



MEAS MINIATURE EMBEDMENT THERMOCOUPLE PROBE

- ♦ Single and Dual Junctions
- ♦ Miniature Design
- ♦ Four Case Styles
- ♦ Simple Installation
- ♦ Custom Designs Available

Features

- ♦ Case Material:
 - » Stainless Steel or Tin Plated Copper
- ♦ Junction Types, Single and Dual:
 - » J, K, T, E
 - » Grounded or Ungrounded
- ♦ Leadwire/Cable Options
- ♦ Feedthrough Option

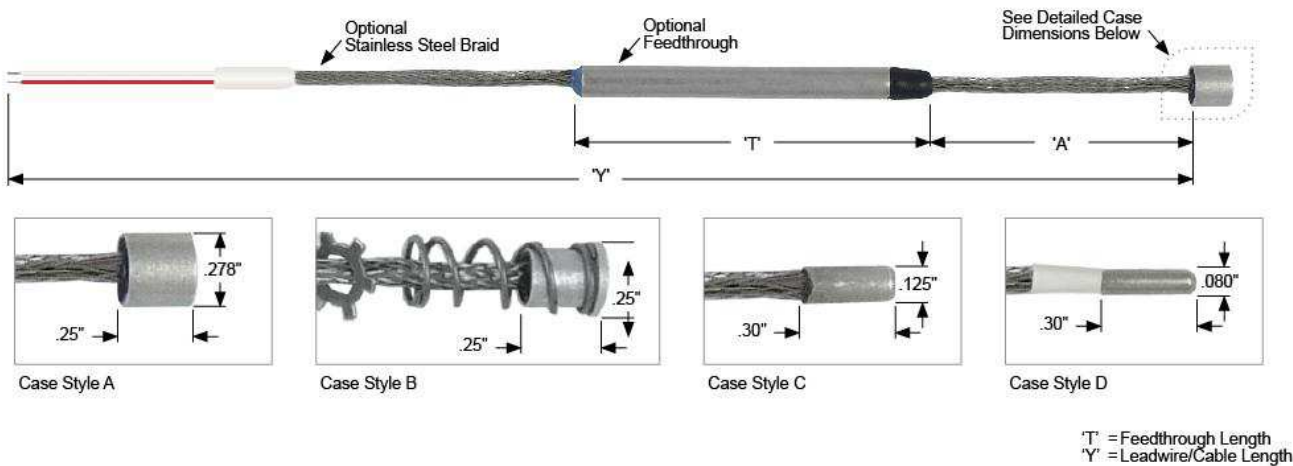
Applications

- ♦ Aerospace
- ♦ Motors
- ♦ Generators

The Miniature Embedment Thermocouple Probe is a miniature sensor designed to be embedded into areas where space is limited. They are commonly installed in bearings and housings of rotating machinery. They are used to detect temperature changes at the point of contact in bearings, oil, air, water and other process control applications.

The sensing junction is installed in a small metal case. This allows for increased accuracy and sensitivity to temperature changes at the point of contact in bearings. These miniature sensors are easy to install where space is limited and a hole can be drilled for placement. We offer a variety of custom options for Embedment thermocouples to suit any application. Feedthroughs provide a fluid seal where the cable exits the installation. Leadwire and cable seals allow position adjustment while protecting your application from leakage.

Dimensions



Performance Specifications

Temperature Range:
-50 to 250°C (-58 to 482°F)

Case Material:
Tin Plated Copper Alloy or Stainless Steel

Insulation Resistance – Ungrounded Models:
Minimum .100 Megohms @ 500 VDC, leads to case
Min. 10 Megohms @ 50 VDC, between elements

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

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

Miniature Embedment Thermocouple Probe

Model Case Style

415	Case Style A, .278" Diameter x .25" Overall Length, Tin Plated
416	Case Style B, .250" Diameter x Top Hat, Spring / Retaining Ring Included, Tin Plated
417	Case Style C, .125" Diameter x .30" Overall Length, Tin Plated or Stainless Steel
418	Case Style D, .080" Diameter x .30" Overall Length, Stainless Steel

Model	Thermocouple Type	Junction	Color Code	Applicable Case Styles
J	J	Single	Red/White [Constantan/Iron]	415, 416, 417, 418
K	K	Single	Red/Yellow [Alumel/Chromel]	415, 416, 417, 418
T	T	Single	Red/Blue [Constantan/Copper]	415, 416, 417, 418
E	E	Single	Red/Purple [Constantan/Chromel]	415, 416, 417, 418
JJ	JJ	Dual	Red/White // Red/White	415, 416, 417
KK	KK	Dual	Red/Yellow // Red/Yellow	415, 416, 417
TT	TT	Dual	Red/Blue // Red/Blue	415, 416, 417
EE	EE	Dual	Red/Purple // Red/Purple	415, 416, 417

Model Junction Style

G	Grounded Junction
U	Ungrounded Junction

Model Limits of Error

A	Standard Limits of Error
B	Special Limits of Error

Model 'Y' Leadwire/Cable Options

N	No Options, Solid TFE Leadwires
W	Leadwire Options

Model 'Y' Leadwire Length

---- Define 'Y' Length in Whole Inches (120 = 120.0"; 036 = 36.0")

Model Optional Feedthrough

N	No Feedthrough (Leave Remaining Codes Blank)
F	Feedthrough (Specify Dimensions Below)

Model 'L' Feedthrough Length

---- Define 'L' Length in Inches Note: Minimum 1.5" / Maximum 6.0"
Example: (1.5 = 1.5"; 4.0 = 4.0")

Model Feedthrough Diameter

B	.188"
C	.250"
D	.215"

Model 'A' Length

--- Define 'A' Length in Inches
Example: (12.0 = 12.0"; 6.5 = 6.5")

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