 mA during start up)
- **Warm-Up Time:** 1 minute to full accuracy
- **Power Supply:** 10 to 30 Vdc

**Environmental**
- **Ambient Operating Range:** -40 to 85°C (-40 to 185°F)
- **Ambient Storage Temperature:** -50 to 90°C (-58 to 194°F)
- **Ambient Humidity Range:** 10 to 90% RH non-condensing

**Physical**
- **Dimensions:** 43 Dia. x 21 mm H (1.7 x 0.8")
- **Weight:** 31 g (0.068 lb) (encapsulated)

**Approvals**
- EMC - BS EN 61326:1998: Electrical equipment for measurement control and laboratory use
- ANNEX A: Immunity test requirements for equipment intended for use in industrial locations
- ANNEX F: Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning
- IEC 61000-4-2: Electrostatic discharge
- IEC 61000-4-3: EM field
- IEC 61000-4-4: Transient burst (output)
- IEC 61000-4-5: Surge (output)

**To Order (Visit omega.com/tx12 for Pricing and Details)**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>TX12</td>
<td>RTD transmitter (100 Ω, Pt 0.00385)</td>
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<tr>
<td>TX2-100</td>
<td>2-conductor shielded cables, 30 m (100')</td>
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<tr>
<td>PSR-24S</td>
<td>Regulated power supply, 24 Vdc, 400 mA, screw terminal</td>
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<tr>
<td>PSR-24L</td>
<td>Regulated power supply, 24 Vdc, 400 mA, UL, stripped leads</td>
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<tr>
<td>PSR-24L-230</td>
<td>Regulated power supply, 24 Vdc, 400 mA, stripped leads, 230 Vac input, CE</td>
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<tr>
<td>TX-SCALED</td>
<td>Scaling charge for factory set up of range (specify temperature range)</td>
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Comes complete with operator’s manual.

**Ordering Example:** TX12, RTD transmitter and PSR-24L, regulated power supply with stripped leads.