

### ANSI CALIBRATION

**Type E, CHROMEL® (+) Constantan (-)**, has the highest EMF output of any standardized metallic thermocouple. If used unprotected, Type E wires are not subject to corrosion at subzero temperatures. They can be used in inert, oxidizing or reducing atmospheres. Because they cover a wide range with a single calibration curve, Type E thermocouples are preferred for computer applications.

**Type J. Iron (+) Constantan (-)**, is the most commonly used calibration. It is suitable for use in a vacuum, inert, oxidizing or reducing atmosphere. If unprotected the iron wire may be attacked by ammonia, nitrogen and hydrogen atmospheres. In sub-zero temperatures the iron wire may rust or become brittle.

**Type T. Copper (+) Constantan (-)**, is commonly used for subzero to 700°F temperature. Preferred to Type J for sub-zero applications because of copper's higher moisture resistance, as compared to iron. If unprotected, it will still function in a vacuum, inert, oxidizing or reducing atmosphere.

**Type K, CHROMEL® (+) ALUMEL® (-)**, is generally used to measure high temperature to 2300°F. It should not be used for accurate temperature measurements below 900°F after prolonged exposure above 1400°F. If unprotected it can be used only in inert or oxidizing atmospheres. It has a short life in alternately oxidizing and reducing atmospheres and in reducing atmospheres, particularly in the 1500 to 1850°F range.

**Type S. Platinum-10% Rhodium (+) vs. Platinum (-)**.

**Type R. Platinum-13% Rhodium (+) vs. Platinum (-)**. These thermoelements should always be protected from contamination by reduced oxides, metallic vapors or other oxides at high temperatures. Platinum protective sheaths or Alumina are used at temperatures which preclude the use of base metal sheaths. Insulation should be silica free to prevent contamination. Type S is frequently used for calibration and checking. Type R has a slightly greater sensitivity and consequently is used more frequently in industrial applications.

**Type B. Platinum-30% Rhodium (+) vs. Platinum-6% Rhodium (-)**.

For use between 1000 and 3175°F. Intended to prevent the problems experienced with types S and R such as (1) weakening of the pure platinum leg due to excessive grain growth and (2) calibration shift due to pure platinum wire picking up rhodium volatilized from the alloy wire at 1500°C. The flatness of the temperature-millivolt curve at normal reference junction ambient temperature permits the use of copper extension wire.

**Type W. Tungsten-5% Rhenium (+) vs. Tungsten-26% Rhenium (-)**.

These thermoelements possess excellent stability at temperatures in the 3000°F to 4000°F range. For use at high temperatures a protective atmosphere must be provided, such as hydrogen, inert gas or vacuum. They are extremely sensitive to mechanical damage and should be handled carefully to prevent breakage.

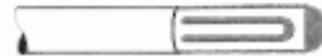
### JUNCTIONTYPE

#### Grounded Junction (G)



The junction is welded to the sheath. Junction is completely sealed from any contamination and response time is typically 1/3 quicker than ungrounded junction.

#### Ungrounded Junction (U)



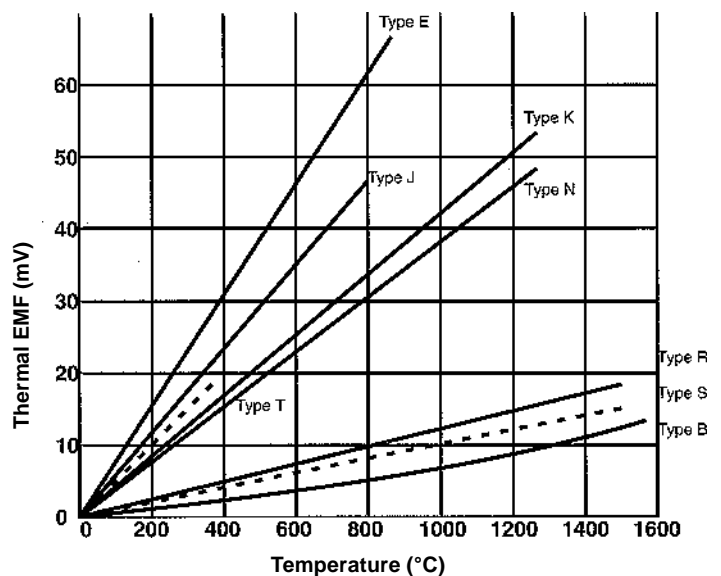
The junction is physically and electrically insulated from the sheath. Used in cycling or high electrical noise applications.

#### Exposed Junction (E)



The junction is extended one diameter beyond sheath for fast response time. Use where mechanical damage will not occur.

#### Thermal EMF (mV)



# TECHNICAL DATA

## RTD'S (Resistance Temperature Detectors)

T.D.

An RTD sensing element consists of a wire coil or deposited film of pure metal. The element's resistance increases with temperature in a known and repeatable manner. RTD's exhibit excellent accuracy over a wide temperature range and represent the fastest growing segment among industrial temperature sensors. Their advantages include:

- **Temperature range:** Models in this catalog cover temperatures from -436 to 1582°F (-260 to 850°C).
- **Repeatability and stability.**
- **Sensitivity:** The voltage drop across an RTD provides a much larger output than a thermocouple.
- **Linearity:** Platinum and copper RTD's produce a more linear response than thermocouples or thermistors. RTD non-linearities can be corrected through proper design of resistive bridge networks.
- **Low system cost:** RTD's use ordinary copper extension leads and require no cold junction compensation.
- **Standardization:** Manufacturers offer RTD's to industry standard curves, most commonly 100Ω platinum with a Temperature Coefficient of Resistance of 0.00385 Ω/Ω/°C in two tolerance classes (Class A: ±0.06% @ 0°C, Class B: +0.12% @ 0°C).

### Wire Wound Element

The standard RTD element used in ISL's probe assemblies are made of 99.99% pure platinum wire wound about a ceramic or glass core and hermetically sealed within a ceramic or glass capsule. Platinum wire was chosen as it best meets the needs of precision thermometry. It resists contamination, can be highly refined and is mechanically and electrically stable. This provides for close interchangeability between elements with negligible drift and error with age. On special request, ISL can make available RTD elements made with other wire materials.

### Thin Film Element

Made by platinum being deposited as a film on a substrate and then encapsulated. This method allows for the production of small fast response, accurate sensors.

### RTD lead configurations

Because an RTD is a resistance type sensor, resistance introduced by connecting extension wires between the RTD and control instrument will add to readings. Furthermore, this additional resistance is not constant but increases with ambient temperature.

You can reduce leadwire error by:

- Using larger gauge extension wires.
- Specifying an RTD with greater sensitivity.
- Employing a 3 or 4-wire resistance cancelling circuit.
- Using a 2-wire current transmitter.

### Calculating leadwire error "E"

$$E = \frac{\text{Leadwire } \Omega \text{ (from table below)} \times \text{Wire Length(ft)}}{\text{Element Sensitivity } (\Omega/\Omega/^\circ\text{C})} = (\text{error in } ^\circ\text{C})$$

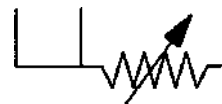
Leadwire AWG	Ohms/ft. at 25°C
12	0.0016
14	0.0026
16	0.0041
18	0.0065
20	0.0103
22	0.0165
24	0.0262
26	0.0418
28	0.0666
30	0.1058

### Style 1



Lead configuration 1 provides one connection to each end of the sensor. This construction is suitable where the resistance of the run of the lead wire may be considered as an additive constant in the circuit, and particularly where the changes in lead resistance due to ambient temperature changes may be ignored.

### Style 2 (standard)



Lead configuration 2 provides one connection to one end and two to the other end of the sensor. Connected to an instrument designed to accept three wire input, compensation is achieved for lead resistance and temperature change in lead resistance. This is the most commonly used configuration.

### Style 3



Lead configuration 3 provides two connections to each end of the sensor. This construction is used for measurements of the highest precision.

### Style 4



Lead configuration 4 is similar to Lead configuration 3 except that a separate pair of wires is provided as a loop to provide compensation for lead resistance and ambient temperature changes in lead resistance.

### Comparison of Thermocouples and Pt RTD's

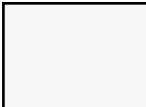
Criterion	Standard-Grade Thermocouple		Standard DIN Pt RTD
	ISA J	ISA K	
Accuracy @ 0°C	±2.2°C	±2.2°C	+0.3°C
100°C	±2.2°C	±2.2°C	+0.5°C
500°C	±3.9°C	±3.9°C	+3.0°C
Time Constant	1.7 sec*	1.7 sec*	5.0 sec**
Tip Sensitive	Yes	Yes	Yes***
Upper Temp.	870°C	1260°C	850°C***

\*1/4" OD probe, grounded junction

\*\*1/4" OD probe

\*\*\* Contact Factory

# Bayonet Adapters and Fixed Fittings



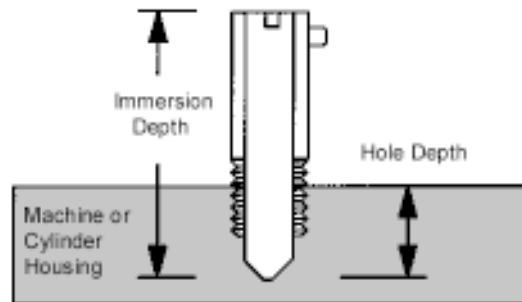
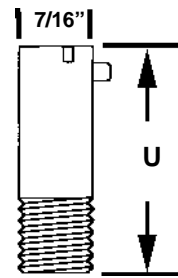
## Sensors for the plastics industry

Thermocouples and RTD's used in the plastic industry are usually spring loaded against the measuring surface using a bayonet cap, bayonet adapter together and fixed fittings. Size and configurations vary according to application but serve the same purpose.

If what you use is not shown, call our sales and engineering staff.

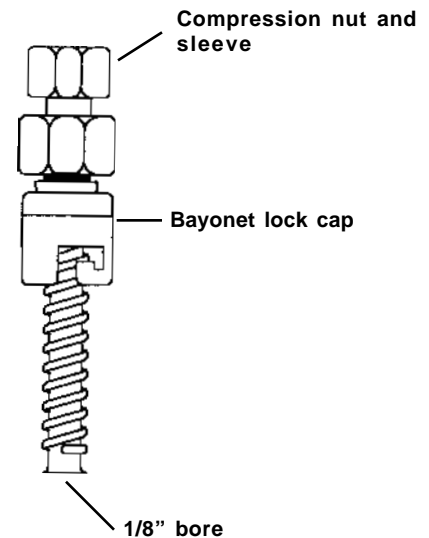
### How to order

On the fixed bayonet style (**H44**) it is very important that the immersion depth "**U**" includes the hole depth **plus** the immersion depth. Also, specify **Thread** size.  
 Example: **H44 - 1 1/4" - 1/8 NPT**



### Adjustable Bayonet Fitting for 1/8" dia. probe

Catalog #	Description
H439	1/8" ADJUSTABLE W/ BRASS FERRULE
H439-NY	1/8" ADJUSTABLE W/ NYLON FERRULE
H439-SS	1/8" ADJUSTABLE W/ STAINLESS FERRULE



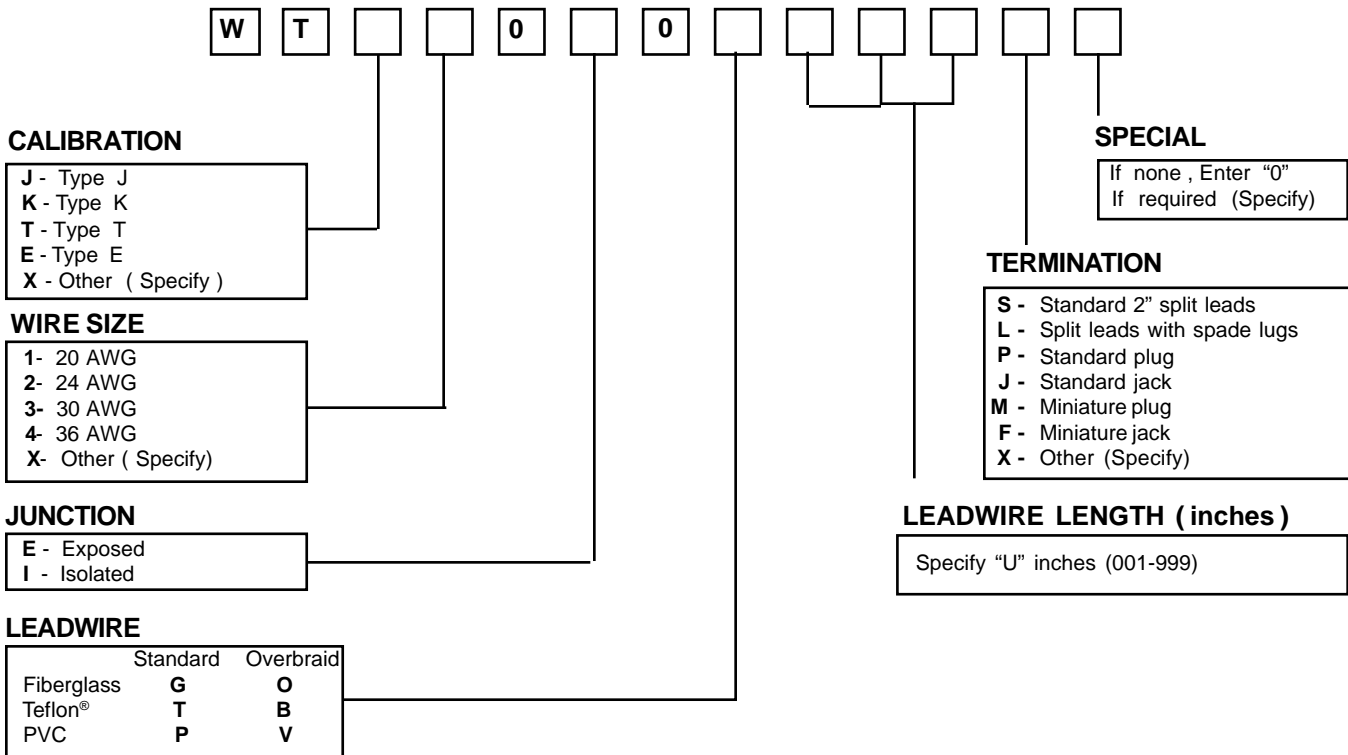
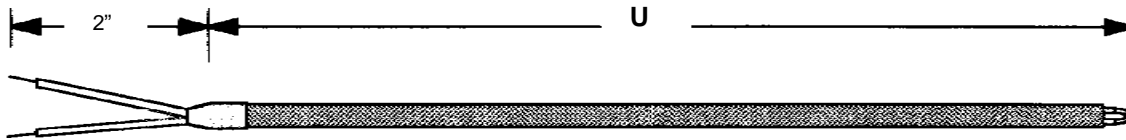
# WT Style Flexible Wire

## Features

- ◆ Fast response time
- ◆ Low cost
- ◆ Multiple uses
- ◆ Exposed or enclosed junction

## General Specifications

- ◆ Wire: Thermocouple grade, special limits
- ◆ Insulation: Teflon®, Fiberglass or PVC
- ◆ Optional stainless steel overbraid available
- ◆ Wide range of insulation materials to meet any temperature range, high humidity and corrosive environments

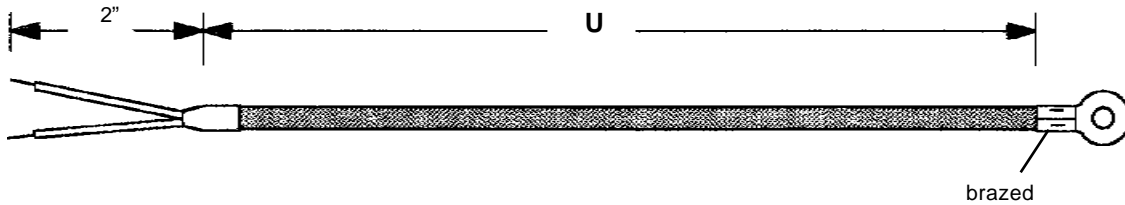


### Features

- ◆ Surface temperature measurement up to 800° F
- ◆ Easily attached to any flat or curved surface with a screw
- ◆ Large variety of ring sizes

### General Specifications

- ◆ High temperature "SS" ring terminals
- ◆ Standard 20 AWG, Teflon® or Fiberglass T/C wire with optional SS overbraided
- ◆ Specify screw size and temperature



<b>R</b>	<b>T</b>		<b>0</b>	<b>0</b>																							
<b>CALIBRATION</b>														<b>SPECIAL</b>													
J - Type J K - Type K T - Type T E - Type E X - Other ( Specify )														If none , Enter "0" If required (Specify)													
<b>JUNCTION</b>														<b>TERMINATION</b>													
U - Ungrounded G - Grounded														S - Standard 2" split leads L - Split leads with spade lugs P - Standard plug J - Standard jack M - Miniature plug F - Miniature jack X - Other (Specify)													
<b>SCREW SIZE- Hole Dia. ( In )</b>														<b>LEADWIRE LENGTH ( inches)</b>													
A - No.6    0.144 B - No.8    0.169 C - No.10   0.196 D - 1/4      0.266 E - 3/8      0.390 F - 1/2      0.525														Specify "U" inches (001-999)													
<b>LEADWIRE</b>																											
<table border="1"> <tr> <td></td> <td>Standard</td> <td>Overbraided</td> </tr> <tr> <td>Fiberglass</td> <td><b>G</b></td> <td><b>O</b></td> </tr> <tr> <td>Teflon®</td> <td><b>T</b></td> <td><b>B</b></td> </tr> </table>															Standard	Overbraided	Fiberglass	<b>G</b>	<b>O</b>	Teflon®	<b>T</b>	<b>B</b>					
	Standard	Overbraided																									
Fiberglass	<b>G</b>	<b>O</b>																									
Teflon®	<b>T</b>	<b>B</b>																									

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# ST Style

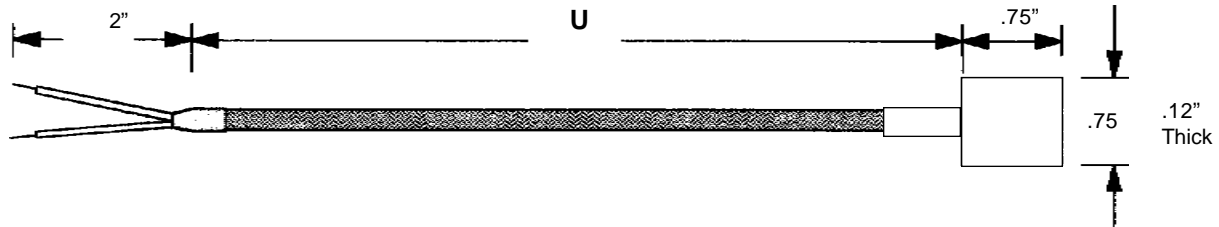
# Brass Shim

### Features

- ◆ Low profile; typically - .012" thick
- ◆ Easily cemented to any surface

### General Specifications

- ◆ Standard shim material is brass or stainless; other materials are available to meet any specific requirement
- ◆ Thermocouple wire used: PVC, Teflon and Fiberglass 20 - 36 AWG
- ◆ Specify: shim size, calibration and length



### CALIBRATION

- J - Type J
- K - Type K
- T - Type T
- E - Type E
- X - Other ( Specify )

### WIRE SIZE

- A - 20 AWG
- B - 24 AWG
- C - 30 AWG
- X - Other ( Specify )

### SHIM MATERIAL

- S - Stainless
- B - Brass

### LEADWIRE

	Standard	Overbraid	Flex Armor
Fiberglass	G	O	1
Teflon®	T	B	3
PVC	P	V	2

### SPECIAL

If none , Enter "0"  
If required (Specify)

### TERMINATION

- S - Standard 2" split leads
- L - Split leads with spade lugs
- P - Standard plug
- J - Standard jack
- M - Miniature plug
- F - Miniature jack
- X - Other (Specify)

