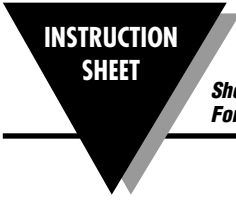


# PRTXD Series RTD Temperature Transmitters

M-4115/0507



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PRTXD

PRTXD Series RTD Transmitters		
MODEL	PROBE LENGTH	PROBE TYPE
PRTXD-*-4	4"	Fixed
PRTXD-*-4-SL	4"	Spring-Loaded†
PRTXD-*-12	12"	Fixed
PRTXD-*-12-SL	12"	Spring-Loaded†

†Thermowell required for spring-loaded versions

* Insert temperature code	
CODE	RANGE
100C	0 to 100°C
150C	0 to 150°C
100F	0 to 100°F
200F	0 to 200°F
300F	0 to 300°F

### Accuracy

Display: ±0.1% of span, plus sensor error, ±1 digit  
 Analog output: ±0.1% of span, plus sensor error  
 Sensor: ±0.3°C at 0°C, ±1.1°C at 150°C

### Sensor

100 Ω RTD element, 0.00385 alpha coefficient  
 IEC-751 Class B: ±0.3°C at 0°C, ±1.1°C at 150°C  
 10 second time constant

### Display (update rate, type, size)

3 readings per second nominal display update rate  
 3 digit LCD, 1/2" digit height

### Controls

Non-interactive zero and span, ±10% range  
 Test calibration level; 0-100% range

### Loop Supply Voltage

Any DC supply/loop resistance that maintains 8 to 32 VDC at gauge terminals. Minimum 8 V required at gauge terminals at all times for proper operation. Reverse polarity protected

### Loop Output Characteristics

4-20 mA output  
 See chart below right for loop voltage characteristics

### Test Function

Front panel TEST button when held, sets loop current and display to test calibration level, independent of temperature input, to allow testing of system operation.

### Wiring Connections (see drawing)

3 ft long, 2-conductor 22 AWG cable

### Weight

Transmitter: Approx. 12 ounces  
 Shipping weight: Approx. 1 pound

### Material and Color

NEMA 4X ABS/Polycarbonate housing, light gray  
 Gasketed rear cover

### Connection and Probe Material

1/2" NPT male hex nipple, 316 stainless steel  
 316 stainless steel probe sheath

### Storage Temperature

-40 to 203°F (-40 to 95°C)

### Operating Temperature

-4 to 185°F (-20 to 85°C) at housing

### Installation and Precautions

A thermowell is required with flowing material, pressurized applications, and all applications using spring-loaded versions of the PRTXD.

Install or remove using wrench on probe hex fitting only. Do not attempt to tighten by turning housing or any other part of the transmitter. Due to the hardness of 316 stainless steel, it is recommended that a thread sealant be used to ensure leak-free operation.

### Electrical Connections

The 2-wire connection allows the PRTXD to be used as a temperature display powered by a low-voltage DC source, or as a loop-powered 4-20 mA transmitter. Connect the loop (+) supply to the RED lead and the loop (-) supply to the BLACK lead. Reversing the connections will not harm the transmitter but it will not operate with incorrect polarity.

Select a loop power supply voltage and total loop resistance so that when the loop current is 20 mA, the transmitter will have at least 8 VDC at its terminals. For correct operation and to avoid erratic or erroneous readings, the terminal voltage must not fall below 8 VDC. Too large a loop resistance will cause the output to "limit" or saturate before reaching its full 20 mA output.

The minimum loop supply voltage may be calculated from the formula:

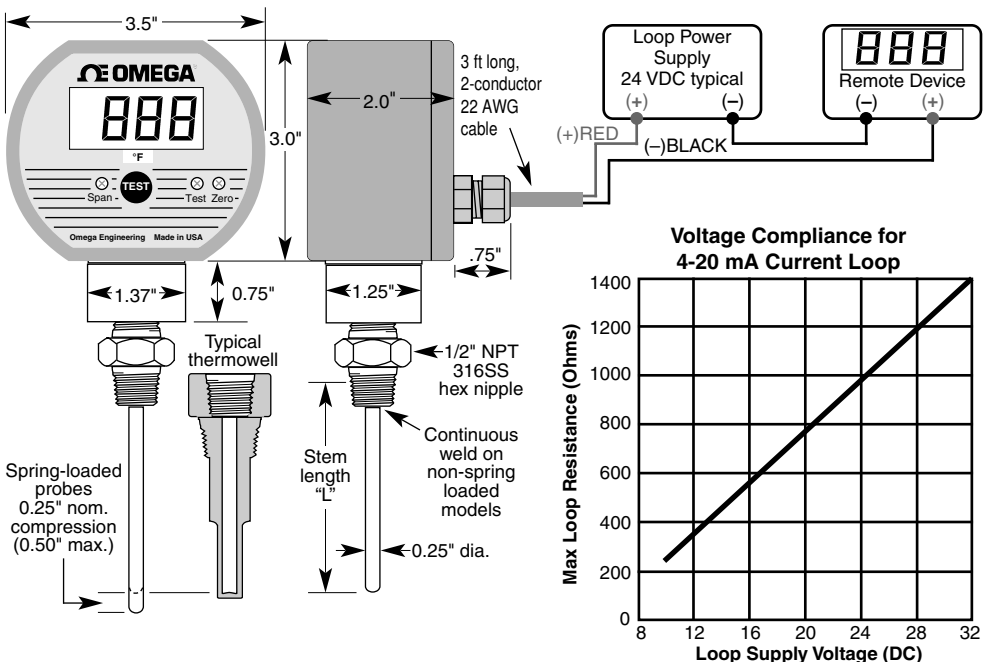
$$V_{\min} = 8V + (20\text{mA} \times \text{Total loop resistance})$$

If the terminal voltage falls below about 7.8 VDC erratic operation may occur. This is an indication that the loop supply/resistance may not allow adequate power for reliable operation. This should never occur in normal use. If it does, examine the loop supply and resistance.

### Operation

The PRTXD series is designed for continuous operation. Warm-up time is negligible. The display will show the temperature, and the loop current will be proportional to the indicated temperature.

4 mA = Zero or low end  
 20 mA = Span, full-scale or high end



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