



MEAS THERMOCOUPLE THERMOWELL ASSEMBLY– SPRING LOADED

- ♦ Single and Dual Junctions
- ♦ Stainless Steel Case
- ♦ Multiple Thermowell Styles

The Thermocouple Thermowell Assembly–Spring Loaded is designed for use in applications where easy removal of the spring loaded sensor is a required option without the need to shut down the system.

Thermowells are used to protect temperature sensors used to monitor industrial processes while permitting accurate measurement. A thermowell consists of a tube closed at one end and mounted in the process stream. A temperature sensor is inserted in the open end of the tube, which is usually in the open air outside the process piping or vessel. The process liquid transfers heat to the thermowell wall, which in turn transfers heat to the sensor. Since more mass is present, the response time of the sensor can be reduced. However, if the sensor fails it can easily be replaced without draining the vessel or piping. To obtain accurate temperature measurement the recommended thermowell immersion length is ten times the outside diameter of the tip.

The thermowell protects the instrument from the pressure, flow-induced forces and chemical effects of the process fluid. Typically a thermowell is made from metal bar stock bored to accept the temperature sensor with a NPT thread or flange for process mounting.

Features

- ♦ Sheath Styles:
 - » Stainless Steel, Welded Capsule
- ♦ Joint Types, Single and Dual:
 - » J, K, T, E
 - » Grounded or Ungrounded

Applications

- ♦ Process
- ♦ Flow

Performance Specifications

Pressure Rating:

Up to 5,000 psi depending on well configuration

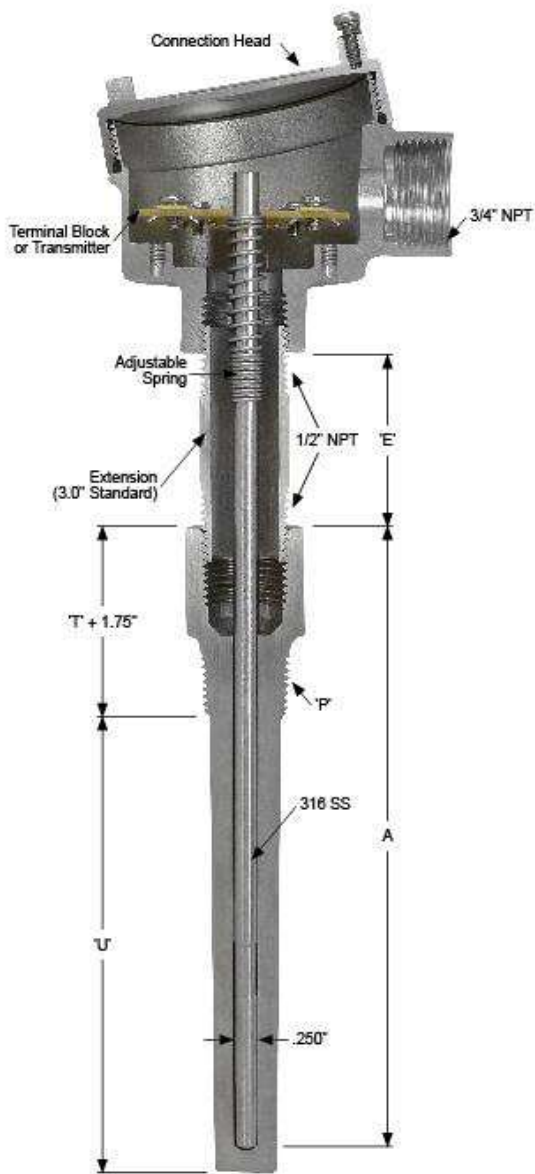
Insulation Resistance – Ungrounded Models:

1,000 megohms @ 500 V, leads to case

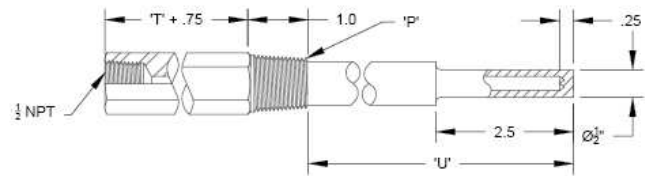
Minimum Recommended Immersion Length:

Ten times the tip diameter plus the element sensing length.
(Example for 1/2" OD thermowell = $10 \times 0.5 + 1 = 6.0$ ")

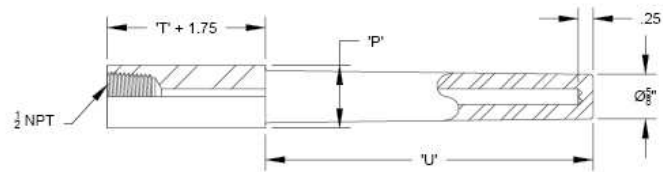
Dimensions



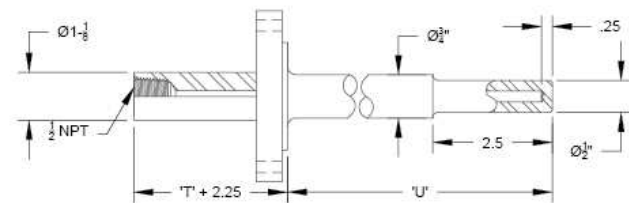
Threaded Thermowell



Socket Weld Thermowell



Raised Face Flanged Thermowell



Ordering Information

Thermocouple Thermowell Assembly-Spring Loaded

Model Temperature Range

230M	Moderate: -50 to 250°C (-58 to 482°F)
230H	High: -50 to 500°C (-58 to 932°F)

