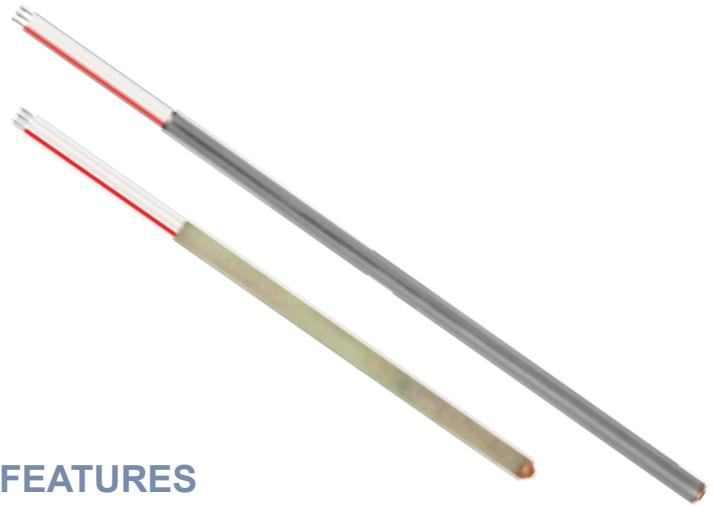


# Tip Sensitive Bearing RTD Probe

- Variety of Configurations
- Cut-To-Length
- Fast Response
- Tip Sensitive
- Single and Dual Elements
- Custom Designs Available



The **Tip Sensitive Bearing RTD Probe** is a tubular sensors in which the sensing element is encased in a copper alloy tip. This allows for increased accuracy and sensitivity to temperature changes at the point of contact in bearings. Inserted at an opening on the bearing housing, they are used in electric motors and generators for continuous sensing of the bearing's temperature.

Bearing sensors can be used with a fluid sealed adjustable spring loaded holder for proper loading in any depth hole to maintain contact with the bearing surface.

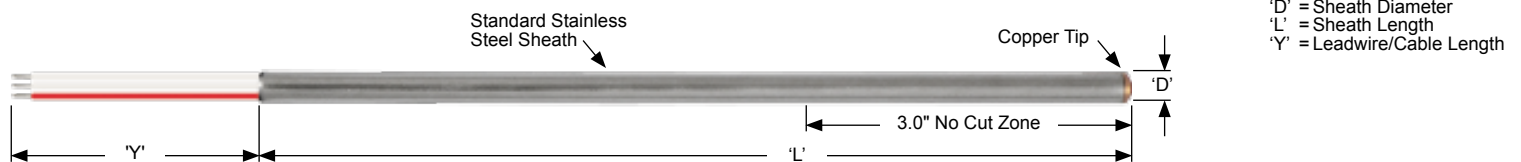
## FEATURES

- Sheath Styles:
  - » Stainless Steel, Isolated Stainless Steel, Insulated Epoxy Glass
  - » Copper Tip
- Elements, Single and Dual:
  - » Platinum, Copper, Nickel
- Sheath Diameters:
  - » 0.188", 0.250", 0.215"
- Leadwire/Cable Options

## APPLICATIONS

- Electric Motors
- Generators

## dimensions



'D' = Sheath Diameter  
'L' = Sheath Length  
'Y' = Leadwire/Cable Length



Isolated Stainless Steel Sheath



Insulated Epoxy Glass Sheath

# Tip Sensitive Bearing RTD Probe

## performance specifications

### Insulation Resistance:

Single or Dual Elements:  
1,000 megohms @ 500 VDC, leads to case  
Dual Elements:  
100 megohms @ 50 VDC between elements

**Time Constant** (typical in 3 ft/sec moving water):  
Stainless Steel Sheath and Isolated Stainless Steel Sheath:  
Single Element: 2.0 seconds  
Dual Element: 3.0 seconds  
Insulated Epoxy Glass Sheath: 2.5 seconds

### Pressure Rating:

Standard Stainless Steel Sheath: 100 psi (6.9 bar)  
Isolated Stainless Steel Sheath: 100 psi (69. bar)  
Insulated Epoxy Glass Sheath: 30 psi (2.1 bar)  
Fluid Seal Holder: 50 psi

### Repeatability:

Less than  $\pm .06\%$  change in ice point resistance after 10 consecutive cycles between ice point and 250°C

### Long Term Stability:

Less than  $\pm .2\%$  ice point resistance shift after 1,000 hours at 250°C

### Self Heating:

10 mW/C in water moving 3 feet/sec

### RTD Temperature Accuracy Specifications:

Element Material	TCR	Standard Tolerances at 0°C		
		$\pm 12\%$	$\pm 2\%$	$\pm 5\%$
Platinum	0.00385	0.30°C, 0.12Ω	N/A	1.20°C, 0.46Ω
Platinum	0.00392	N/A	N/A	1.20°C, 0.46Ω
Copper	0.00427	N/A	0.71°C, 0.028Ω	1.49°C, 0.058Ω
Nickel	0.00672	N/A	N/A	0.85°C, 0.68Ω

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## ordering info

Tip Sensitive Bearing RTD Probe			
Model	Sheath Style	Temperature Range	Minimum/Maximum Lengths
310A	Insulated Epoxy Glass	-50 to 155°C (-58 to 311°F)	3.0" Min./48.0" Max.
310B	Standard Stainless Steel	-50 to 250°C (-58 to 482°F)	3.0" Min./240.0" Max.
310C	Isolated Stainless Steel	-50 to 250°C (-58 to 482°F)	5.0" Min./240.0" Max.
Model	Element	Accuracy	Temperature Coefficient
P2B	Platinum	100 Ohm $\pm 12\%$ at 0°C	.00385
P2C	Platinum	100 Ohm $\pm 5\%$ at 0°C	.00385
G2C	Platinum	100 Ohm $\pm 5\%$ at 0°C	.00392
C1D	Copper	10 Ohm $\pm 2\%$ at 25°C	.00427
N3C	Nickel	120 Ohm $\pm 5\%$ at 0°C	.00672
Model	Leadwires, Element Configuration		Typical Color Code
3S	Three Wire, Single		Red/White/White
3D	Three Wire, Dual		Red/White/White // Blue/Yellow/Yellow
Model	'L' Sheath Length		
---	Define 'L' Length in Inches (12 = 12.0"); see notes above for minimum/maximum lengths		
Model	'D' Sheath Diameter		
B	.188" Diameter		
C	.250" Diameter (Standard SS and Isolated SS Only)		
D	.215" Diameter		
Model	'Y' Leadwire/Cable Options		
N	No Options, Stranded TFE Leadwires (36.0" Standard)		
W	Leadwire Options		