



## TIP SENSITIVE BEARING THERMOCOUPLE PROBE

### Temperature Sensor

#### Specifications

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

The Tip Sensitive Bearing Thermocouple Probe is a tubular sensor in which the sensing junction 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 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
- Junction Types, Single and Dual:
  - » J, K, T, E
  - » Grounded or Ungrounded
- Sheath Diameters:
  - » 0.188", 0.250", 0.215"
- Leadwire/Cable Options

#### Applications

- Electric Motors
- Generators

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## Performance Specifications

### Insulation Resistance – Ungrounded Model:

1,000 megohms @ 500 V, leads to case

### Vibration:

Withstands 5 to 500 Hz at 3 g-level peak for 3 hours. Per ASTM E 644, Sec. 10.

### Shock:

Withstands 50 g-level peak sine wave shock of 11 milliseconds duration. Per ASTM E 644, Sec. 11

### Pressure Rating:

Standard Stainless Steel Sheath: 100 psi (6.9 bar)

Isolated Stainless Steel Sheath: 100 psi (6.9 bar)

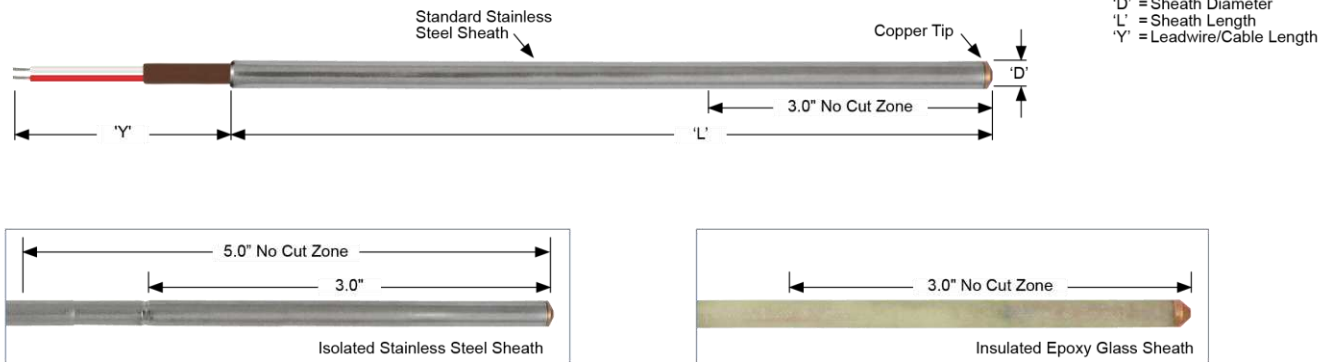
Insulated Epoxy Glass Sheath: 30 psi (2.1 bar)

Fluid Seal Holder: 50 psi

### Thermocouple Temperature Accuracy Specifications:

Type	Temp Range	Standard Limits of Error	Special Limits of Error
T	-200 to 0°C	±1°C or 1.5%	Not ASTM Defined
	0 to 350°C	±1°C or 0.75%	±0.5°C or 0.4%
J	0 to 750°C	±2.2°C or 0.75%	±1.1°C or 0.4%
E	-200 to 0°C	±1.7°C or 1%	Not ASTM Defined
	0 to 900°C	±1.7°C or 0.5%	±1°C or 0.4%
K	-200 to 0°C	±2.2°C or 2%	Not ASTM Defined
	0 to 1,250°C	±2.2°C or 0.75%	±1.1°C or 0.4%

## Dimensions



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## Ordering Information

Tip Sensitive Bearing Thermocouple Probe			
Model	Sheath Style	Temperature Range	Minimum / Maximum Lengths
410A	Insulated Epoxy Glass	-50 to 155°C (-58 to 311°F)	3.0" Minimum / 48.0" Maximum
410B	Standard Stainless Steel	-50 to 250°C (-58 to 482°F)	3.0" Minimum / 96.0" Maximum
410C	Isolated Stainless Steel	-50 to 250°C (-58 to 482°F)	5.0" Minimum / 96.0" Maximum
Model	Thermocouple Type	Junction	Color Code
J	J	Single	Red/White [Constantan/Iron]
K	K	Single	Red/Yellow [Alumel/Chromel]
T	T	Single	Red/Blue [Constantan/Copper]
E	E	Single	Red/Purple [Constantan/Chromel]
JJ	JJ	Dual	Red/White // Red/White
KK	KK	Dual	Red/Yellow // Red/Yellow
TT	TT	Dual	Red/Blue // Red/Blue
EE	EE	Dual	Red/Purple // Red/Purple
Model	Junction Style		
G	Grounded Junction		
U	Ungrounded Junction		
Model	Limits of Error		
A	Standard Limits of Error		
B	Special Limits of Error		
Model	'L' Sheath Length		
----	Define 'L' Length in Inches (See above for Minimum / Maximum Lengths) Example: 10.0 = 10.0"; 6.3 = 6.3"		
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, Solid TFE Leadwires (36.0" Standard)		
W	Leadwire Options		

## Stocked Part Numbers\*

### Model Number

410C T U A 36.0 B W=10.0" Leads  
410C E U A 36.0 B W=10.0" Leads  
410C J U A 36.0 B W=10.0" Leads  
410C K U A 36.0 B W=10.0" Leads

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