### LEADWIRE LENGTH ( inches )

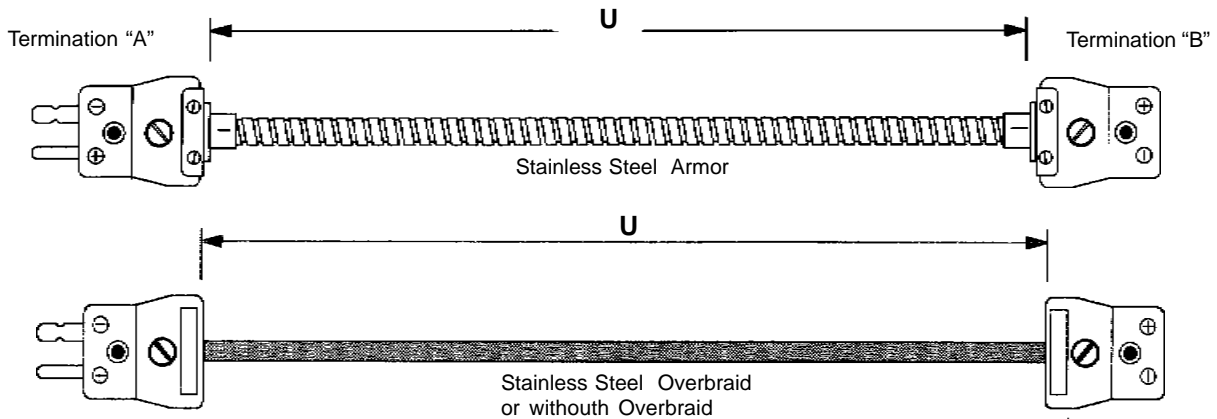
Specify "U" inches (001-999)

### Features

- ◆ Quick disconnect
- ◆ Full protection of extension wire against harsh industrial environments
- ◆ Fully compensated thermocouple materials to eliminate reading errors

### General Specifications

- ◆ Extension wire: Special limits, 20 AWG, stranded, PVC, Fiberglass and Teflon insulation
- ◆ SS flexible armor, SS overbraid or standard
- ◆ Custom design to any specification



### CALIBRATION

- J - Type J
- K - Type K
- T - Type T
- E - Type E
- X - Other ( Specify )

### TERMINATION "A"

- S - Standard 1 1/2" split leads
- L - 1 1/2" split leads with spade lugs
- P - Standard plug
- J - Standard jack
- M - Miniature plug
- F - Miniature jack
- X - Other ( Specify )

### LEAD WIRE

	Standard	Overbraid	Flex Armor
PVC	P	V	2
Fiberglass	G	O	1
Teflon®	T	B	3

### SPECIAL

If none , Enter "0"  
If required (Specify)

### TERMINATION "B"

- S - Standard 1 1/2" split leads
- L - Split leads with spade lugs
- P - Standard plug
- J - Standard jack
- M - Miniature plug
- F - Miniature jack
- X - Other (Specify)

### LEADWIRE LENGTH ( Inches )

Specify "U" inches (006-999)

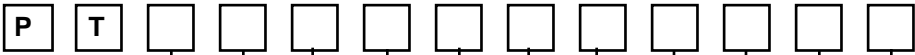
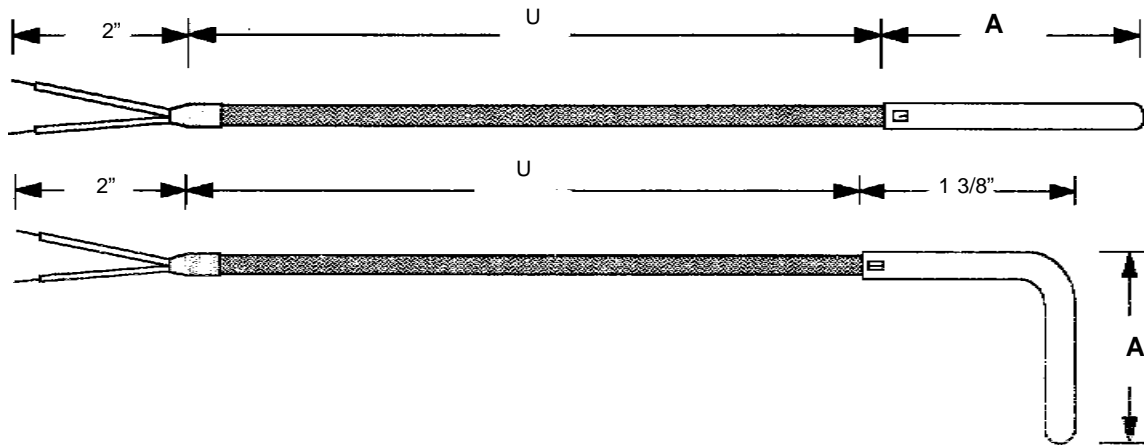
# PT Style Tube and Wire

### Features

- ◆ Low cost
- ◆ Quick delivery
- ◆ Wide temperature range

### General Specifications

- ◆ Sheath material is 316 SS
- ◆ Cold - End epoxy sealed or crimped
- ◆ Select from variety of T/C wire to meet the operating temperature and environment specifications



#### CALIBRATION

- J - Type J
- K - Type K
- T - Type T
- E - Type E
- P - 100 Ω Thin film RTD\*

#### TUBE DIA.

- 4 - 1/8"
- 6 - 3/16"
- 8 - 1/4"

#### JUNCTION

	Grounded	Ungrounded
Single	G	U
Duplex	D	C

#### BEND ANGLE

- 0 - Straight
- 4 - 45 deg. Bend
- 9 - 90 deg. Bend

#### IMMERSION LENGTH "A" (inches)

A- 2	D- 3.5	G- 5	J- 6.5	L- 8	O- 9.5	R- 12
B- 2.5	E- 4	H- 5.5	J- 7	M- 8.5	P- 10	X- Other (Specify)
C- 3	F- 4.5	I- 6	K- 7.5	N- 9	Q- 11	

#### SPECIAL

If none, Enter "0"  
If required (Specify)

#### TERMINATION

- S - Standard 2" split leads
- L - Split leads with spade lugs
- P - Standard plug
- J - Standard jack
- M - Miniature plug
- F - Miniature jack
- X - Other (Specify)

#### LEADWIRE LENGTH (inches)

Specify U inches (001-000)

#### LEADWIRE

	Standard	Overbraided	Flex Armor
Fiberglass	G	O	1
Teflon®	T	B	3

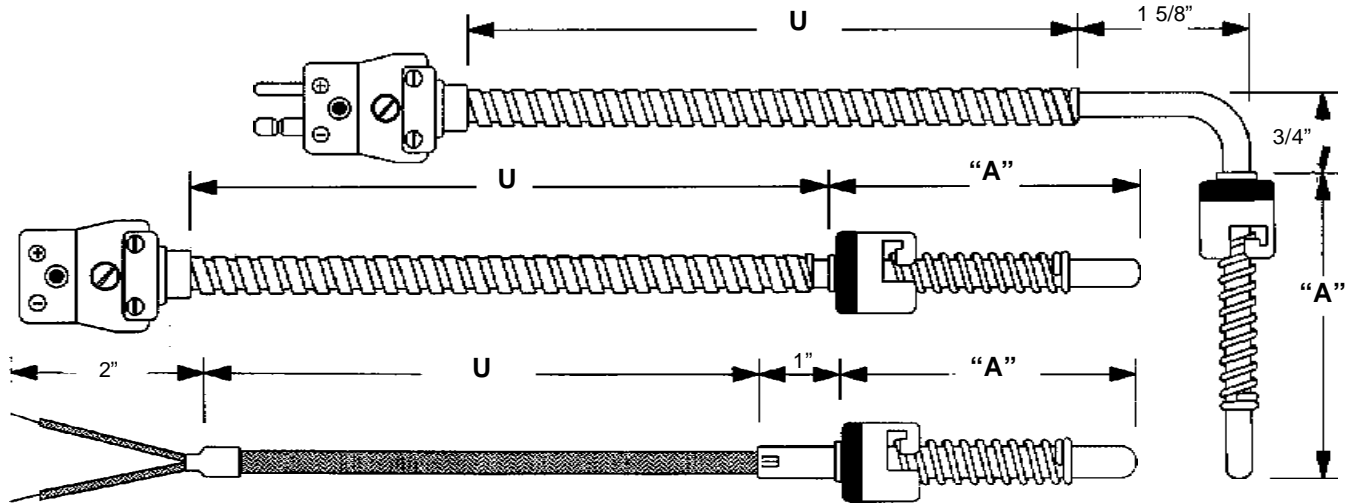


### Features

- ◆ Spring loaded to assure contact with measured surface
- ◆ Fixed bayonet fitting for quick twist-lock installation
- ◆ Low cost & quick delivery

### General Specifications

- ◆ Tube: .188 O.D., 316 SS (std)
- ◆ Steel spring, nickel plated brass cap
- ◆ Wide temperature range
- ◆ Wide variety of wire insulation materials
- ◆ Fixed immersion length



F B [ ] 0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

### CALIBRATION

- J - Type J
- K - Type K
- T - Type T
- E - Type E
- P - 100 Ω Thin film RTD\*

### JUNCTION

	Grounded	Ungrounded
Single	G	U
Duplex	D	C

### BEND ANGLE

- 0 - Straight
- 1 - 45 degree bend
- 9 - 90 degree bend
- X - Other (Specify)

### IMMERSION LENGTH "A"

A - 2	D - 3.5	G - 5	J - 6.5
B - 2.5	E - 4	H - 5.5	K - 7
C - 3	F - 4.5	I - 6	X - Other (Specify)

### SPECIAL

If none, Enter "0"  
If required (Specify)

### TERMINATION

- S - Standard 2" split leads
- L - Split leads with spade lugs
- P - Standard plug
- J - Standard jack
- M - Miniature plug
- F - Miniature jack
- X - Other (Specify)

### LEADWIRE LENGTH (inches)

Specify "U" inches (001-999)

### LEADWIRE

	Standard	Overbraided	Flex Armor
Fiberglass	G	O	1
Teflon®	T	B	3

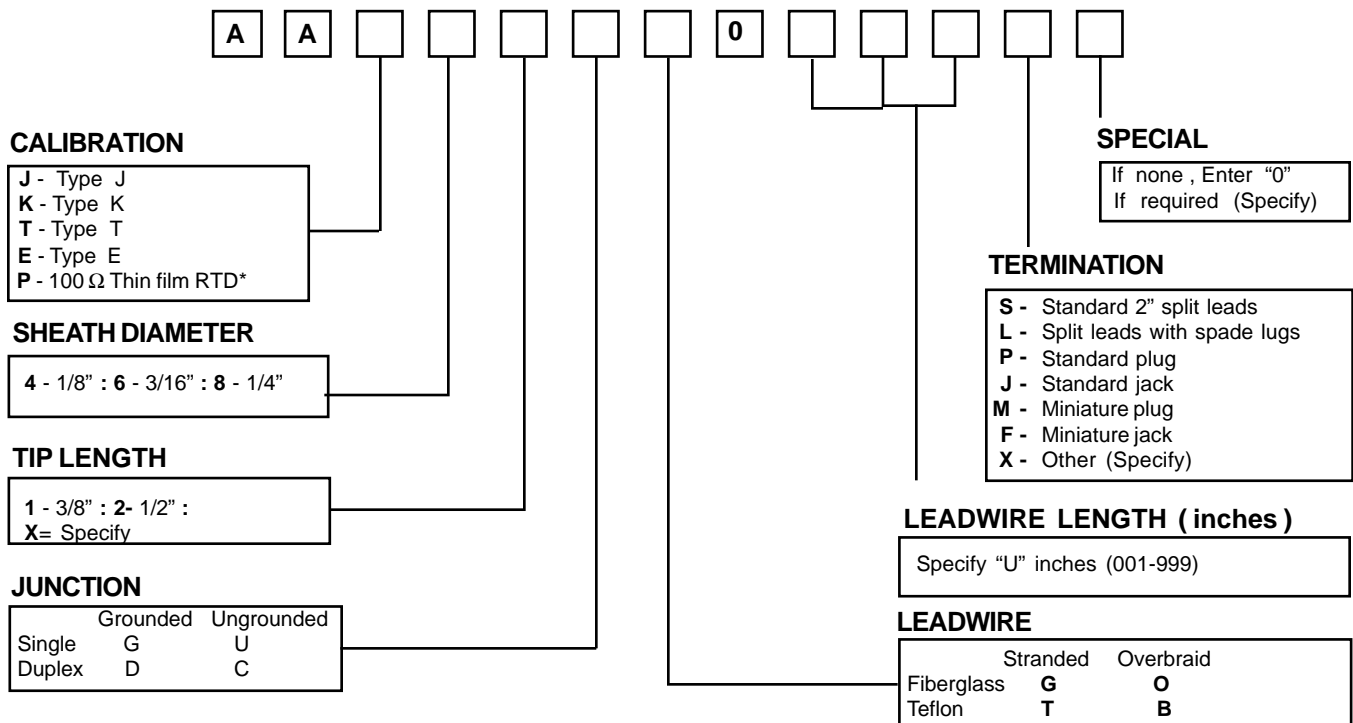
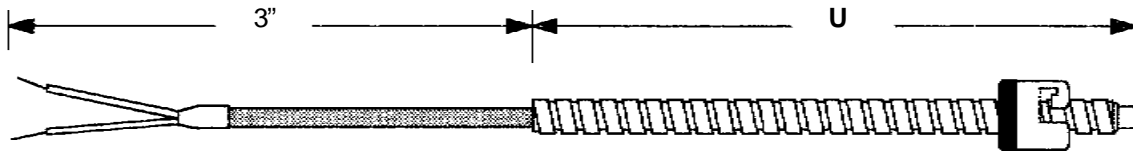
# AA Style Adjustable Armor

## Features

- ◆ Bayonet cap threads length of flex armor
- ◆ Compression of flex armor loads tip
- ◆ Fits standard bayonet adaptors

## General Specifications

- ◆ .188" tube diameter- 316SS (std)
- ◆ Leadwire available with Fiberglass or Teflon® insulation
- ◆ Standard terminations available



# AS Style Adjustable Spring

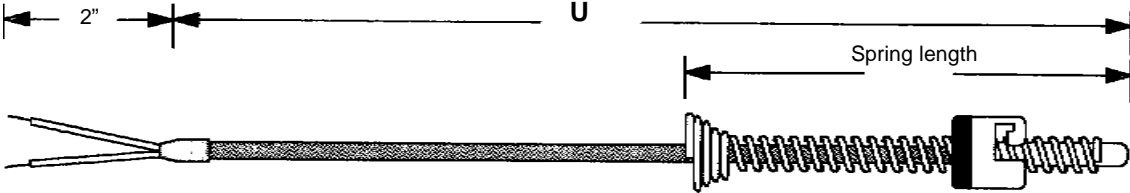
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## Features

- ◆ Variable adjustable sensor fits a large range of hole depths
- ◆ Bends to any angle
- ◆ Eliminates immersion depth variations

## General Specifications

- ◆ .188" O.D. 316SS tube (std)
- ◆ Stainless steel spring O.D. .250"
- ◆ Standard terminations available



	<div style="display: flex; justify-content: space-around; margin-bottom: 5px;"> <span style="border: 1px solid black; padding: 2px 5px;">A</span> <span style="border: 1px solid black; padding: 2px 5px;">S</span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> <span style="border: 1px solid black; padding: 2px 5px;"> </span> </div>												
<p><b>CALIBRATION</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">             J - Type J              K - Type K              T - Type T              E - Type E              P - 100 Ω Thin film RTD*         </div> <p><b>SHEATH DIAMETER</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">             4 - 1/8" : 6 - 3/16" : 8 - 1/4"         </div> <p><b>TIP LENGTH</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">             1 - 3/8" : 2 - 1/2" :              X = Specify         </div> <p><b>JUNCTION</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Grounded</td> <td style="text-align: center;">Ungrounded</td> </tr> <tr> <td style="text-align: center;">Single <b>G</b></td> <td style="text-align: center;"><b>U</b></td> </tr> </table> </div> <p><b>SPRING LENGTH</b></p> <div style="border: 1px solid black; padding: 2px;">             1 - 6 inch spring              2 - 8 inch spring              3 - 12 inch spring         </div>	Grounded	Ungrounded	Single <b>G</b>	<b>U</b>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <b>SPECIAL</b>              If none, Enter "0"              If required (Specify)         </div> <p><b>TERMINATION</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">             S - Standard 2" split leads              L - Split leads with spade lugs              P - Standard plug              J - Standard jack              M - Miniature plug              F - Miniature jack              X - Other (Specify)         </div> <p><b>LEADWIRE LENGTH (inches)</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">             Specify "U" inches (001-999)         </div> <p><b>LEADWIRE</b></p> <div style="border: 1px solid black; padding: 2px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Standard</td> <td style="text-align: center;">Overbraid</td> </tr> <tr> <td style="text-align: center;">Fiberglass <b>G</b></td> <td style="text-align: center;"><b>O</b></td> </tr> <tr> <td style="text-align: center;">Teflon® <b>T</b></td> <td style="text-align: center;"><b>B</b></td> </tr> </table> </div>	Standard	Overbraid	Fiberglass <b>G</b>	<b>O</b>	Teflon® <b>T</b>	<b>B</b>		
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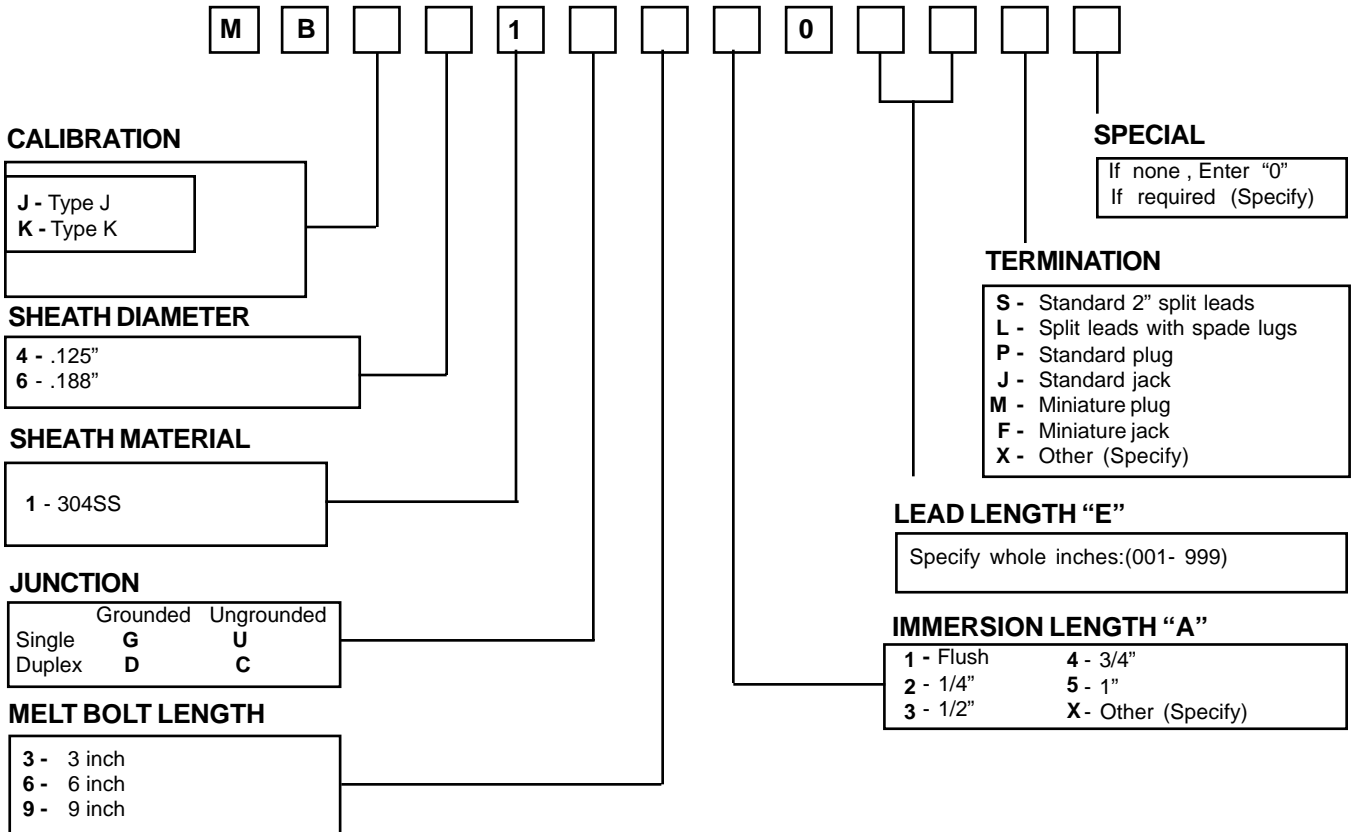
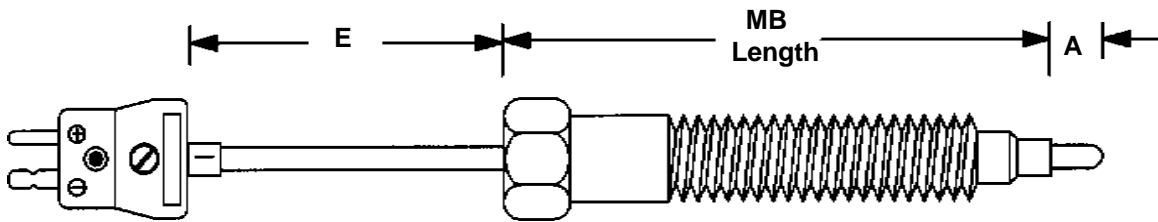
# MB Style Melt Bolt

## Features

- ◆ Designed for insertion directly into molten plastic
- ◆ Available with various lead extensions, Flex Armor and SS Overbraid. Shown with sheath extension.

