Smart Temperature Transmitters

TX13

K, J, N, E, T, R, S Thermocouples and mV Inputs

Pushbutton Configuration

56 Preprogrammed Ranges Ready-to-Use

User Trim—Null Out Sensor Error

Programmable Burnout with Sensor Fail Indicator

Galvanically Isolated

The TX13 is a “smart” in-head transmitter that accepts thermocouple temperature sensors and converts sensor output over a configured range to a standard industrial (4 to 20 mA) transmission signal.

A simple pushbutton operation allows the user to select TC type, burnout direction, select fixed ranges and trim 4 and 20 mA points. The in head transmitter incorporates the latest digital technology to ensure accurate drift-free performance.

If required the desired range can be specified at the time of order, removing the need for user configuration. If the range is not specified then the transmitter will be shipped with the default range of 0 to 1000°C (32 to 1832°F) Type K.

Specifications

Isolation: Tested to 250 Vdc

Sensor Burnout: Either up or down scale output

Cold Junction:

Range: -40 to 85°C (-40 to 185°F)

Accuracy: ±0.5°C (0.9°F)

Tracking: ±0.05°C/C (0.09°F/F)

Stability:

Offset: 0.1°C/C (0.18°F/F)

Span: 0.05°C/C (0.09°F/F)

Output

Output Type: 2 wire, 4 to 20 mA current loop

Output Range: 4.0 to 20.0 mA

Output Connection: Screw terminal

Maximum Output: 21.5 mA

(in high burnout condition)

Minimum Output: 3.8 mA

(in low burnout condition)

Accuracy: (mA output/2000) or 5 uA (whichever is the greater)

Loop Voltage Effect: 0.2 uA/V

Thermal Drift: 1 uA/°C

Maximum Output Load: 

\[(V_{supply} - 10)/20\] kΩ

(Example: 700 Ω @ 24V)

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 (0.07 lb) (encapsulated)

Model No. Description

TX13 Thermocouple/mV smart transmitter

TX2-100 2-conductor shielded cables, 30 m (100’)

PSR-24S Regulated power supply, 24 Vdc, 400 mA, screw terminal

PSR-24L Regulated power supply, 24 Vdc, 400 mA, UL, stripped leads

PSR-24L-230 Regulated power supply, 24 Vdc, 400 mA, stripped leads, 230 Vac input, CE

TX-SCALED Scaling charge for factory set up of range (specify temperature range)

Comes complete with operator’s manual.

Ordering Example: TX13, thermocouple smart transmitter.