

Foxboro RTT80 HART

Temperature Transmitter



Model Code Specifications

Description	Model
Intelligent Temperature Transmitter with Two Signal Inputs	RTT80
Communication Protocol	
Digital HART and 4 to 20 mA dc	T
Sensor Input	
Dual Sensor Input	2
Housing and Sensor Mounting	
Basic Module for DIN Rail or Surface Mounting or Replacement	BB
Universal Aluminum Housing for use with Remote Sensor (a)	SS
Universal SS Housing for use with Remote Sensor (a)	TT
Universal Aluminum Housing w/Bare Sensor (b)	WW
Universal SS Housing w/Bare Sensor (b)	YY
Universal Aluminum Housing w/ Sensor & Thermowell Mounting	LL
Universal SS Housing w/ Sensor & Thermowell Mounting	MM
Thermowell Assembled to Housing	
No Well or Well Supplied Separately	NA
Thermowell Series "T-" assembled to housing; specify child thermowell	TK
Thermowell Series "W-" assembled to housing; specify "W-" model code (d)	TX
Hazardous Area Certifications	
None - Not used in Hazardous Areas	ZZ
CSA IS, I/1/ABCD	CA
CSA NI I/2/ABCD	CN
CSA Explosionproof, Class I, Div 1, GCD; Dust-ignitionproof, Class II Div 1. Also zone certified, Cl I, Zone 1, Ex d IIC	CD
ATEX II 1G EEx ia IIC T4/T5/T6	AA
ATEX II3G EEx nA, nL, IIC T4/T5/T6	AN
FM IS, I/1/ABCD	FA
FM NS I/2/ABCD	FN
FM explosionproof, Class I, Division 1, Groups B, C and D; Dust-ignitionproof, Class II, Division 1, Groups E, F and G; Class III Division 1 (n)	FD

(a) Sensor Ordered Separately (b) Must be ordered with PMTA Sensor Type B (d) See Price Sheet 3-3C1

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RTT80 HART Temperature Transmitter Description

For demanding temperature measurement applications that require a rugged, robust and reliable temperature transmitter, the Foxboro RTT80 Temperature Transmitter provides the best solution.

The RTT80 is a mid-tier two-wire temperature transmitter available with protocols, dual sensor inputs, universal housing, diagnostics, alarms, RTDs and TCs. The RTT80 stands out due to signal reliability, long-term stability, high precision and advanced diagnostics (important in critical processes). For the highest level of safety, availability and risk reduction.

Summary

The Foxboro RTT80 Temperature Transmitter represents a new generation, exemplifies best in class, and stands out due to signal reliability, long-term stability, high precision and advanced diagnostics .

Business Value

The rich diagnostics of the RTT80 enables cost savings via alarms to trigger predictive maintenance scenarios and is capable of automatically switching to a back up sensor and notify the control room that a primary sensor has gone bad. A failed temperature sensor can translate into major productivity losses.

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Features / Benefits

Intelligent "Hot Sensor Backup"

Should the primary sensor burn out, the RTT80 is able to intelligently switch to a secondary backup sensor. This prevents unexpected downtime and maintains productivity within the plant.

Sensor Corrosion

The RTT80 is capable of measuring corrosion on the Sensor. Maintenance is able to better predict the quality of their temperature sensors and their life expectancy.

Sensor Drift Detection

This diagnostic enables the Control room to evaluate their temperature measurements over time and make better decisions concerning sensor stability.

Automatic Temperature Range Sensor Change

The RTT80 is capable of switching the primary temperature measurement from sensor 1 to sensor 2 (a different sensor type) which is accurate for a certain temperature range.

Corrosion detection as per NAMUR NE89

The transmitter prevents incorrect measured values from being exported and can issue a warning via the HART protocol when conductor resistance values exceed plausible limits.

Sensor and Thermowell Attachment

The RTT80 can be mounted directly to Foxboro sensors and thermowells to provide reliable and dependable temperature measurement.

Calibration Scheduling

The RTT80 is capable of scheduling a future calibration time enunciation of up to 365 days. One enters a start date and then the number of days till next calibration for a maximum of 365 days.

RTT80 Temperature Transmitter:



Optional Plug-on Display

Specifications

Temperature Inputs:

2-, 3- and 4- wire RTD (Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Cu50) Thermocouples; B,C,D,E,J,K,L,N,R,S,T and U Resistance and Millivolt input devices

Ambient Temperature Range Operative Limits:

Without Integral Indicator: -40 and +85°C (-40 and +185°F)
With Integral Indicator: -40 - +70°C (-40 and +158°F)

Relative Humidity:

0 and 100% (condensation permitted)

Supply Voltage:

With HART Indicator: 18 – 40 V dc
Without HART Indicator: 11 – 40 V dc

Repeatability:

+/-0.0015% of the input range of the sensors

Long-term Stability:

<0.1°C (<0.18°F) per year or < 0.5% per year (whichever is greater)

Response Time:

1 second per channel

Fault Information: per NAMUR NE 43:

Under-range: Linear drop to 3.8 mA

Over-range: Linear rise to 20.5 mA

Failure (sensor break or short circuit) <3.6 mA low or > 21 mA high (Selectable).

High alarm is adjustable between 21.6 and 23 mA for flexibility with various control systems.

Warm-Up Time:

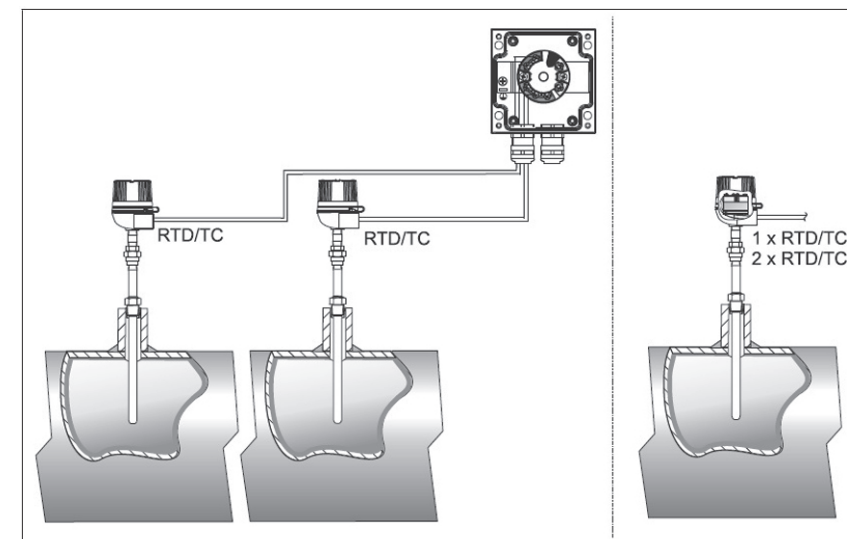
4 seconds

Electrical Conduit:

½ NPT and M20

Weight:

Approximately 1.4 to 1.8 oz



Typical RTT80 Installations