## General Specifications

- ◆ 304SS sheath and melt bolt
- ◆ Melt bolt lengths are 3 inch, 6 inch and 9 inch

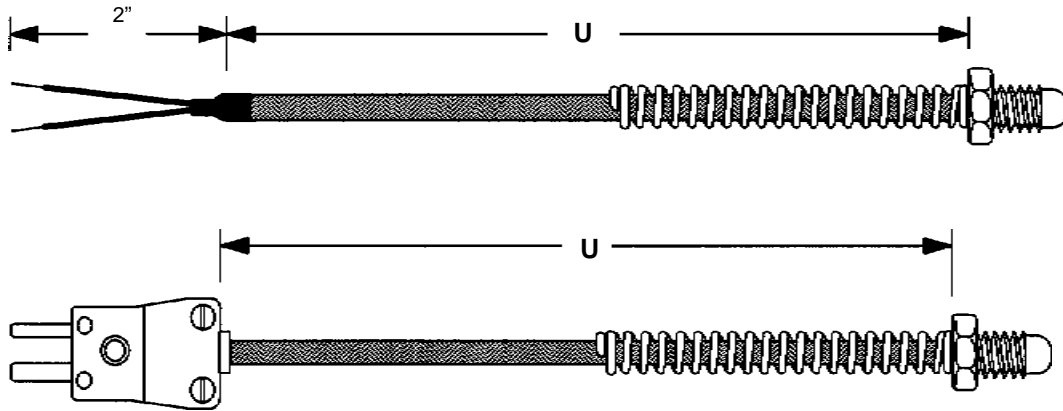


### Features

- ◆ Low profile and short depth
- ◆ Rotating threaded screw
- ◆ Wide temperature range
- ◆ Available in standard and metric thread

### General Specifications

- ◆ Threaded screw, all stainless steel
- ◆ Steel spring for wire strain relief
- ◆ Standard 24 AWG Wire



B T [ ] 0 0 0 [ ] 0 [ ] [ ] [ ] [ ]

### CALIBRATION

- J - Type J
- K - Type K
- T - Type T
- E - Type E
- X - Other (Specify)

### BOLT SIZE

- A - 1/4 - 20 UNF,
- B - 8/32 thread
- C - 10/32 thread
- D - 1/4 - 28 UNF
- X - Other (Specify)

### LEADWIRE

	Standard	Overbraid
Fiberglass	G	O
Teflon®	T	B

### SPECIAL

If none, Enter "0"  
If required (Specify)

### TERMINATION

- S - Standard 2" split leads
- L - Split leads with spade lugs
- P - Standard plug
- J - Standard jack
- M - Miniature plug
- F - Miniature jack
- X - Other (Specify)

### LEADWIRE LENGTH (inches)

Specify "U" inches (001-999)

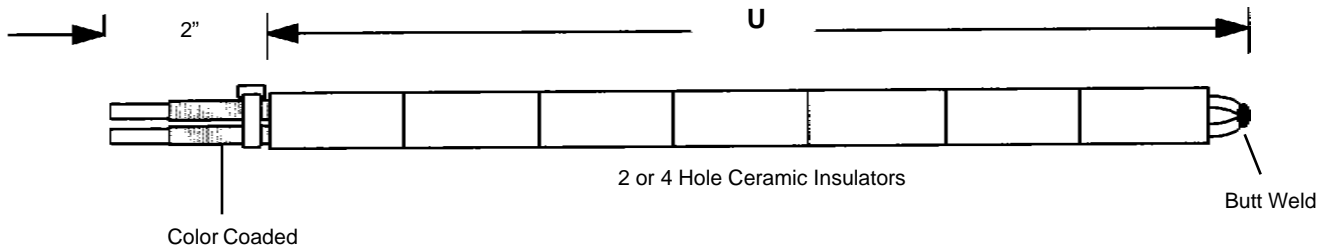
# BT Style Beaded Base Metal

### Features

- ◆ Low cost
- ◆ High temperature up to 2300° F for type "K" thermocouple
- ◆ Long life if properly protected with a thermowell or protection tube

### General Specifications

- ◆ Standard thermocouple calibrations are; J & K
- ◆ Standard wire: 8 and 14 AWG
- ◆ Color coded for proper instrument hook-up
- ◆ Select from oval or round insulators
- ◆ Custom designs to meet any requirement, contact factory



	B	T			0	0		0				0									
<p><b>CALIBRATION</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>J - Type J                      K - Type K                      T - Type T                      E - Type E                      X - Other ( Specify )</p> </div>													<p><b>SPECIAL</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>If none , Enter "0"                      If required (Specify)</p> </div>								
<p><b>ELEMENT INSULATION</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>B - Bare (no insulators)                      O - Oval Ceramic                      R - Round Ceramic</p> </div>																					
<p><b>WIRE SIZE</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>1 - 08 AWG                      2 - 14 AWG                      3 - 20 AWG                      X - Other ( Specify )</p> </div>																					
<p><b>JUNCTION</b></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px;">Style</td> <td style="padding: 2px;">Twisted Welded</td> <td style="padding: 2px;">Butt Welded</td> </tr> <tr> <td style="padding: 2px;">Single</td> <td style="padding: 2px;">T</td> <td style="padding: 2px;">B</td> </tr> <tr> <td style="padding: 2px;">Duplex</td> <td style="padding: 2px;">D</td> <td style="padding: 2px;">W</td> </tr> </table>	Style	Twisted Welded	Butt Welded	Single	T	B	Duplex	D	W												
Style	Twisted Welded	Butt Welded																			
Single	T	B																			
Duplex	D	W																			
													<p><b>LENGTH ( Inches )</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>Specify whole inches: 01 - 999</p> </div>								

# NB Style Noble Metal

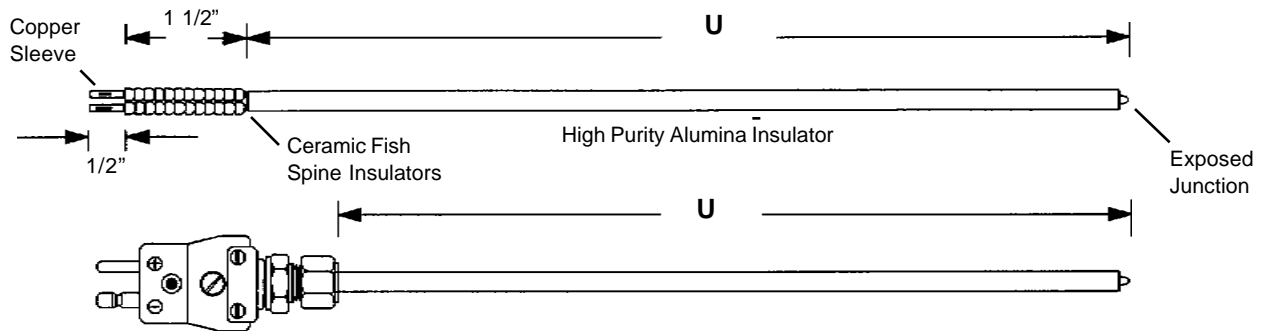
1

## Features

- ◆ High temperature up to 3000° F
- ◆ Most accurate of all thermocouples  
standard grade R & S: +/- 0.25 %  
reference grade R & S: +/- 0.1 %  
within range of 400° to 1400°C
- ◆ Fast response time; typically under .3 Sec

## General Specifications

- ◆ Standard grade platinum wire is provided unless reference grade is requested
- ◆ High purity alumina 2 or 4 hole insulators
- ◆ Standard termination is 1 1/2" leads with ceramic fish spine insulators and copper sleeves



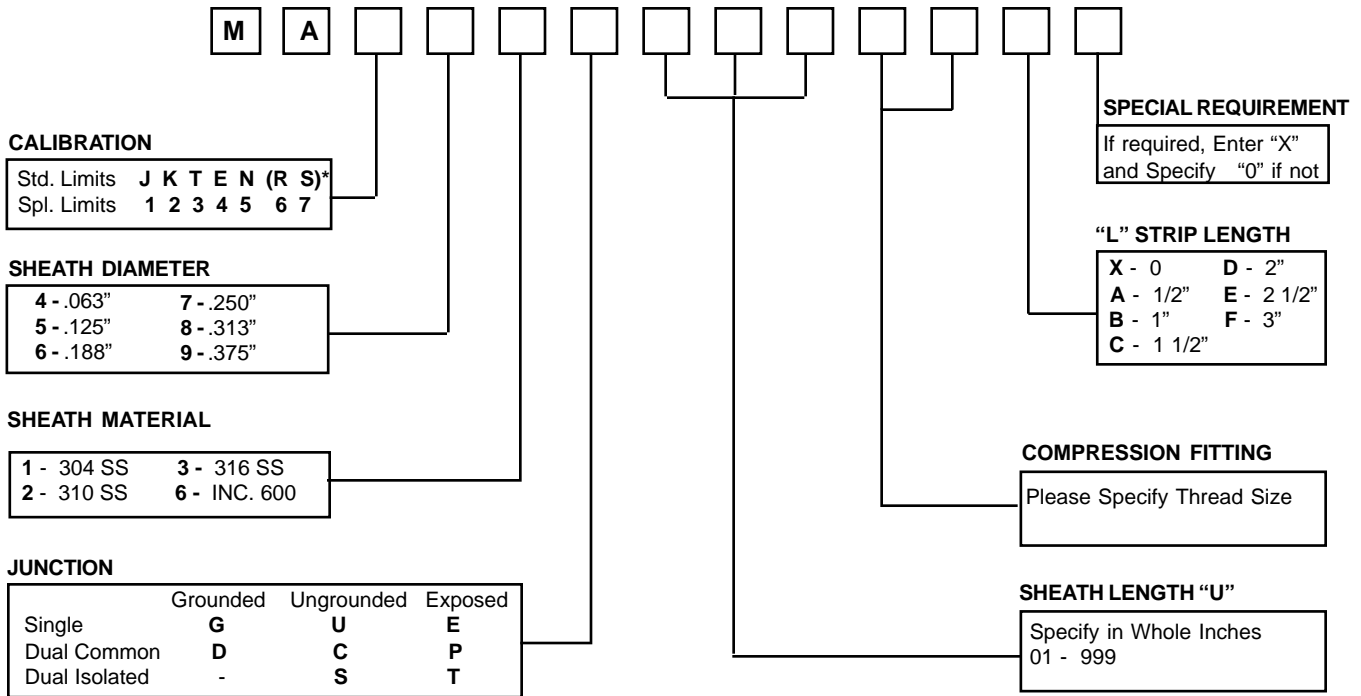
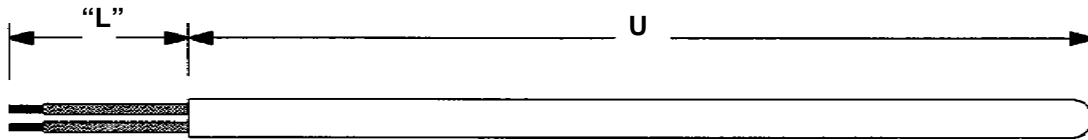
<b>N</b>	<b>B</b>				<b>E</b>	<b>0</b>	<b>0</b>	<b>0</b>									
<b>CALIBRATION</b> S - Type S ( Pt vs Pt/Rh ) R - Type R ( Pt vs Pt/Rh ) B - Type B ( Pt vs Pt/Rh ) W - Type W ( Tg vs Tg/Rh )					<b>ELEMENT SIZE</b> A - 24 AWG B - 30 AWG					<b>CONSTRUCTION</b> S - Single D - Duplex					<b>SPECIAL</b> If none , Enter "0" If required (Specify)		
<b>TERMINATION</b> S - Standard 2" split leads P - Standard Plug J - Standard Jack											<b>LENGTH "U" ( Inches )</b> Specify whole inches: 01 - 999						

Features

- Fast delivery
- Standard sheaths
- T/C material protected by sheath

General Specifications

- Available in standard or special limits (99.6%) MgO.
- Can be supplied with 0.020" to .375" dia. sheath.



\*For noble metal price contact factory.



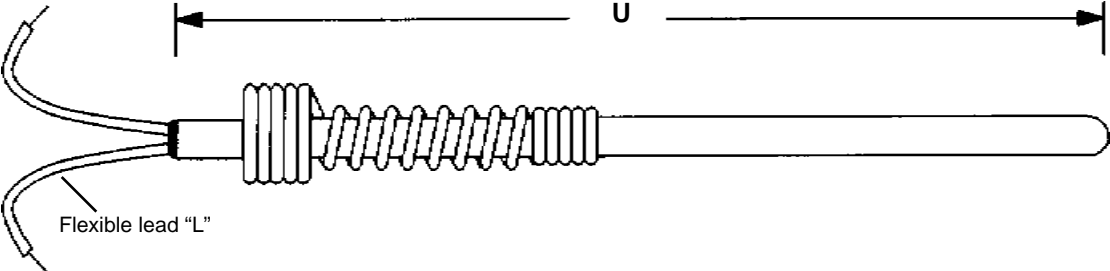
# ML Style      Spring loaded

**Features**

- Spring loaded assures contact with bottom of well
- "L" length is flexible lead to allow for expansion of well
- Spring is adjustable

**General Specifications**

- Standard or special limits of error - Hard pack MgO insulation
- Available in 1/8", 3/16", or 1/4" O.D.
- High temp spring



M
L
 
 
 
 
 
 
 
 
 
 
 
0
 

**CALIBRATION**

Std. Limits	<b>J K T E N (R S)*</b>
Spl. Limits	1 2 3 4 5 6 7

**SHEATH DIAMETER**

4 - .063"	7 - .250"
5 - .125"	8 - .313"
6 - .188"	9 - .375"

**SHEATH MATERIAL**

1 - 304 SS	3 - 316 SS
2 - 310 SS	6 - INC. 600

**JUNCTION**

	Grounded	Ungrounded	Exposed
Single	<b>G</b>	<b>U</b>	<b>E</b>
Dual Common	<b>D</b>	<b>C</b>	<b>P</b>
Dual Isolated	-	<b>S</b>	<b>T</b>

**SPECIAL REQUIREMENT**  
If Required, Enter "X" and Specify. "0" If Not

**LEAD LENGTH "L"**  
Enter Lead Length in Whole Inches (0-99)

**"U" SHEATH LENGTH**  
Enter "U" Length in Whole Inches (0-999)

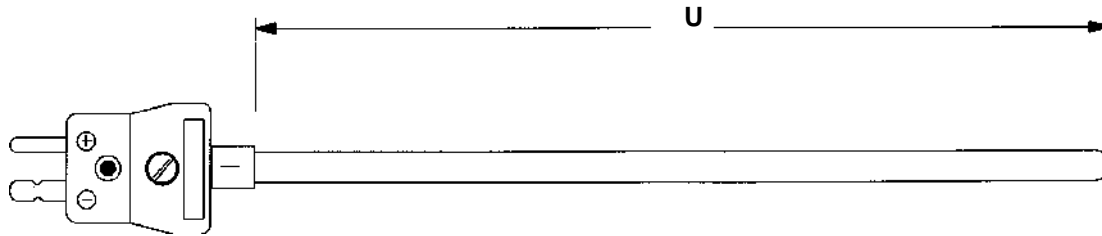
# MC Style Plug Termination

## Features

- Quick disconnect thermocouple assemblies
- Standard or miniature connectors
- Standard connector rated to 425° F.  
Also, available with high temperature connector to 900° F.

## General Specifications

- Available in standard or special limits of error
- Hard packed MgO.
- Sheath diameter available from .010" to .375"
- Available sheath temperatures to 2880° F with Pyrosyl "B"



### CALIBRATION

Std. Limits	J	K	T	E	N	(R S)*
Spl. Limits	1	2	3	4	5	6 7

### SHEATH DIAMETER

4 - .063"	7 - .250"
5 - .125"	8 - .313"
6 - .188"	9 - .375"

### SHEATH MATERIAL

1 - 304 SS	3 - 316 SS
2 - 310 SS	6 - INC. 600

### JUNCTION

	Grounded	Ungrounded	Exposed
Single	G	U	E
Dual Common	D	C	P
Dual Isolated	-	S	T

### SPECIAL REQUIREMENT

If required, Enter "X" and Specify. "0" if Not

### COLD END TERMINATION

P - Standard Plug
J - Standard Jack
M - Miniature Plug
F - Miniature Jack
HP- High Temp. Standard Plug
HJ- High Temp. Standard Jack

### "U" SHEATH LENGTH

Specify in Whole Inches (0-999)

\*For noble metal price contact factory.

### Notes:

Mini Plug & Jack dual elemt available only for max. diameter 0.125".

