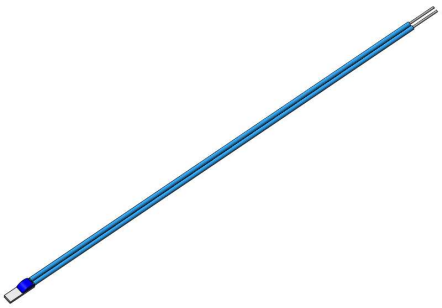


PTFM102A1G6

Platinum Temperature Sensor

- **Platinum Temperature Sensor**
- **Conformal to DIN EN 60751**
- **Global interchangeability**
- **Wide temperature range**
- **Fast response time**
- **Class A (F0.15) tolerance**
- **Small outline dimensions**
- **Specific lead extension**

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 glass coating. The connection wires are protected with glass on the welding area.

The connection wires are prolonged with PTFE insulated stranded silver coated copper wire, stripped area is additionally tinned.

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 small outline and low mass this RTD has a low time constant; therefore it is a suitable solution for fast and precise feedback control systems.

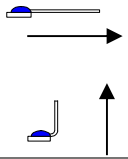
Features

- R_0: 1000 Ω
- TCR 3850ppm/K
- Application temperature -30…260°C
- resistance tolerance ±0.06%
- Size 1.2 x 4.0 x 1.1 mm³ (width/length/height)
- PTFE-insulated lead wire extension

Applications

- Specific temperature feedback control facility temperature monitoring
- Medical
- HVC
- White goods
- Automotive
- Industrial applications

Sensor properties

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Nominal Resistance at 0 °C	R_0	Class A (F 0.15)	999.4	1000.0	1000.6	Ω
Nominal Resistance at 25 °C	R_{25}	Class A (F 0.15)	1096.57	1097.35	1098.12	Ω
Temperature Coefficient of Resistance	TCR	0 °C, 100 °C		3850		ppm/°C
Temperature Range		Class A (F 0.15)	-30		260	°C
Self Heating Coefficient in air, flow: 1 m/s				0.5		°C/mW
Response Time Water Flow: 0.4 m/s	$\tau_{W,0.9}$			0.2		s
Response Time Air Flow: 1 m/s	$\tau_{A,0.9}$			10		s
Measuring Current					0.3	mA
Lead wire **Au- coated Ni-wire**		diameter length		0.2 5		mm mm
Lead wire extension		insulation color size		PTFE Blue AWG 30		
Lead wire extended		length		66		mm
Calibration Point		Class A (F 0.15)		8		mm
Resistance of extension wire (single)		Taken from suppliers cataloque At 20°C		0.361		Ohm/m
Lead wire pull strength	F		6 3			N N

Calculation Formulas

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

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

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

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

Tolerances: class F0.15 (A): ± (0.15+0.002*|T/°C|) °C (-30 … +260 °C)

Mechanical Dimensions

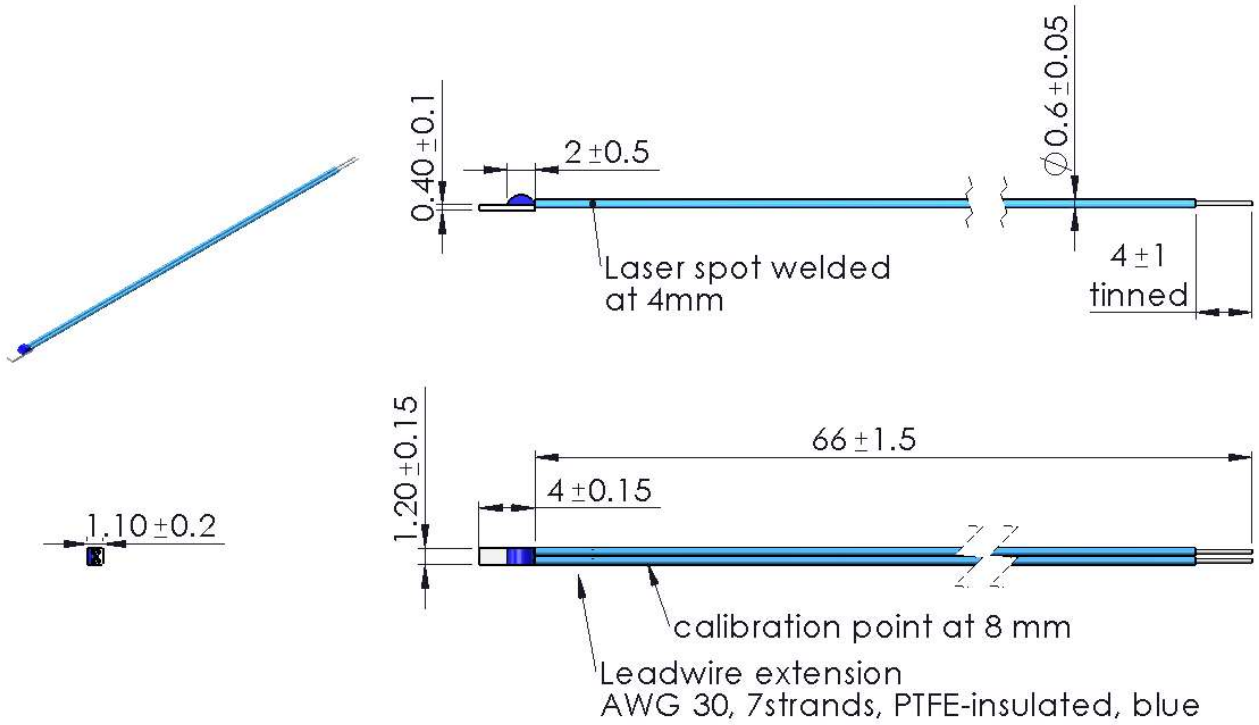


Figure 1: Mechanical dimensions of Platinum Temperature Sensor

Ordering Information

Description	Alias	Part Number
PTFM102A1G6:ASSEMBLY,A	NB-PTCO-430	10219239-00

Packing and Minimum Order Quantity

Packing	PCS per Packing Unit	MOQ
Bag 100 x 150 mm²	100	100

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