



MODEL 410M

(13500000-91)

TIP SENSITIVE BEARING THERMOCOUPLE PROBE

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

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.

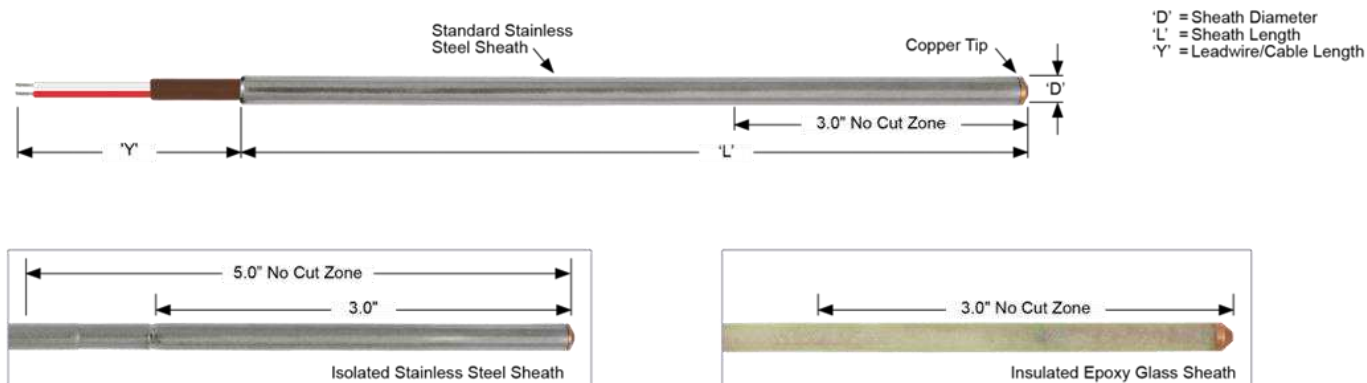
Features

- 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"

Applications

- Industrial
- Electric Motors
- Generators

Dimensions



Performance Specifications

Insulation Resistance – Ungrounded Model:
1,000 Megaohms @ 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%

Ordering Information (13500000-91)

Configuration Model Number

410M - _ - _ - _ - _ - _ - _ - _ - _ - _

Sheath Style

A	Insulated Epoxy Glass -50 to 155°C (-58 to 311°F) Immersion Length: 3.0" Min / 48.0" Max
B	Standard Stainless Steel -50 to 250°C (-58 to 482°F) Immersion Length 3.0" Min / 96.0" Max
C	Isolated Stainless Steel -50 to 250°C (-58 to 482°F) Immersion Length 5.0" Min / 96.0" Max

Thermocouple Type

0J	Type J, Single Junction, (Red/White), Constantan/Iron
0K	Type K, Single Junction, (Red/Yellow), Alumel/Chromel
0T	Type T, Single Junction, (Red/Blue), Constantan/Copper
0E	Type E, Single Junction, (Red/Purple), Constantan/Chromel
JJ	Type J, Dual Junction, (Red/White,x2), Constantan/Iron
KK	Type K, Single Junction, (Red/Yellow,x2), Alumel/Chromel
TT	Type T, Single Junction, (Red/Blue,x2), Constantan/Copper
EE	Type E, Single Junction, (Red/Purple,x2), Constantan/Chromel

Junction Style

G	Grounded Junction
U	Ungrounded Junction

Lead Wire Length 'Y'

###	Define 'Y' Length in Whole Inches Note: Minimum 6" / Maximum 120" Example: (6" = 006; 96" = 096)
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Sheath Diameter 'D'

B	.188" Diameter
C	.250" Diameter (SS and Isolated Sheath Only)
D	.215" Diameter

Sheath Length 'L'

##.##	Define 'L' Length in Inches (See 'Sheath Style' for Minimum / Maximum Lengths) Example: (10.00" = 10.00; 6.30" = 06.30)
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Limits of Error

A	Standard Limits of Error
B	Special Limits of Error

e.g. **410M-A-0K-U-A-06.00-B-072**