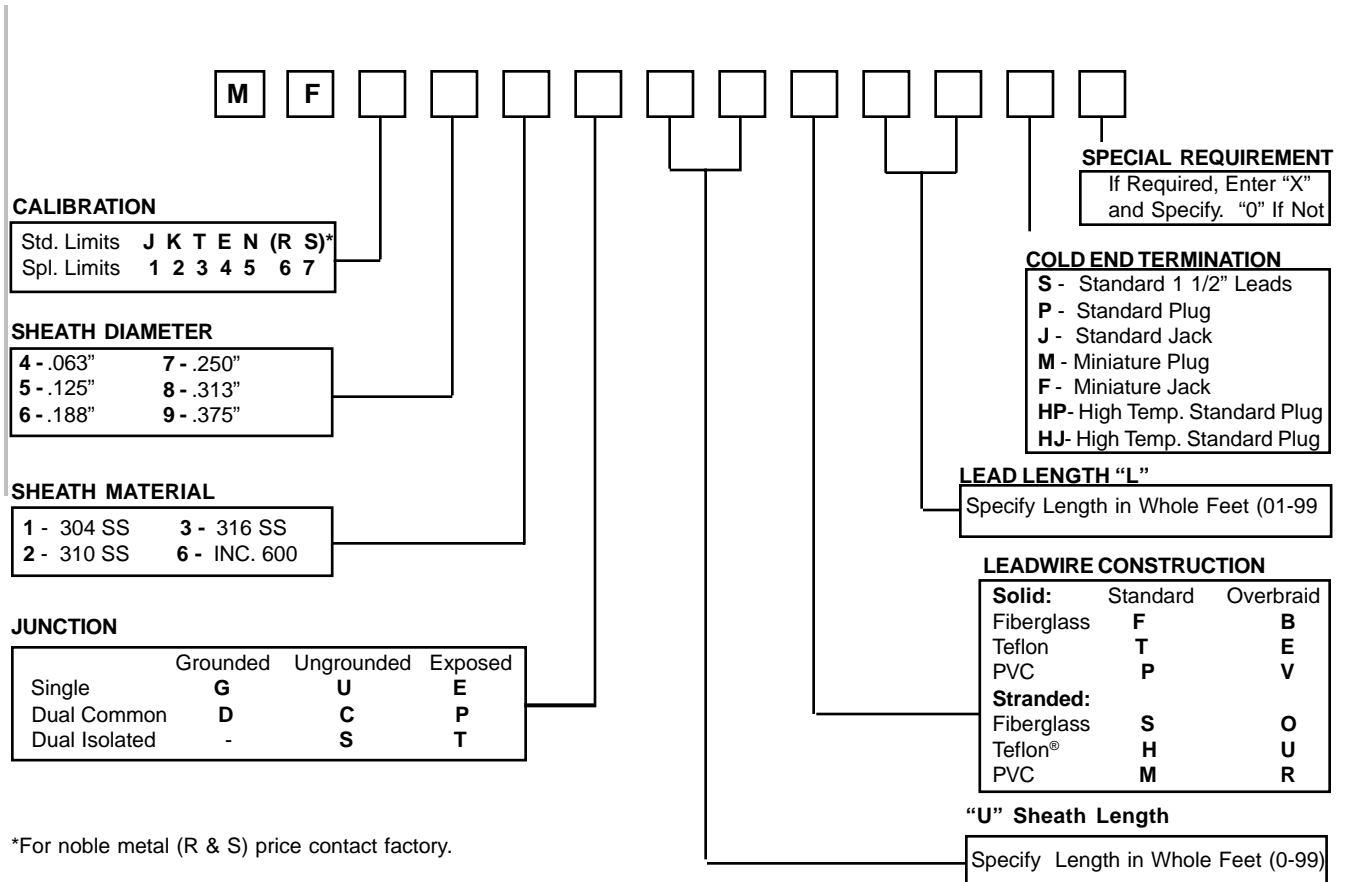
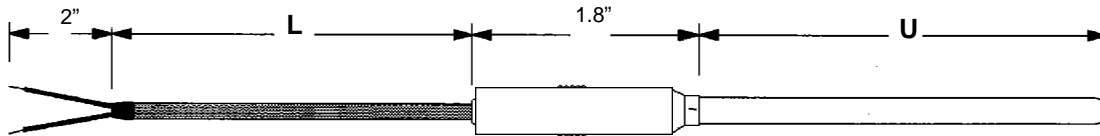
# MF Style Metal Transition

**Features**

- Rugged stainless steel transition
- Flexible leadwire, Stranded or Solid
- Also, available with Plug & Jack cold end termination
- Diameters available from .010" to .375"

**General Specifications**

- Hard packed MgO insulation
- 1/4" O.D. transition for smaller diameter
- 3/8 O.D. transition for larger dia. sheath
- 400° F epoxy



\*For noble metal (R & S) price contact factory.

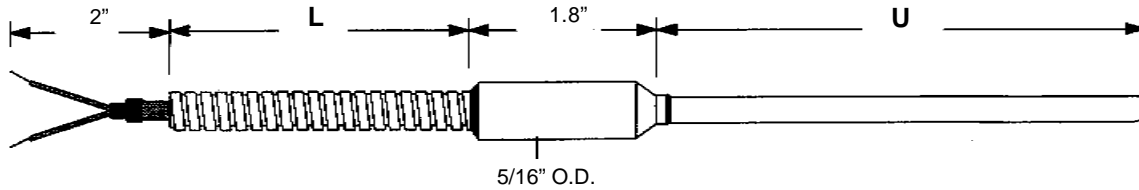
# ME Style Large Transition

## Features

- ☑ Large transition for flex armor
- ☑ PVC or Teflon coated for added protection
- ☑ Crush resistant

## General Specifications

- ☑ 5/16" O.D. x 0.44" I.D. transition accomadates standard 3/16" I.D. x 9/32" O.D. SS flex or 1/4" I.D. x 11/32" O.D. flex
- ☑ Maximum continuous operating temperature of 400° F for large transition. Higher ranges available



### CALIBRATION

Std. Limits	J	K	T	E	N	(R)	(S)*
Spl. Limits	1	2	3	4	5	6	7

### SHEATH DIAMETER

	7 - .250"
5 - .125"	8 - .313"
6 - .188"	9 - .375"

### SHEATH MATERIAL

1 - 304 SS	3 - 316 SS
2 - 310 SS	6 - INC. 600

### JUNCTION

	Grounded	Ungrounded	Exposed
Single	G	U	E
Dual Common	D	C	P
Dual Isolated	-	S	T

### SPECIAL REQUIREMENT

If Required, Enter "X" and Specify. "0" If Not

### COLD END TERMINATION

- S - Standard 1 1/2" Leads
- P - Standard Plug
- J - Standard Jack

### LEAD LENGTH "L"

Enter Length in Whole Feet 01 to 99

### LEADWIRE CONSTRUCTION

Solid	Flex Armor
Fiberglass	1
Teflon®	3
PVC	2

### SHEATH "U" LENGTH

Enter Length in Whole Feet

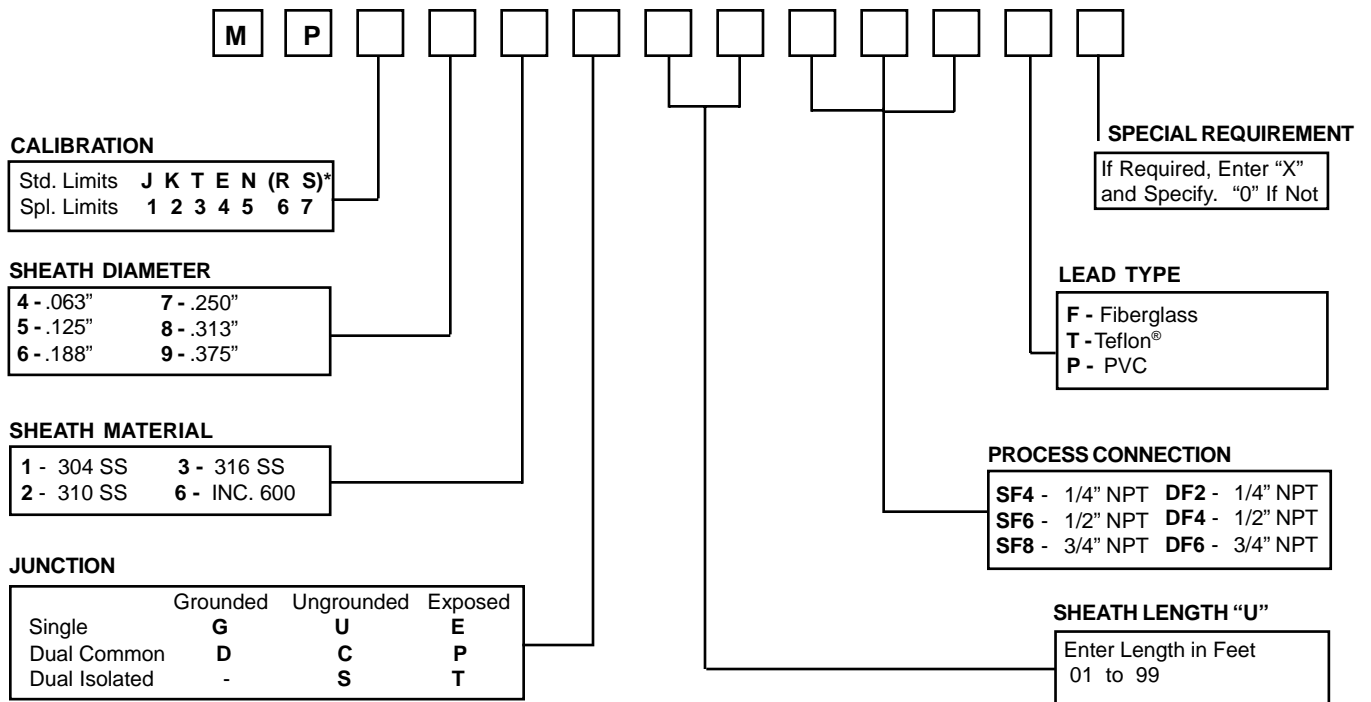
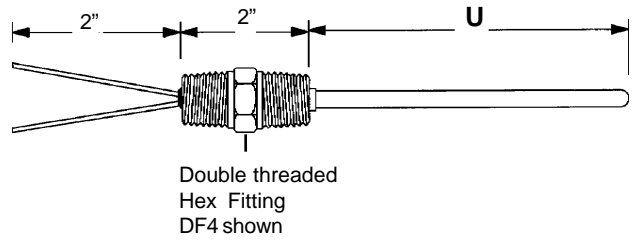
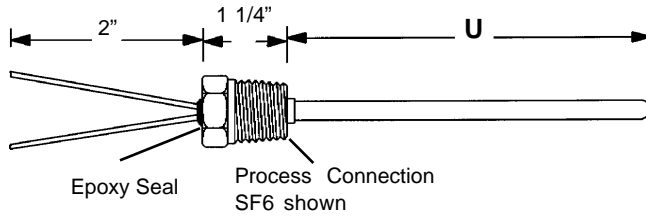
\*For noble metal (R & S) price contact factory.

Features

- ☑ Process connection and transition all in one
- ☑ Available in 1/4", 1/2" and 3/4" NPT connection
- ☑ Epoxy seal, 400°F
- ☑ Use in thermowells or directly in process

General Specifications

- ☑ Standard or special limits of error hard packed MgO insulation
- ☑ 2" leadwire is stranded for flexibility
- ☑ Stainless steel process fittings



\*For noble metal (R & S) price contact factory.

Note:

Lead lengths over 2" contact factory

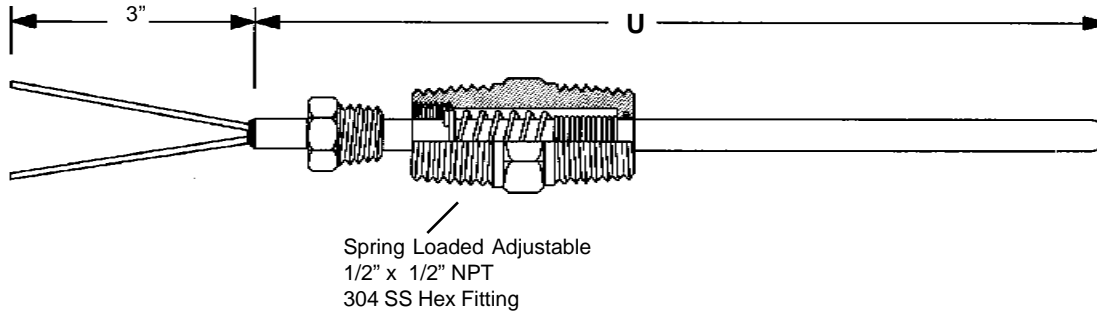
# MS Style Spring Loaded

## Features

- ☑ Adjustable spring loaded fitting ensures direct surface contact
- ☑ Fast response, great as bearing sensor
- ☑ Use with well and protection head

## General Specifications

- ☑ 1/2" x 1/2" NPT hex fitting, 304SS
- ☑ Fitting adjustable spring travel of 1/2"



### CALIBRATION

Std. Limits	J	K	T	E	N	(R S)*
Spl. Limits	1	2	3	4	5	6 7

### SHEATH DIAMETER

	7 - .250"
5 - .125"	
6 - .188"	

### SHEATH MATERIAL

1 - 304 SS	3 - 316 SS
2 - 310 SS	6 - INC. 600

### JUNCTION

	Grounded	Ungrounded	Exposed
Single	G	U	E
Dual Common	D	C	P
Dual Isolated	-	S	T

### SPECIAL REQUIREMENT

If Required, Enter "X" and Specify. "0" If Not

### LEAD TYPE

Fiberglass -	F
Teflon® -	T
PVC -	P

### PROCESS CONNECTION

SL4 - .188"O.D. 1/2" NPT
SL6 - .250"O.D. 1/2" NPT

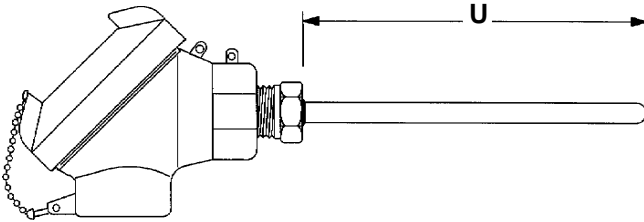
### SHEATH LENGTH "U"

Enter Length in Whole Feet 01 to 99

\*For noble metal (R & S) price contact factory.

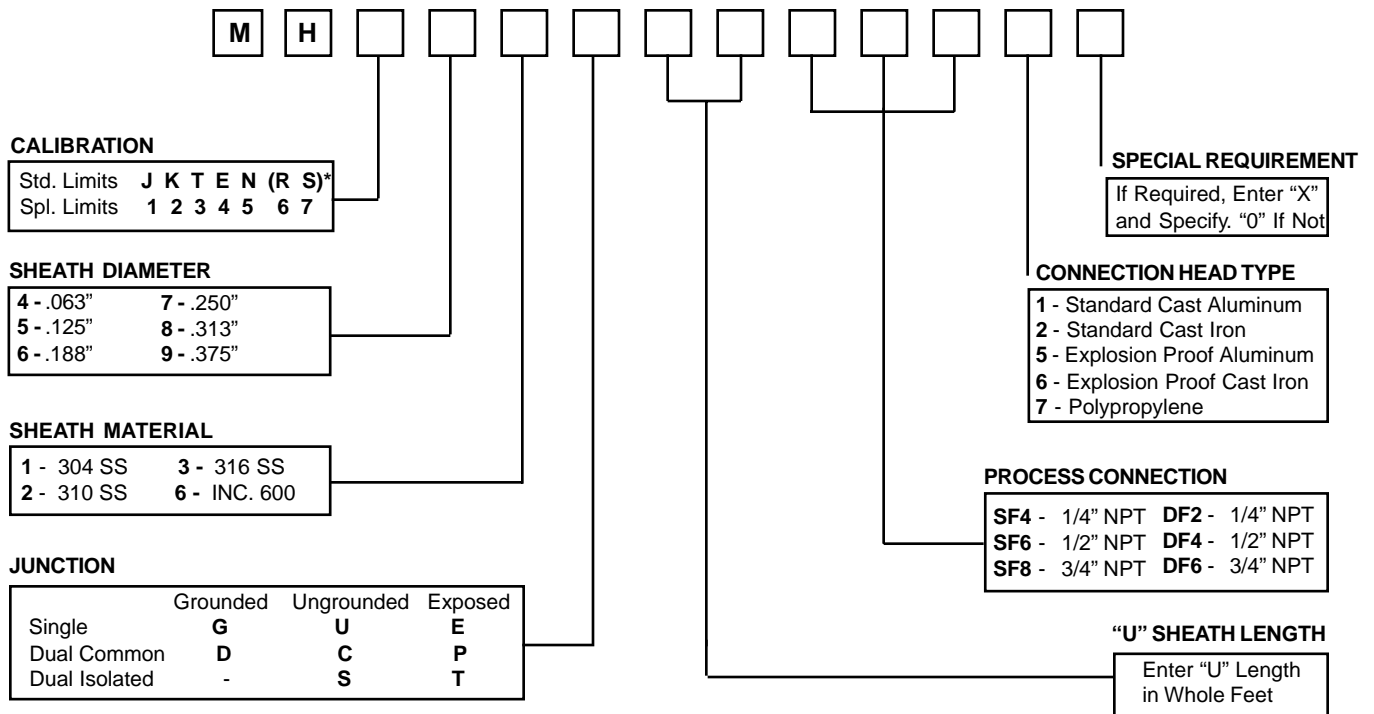
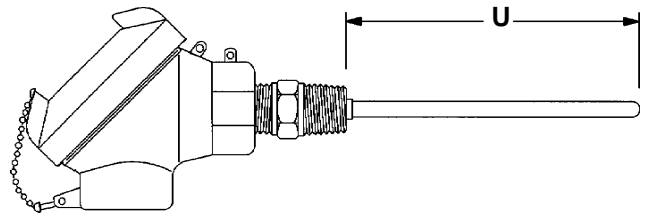
## Features

- Connection heads provide superior dust and moisture resistance
- Heads are available in Aluminum, Cast Iron, Explosion proof and Polypropylene
- Optional temperature transmitters can mount inside connection head



## General Specifications

- Sheath diameter available from .063" to .375"
- Hex fittings are made of stainless steel



\*For noble metal (R & S) price contact factory.

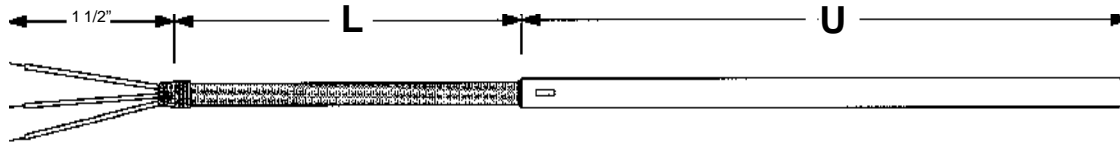
# RE Style Tube & Wire

## Features

- ☑ Standard industrial leads available in fiberglass, teflon and PVC insulation
- ☑ Accurate and dependable reading
- ☑ Economical and quick delivery

## General Specifications

- ☑ Available in diameters .125" to .250"
- ☑ Tube and wire max temperatures 300° C
- ☑ Epoxy sealed to resist moisture



STANDARD PT-100 RTD .00385  
CLASS WIRE WOUND THIN FILM

CLASS A	A	F
CLASS B	B	M

SHEATH O.D.

5 - .125"	6 - .188"	7 - .250"
-----------	-----------	-----------

Tube & Wire Max 300° C

SHEATH MATERIAL

304 SS	1
316 SS	2
Inconel 600	3

ELEMENT      2 Wire    3 Wire    4 Wire

100 Ohm Single	2	3	4
100 Ohm Duplex	D	L *	F *

SHEATH LENGTH "U"

Specify Whole Feet

SPECIAL REQUIREMENT

If Required Enter "X"  
and Specify. "0" If Not

COLD END TERMINATION

C - Three Pin Plug  
E - Three Pin Jack  
S - Standard 1 1/2" Leads

LEADWIRE LENGTH "L"

Enter "L" Length in  
Whole Feet 01 to 99

LEADWIRE CONSTRUCTION\*

	Standard	Overbraid
Fiberglass	F	B
Teflon	T	E
PVC	M	R

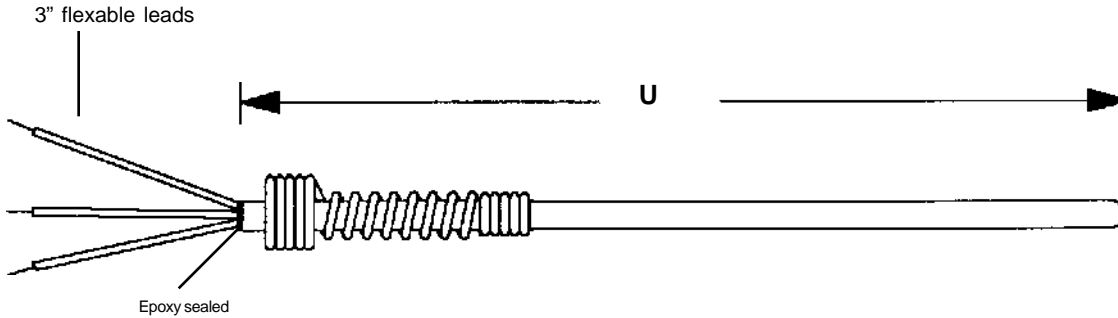


## Features

- ☑ Replacement spring loaded element for well assemblies
- ☑ Epoxy sealed against moisture

## General Specifications

- ☑ Sheath diameters .188" and .250"
- ☑ Mineral insulated available for applications above 300°C
- ☑ Teflon® or fiberglass insulation



CLASS A	A	F
CLASS B	B	M

<b>SHEATH O.D.</b>	
6 - .188"	7 - .250"

SHEATH MATERIAL	Tube & Wire		M.I. Cable**	
	Max 300° C		Max 650° C	
304 SS	1	A		
316 SS	2	B		
Inconel 600	3	C		

ELEMENT	2 Wire	3 Wire	4 Wire
100 Ohm Single	2	3	4 *
100 Ohm Duplex	D	L	F

**SHEATH LENGTH "U"**  
Specify Whole Feet

**SPECIAL REQUIREMENT**  
If Required Enter "X" and Specify. "0" If Not

**LEADWIRE LENGTH "L"**  
Enter "L" Length in Whole Feet 01 to 99

**LEADWIRE CONSTRUCTION**  
T - Teflon ( 400 F )  
F - Fiberglass ( 800 F )

\*\* Contact factory for mineral insulated 650°C

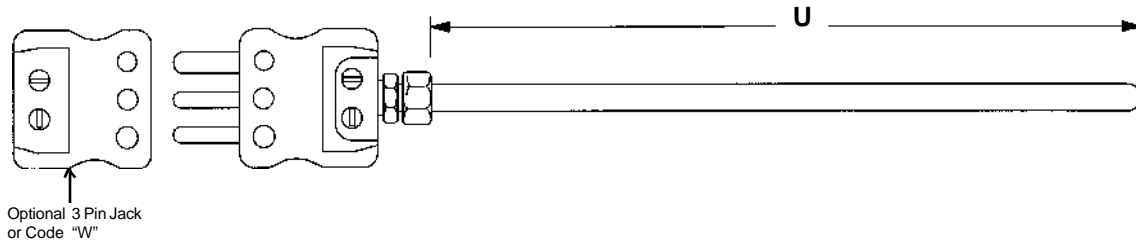
# RC Style Plug Termination

## Features

- Connector available in standard or mini sizes
- Available with mating Jack to allow for quick connect / disconnect

## General Specifications

- Available in diameters of .125" to .250"
- Dual element available
- Connector Temperature to 400°F



R C [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

STANDARD PT-100 RTD .00385  
CLASS WIRE WOUND THIN FILM

CLASS A	A	F
CLASS B	B	M

SHEATH O.D.

