

Miniature Head Mount Temperature Transmitters With RFID Communications



TX400 Series



- ✓ TX401 Accepts Pt100, Pt1000 or Ni100 RTD Inputs
- ✓ TX402 Accepts Pt100 or Ni100 RTD Inputs and Types J/K/T/E/R/S/B/N Thermocouples
- ✓ User Configurable via TX400-RFID (NFC) Programmer and Configuration Software
- ✓ High Accuracy
- ✓ 16-Bit Conversion
- ✓ Linearized
- ✓ Transmitters Have Non-Volatile Memory (Circular Buffer) for Data-Logging with User-Selectable Sampling Time
- ✓ FREE Downloadable RF Programmer Configuration Software from OMEGA

The TX401 and TX402 head mount temperature transmitters transform a temperature signal acquired from a Pt100, Pt1000 (TX401 only) or Ni100 RTD sensor or from a thermocouple (TX402 only) into a linearized 2-wire loop-powered 4 to 20 mA output. The characteristics of these converters ensure high precision on the reading scale with 16-bit conversion. The 4 to 20 mA output can be scaled based on the desired temperature input range.

The programming procedure uses an RFID (NFC) mode with the dedicated TX400-RFID programmer that allows the user to make all calibrations and settings quickly and without the need to power and connect up the transmitter. Simply connect the TX400-RFID programmer to the USB port of your PC, start the RF Programmer configuration software and place the transmitter on top of the TX400-RFID programmer to establish communications.



TX400-RFID programmer shown connected to PC.



TX401 shown larger than actual size.



TX402 shown larger than actual size.

These temperature transmitters are also provided with a data logging function for the input signal. Transmitters have a non-volatile memory (circular buffer) for data-logging with user-selectable sampling time. The user selects the sampling time (1 to 3600 seconds) and then each time the 4 to 20 mA loop powers the device, the input value is stored to non-volatile memory.

Using the TX400-RFID programmer along with the RF Programmer configuration software (software is a free download from OMEGA) the user can:

- Completely configure the transmitter including scaling the 4 to 20 mA output to desired temperature input range
- Implement field calibration to compensate for gain and offset errors
- Download logged data to PC for visualization and printing

Specifications

RTD Input Types and Ranges:

TX401, TX402: Pt100 ($\alpha = 0.00385$), 2, 3, or 4-wire connection: TX401: -200 to 800°C (-328 to 1472°F), TX402: -200 to 600°C (-328 to 1112°F)

TX401 Only: Pt1000 ($\alpha = 0.00385$), 2-wire connection; -200 to 800°C (-328 to 1472°F)

TX401, TX402: Ni100 ($\alpha = 0.00618$), 2, 3, or 4-wire connection: TX401: -50 to 170°C (-58 to 338°F), TX402: -60 to 180°C (-76 to 356°F)

Thermocouple Inputs (TX402 Only)	
Types	Ranges
J	-200 to 1200°C (-328 to 2192°F)
K	-260 to 1360°C (-436 to 2480°F)
T	-260 to 400°C (-436 to 752°F)
E	-260 to 940°C (-436 to 1724°F)
R	-40 to 1760°C (-40 to 3200°F)
S	-40 to 1760°C (-40 to 3200°F)
B	40 to 1820°C (104 to 3308°F)
N	-260 to 1280°C (-436 to 2336°F)
mV	-10 to 70 mV

Output Resolution: 1 μ A

Over-Range Output: FS + 5°C

Under-Range Output: FS - 5°C

Output Error (Failure): Selectable: TX401: between 21.5 or 3.8 mA, TX402: between 21 or 3.8 mA

Current Output Protection: 30 mA approx

Rejection: 50 to 60 Hz

Maximum Transmission Error: 0.1% FS or 0.2°C whichever is greater

Sampling Time: 300 msec



RF programmer PC configuration software available via free download from OMEGA.

Response Time (10 to 90%): 600 msec

Non-Volatile Memory (Circular Buffer) for Data Logging:

TX401: 3966 Data Points

TX402: 2546 Data Points

Cable Resistance: 20 Ω max

Temperature Coefficient: <100 ppm

Power: 2-wire loop powered; operating range 6 to 32 Vdc

Isolation:

TX401: Non-isolated

TX402: galvanic, 1 KVac input/output

Operating Environment: -40 to 85°C (-40 to 185°F), 30 to 90% RH (non condensing)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Mounting: DIN/B head

Enclosure Material: Nylon (PA66)

Enclosure Rating: NEMA 1 (IP20) according to CE, EN 61000-6-4, EN 61000-6-2

Programming: Wireless with RFID technology (NFC)

Software: Windows® XP/7/8 (32-bit and 64-bit), Windows 10 (64-bit)

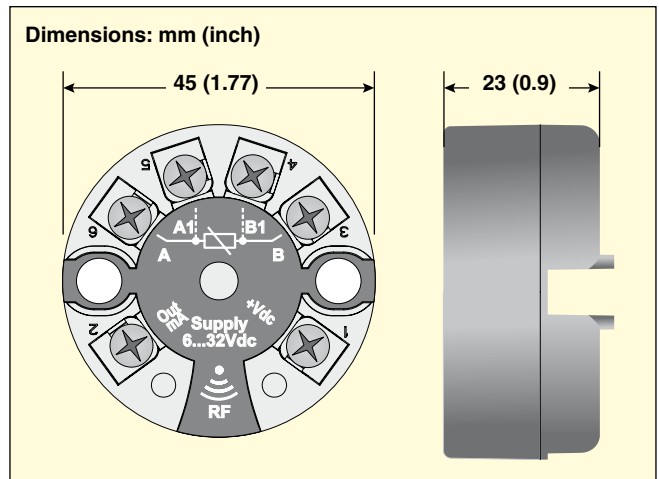
Connection: Screw terminals

Weight: 30 g (1.05 oz) approx

Dimensions: 23 H x 45 mm dia (0.9 x 1.77")



TX400-RFID, RFID programmer shown smaller than actual size.



To Order

Model No.	Description
TX401	RTD input head mount RFID temperature transmitter
TX402	Thermocouple/RTD input head mount RFID temperature transmitter
TX400-RFID	RFID programmer

TX400-RFID programmer is supplied with complete user's guide and USB interface cable. User's guide for the TX401 and TX402 transmitters can be downloaded from OMEGA. RF programmer PC configuration software is a free download from OMEGA.

Ordering Example: TX401, RTD input head mount RFID temperature transmitter and TX400-RFID programmer.