

Miniature Temptran™ RTD Transmitters



TT111, TT211

Overview

- Two models:
 - TT111: UL-recognized component for Canada and United States.
 - TT211: Wider ambient rating; no agency approvals
- Optional high-accuracy calibration to Minco RTDs for improved accuracy; see next page and page 4-22 for more information.

Specifications

Output: 4 to 20 mA over specified range, linear with temperature.

Calibration accuracy: ±0.1% of span.

Linearity: Referenced to actual sensor temperature.

Platinum RTD input: ±0.1% of span.

Nickel and nickel-iron RTD input:

±0.25% of span for spans less than 100°C.

±0.25% of span per 100°C of span for spans greater than 100°C.

Adjustments: Zero and span, ±5% of span. Factory set.

Ambient temperature:

TT111: 0 to 50°C (32 to 122°F).

TT211: -25 to 85°C (-13 to 185°F).

Storage: -55 to 100°C (-67 to 212°F).

Ambient temperature effects:

±0.013% of span per °C.

±0.025% of span per °C for spans less than 55°C.

Warmup drift:

±0.1% of span max., with $V_{supply} = 24$ VDC and $R_{loop} = 250 \Omega$.

Stable within 30 minutes.

Supply voltage: 8.5 to 35 VDC. Voltage effect ±0.001% of span per volt. Reverse polarity protected.

Maximum load resistance: The maximum allowable resistance of the signal carrying loop is:

$$R_{loop\ max} = \frac{V_{supply} - 8.5}{0.020\ \text{amps}}$$

Example: With supply voltage 24 VDC, maximum loop resistance is 775 Ω .

Minimum span: 27.8°C (50°F).

Connections:

Terminal block for wires AWG 22 to AWG 14.

Physical: Polycarbonate case, epoxy potted for moisture resistance.

Weight: 1.1 oz. (30 g).

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RTD input types

2-wire resistance thermometer:

Element		Code
Platinum (0.00392 TCR)	100 Ω at 0°C	PA
Platinum (0.00391 TCR)	100 Ω at 0°C	PB
Platinum (0.00385 TCR)	100 Ω at 0°C	PD, PE
Platinum (0.00385 TCR)	1000 Ω at 0°C	PF
Platinum (0.00375 TCR)	1000 Ω at 0°C	PW
Nickel-iron (0.00518 TCR)	604 Ω at 0°C	FA
Nickel-iron (0.00527 TCR)	1000 Ω at 70°F	FB
Nickel-iron (0.00527 TCR)	2000 Ω at 70°F	FC
Nickel (0.00672 TCR)	120 Ω at 0°C	NA

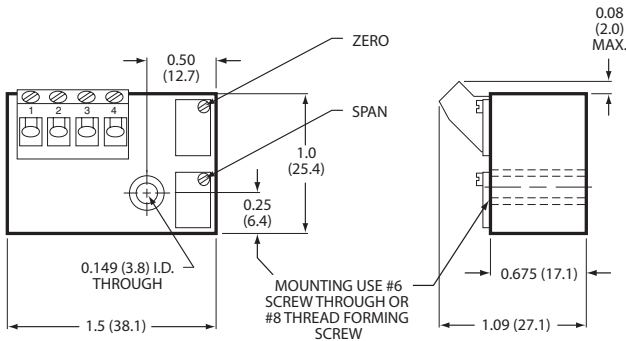
Special high-accuracy calibration

For high system accuracy, specify transmitters with matched calibration. Temptrans match calibrated to a sensor are always ordered as assemblies. Common examples are shown in Section 1.

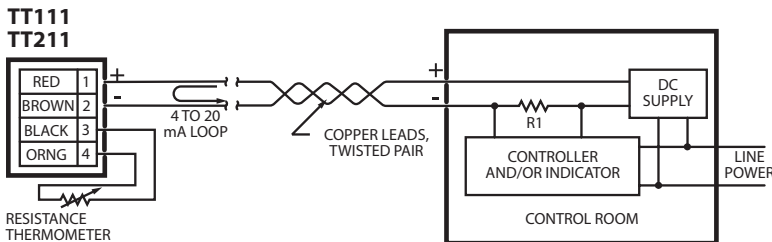
Specification and order options:

TT111	Model number: TT111 or TT211
PD	RTD element code from table
1	Output: 4 to 20 mA DC
C	Temperature range code starting on page 4-20 [Ex: C = 0 to 100°C (32 to 212°F)]
TT111PD1C = Sample part number	

Dimensions in inches (mm)



Wiring Diagram



▼ = **STANDARD OPTIONS**
Specifications subject to change