5 - .125"	6 - .188"	7 - .250"
-----------	-----------	-----------

Tube & Wire M.I. Cable\*\*

SHEATH MATERIAL Max 300° C Max 650° C

304 SS	1	N/A
316 SS	2	B
Inconel 600	3	C

ELEMENT 2 Wire 3 Wire

100 Ohm Single	2	3
100 Ohm Duplex	D	L

SHEATH LENGTH "U"

Specify Whole Feet

SPECIAL REQUIREMENT

If Required, Enter "X"  
and Specify. "0" If Not

COLD END TERMINATION

C - Three Pin Plug  
E - Three Pin Jack  
W - Plug & Jack

\*\*Contact factory for mineral insulated (650°C).

# RL Style Metal Transition

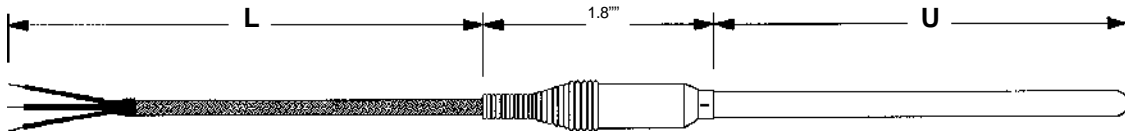
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## Features

- ☑ Spring strain relief protects lead wire against sharp bends in the transition area

## General Specifications

- ☑ Stainless steel transitions are crimped to sheath and epoxy filled for temperatures up to 400°F
- ☑ Available in .125" to .250" sheath O.D.



<b>R</b>	<b>L</b>												
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**STANDARD PT-100 RTD .00385**  
**CLASS WIRE WOUND THIN FILM**

CLASS A	<b>A</b>	<b>F</b>
CLASS B	<b>B</b>	<b>M</b>

**SHEATH O.D.**

5 - .125"	6 - .188"	7 - .250"
-----------	-----------	-----------

Tube & Wire  
**SHEATH MATERIAL Max 300° C**

304 SS	<b>1</b>
316 SS	<b>2</b>
Inconel 600	<b>3</b>

**ELEMENT**

	<b>2 Wire</b>	<b>3 Wire</b>	<b>4 Wire</b>
100 Ohm Single	<b>2</b>	<b>3</b>	<b>4</b>
100 Ohm Duplex	<b>D</b>	<b>L *</b>	<b>F *</b>

**SHEATH LENGTH "U"**

Specify Whole Feet

**SPECIAL REQUIREMENT**  
 If Required Enter "X" and Specify. "0" If Not

**COLD END TERMINATION**

**C** - Three Pin Plug  
**E** - Three Pin Jack  
**W** - Plug and Jack  
**S** - Standard 1 1/2" Leads

**LEADWIRE LENGTH "L"**  
 Enter "L" Length in Whole Feet 01 to 99

**LEADWIRE CONSTRUCTION**

	Standard	Overbraid
Fiberglass	<b>F</b>	<b>B</b>
Teflon	<b>T</b>	<b>E</b>
PVC	<b>M</b>	<b>V</b>

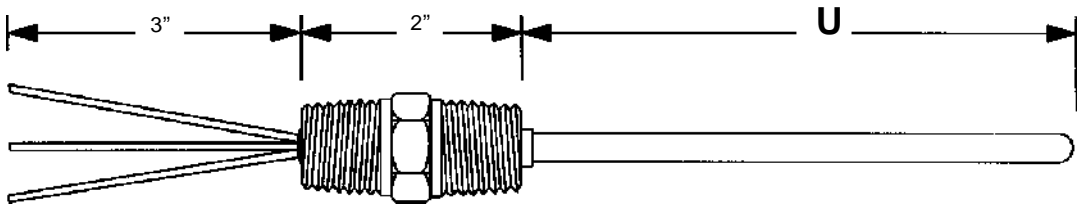
# RD Style Fixed Fitting

### Features

- Process connection designed for use with connection head
- Mineral insulation available for temperatures above 300°C

### General Specifications

- .125" to .250 O.D. sheaths available
- Stainless steel process fittings available in sizes 1/4" to 3/4" NPT



STANDARD PT-100 RTD .00385  
CLASS WIRE WOUND THIN FILM

CLASS A	A	F
CLASS B	B	M

SHEATH O.D.

5 - .125"	6 - .188"	7 - .250"
-----------	-----------	-----------

Tube & Wire M.I. Cable\*\*

SHEATH MATERIAL Max 300° C Max 650° C

304 SS	1	N/A
316 SS	2	B
Inconel 600	3	C

ELEMENT 2 Wire 3 Wire 4 Wire

100 Ohm Single	2	3	4
100 Ohm Duplex	D	L *	F *

SHEATH LENGTH "U"

Specify Whole Feet

SPECIAL REQUIREMENTS

If Required Enter "X" and specify. "0" If Not

LEADWIRE CONSTRUCTION

Fiberglass	F
Teflon	T
PVC	P

PROCESS FITTING

PART NO.	MALE N.P.T.
DF2	1/4"
DF4	1/2"
DF6	3/4"

\*\*Contact factory for mineral insulated (650°C).

# RS Style Spring Loaded

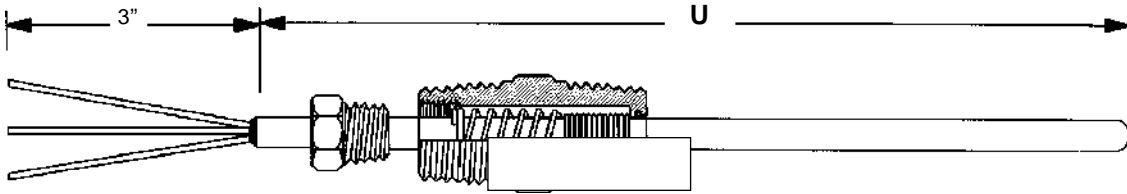
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## Features

- Spring loaded element ensures contact with well bottom

## General Specifications

- .188" & .250" sheath diameters
- 1/2"x 1/2" process threads



<b>R</b>	<b>S</b>												
----------	----------	--	--	--	--	--	--	--	--	--	--	--	--

**STANDARD PT-100 RTD .00385**  
**CLASS WIRE WOUND THIN FILM**

CLASS A	<b>A</b>	<b>F</b>
CLASS B	<b>B</b>	<b>M</b>

**SHEATH O.D.**

6 - .188"	7 - .250"
-----------	-----------

Tube & Wire M.I. Cable\*\*

<b>SHEATH MATERIAL</b>	<b>Max 300° C</b>	<b>Max 650° C</b>
304 SS	1	N/A
316 SS	2	B
Inconel 600	3	C

**ELEMENT**

	<b>2 Wire</b>	<b>3 Wire</b>	<b>4 Wire</b>
100 Ohm Single	2	3	4
100 Ohm Duplex	D	L	F

**SHEATH LENGTH "U"**

Specify Whole Feet

**SPECIAL REQUIREMENTS**  
 If Required Enter "X" and specify. "0" If Not

**LEADWIRE CONSTRUCTION**

Standard	
Fiberglass	F
Teflon	T

**SPRING LOADED PROCESS BUSHING**

PART NO.	TUBE O.D.	MALE NPT
SL4	.188"	1/2"
SL6	.250"	1/2"

\*\*Contact factory for mineral insulated (650°C).

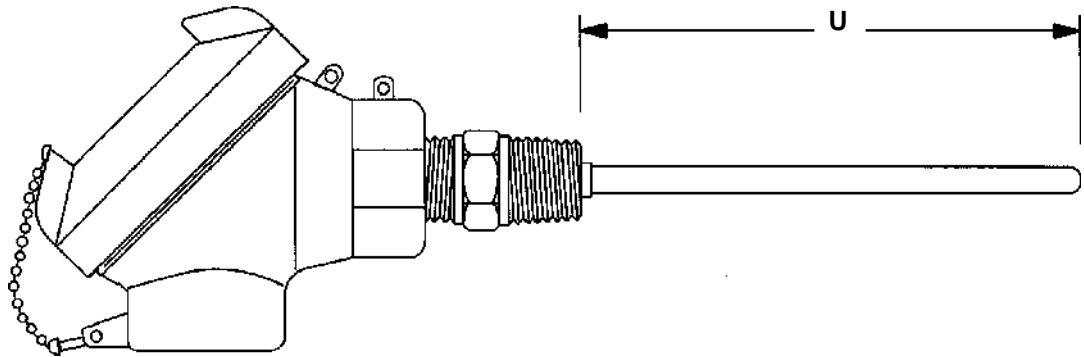
# RH Style Connection Head

## Features

- ☑ Connection heads provide superior dust and moisture resistance
- ☑ Screw top and flip top covers available

## General Specifications

- ☑ Sheath sizes of .125" to .250" O.D.
- ☑ 1/2"x 1/2" NPT stainless hex fitting
- ☑ Connection heads available in aluminum, cast iron and polypropylene



STANDARD PT-100 RTD .00385 CLASS WIRE WOUND THIN FILM

CLASS A	A	F
CLASS B	B	M

SHEATH O.D.

5 - .125"	6 - .188"	7 - .250"
-----------	-----------	-----------

Tube & Wire M.I. Cable\*\*

SHEATH MATERIAL Max 300° C Max 650° C

304 SS	1	N/A
316 SS	2	B
Inconel 600	3	C

ELEMENT 2 Wire 3 Wire 4 Wire

100 Ohm Single	2	3	4
100 Ohm Duplex	D	L *	F *

SHEATH LENGTH "U"

Specify Whole Feet

**SPECIAL REQUIREMENT**  
If Required, Enter "X" and Specify. "0" If Not

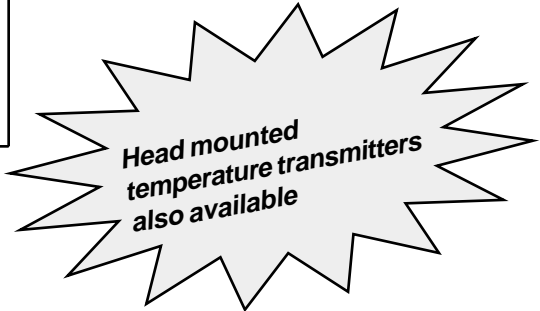
**CONNECTION HEAD TYPE**

- 1 - Standard Cast Aluminum
- 2 - Standard Cast Iron
- 5 - Explosion Proof Aluminum
- 6 - Explosion Proof Cast Iron
- 7 - Polypropylene

**"L" LENGTH FRACTIONAL**

0 - 0	4 - 1/2"
1 - 1/8"	5 - 5/8"
2 - 1/4"	6 - 7/8"
3 - 3/8"	

\*\*Contact factory for mineral insulated (650°C).



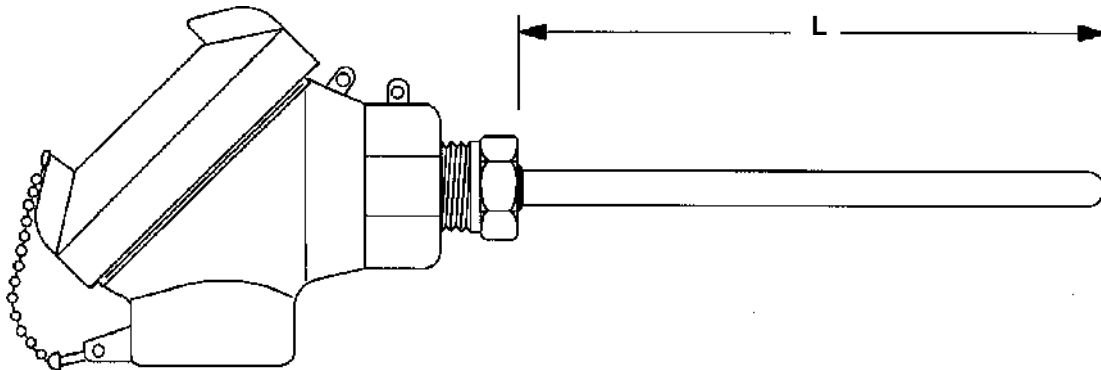
# RH Style Connection Head

**Features**

- Connection head provides superior dust and moisture resistance
- Designed for use with compression fittings

**General Specifications**

- Sheath construction available in low temp. max 300°C and mineral insulated 650°C max
- Connection heads available in Aluminum, cast iron and polypropylene



**STANDARD PT-100 RTD .00385  
CLASS WIRE WOUND THIN FILM**

CLASS A	A	F
CLASS B	B	M

**SHEATH O.D.**

5 - .125"	6 - .188"	7 - .250"
-----------	-----------	-----------

Tube & Wire M.I. Cable\*\*

**SHEATH MATERIAL Max 300° C Max 650° C**

304 SS	1	N/A
316 SS	2	B
Inconel 600	3	C

**ELEMENT 2 Wire 3 Wire 4 Wire**

100 Ohm Single	2	3	4
100 Ohm Duplex	D	L *	F *

**SHEATH LENGTH "U"**

Specify Whole Feet
--------------------

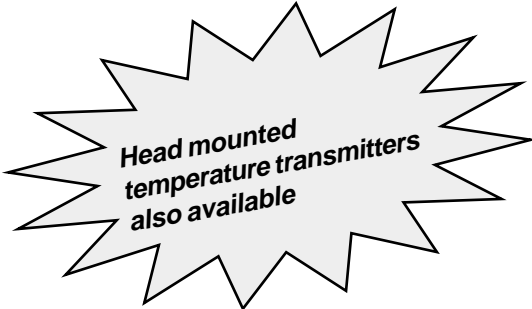
**SPECIAL REQUIREMENT**

If Required, Enter "X" and Specify. "0" If Not

**CONNECTION HEAD TYPE**

- |                               |
|-------------------------------|
| 1 - Standard Cast Aluminum    |
| 2 - Standard Cast Iron        |
| 5 - Explosion Proof Aluminum  |
| 6 - Explosion Proof Cast Iron |
| 7 - Polypropylene             |

\*\*Contact factory for mineral insulated (650°C).



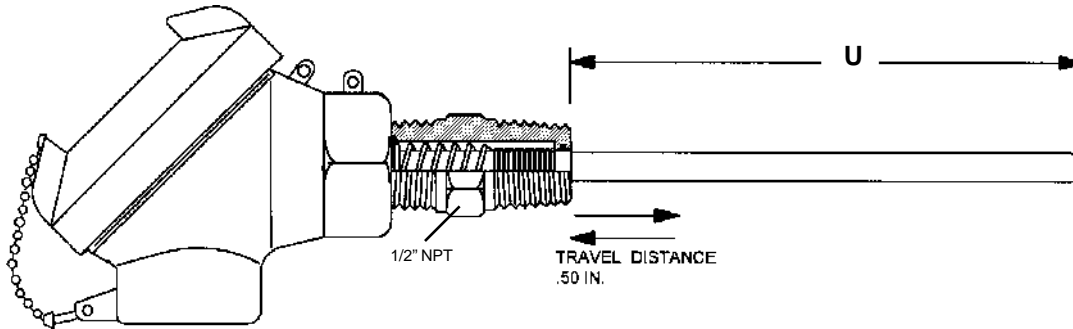
# RB Style Spring Loaded

## Features

- Spring loaded fitting ensures contact with bottom of well
- Connection head provides superior dust and moisture resistance

## General Specifications

- .188" & .250" sheath diameters available
- 1/2" of spring loaded travel
- 1/2" NPT stainless steel process connection



STANDARD PT-100 RTD .00385 CLASS WIRE WOUND THIN FILM

CLASS A	A	F
CLASS B	B	M

SHEATH O.D.

6 - .188"	7 - .250"
-----------	-----------

Tube & Wire M.I. Cable\*\*

SHEATH MATERIAL Max 300° C Max 650° C

304 SS	1	N/A
316 SS	2	B
Inconel 600	3	C

ELEMENT 2 Wire 3 Wire 4 Wire

100 Ohm Single	2	3	4
100 Ohm Duplex	D	L	F

SHEATH LENGTH "U"

Specify Whole Feet
--------------------

SPECIAL REQUIREMENT

If Required, Enter "X" and Specify. "0" If Not

CONNECTION HEAD TYPE

- 1 - Standard Cast Aluminum
- 2 - Standard Cast Iron
- 5 - Explosion Proof Aluminum
- 6 - Explosion Proof Cast Iron
- 7 - Polypropylene

\*\*Contact factory for mineral insulated (650°C).



