

RTD Thermowell Assembly– Threaded Fitting



Single and Dual Elements Stainless Steel Case Multiple Thermowell Styles

The **RTD Thermowell Assembly–Threaded Fitting** is designed for use in applications where easy removal of the spring loaded sensor is a required option without the need to shutdown 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
- Elements, Single and Dual:
 - » Platinum

APPLICATIONS

- Process
- Flow

performance specifications

Repeatability:

Less than $\pm .06\%$ change in ice point resistance after 10 consecutive cycles between ice point and 250°C

Long Term Stability:

Less than $\pm .2\%$ ice point resistance shift after 1,000 hours at 250°C

Self Heating:

10 mW/C in water moving 3 feet/sec

Pressure Rating:

Up to 5,000 psi depending on well configuration

Insulation Resistance:

1,000 megohms @ 500 V, leads to case

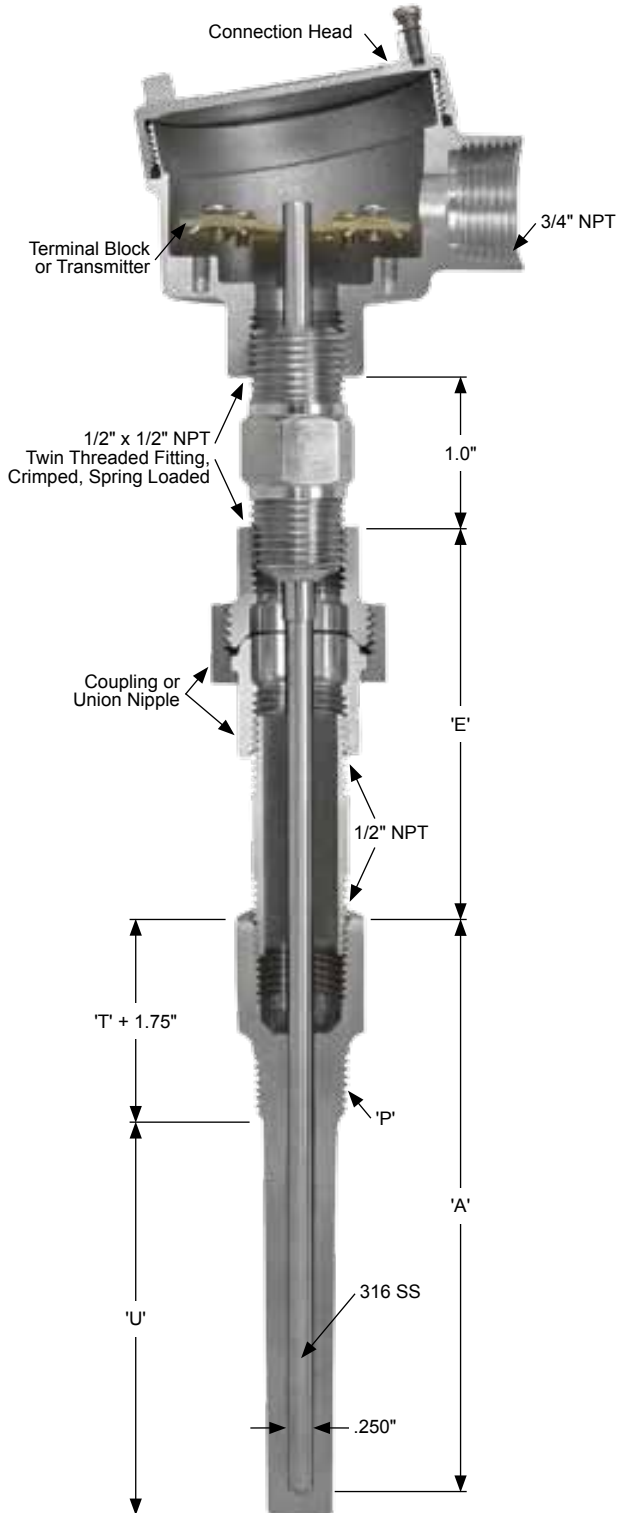
Minimum Recommended Immersion Length:

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

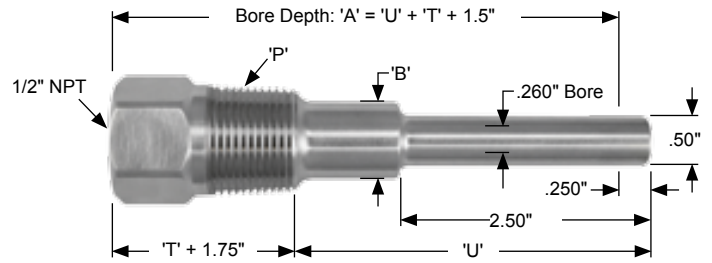
RTD Thermowell Assembly– Threaded Fitting

dimensions

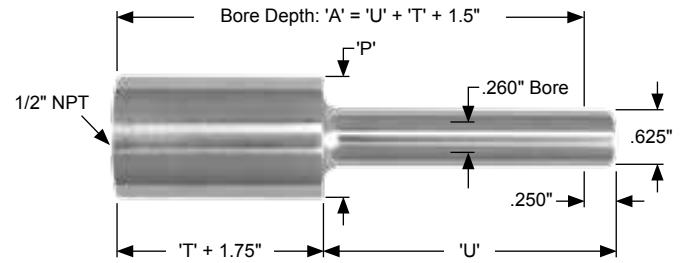
Crimped Twin Threaded Hex Fitting, Welded Capsule



Socket Weld Thermowell



Socket Weld Thermowell



Flanged Thermowell (Please consult factory for details.)

RTD Thermowell Assembly– Threaded Fitting

ordering info

RTD Thermowell Assembly–Threaded Fitting

Model Style

131 RTD Thermowell Assembly, Crimped Twin Threaded Hex Fitting, Welded Capsule
132 RTD Thermowell Assembly, Quick Release, Twin Threaded Hex Fitting, Cut-To-Length, Copper Tip Sheath

Model Temperature Range

M Moderate: -50 to 250°C (-58 to 482°F)
H High: -50 to 500°C (-58 to 932°F)
F Full: -200 to 500°C (-328 to 932°F)

Model Element Accuracy Temperature Coefficient

P2A Platinum 100 Ohm ±.06% at 0°C .00385
P2B Platinum 100 Ohm ±.12% at 0°C .00385
P2C Platinum 100 Ohm ±.5% at 0°C .00385
P6B Platinum 1,000 Ohm ±.12% at 0°C .00385

Model Leadwires, Element Configuration

Color Code

3S Three Wire, Single Red/Red/White
4S Four Wire, Single Red/Red/White/White
3D Three Wire, Dual Red/Red/White // Black/Green/Green

Model Connection Head

N No Connection Head
A Stainless Steel
B Aluminum
C Polypropylene (Model 131M/132M 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 (3 = 3.0") Note: Minimum 1.0" / Maximum 12.0"

Model Thermowell Style

--- **Threaded Thermowell**
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

--- **Socket Weld Thermowell**
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

--- **Raised Face Flanged Thermowell**
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 = 7.0")
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

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