



## Thin Film Platinum RTD



### FEATURES

- Wide Temperature Range -75 ~ 540°C
- High Accuracy
- 1k Ohms RTD Platinum (Pt) Cylindrical Probe
- Stainless Steel Probe Compatible with Various Medias
- Fast Response Time
- Very Small Size Ø.085" x 0.25" (2.12mm x 6.35mm)

### DESCRIPTION

The PRTD10-1K-FG Series Thin Film Platinum RTDs (Resistance Temperature Detectors) are designed to monitor or control critical temperatures in industrial applications. They provide a linear change in resistance versus temperature, combining high linearity, stability, accuracy, and wide temperature range in a small, fast-response package. This series is designed to measure temperatures from -75 °C to 540 °C [-100 °F to 1000 °F] with high accuracy. These fully-assembled elements are ready-to-use in probe assemblies, without the need for fragile splices to extension leads.

### APPLICATIONS

- Ovens & Kilns
- HVAC Equipment
- Autoclaves
- Process Control
- Environmental Chambers

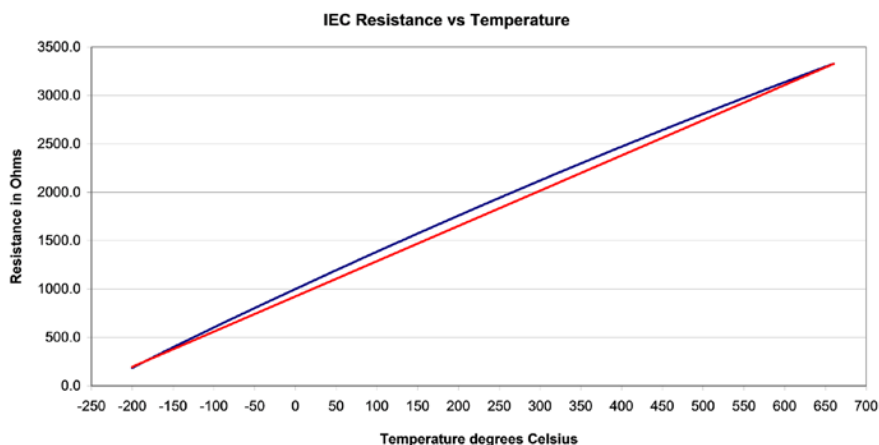
### Maximum Environmental Ratings

Operating Temperature: -75 °C to 540 °C [-100 °F to 1000 °F]  
Storage Temperature Range: -75 °C to 540 °C [-100 °F to 1000 °F]

## Specifications

Characteristic	Condition	Parameter
Alpha: $R_0 = 1000 \Omega$	0 °C	0.00375 $\Omega/\Omega/^\circ\text{C}$
Temperature Range		-75 °C to 540 °C [-100 °F to 1000 °F]
Temperature Accuracy: $R_0 \pm 0.1\%$ trim		$\pm 0.3^\circ\text{C}$ or 0.6% of temperature, whichever is greater
Base resistance and interchangeability, $R_0 \pm \Delta R_0$ $R_0 \pm 0.1\%$ trim :	0 °C	1000 $\Omega \pm 1 \Omega$
Linearity: -40 °C to 125 °C -75 °C to 540 °C	—	$\pm 0.1\%$ of full scale $\pm 2.0\%$ of full scale
Time constant	water at 3 ft/s still water	<0.5 s for 0.086 in O.D. <1.0 s for 0.086 in O.D.
Operating current	—	2 mA max. minimal self heating errors of 1 °C; 1 mA recommended
Stability	occupied environments	<0.25 °C /year; 0.05 °C /5 years
Self heating	—	<15 mW/°C typ. for 0.086 in O.D.
Insulation resistance	50 Vdc at 25 °C	>50 M $\Omega$
Construction/Material Probe material Fiberglass-insulated leads	—	Stainless Steel 316L nickel-coated stranded copper, epoxy potting

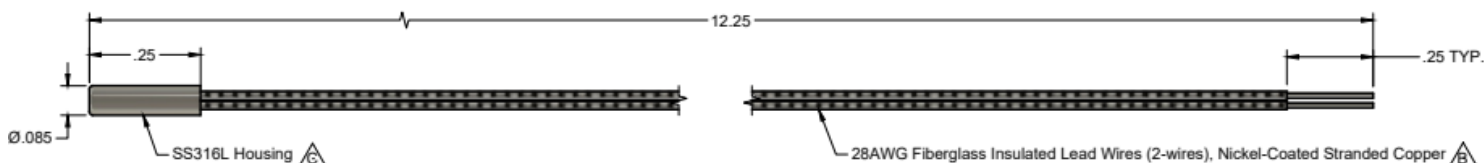
## Resistance vs Temperature Graph



## Accuracy vs Temperature

Temperature (°C)	±ΔR <sup>1</sup> (Ω) - Resistance Accuracy	±ΔT (°C) - Temperature Accuracy
-100	2.4	0.6
0	1.0	0.3
100	2.2	0.6
200	4.3	1.2
300	6.2	1.8
400	8.5	2.3
500	9.6	3.0
600	10.4	3.3

## Mechanical Dimensions (inches)



## Part Number Configuration

Phoenix Sensors Nomenclature			
Model	Ω Value @ 25C	Wire Type	Wire Lead Length
PRTD10	100 = 100Ohms	FG = Fiberglass	Null = 12 inches
	1K = 1,000Ohms		
Example: PRTD10-1K-FG 1 (1,000Ohm RTD, Fiberglass Wire, 12in Wire Leads)			

**Notice:**

[Website: phoenixsensors.com](http://www.phoenixsensors.com)   
 [Phone: \(480\) 462-1810](tel:4804621810)   
 [sales@phoenixsensors.com](mailto:sales@phoenixsensors.com)

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