# RN Style Connection Head

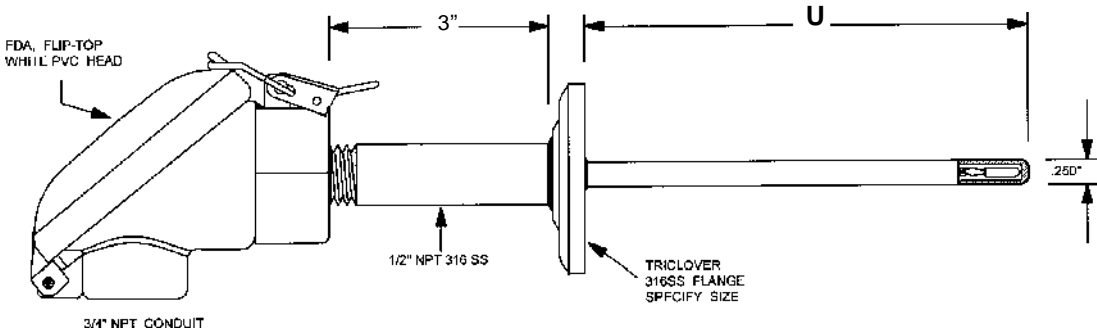
4

## Features

- 3-A certified for sanitary clean-in-place applications
- Epoxy coated or polypropylene head resists harsh washdown chemicals

## General Specifications

- .250" O.D. 316 ss sheath



R	N		7	3				0															
<p><b>STANDARD PT-100 RTD .00385 CLASS WIRE WOUND THIN FILM</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">CLASS A</td> <td style="width: 20%;">A</td> <td style="width: 20%;">F</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>CLASS B</td> <td>B</td> <td>M</td> <td></td> <td></td> </tr> </table>												CLASS A	A	F			CLASS B	B	M				
CLASS A	A	F																					
CLASS B	B	M																					
<p><b>SHEATH O.D.</b></p> <p>7 - 250"</p>																							
<p><b>SHEATH MATERIAL</b> MAX 260° C (500° F)</p> <p>3- 316ss</p>																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">100 Ohm Single</td> <td style="width: 10%;">2</td> <td style="width: 10%;">3</td> <td style="width: 10%;">4</td> <td style="width: 10%;"></td> </tr> <tr> <td>100 Ohm Duplex</td> <td>D</td> <td>L</td> <td>F</td> <td></td> </tr> </table>												100 Ohm Single	2	3	4		100 Ohm Duplex	D	L	F			
100 Ohm Single	2	3	4																				
100 Ohm Duplex	D	L	F																				
<p><b>SHEATH LENGTH "L"</b></p> <p>Specify Whole Inches</p>																							
<p style="text-align: right;"><b>SPECIAL REQUIREMENT</b> If Required, Enter "X" and Specify. "0" If Not</p>																							
<p style="text-align: right;"><b>CONNECTION HEAD TYPE</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">1- Polypropylene</td> <td style="width: 50%;"></td> </tr> <tr> <td>2- Epoxy coated Aluminum</td> <td></td> </tr> </table>												1- Polypropylene		2- Epoxy coated Aluminum									
1- Polypropylene																							
2- Epoxy coated Aluminum																							
<p style="text-align: right;"><b>SANITARY CAP SIZE/TUBE O.D.</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">A -1 1/2"</td> <td style="width: 25%;">D -3"</td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> <tr> <td>B -2"</td> <td>X -Other (Specify)</td> <td></td> <td></td> </tr> <tr> <td>C -2 1/2"</td> <td></td> <td></td> <td></td> </tr> </table>												A -1 1/2"	D -3"			B -2"	X -Other (Specify)			C -2 1/2"			
A -1 1/2"	D -3"																						
B -2"	X -Other (Specify)																						
C -2 1/2"																							
<p style="text-align: right;"><b>SANITARY CAP STYLE</b></p> <p>T - TRI-CLAMP®</p>																							

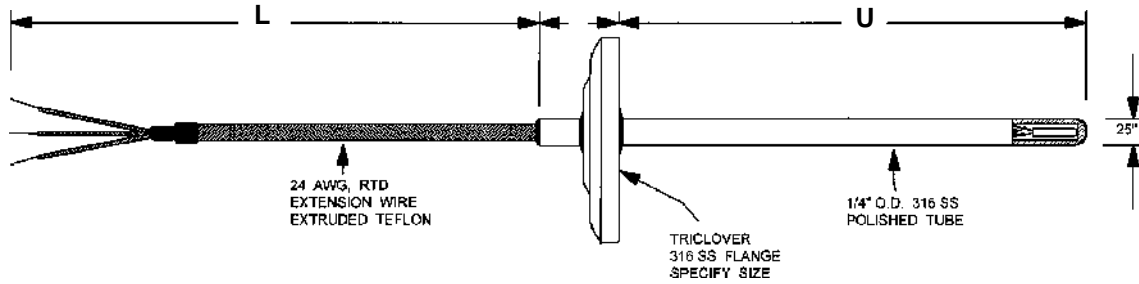
# RY Style Teflon Lead

### Features

- 3-A certified for sanitary clean-in-place applications
- FEP Teflon® flexible extension

### General Specifications

- .250" O.D. sheath, polished 316ss sheath and sanitary cap
- 100Ω 2 , 3 and 4 wire circuits available



R Y [ ] 7 3 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

STANDARD PT-100 RTD .00385 CLASS WIRE WOUND THIN FILM

CLASS A	A	F
CLASS B	B	M

SHEATH O.D.

7- .250"

SHEATH MATERIAL MAX 260° C (500° F)

3- 316ss

ELEMENT      2 Wire    3 Wire    4 Wire

100 Ohm Single	2	3	4
100 Ohm Duplex	D	L	F

SHEATH LENGTH "L"

Specify Whole Inches

**SPECIAL REQUIREMENT**  
If Required, Enter "X" and Specify. "0" If Not

**LEADWIRE LENGTH "E"**

Enter "E" Length in Whole Feet 01 to 99

**SANITARY CAP SIZE/TUBE O.D.**

A -1 1/2"	D -3"
B -2"	X -Other (Specify)
C -2 1/2"	

**SANITARY CAP STYLE**

T - TRI-CLAMP®

### What's a Thermistor ?

The Word Thermistor is derived from **THERM**ally sensitive res**ISTOR** .  
there are two major types: **NTC** and **PTC**.

**NTC** Thermistors have a Negative Temperature Coefficient of resistance.

**PTC** Thermistors have a Positive Temperature Coefficient of resistance

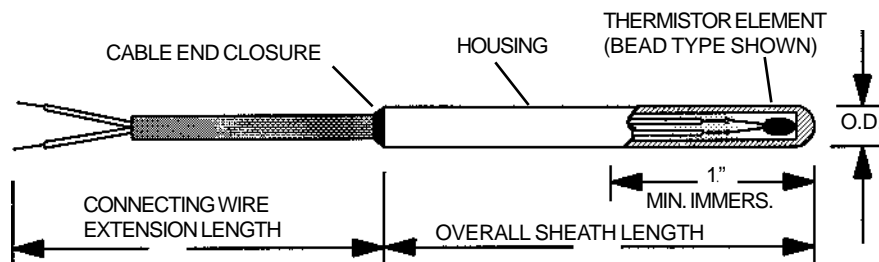
**NTC** Thermistors exhibit a decrease in electrical resistance with increasing temperature.

**PTC** Thermistors exhibit an increase in electrical resistance with increasing temperature.

Thermistors are actually classified as Ceramic Semiconductors. Manufacturing precision Thermistors involves advanced ceramics technology, solid state chemistry and electronics. Depending on the materials and methods of fabrication, they are generally used in the temperature range of - 50°to 150°C and up to 300°C for some glass encapsulated units, however their Temperature vs Resistance curve is Non-Linear.

The resistance value of Thermistors are typically referenced at 25°C ( R25 ). For most applications R25 values are between 100 ohms and 100 Kohms.

**Fig. 1 Thermistor Probe Typical Construction**



### Sensor Manufacturing Capabilities

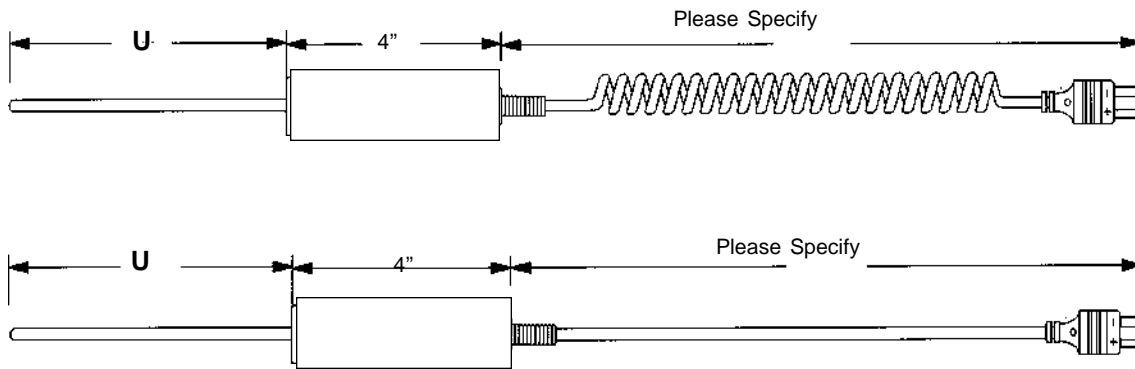
At **Eustis Co.** Thermistor probes can be custom built to meet most demanding applications, whether your concern is: Size, Interchangeability, Response Time Ruggedness, Response Time or Temperature, we can build It.

### Applications:

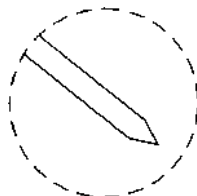
- \* Automotive
- \* HVAC
- \* Biomedical
- \* Military / Aerospace
- \* Food Processing
- \* Electronics

- ☑ Probes available in thermocouple RTD and thermistor elements
- ☑ Plastic, Teflon or SS handle available
- ☑ A variety of probe tips available, standard immersion tip shown below

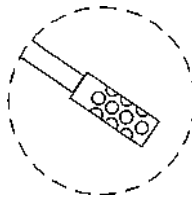
- ☑ Probe diameter available in standard .125" O.D. to .250" O.D.
- ☑ PVC cord with molded mini plug.



P	H									0	0	0
<b>CALIBRATION</b>										<b>SPECIAL REQUIREMENT</b>		
J K T (x for other)										If required, enter "X" and specify. "0" if not.		
<b>SHEATH O.D.</b>										<b>LEAD</b>		
5- .125"										T- Straight cord		
6- .188"										C- Coil cord		
7- .250"										<b>TIP STYLE</b>		
<b>SHEATH MATERIAL</b>										A- Flat		
1- 304SS										B- Air		
3- 316SS										C- Piercing		
6- INC. 600										<b>BEND ANGLE</b>		
<b>Sheath length "U"</b>										0- Straight		
Specify Whole inches										4- 45°		
										5- 90° (bends are made at 6" "L")		



Piercing tip - Used for measuring temperatures where penetration into frozen or bulk foods is required.



Air tip - For fast accurate measuring air or gas.

## INDUSTRIAL THERMOCOUPLE & RTD ASSEMBLIES

To order a complete assembly from this section:

Step 1: Determine the part number for sensing element.

Step 2: Determine Part number of Thermowell from section .

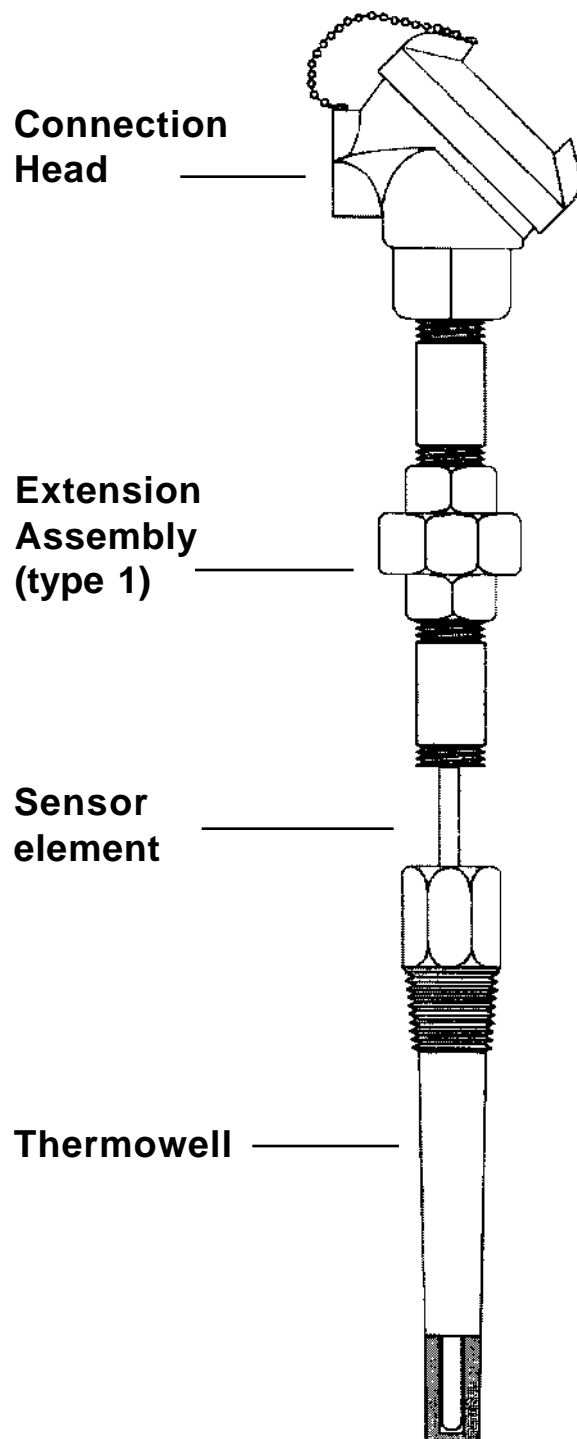
Example: Sensor, Extension & Connection head.

- ◆ Part Number:
- ◆ Mineral insulated
- ◆ Type J
- ◆ 1/4" O.D.
- ◆ 304 stainless steel
- ◆ Ungrounded junction
- ◆ As required element length
- ◆ Spring loaded
- ◆ Nipple-Union-Nipple extension
- ◆ General purpose Aluminum head
- ◆ No special requirements

Example: Thermowell

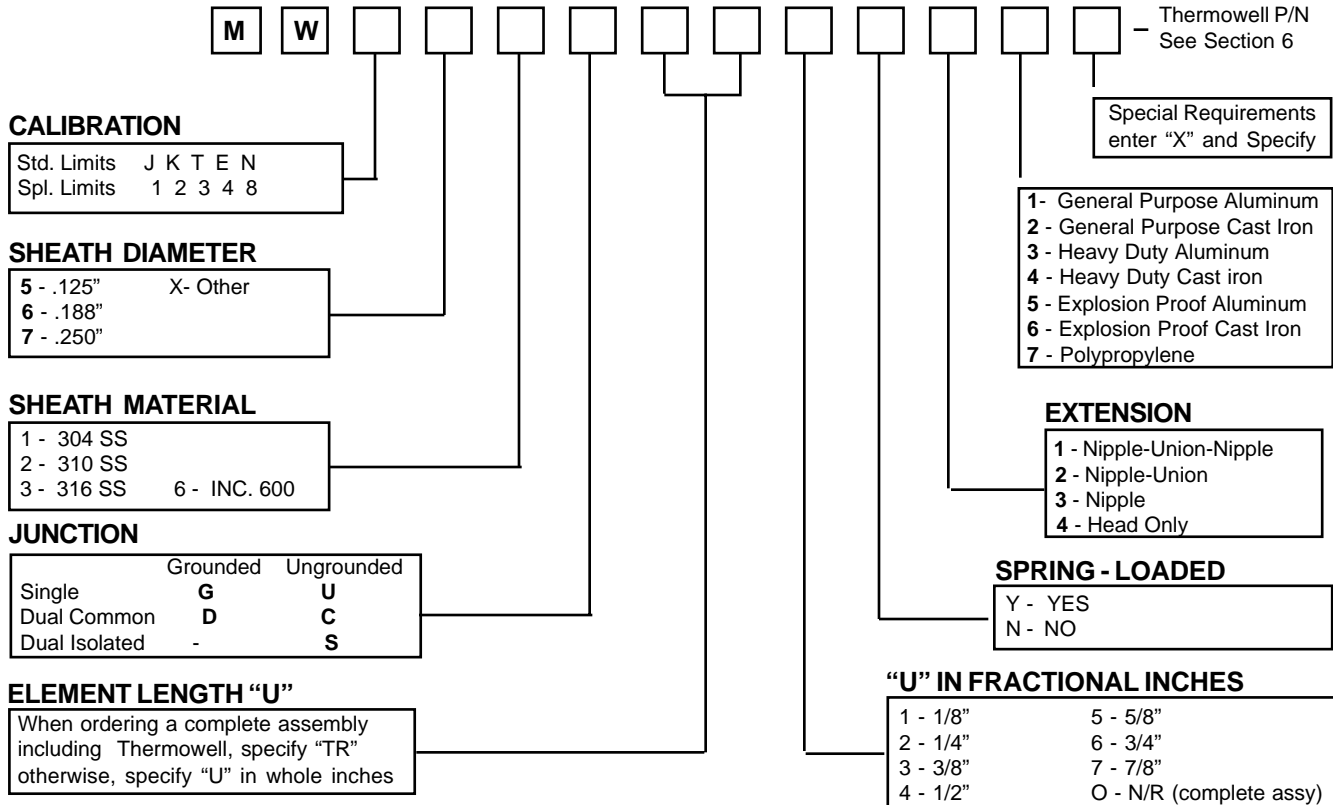
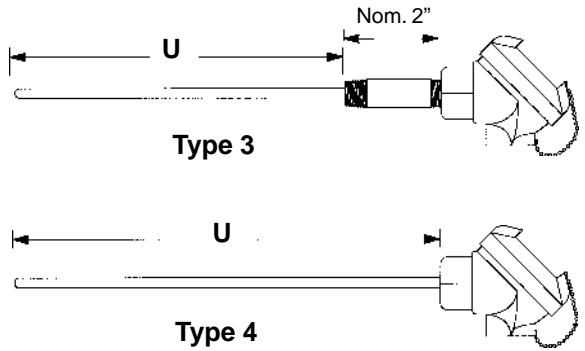
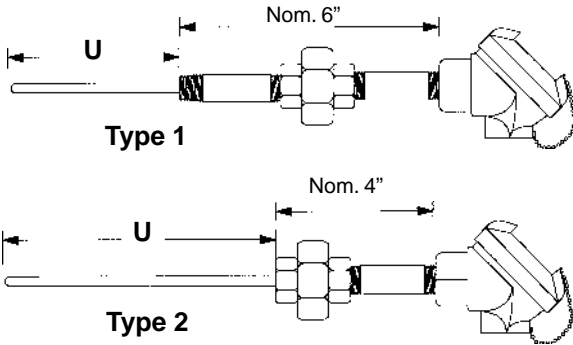
Part Number: TT300A045030

- ◆ Threaded, tapered thermowell
- ◆ 3/4" NPT Process connection
- ◆ .260" bore
- ◆ 4 1/2" immersion length "U"
- ◆ No lag
- ◆ 316 stainless steel
- ◆ No special requirements



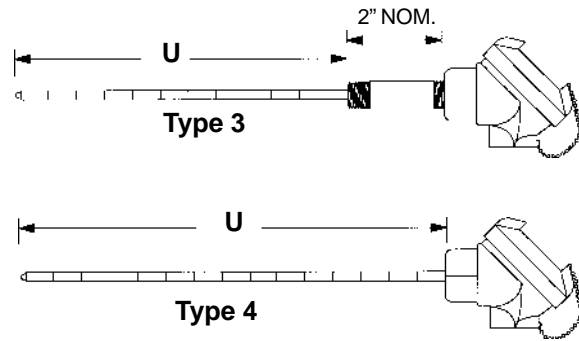
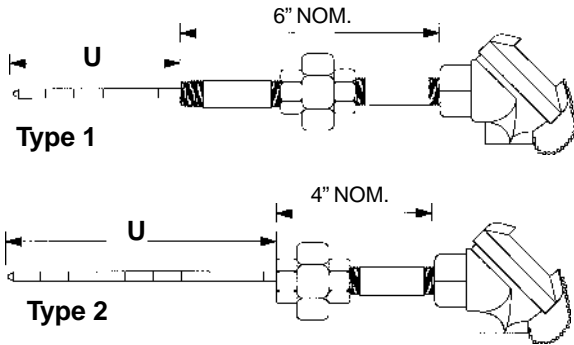
Industrial, mineral insulated assemblies for use with thermowells

Seven varieties of connection heads  
 Spring loading available



- ☑ Beaded elements for use with thermowells
- ☑ Available in four extension configurations

- ☑ Seven connection head varieties to choose from
- ☑ Element size available 14 AWG and 8 AWG
- ☑ Noble metal thermocouples are supplied with Alumina insulators, 24 AWG wire is standard



Special Requirements enter "X" and Specify

### CALIBRATION

Std. Limits	J	K	T	E	N	(S R B)*
Spl. Limits	1	2	3	4	8	3 5 6

### ELEMENT INSULATION

- B** - Bare (no insulators)
- O** - Oval Ceramic
- R** - Round Ceramic

### WIRE SIZE

- 1** - 08 AWG
- 2** - 14 AWG
- 3** - 24 AWG (S R B)\*
- X** - Other (Specify)

### JUNCTION

Style	Twisted	Butt
	Welded	Welded
Single	<b>T</b>	<b>B</b>
Duplex	<b>D</b>	<b>W</b>

### ELEMENT LENGTH "U"

When ordering a complete assembly including Thermowell, specify "TR" otherwise, specify "U" in whole inches

### CONNECTION HEAD

- 1** - General Purpose Aluminum
- 2** - General Purpose Cast Iron
- 3** - Heavy Duty Aluminum
- 4** - Heavy Duty Cast iron
- 5** - Explosion Proof Aluminum
- 6** - Explosion Proof Cast Iron
- 7** - Polypropylene

