Isolated Miniature Transmitters

TX31

_AVAILABLE_ WARRANTY

✔ Ultra-Low Profile Design
✔ Multi-Range Selectable
✔ Galvanic Isolation
✔ Long Term Stability
✔ Cast Aluminum Housing

The Model TX31 is an analog, isolated 2-wire head-mounted temperature transmitter that converts thermocouple input to the voltage, which is generated by the thermocouple sensor, linear, and highly accurate 4 to 20 mA output current. The transmitter comes in a variety of applications such as process control, automation system, and energy source management.

The TX31 is performed by means of a DIP-switch array for coarse range setting, and 2 multi-turn potentiometers (ZERO and SPAN) which are used for the final fine-tuning. The TX31 is housed in a metal enclosure with a plastic top cover, fitting into DIN B connection heads, providing excellent RFI immunity. The TX31 accepts low-level signal from the thermocouple, filtered, amplified, and converter process current to reduce susceptibility transients and noise operations while allowing the same 2 wires to carry the transmitter power and output current signal simultaneously.

Specifications

\( V_{\text{LOOP}} = 24 \text{ VDC}, \ T_{\text{AMB}} = 23 \pm 2^\circ \text{C}, \ R_{\text{LOAD}} = 250 \ \Omega \)

Output: 4 to 20 mA; Upscale < 26 mA, Downscale <3.8 mA
Loop Power: 12 to 32 Vdc; Reverse polarity protected
Input Thermocouple: J; E; K; T; R; S; B
Supply Voltage Effect: ±0.01%/V
Temperature Coefficient: ±0.02%/°C (Tamb = 5 to 50°C)
Repeatability: ±0.01% of voltage input span

Linearity Error: ±0.1% of voltage input span (not temperature input)
Galvanic Isolation: Input/output 1000 Vrms, continuous
Cold-Junction Compensation: ±2°C max (Tamb = 5 to 50°C)
Load Capability: 50 x (loop power - 12)
Fine Adjustment: 5% of zero and span
RFI effect (5W, 470 MHz):
< ±10% of span
Response Time (0 to 90%): 200 ms
Housing Material: Cast aluminum with epoxy coating and polycarbonate, UL94-V0 grade
Connection: M3, nickel coated brass; 22 to 12 AWG
Operation Environment: -20 to 70°C; 5 to 85 %, non-condensing
Dimensions: 27 H x 45 mm Dia. (1.06 x 1.77”)
Weight: 65 g (2.3 oz)

To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>TX31(*)</td>
<td>Temperature transmitter</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, stripped leads</td>
</tr>
<tr>
<td>PSU-93</td>
<td>Unregulated power supply, 16 to 23 Vdc, 300 mA max, screw terminal</td>
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(*) Insert thermocouple Type: J, E, K, T, R, S, and B, no additional charge.
Ordering Example: TX31-K, Type K temperature transmitter with a temperature range of 0 to 1000°C.
OCW-3, OMEGACARE™ extends standard 1-year warranty to a total of 4 years.