

Model RTT15 Temperature Transmitters



Model RTT15 Description

Foxboro® RTT15 Temperature Transmitters provide highly reliable, stable, and accurate temperature measurements, using either RTD or thermocouple sensors.

This microprocessor-based transmitter is fully user-configurable and is available with a choice of 4-20 mA/HART, Foundation Fieldbus, or Profibus communications.

The compact DIN B size module is available in a variety of weatherproof or explosionproof housings, including remote, pipe-mounted types and integral, sensor-mounted versions. The bare module may also be surface or DIN rail mounted (using optional DIN rail clip). The transmitter is also intrinsically safe.

RTT15 transmitters can be used with a wide variety of sensors, including two-, three-, or four-wire RTDs and Types B, E, J, K, L, N, R, S, T, U, W3, and W4 thermocouples. In thermocouple applications, the transmitter is configurable for an internal, external, or constant cold junction reference.

The 4-20 mA/HART version is configurable for low and high out-of-range and failure current signals, including conformance to NAMUR NE43. Diagnostics include sensor short and open detection for RTDs and sensor open detection for thermocouples.

The 4-20 mA/HART version also supports average and difference measurement, using dual two-wire RTDs or thermocouples.

The Foundation Fieldbus/Profibus version supports average, difference, and redundant measurements, using a choice of dual two-wire RTDs or thermocouples or a combination of a two- or three-wire RTD with a thermocouple.

The RTT15 transmitter is part of the Foxboro family of intelligent temperature transmitters and carries a standard five year warranty. The combination of high functionality, performance, and reliability at a very affordable price results in exceptional value to the user.

Features/Benefits

- Microprocessor-based technology for maximum accuracy, reliability, and longevity
- Two versions available:
 - 4-20 mA with HART
 - FOUNDATION Fieldbus H1 or PROFIBUS PA
- Input/output isolation
- Automatic self-diagnosis and self-calibration
- Support for two-, three-, or four-wire RTDs and a wide variety of thermocouple types
- Integral sensors with high quality and durable construction
- Wide selection of bare sensors and sensor/thermowell packages
- Basic module mounting to surface or DIN rail
- Variety of weatherproof and explosionproof housings for remote and element mounting

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RTT15

Basic Module – Code B



With DIN rail clip

For remote-mounted sensor



Universal housing
Codes S (aluminum)
and T (316 ss)

Bare Element Mounted

Weatherproof housing, Code C



Explosionproof housing, Code D



Universal housing,
Codes W (aluminum)
and Y (316 ss)



Thermowell Mounted

Weatherproof housing, Code E



Explosionproof housing, Code F



Universal housing,
Codes L (aluminum)
and M (316 ss)



Specifications⁽¹⁾

Span and Range Limits — RTD Input

TC Type	Span Limits		Range Limits	
	°C	°F	°C	°F
B	100 and 1420	180 and 2556	400 and 1820	752 and 3308
E	50 and 1100	90 and 1980	-100 and +1000	-148 and +1832
J	50 and 1300	90 and 2340	-100 and +1200	-148 and +2192
K	50 and 1552	90 and 2794	-180 and +1372	-292 and +2502
L	50 and 1100	90 and 1980	-200 and +900	-328 and +1652
N	50 and 1480	90 and 2664	-180 and +1300	-292 and +2372
R	100 and 1810	180 and 3258	-50 and +1760	-58 and +3200
S	100 and 1810	180 and 3258	-50 and +1760	-58 and +3200
T	50 and 600	90 and 1080	-200 and +400	-328 and +752
U	50 and 800	90 and 1440	-200 and +600	-328 and 1112
W3	100 and 2300	180 and 4140	0 and 2300	32 and 4172
W5	100 and 2300	180 and 4140	0 and 2300	32 and 4172

Transmitter Accuracy⁽²⁾ — General Value

HART

±0.05% of span for all input types.

Fieldbus/Profibus

±0.05% of reading for all input types.

Transmitter Accuracy⁽²⁾ — Basic Values

Platinum RTD input

±0.1°C (±0.18°F)

TC type E, J, K, L, N, T, and U input

±0.5°C (±0.9°F)

TC type B, R, S, W3, and W5 input

±1.0°C (±1.8°F)

Span and Range Limits — TC Input

RTD Type	Span Limits		Range Limits	
	°C	°F	°C	°F
Platinum, 100Ω	10 and 1050	18 and 1890	-200 and +850	-328 and +1562
Nickel, 100Ω	10 and 310	18 and 558	-60 and +250	-76 and +482

Notes

1 For complete specifications, refer to Product Specification Sheet PSS 2A-1F5A.

2 Transmitter accuracy is the greater of the general or basic values listed. This value does not include specific sensor effects.

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