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 (Constantan/Iron)
KK	KK	Dual	Red/Yellow // Red/Yellow (Alumel/Chromel)
TT	TT	Dual	Red/Blue // Red/Blue (Constantan/Copper)
EE	EE	Dual	Red/Purple // Red/Purple (Constantan/Chromel)

Model Junction Style

G	Grounded Junction
U	Ungrounded Junction

Model Limits of Error

A	Standard Limits of Error
B	Special Limits of Error

Model Connection Head

N	No Connection Head
A	Stainless Steel
B	Aluminum
C	Polypropylene (Model 230M Only)
D	Cast Iron
G	Small Stainless Steel

Model Extension Material Extension Type

N	No Extension	----
A	Galvanized	Nipple
B	316 Stainless Steel	Nipple
C	Galvanized	Nipple / Union / Nipple
D	316 Stainless Steel	Nipple / Union / Nipple
E	Galvanized	Nipple / Coupling / Nipple
F	316 Stainless Steel	Nipple / Coupling / Nipple

Model 'E' Extension Length

----	Define 'E' Length in Inches
----	Example: (3.0 = 3.0"; 10.0 = 10.0") Note: Minimum 1.0" / Maximum 12.0"

Model	Thermowell Style	Model	Thermowell Style	Model	Thermowell Style
---	Threaded Thermowell	---	Socket Weld Thermowell	---	Raised Face Flanged Thermowell
TR2	Reduced Tip 'P' = 1/2" NPT Process Threads	SR3	Reduced Tip 'P' = 3/4" Pipe Size	RR4A	Reduced Tip 1.0" Flange, 150 LB
TR3	Reduced Tip 'P' = 3/4" NPT Process Threads	SR4	Reduced Tip 'P' = 1" Pipe Size	RR5A	Reduced Tip 1.5" Flange, 150 LB
TR4	Reduced Tip 'P' = 1" NPT Process Threads	SS3	Straight Stem 'P' = 3/4" NPT Process Threads	RR6A	Reduced Tip 2.0" Flange, 150 LB
TS2	Straight Stem 'P' = 1/2" NPT Process Threads	SS4	Straight Stem 'P' = 1" NPT Process Threads	RR4B	Reduced Tip 1.0" Flange, 300 LB
TS3	Straight Stem 'P' = 3/4" NPT Process Threads	ST4	Tapered Tip 'P' = 1" Pipe Size	RR5B	Reduced Tip 1.5" Flange, 300 LB
TS4	Straight Stem 'P' = 1" NPT Process Threads	ST5	Tapered Tip 'P' = 1 1/4" Pipe Size	RS4A	Straight Stem 1.0" Flange, 150 LB
TT2	Tapered Tip 'P' = 1/2" NPT Process Threads			RS5A	Straight Stem 1.5" Flange, 150 LB
TT3	Tapered Tip 'P' = 3/4" NPT Process Threads			RS6A	Straight Stem 2.0" Flange, 150 LB
TT4	Tapered Tip 'P' = 1" NPT Process Threads			RS4B	Straight Stem 1.0" Flange, 300 LB
				RS5B	Straight Stem 1.5" Flange, 300 LB
				RT4A	Tapered Tip 1.0" Flange, 150 LB
				RT5A	Tapered Tip 1.5" Flange, 150 LB
				RT6A	Tapered Tip 2.0" Flange, 150 LB
				RT4B	Tapered Tip 1.0" Flange, 300 LB
				RT5B	Tapered Tip 1.5" Flange, 300 LB

Model 'U' Immersion Length

----	Define 'U' Length in Inches. (7.0 = 7.0"; 12.25 = 12.25")
----	Threaded and Socket Well Equation 'A' = U + T + 1.5" / Flanged Well Equation 'A' = U + T = 2"

Model Thermowell Material

A	304 Stainless Steel
B	316 Stainless Steel
C	Brass
D	Carbon Steel
E	Monel
F	Hastelloy C276
G	Inconel

MEAS THERMOCOUPLE THERMOWELL ASSEMBLY-SPRING LOADED

Model	'T' Lag Length
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00	No Lag
30	3.0" Lag Length
60	6.0" Lag Length

Model	'Y' Leadwire/Cable Options
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N	No Options, Stranded TFE Leadwires (36.0" Standard, 6.0" w/Connection Head)
W	Leadwire Options (See Page 121)

Model	Additional Options (Leave Option Code Blank if Not Required)
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T	Transmitter Options
M	Material Certification

'E' = Extension Length

'T' = Lag Length

'A' = Bore Depth

'U' = Immersion Length

'P' = Process Thread or Pipe Size

'B' = Shank Diameter

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