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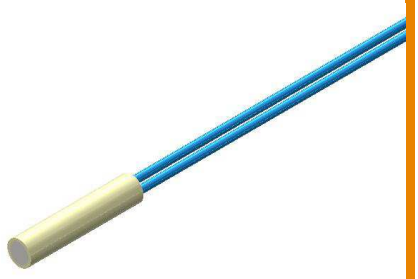

PTRB101A009

Platinum Temperature Sensor

PT100, 13 x 2.8, Class A, cable assembly, ceramic tube

Product Description

This sensor is a resistance temperature detector (RTD) using a platinum resistor as sensing element. This platinum resistor consists of a structured platinum film on a ceramic substrate, passivated by a ceramic cover. The connection wires are protected with glass ceramic on the welding area. This standard element with PTFE-insulated lead wire extension is mounted into a ceramic tube. The material for the connection wire is gold coated nickel wire extended with PTFE insulated Ag-coated stranded copper wire.

The characteristic curve of this Platinum RTD complies with DIN EN 60751. The usage of Platinum as resistive material guarantees high long term stability.

Due to relative outline and mass this RTD has a moderate time constant; therefore it is a suitable solution for fast and precise feedback control systems.

Features

- R_0: 100 Ω
- TCR 3850ppm/K
- Application temperature -30°C…250°C
- Resistance tolerance ±0.06%
- Size 13 mm x 2.8 mm (length/diameter)
- 200mm AWG 26 PTFE insulated lead extension

Applications

- Specific temperature feedback control
- Industrial applications
- Medical

- Platinum Temperature Sensor
- Conformal to DIN EN 60751
- Global interchangeability
- Wide temperature range
- Fast response time
- Special Class A (F0.15)
- Small outline dimensions
- Gold coated nickel lead wires with lead extension

Sensor properties

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Nominal Resistance at 0 °C	R_0	Class A (F0.15)	99.94	100.00	100.06	Ω
Temperature Coefficient of Resistance	TCR	0 °C, 100 °C		3850		ppm/°C
Tolerance Temperature Range *		Class A (F0.15)	-30		250	°C
Self-Heating Coefficient in air, flow: 1 m/s				0.2		°C/mW
Response Time Water Flow: 0.4 m/s	$\tau_{W,0.9}$			3		s
Response Time Air Flow: 1 m/s	$\tau_{A,0.9}$			40		s
Measuring Current		Class A (F0.15)			1.5	mA
Lead wire extension Ag-coated copper wire stranded AWG26 PTFE-insulated		Diameter length		0.8 200		mm mm

**possible operating temperature range is, -200°C to +270°C for PTFE insulated wire type.*
Specified accuracy is not guaranteed if the sensor is exposed to temperatures outside the specified tolerance temperature range.

Calculation Formulas

The calculation formulas of this Pt-RTD are defined in DIN EN 60751 as following:

For T ≥ 0 °C: $R_{(T)} = R_{(0)} * (1+a * T + b * T^2)$

For T < 0 °C: $R_{(T)} = R_{(0)} * [1+a * T + b * T^2 + c * (T-100°C) * T^3]$

Polynomial coefficients: a = 3.9083E-03 b = -5.775E-07 c = -4.183E-12

Tolerances: Class A (F 0.15): ± (0.15+0.002*|T/°C|) °C (-30 … 250 °C)

Mechanical Dimensions

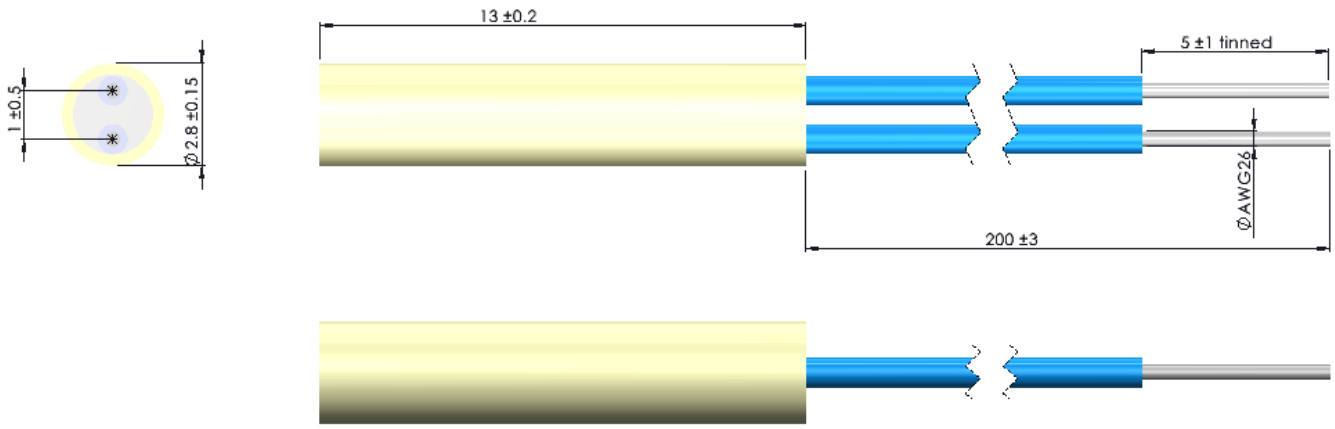

Figure 1: Mechanical dimensions of Platinum Temperature Sensor

Ordering Information

Description	Part Number	Configuration information
Pt100, 13.0x2.8, A, PTRB101A009 (ASSY)	NB-PTCO-134	100 Ohms, Ø 2.8 mm x 13 mm, F 0.15 (A) Au-coated Ni-wire, ceramic tube, lead extension 200mm stranded AWG26, PTFE

Packing and Minimum Order Quantity

Packing	PCS per Packing Unit	MOQ
Bag 250x350 mm²	100	100

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