### EXTENSION

- 1** - Nipple-Union-Nipple
- 2** - Nipple-Union
- 3** - Nipple
- 4** - Head Only

### "U" IN FRACTIONAL INCHES

1 - 1/8"	5 - 5/8"
2 - 1/4"	6 - 3/4"
3 - 3/8"	7 - 7/8"
4 - 1/2"	O - N/R (complete assy)

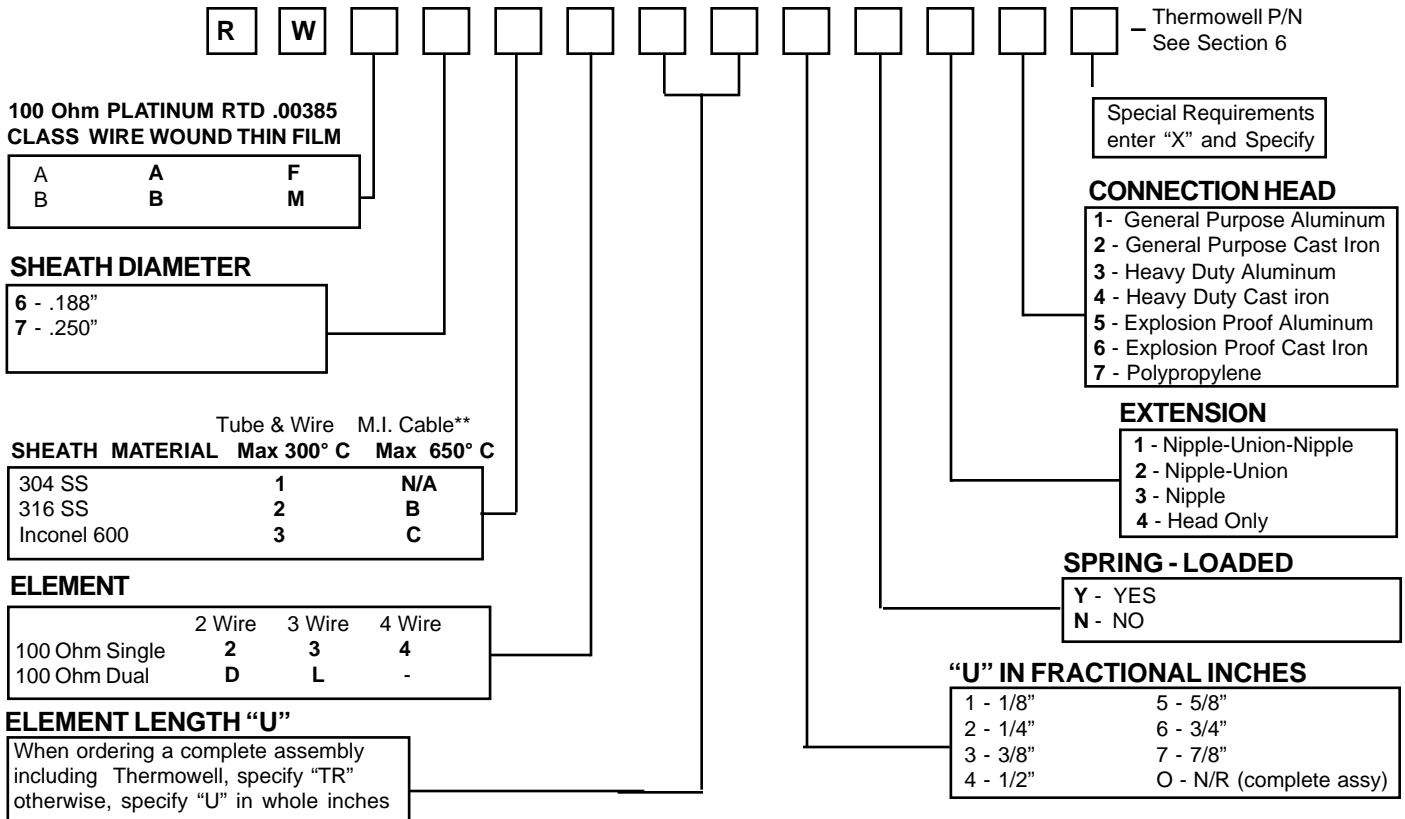
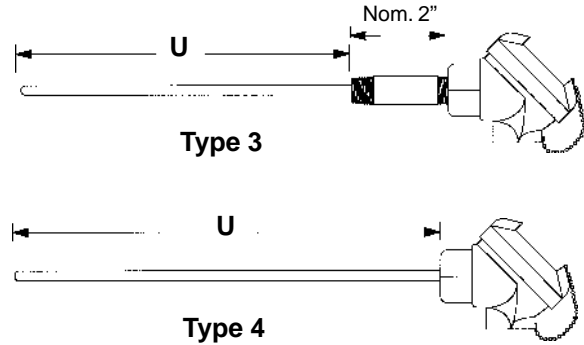
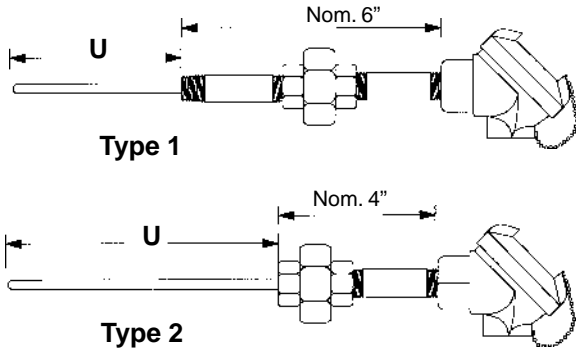
\*For type R,S and B pricing contact the factory.

Features

- ☑ RTD Elements for use with Thermowells
- ☑ Seven connection head varieties to choose from

General Specifications

- ☑ Four standard extension configurations, type 1,2,3 and 4
- ☑ Available up to 800°C temperature



NOTE:

\*\*For M.I. cable construction and 800 deg/C contact factory.



# Section Thermowells and Protection tubes



Threaded Thermowell  
Socket-weld  
Weld in  
Flanged  
Van Stone  
Metal Tubes  
Ceramic Tubes

## THERMOWELLS

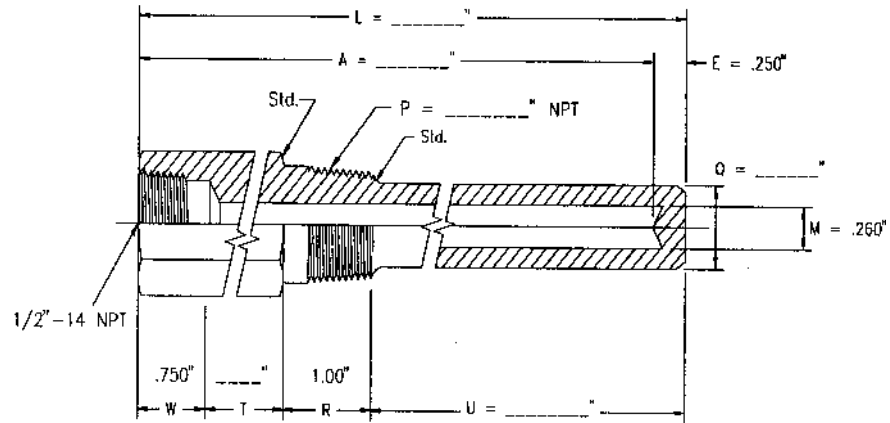
Manufactured from drilled bar stock, Pyrocoms thermowells provide protection from pressure, gas and liquid elements. Thick walls provide sturdy protection for the sensor against high velocity and corrosive environments. Below is a helpful guide of recommended materials for specific corrodents.

Corrodent	Temp °F	Conc. %	Recom. Material	Corrodent	Temp °F	Conc. %	Recom. Material	Corrodent	Temp °F	Conc. %	Recom. Material
Acetic Acid	212	ALL	Monel	Copper (10) Sulfate	300	ALL	316SS	Oxygen	75	ALL	Steel
Acetic Anhydride	300		Nickel	Copper Plating Solution (Cyanide)	180		304SS	Oleic Acid	See Fatty Acids		
Acetone	212	ALL	304 SS	Copper Plating Solution (Acid)	75		304SS	Oxalic Acid	212	ALL	Monel
Acetylene	400		304 SS	Corn Oil	200		304SS	Photographic Bleaching	100	ALL	304SS
Alcohols	212	ALL	304 SS	Creosote	200	ALL	304SS	Palmitic Acid	See Fatty Acids		
Alum Potassium (or Sodium)	300	ALL	Hast. C	Crude Oil	300		Monel	Phosphoric Acid	212	ALL	316SS
Aluminum Chloride	212	ALL	Hast B	Ethyl Acetate	See Lacquer Thinner			Phenol	212	ALL	316SS
Aluminum Sulfate	212	ALL	316 SS	Ethyl Chloride, DRY	500		Steel	Potassium Compounds	See Sodium Compounds		
Ammonia, Dry	212	ALL	304,316SS	Ethanol	See Alcohols			Propane	300		Steel
Ammonium Hydroxide (Ammonia, Aqua)	212	ALL	304,316SS	Ethylene Glycol (Uninhibited)	212	ALL	304SS	Rosin	700	100%	316SS
Ammonium Chloride	300	50%	Monel	Ethylene Oxide	75		Steel	Sea Water	75		Monel
Ammonium Nitrate	300	ALL	304SS	Fatty Acids	500	ALL	Hast. C	Soap & Detergents	212	Monel	304SS
Ammonium Sulfate	212	ALL	316SS	Ferric Chloride	75	ALL	Hast. C	Sodium Bicarbonate	212	20%	316SS
Amyl Acetate	300	ALL	304SS	Ferric Sulfate	300	ALL	304SS	Sodium Bisulphite	212	20%	304SS
Aniline	25		Monel	Formaldehyde	212	40%	316SS	Sodium Carbinate	212	40%	316SS
Asphalt	250		304SS	Formic Acid	300	ALL	316SS	Sodium Chloride	300	30%	Monel
Atmosphere (industrial and Marine)			304SS	Freon	300		Steel	Sodium Chromate	212	ALL	316SS
Barium Compounds	See Calcium			Flourine, Anhydrous	100		304SS	Salt or Brine	See Sodium Chloride		
Beer	70		304SS	Furfural	450		316SS	Sodium Cyanide	212	ALL	304SS
Benzene (Benzol)	212		Steel	Gasoline	300		Steel	Sodium Hydroxide	212	30%	316SS
Benzoic Acid	212	ALL	316SS	Glucose	300		304SS	Sodium Hypochlorite	75	10%	Hast. C
Bleaching Powder	70	15%	Monel	Glue ph 6-8	300	ALL	304SS	Sodium Nitrate	212	40%	304SS
Borax	212	ALL	Brass	Glycerine	212	ALL	Brass	Sodium Nitrate	75	20%	316SS
Bordeaux Mixture	200		304SS	Hydrobromic Acid	212	ALL	Hast. C	Sodium Phosphate	212	10%	Steel
Boric Acid	400	ALL	316SS	Hydrochloric Acid (37 -38%)	225	ALL	Hast. B	Sodium Silicate	212	10%	Steel
Bromine	125	DRY	Monel	Hydrogen Chloride, Dry	500		304SS	Sodium Sulfide	212	30%	316SS
Butane	400	ALL	Steel	Hydrocyanic Acid	212	ALL	304SS	Sodium Sulfite	212	10%	316SS
Butyl Alcohol	See Alcohols			Hydrofluoric Acid	212	60%	Monel	Sodium Sulfate	212	30%	304SS
Butyric Acid	212		Hast. C	Hydrofluoric Acid, Dry	175		Steel	Sodium Thiosulfate	212	ALL	304SS
Calcium Bisulphite	75	ALL	Hast. C	Hydrofluogilicic Acid	212	40%	Monel	Steam	304SS		
Calcium Chloride	212	ALL	Hast. C	Hydrogen Peroxide	125	10-100%	304SS	Stearic Acid	See Fatty Acids		
Calcium Hydroxide	300	20%	Hast. C	Kerosene	300	ALL	Steel	Sugar Solution	See Glucose		
Calcium Hypochlorite	See Bleaching Powder			Lacquers & Thinners	300	ALL	304SS	Sulfur	500		304SS
Carbolic Acid	See Phenol			Latic Acid	300	ALL	316SS	Sulfur Chloride	75	DRY	316SS
Carbon Dioxide, Dry	800	ALL	Brass	Lime	212	ALL	316SS	Sulfur Dioxide	500	DRY	316SS
Carbonated Water	212	ALL	304SS	Linseed Oil	75		Steel	Sulfur Trioxide	500	DRY	316SS
Carbonated Beverages	212		304SS	Magnesium Chloride	212	50%	Nickel	Sulfuric Acid	212	10%	316SS
Carbon Disulphide	200		304SS	Magnesium Hydroxide (or Oxide)	75	ALL	304SS	Sulfuric Acid Fuming	175		Hast. C
Carbon Tetrachloride	125	ALL	Monel	Magnesium Sulfate	212	40%	304SS	Sulfurous Acid	75	20%	316SS
Chlorine, Dry	100		Monel	Mercuric Chloride	75	10%	Hast. C	Titanium Tetrachloride	75	ALL	316SS
Chlorine, Moist	100	ALL	Monel	Mercury	700		Steel	Tannic Acid	75	40%	Hast. B
Chloroacetic Acid	212	ALL	Monel	Methylene Chloride	212	ALL	304SS	Toluene	75		Steel
Chloroform, Dry	212		Monel	Methyl Chloride, Dry	75		Steel	Trichloroacetic Acid	75	ALL	Hast. B
Chromic Acid	300	ALL	Hast. C	Milk fresh or sour	180		304SS	Trichlorethylene	300	DRY	Monel
Cider	300	ALL	304SS	Molasses	See Glucose			Turpentine	75		316SS
Citric Acid	212	ALL	Hast. C	Natural Gas	70		304SS	Varnish	150		Steel
Copper (10) Chloride	212	ALL	Hast. C	Nitric Acid	75	ALL	304SS	Zinc Chloride	212	ALL	Hast. B
Copper (10) Nitrate	300	ALL	316SS	Nitric Acid	300	ALL	316SS	Zinc Sulfate	212	ALL	316SS

Monel® is a registered trade mark of the Inco family of companies  
Hasteloy B® and Hasteloy C® are registered trade marks of Haynes International

# TS Style Threaded Straight

6



T S [ ] 0 0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

**PROCESS CONNECTION "P"**

- 3 - 3/4" NPT
- 1 - 1" NPT
- 2 - 1/2" NPT

**BORE DIAMETER "M"**

- A - .260" Bore
- B - .385" Bore

**IMMERSION "U" LENGTH (In)**

Enter "U" Dimension from table below

**SPECIAL REQUIREMENT**

If Required, Enter "X" and Specify

**MATERIAL\***

- 1 - 304 SS
- 2 - 310 SS
- 3 - 316 SS
- 4 - 446 SS
- 5 - 347 SS
- 6 - Inconel 600™
- 7 - Brass
- 8 - Hastelloy™
- 9 - Monel™

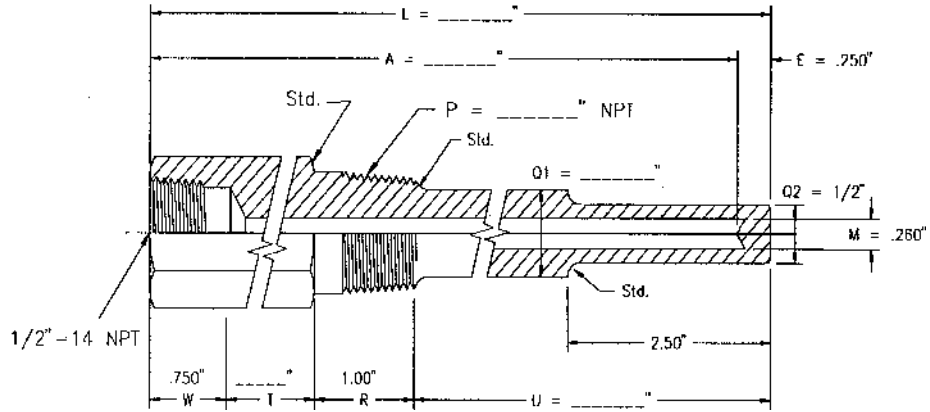
**LAG "T" (In)**

If Required Enter in Whole Inches, "0" If Not

Note: \*For other lengths and materials not listed above contact factory.

\*\*For thermowells with lag contact factory.

# TR Style Threaded Reduced



T R [ ] 0 0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

**PROCESS CONNECTION "P"**

- 3 - 3/4" NPT
- 1 - 1" NPT
- 2 - 1/2" NPT

**BORE DIAMETER "M"**

- A - .260" Bore
- B - .385" Bore

**IMMERSION "U" LENGTH (In)**

Enter "U" Dimension from table below

**SPECIAL REQUIREMENT**

If Required, Enter "X" and Specify

**MATERIAL\***

- 1 - 304 SS
- 2 - 310 SS
- 3 - 316 SS
- 4 - 446 SS
- 5 - 347 SS
- 6 - Inconel 600™
- 7 - Brass
- 8 - Hastelloy™
- 9 - Monel™

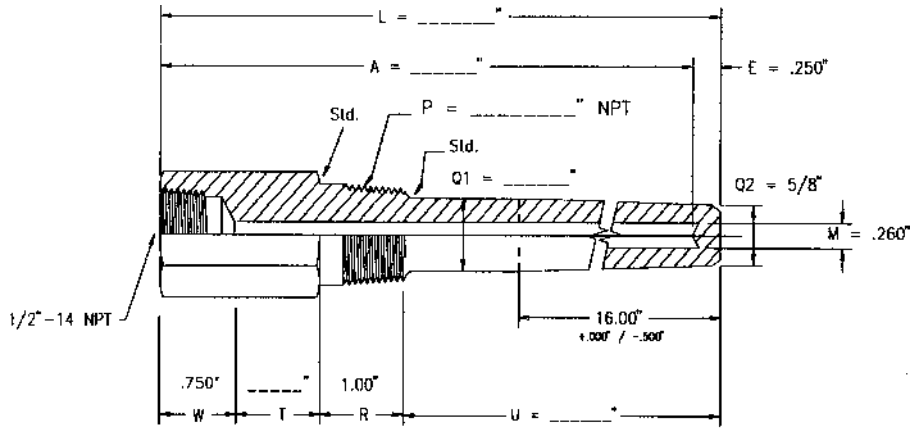
**LAG "T" (In)**

If Required Enter in Whole Inches, "0" If Not

Note: \*For other lengths and materials not listed above contact factory.

\*\*For thermowells with lag contact factory.

