

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 (0.9°F/°F)

Stability:

Offset: 0.1°C/°C (0.18°F/°F)

Span: 0.05°C/°C (0.18°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:

[(Vsupply-10)/20] kΩ
(Example: 700 Ω @ 24V)

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 (0.07 lb) (encapsulated)



TX13 shown actual size.

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)

Note: Sensor input wires to be less than 3 m (10') to comply.

Specifications @ 20°C–Input

Sensor	Range °C (°F)	Accuracy
K	-200 to 1370 (-328 to 2498)	±0.5°C (0.9°F) or ±0.1% whichever the greater
J	-100 to 1200 (-148 to 2192)	±0.5°C (0.9°F) or ±0.1% whichever the greater
E	-100 to 1000 (-148 to 1832)	±0.5°C (0.9°F) or ±0.1% whichever the greater
N	-180 to 1300 (-292 to 2372)	±0.5°C (0.9°F) or ±0.1% whichever the greater
T	-100 to 400 (-148 to 752)	±0.5°C (0.9°F) or ±0.1% whichever the greater
R	-10 to 1760 (14 to 3200)	±0.5°C (0.9°F) or ±0.1% whichever the greater over range 800 to 1600
S	-10 to 1760 (14 to 3200)	±0.5°C (0.9°F) or ±0.1% whichever the greater over range 800 to 1600
mV	-10 to 70 (14 to 158)	±0.02% of full scale

To Order Visit omega.com/tx13 for Pricing and Details

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.

N-36

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