



## 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

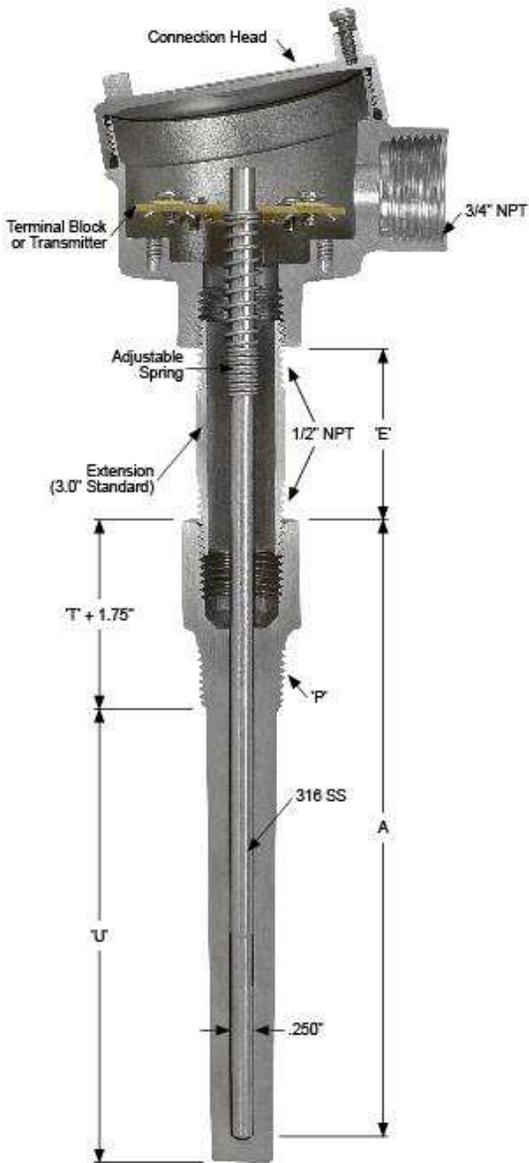
#### Insulation Resistance – Ungrounded Models:

1,000 megohms @ 500 V, leads to case

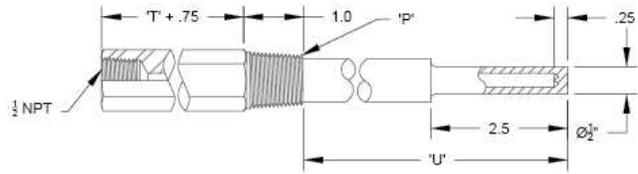
#### Minimum Recommended Immersion Length:

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

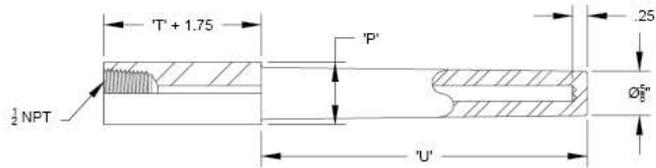
Dimensions



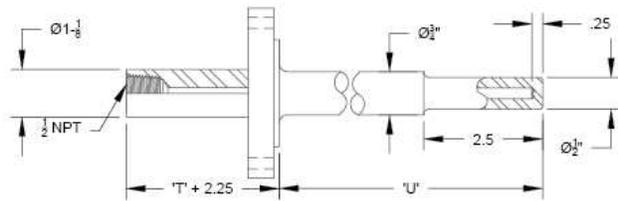
Threaded Thermowell



Socket Weld Thermowell



Raised Face Flanged Thermowell



# MEAS THERMOCOUPLE THERMOWELL ASSEMBLY-SPRING LOADED

## 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

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"
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#### Model Thermowell Style

Model	Thermowell Style
---	<b>Threaded Thermowell</b>
TR2	Reduced Tip 'P' = 1/2" NPT Process Threads
TR3	Reduced Tip 'P' = 3/4" NPT Process Threads
TR4	Reduced Tip 'P' = 1" NPT Process Threads
TS2	Straight Stem 'P' = 1/2" NPT Process Threads
TS3	Straight Stem 'P' = 3/4" NPT Process Threads
TS4	Straight Stem 'P' = 1" NPT Process Threads
TT2	Tapered Tip 'P' = 1/2" NPT Process Threads
TT3	Tapered Tip 'P' = 3/4" NPT Process Threads
TT4	Tapered Tip 'P' = 1" NPT Process Threads

#### Model Thermowell Style

Model	Thermowell Style
---	<b>Socket Weld Thermowell</b>
SR3	Reduced Tip 'P' = 3/4" Pipe Size
SR4	Reduced Tip 'P' = 1" Pipe Size
SS3	Straight Stem 'P' = 3/4" NPT Process Threads
SS4	Straight Stem 'P' = 1" NPT Process Threads
ST4	Tapered Tip 'P' = 1" Pipe Size
ST5	Tapered Tip 'P' = 1 1/4" Pipe Size

#### Model Thermowell Style

Model	Thermowell Style
---	<b>Raised Face Flanged Thermowell</b>
RR4A	Reduced Tip 1.0" Flange, 150 LB
RR5A	Reduced Tip 1.5" Flange, 150 LB
RR6A	Reduced Tip 2.0" Flange, 150 LB
RR4B	Reduced Tip 1.0" Flange, 300 LB
RR5B	Reduced Tip 1.5" Flange, 300 LB
RS4A	Straight Stem 1.0" Flange, 150 LB
RS5A	Straight Stem 1.5" Flange, 150 LB
RS6A	Straight Stem 2.0" Flange, 150 LB
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"
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#### 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
00	No Lag
30	3.0" Lag Length
60	6.0" Lag Length

Model	'Y' Leadwire/Cable Options
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)
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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