# TT Style Threaded Tapered



T
T
 
0
0
 
 
 
 
 
 
 

**PROCESS CONNECTION "P"**  
 3 - 3/4" NPT  
 1 - 1" NPT  
 2 - 1/2" NPT

**BORE DIAMETER "M"**  
 A - .260" Bore  
 B - .385" Bore

**IMMERSION "U" LENGTH (In)**  
 Enter "U" Dimension  
 from table below

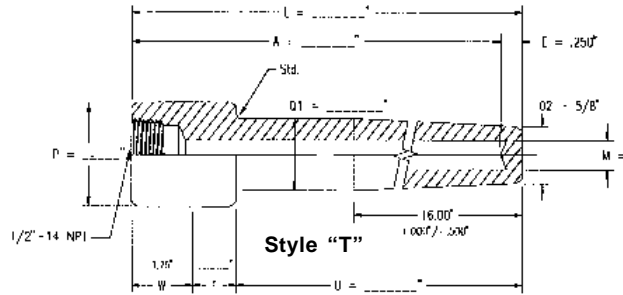
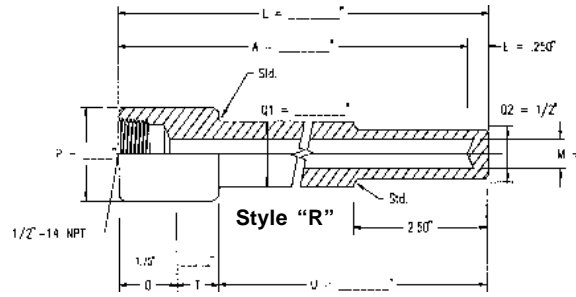
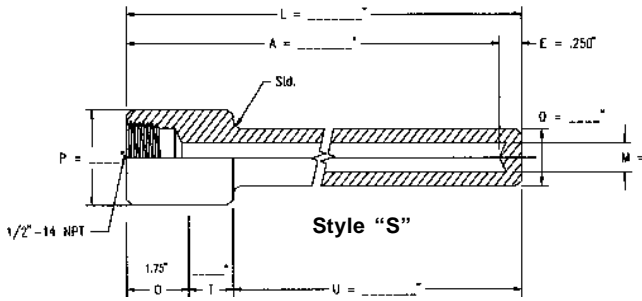
**SPECIAL REQUIREMENT**  
 If Required, Enter "X"  
 and Specify

- MATERIAL\***
- 1 - 304 SS
  - 2 - 310 SS
  - 3 - 316 SS
  - 4 - 446 SS
  - 5 - 347 SS
  - 6 - Inconel 600™
  - 7 - Brass
  - 8 - Hastelloy™
  - 9 - Monel™

**LAG "T" (In)**  
 If Required Enter in  
 Whole Inches, "0" If Not

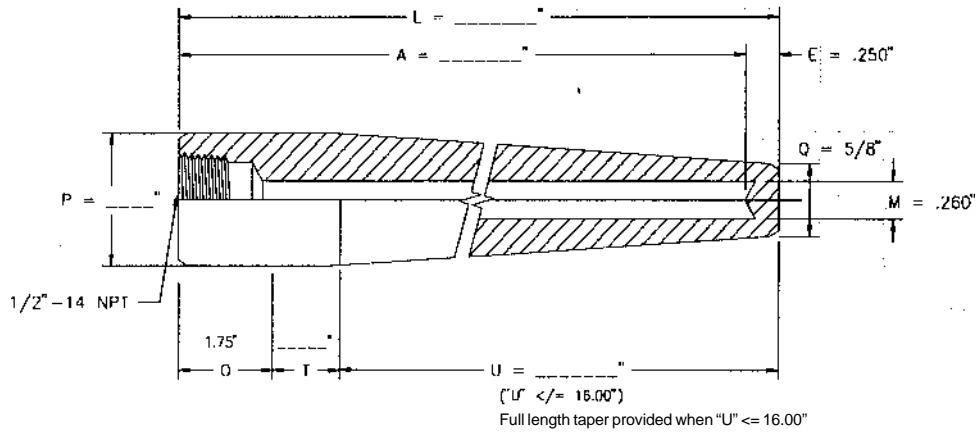
Note: \*For other lengths and materials not listed above contact factory.  
 \*\*For thermowells with lag contact factory.

# W Style Socket Weld Thermowell



<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">W</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; padding: 2px;">0</div> <div style="border: 1px solid black; padding: 2px;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; padding: 2px;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>											
<b>STYLE</b>											
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px;"> <p><b>S</b> - Straight</p> <p><b>R</b> - Reduced</p> <p><b>T</b> - Tapered</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p><b>SPECIAL REQUIREMENT</b></p> <p>If Required, Enter "X" and Specify. "0" If Not</p> </div> </div>											
<b>PIPE SIZE "P"</b>											
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px;"> <p>3 - 3/4" (Actual 1.050")</p> <p>1 - 1" (Actual 1.315")</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p><b>MATERIAL*</b></p> <p>0 - Carbon Steel</p> <p>1 - 304 SS</p> <p>2 - 310 SS</p> <p>3 - 316 SS</p> <p>4 - 446 SS</p> <p>5 - 347 SS</p> <p>6 - Inconel 600™</p> <p>7 - Brass</p> <p>8 - Hastelloy™</p> <p>9 - Monel™</p> </div> </div>											
<b>BORE DIAMETER "M"</b>											
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px;"> <p>A - .260"</p> <p>B - .385"</p> </div> </div>											
<b>IMMERSION "U" LENGTH (In)</b>											
<div style="border: 1px solid black; padding: 5px;"> <p>Enter "U" Dimension from table below</p> </div>											

Note: \*For other lengths and materials not listed above contact factory.



W I [ ] 0 0 [ ] [ ] [ ] [ ] 0 [ ] [ ]

**PIPE SIZE "P"**

3 - 3/4" (Actual 1.050")  
1 - 1" (Actual 1.315")

**BORE DIAMETER "M"**

A - .260"  
B - .385"

**IMMERSION "U" LENGTH (In)**

Enter "U" Dimension  
from table below

**SPECIAL REQUIREMENT**

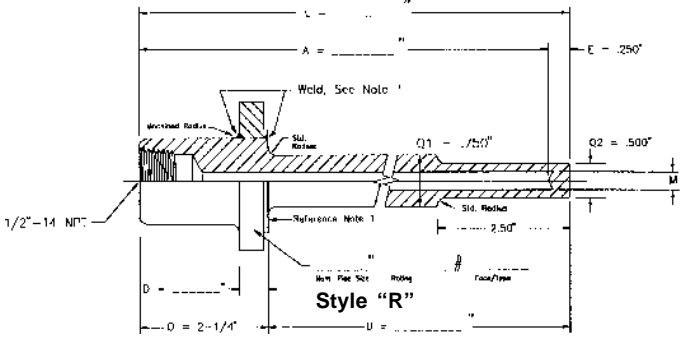
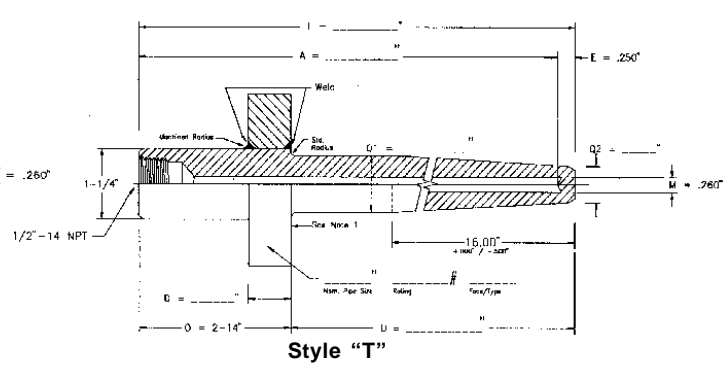
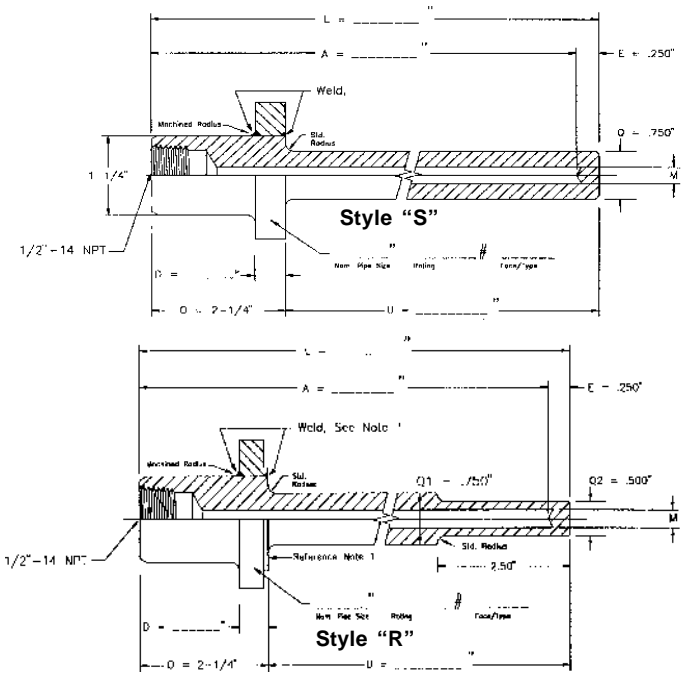
If Required, Enter "x"  
and Specify. "0" If Not

**MATERIAL\***

- 0 - Carbon Steel
- 1 - 304 SS
- 2 - 310 SS
- 3 - 316 SS
- 4 - 446 SS
- 5 - 347 SS
- 6 - Inconel 600™
- 7 - Brass
- 8 - Hastelloy™
- 9 - Monel™

Note: \*For other lengths and materials not listed above contact factory.

# F Style Flanged Thermowells



F										O		
---	--	--	--	--	--	--	--	--	--	---	--	--

**STYLE**  
**S** - Straight  
**R** - Reduced  
**T** - Tapered

**FLANGE SIZE (In)**  
 1 - 3/4"    4 - 2"  
 2 - 1"     5 - 3"  
 3 - 1-1/2"

**FLANGE RATING (Lbs)**  
**A** - 150    **D** - 900  
**B** - 300    **E** - 1500  
**C** - 600    **F** - 3000

**FLANGE MATERIAL**  
 1 - 304 SS    6 - Inconel 600™  
 2 - 310 SS    8 - Hastelloy™  
 3 - 316 SS    9 - Monel™

**BORE DIAMETER "M"**  
**A** - .260"  
**B** - .385"

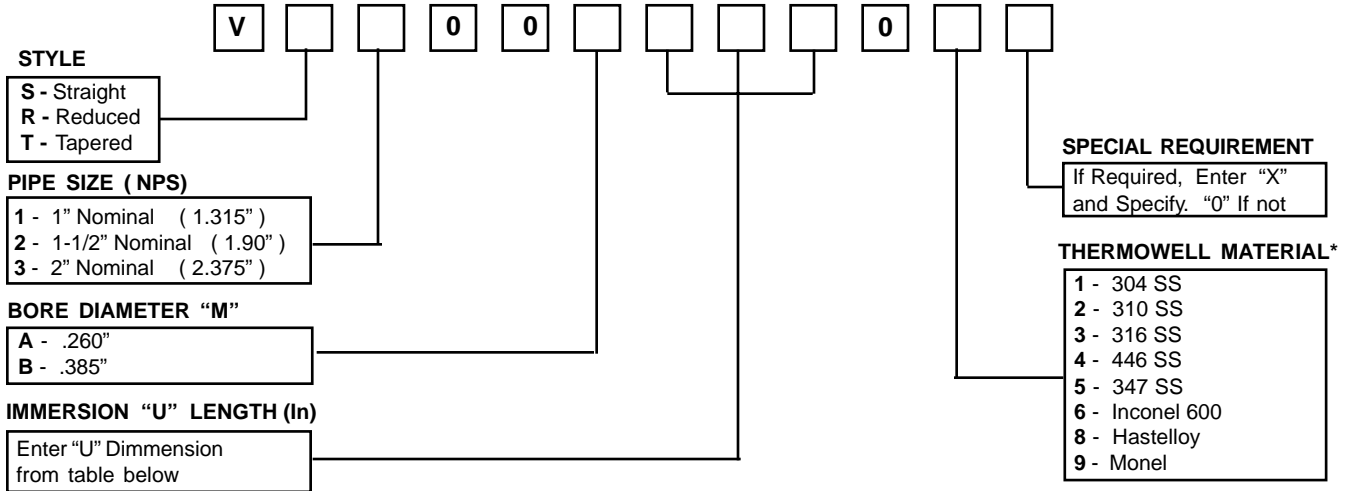
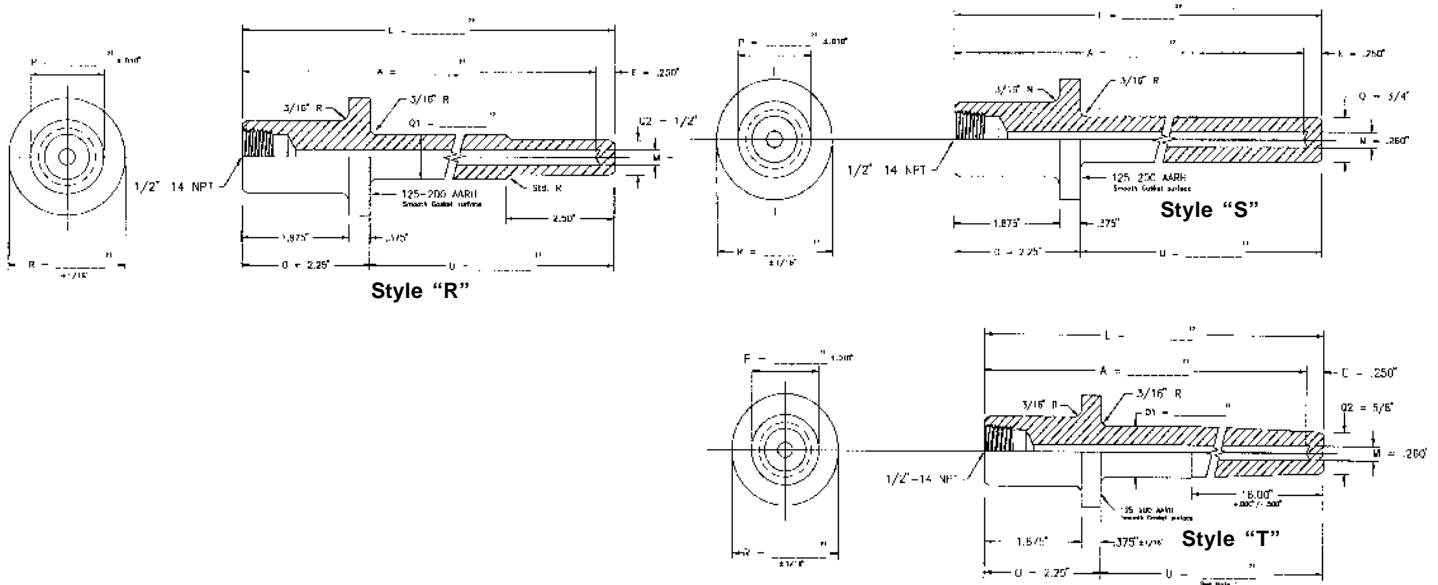
**SPECIAL REQUIREMENT**  
 If Required, Enter "X"  
 and Specify. "O" If not

**THERMOWELL MATERIAL\***  
 1 - 304 SS  
 2 - 310 SS  
 3 - 316 SS  
 4 - 446 SS  
 5 - 347 SS  
 6 - Inconel 600™  
 8 - Hastelloy™  
 9 - Monel™

**IMMERSION "U" LENGTH (In)**  
 Enter "U" Dimension  
 from table below

Note: \*For other lengths and materials not listed above contact factory.

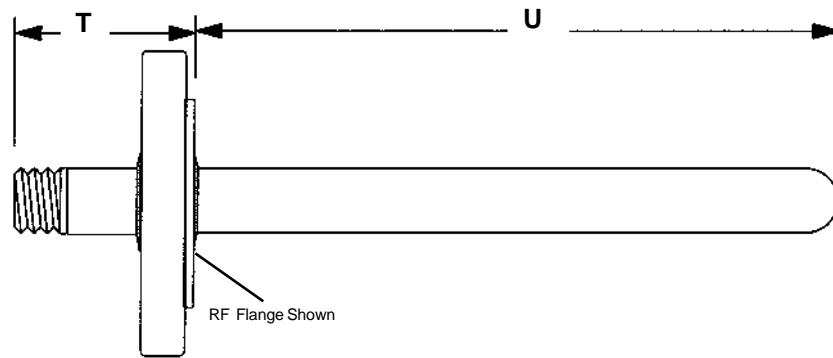
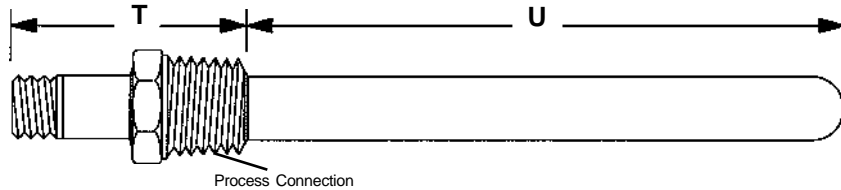




Note: \*For other lengths and materials not listed above contact factory.

6

# M Style Metal Protection Tube



M

### PIPE SIZE (NPT)

- 3 - 1/2" (.840")
- 4 - 3/4" (1.05")
- 5 - 1" (1.315)

### PROCESS CONNECTION

- | Bushing                  | Flange    |
|--------------------------|-----------|
| A - 1/2" NPT             | 1 - 3/4   |
| B - 3/4" NPT             | 2 - 1     |
| C - 1" NPT               | 3 - 1 1/2 |
| D - 1 1/4" NPT           | 4 - 2     |
| E - 1 1/2" NPT           | 5 - 3     |
| 0 - No Bushing or Flange |           |

### FLANGE RATING (Lbs)

- |               |          |
|---------------|----------|
| 0 - No Flange | D - 900  |
| A - 150       | E - 1500 |
| B - 300       | F - 2500 |
| C - 600       |          |

### MATERIAL Flange or Bushing

- |            |               |
|------------|---------------|
| 0 - None   | 3 - 316 SS    |
| 1 - 304 SS | 8 - Hastelloy |
| 2 - 310 SS | 9 - Monel     |

### PIPE SCHEDULE\*\*

- |        |         |
|--------|---------|
| 1 - 40 | 3 - 160 |
| 2 - 80 | 4 - XX  |

### SPECIAL REQUIREMENT

If Required, Enter "X" and Specify. "0" If Not

### PIPE MATERIAL\*

- |                 |
|-----------------|
| 1 - 304 SS      |
| 2 - 310 SS      |
| 3 - 316 SS      |
| 4 - 446 SS      |
| 6 - Inconel 600 |
| 8 - Hastelloy   |
| H - HR-160      |

### "T" LENGTH (In)

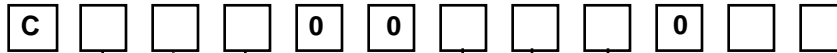
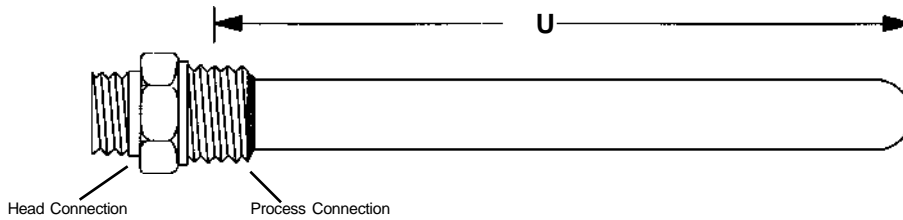
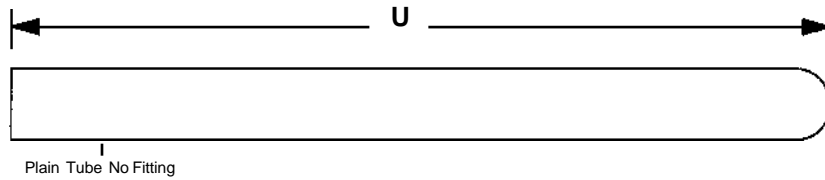
Enter in Whole Inches

### DIMENSION "U" FRACTIONAL

- |          |          |
|----------|----------|
| 0 - 0    | 4 - 1/2" |
| 1 - 1/8" | 5 - 5/8" |
| 2 - 1/4" | 6 - 7/8" |
| 3 - 3/8" |          |

### IMMERSION "U" LENGTH

Enter "U" Dimension in Whole Inches



**TUBE DIAMENTER\***

O.D.	I.D.
1 - 3/8"	1/4"
2 - 7/16"	5/16"
3 - 1/2"	3/8"
4 - 11/16"	7/16"
5 - 3/4"	1/2"
6 - 1"	3/4"

**HEAD CONNECTION**

0 - None
2 - 1/2" NPT
3 - 3/4" NPT

**PROCESS CONNECTION\*\***

0 - None
2 - 1/2" NPT
3 - 3/4" NPT (Standard)

**SPECIAL REQUIREMENT**

If Required, Enter "X" and Specify. "0" If Not

**TUBE MATERIAL**

A - Alumina (3400°F)
M - Mullite (2750°F)
C - Cer-Met (2200°F)
H - Halsic I (3000°F)
S - Silicon Carbide (3000°F)

**IMMERSION "U" FRACTIONAL**

0 - 0	4 - 1/2"
1 - 1/8"	5 - 5/8"
2 - 1/4"	6 - 7/8"
3 - 3/8"	

**IMMERSION "U" LENGTH**

Enter "U" Dimension in Whole Inches

Note: \*For other lengths and materials not listed above contact factory.