

Table of Contents

TEMPERATURE INSTRUMENTATION

Industrial Thermometers

Trerice Industrial Thermometers are either of the liquid-in-glass or light-powered digital type.



Design & Operation 82-83

SX9 Solar Therm • Light-Powered Digital 84

Adjustable Angle Series 86

Rigid Stem Series 88

BX Plus Series • with Integrated RTD 90

Retort Series • for Food Processing 92

Hydro-Therm Series 94

Econo-Therm Series 96

Options & Accessories 98-99

Dial Thermometers

Direct or Remote mounted thermometers suited for a variety of temperature measuring requirements



Design & Operation 100-103

Remote Mounted 3 1/2" Stainless Steel Case 104

Remote Mounted 4 1/2"- 8 1/2" Aluminum Case 106

Direct Mounted 4 1/2" & 6" Universal Angle 108

Direct Mounted 3 1/2" & 4 1/2" Adjustable Angle 110

Thermal System Selection 112

Temperature Ranges 114

Options & Accessories 115-117

Table of Contents

TEMPERATURE INSTRUMENTATION

Bimetal Thermometers

Direct Mounted thermometers with all stainless steel construction and hermetically sealed cases are designed for use in demanding industrial applications.



Design & Operation 118-119

Adjustable Angle 120

Bottom Connect 122

Rear Connect 124

X-Series 126

Compact 128

Pocket 129

Bimetal Plus • with Integrated Sensor 130

Options & Accessories - Bimetals 133

Electronic Temperature Sensors

Sensors providing an Electronic Signal to a Controller or Indicating Device.



Design & Operation 136-137

RTD & Thermocouple Sensors 138

Options & Accessories 143

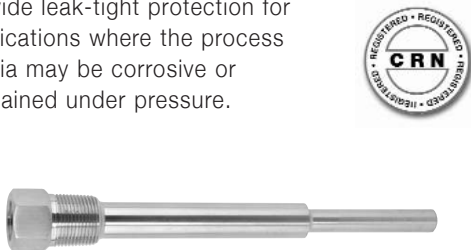
Digital Temperature Indicator TRD20 Series 144

Digital Temperature Indicator TRD16 Series 146

Indicator Selector Switch TRS16 Series 148

Thermowells

Provide leak-tight protection for applications where the process media may be corrosive or contained under pressure.



Design & Operation 150-151

for **Industrial** Thermometers 152

for **Econo** Thermometers 153

for **Dial** Thermometers 154

for **Bimetals, Thermocouples & RTDs** 155

Options & Accessories 162

Industrial Thermometers

DESIGN & OPERATION

INDUSTRIAL THERMOMETERS



Light-Powered Digital



Liquid-in-Glass

Description

A thermometer is an instrument designed to measure and indicate the temperature of a specific application or condition. An Industrial Thermometer, commonly known as a “Liquid-In-Glass” or Light-Powered Digital Thermometer, is installed at the point of measurement and is usually read from that location.

Principles of Operation

Liquid-in-Glass

This thermometer is comprised of a liquid-filled sealed glass tube and bulb, which is affixed to the front of a metal temperature scale, and extends into a metal bulb chamber (stem). Flaked graphite is used within the bulb chamber to transfer the measured temperature to the glass bulb. Temperature changes cause the thermo-active fill to expand or contract within the tube. This activity is instantly visible in the tube against the calibrated markings of the temperature scale. For purposes of readability, the tube is formed with a lens front to create a magnified indicating column.

Light-Powered Digital

This thermometer is comprised of a thermistor wire that extends into the stem. Flaked graphite is used to transfer the measured temperature to the thermistor. Temperature change causes a change in the output of the thermistor; this output is translated through a pre-programmed algorithm in the microprocessor resulting in a digital display of the temperature.

All Trerice Industrial Thermometers should be carefully selected to meet the demands of the particular application. The information contained in this catalog is offered only as a guide to assist in making the proper selection. Improper applications may cause failure of the instrument, resulting in possible personal injury or property damage. For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

Selecting an Industrial Thermometer (Liquid in-glass only)

Case

The case is durable, die cast aluminum with dark blue epoxy powder coating (Hydro-Therm is furnished with Valox Case), and is available in scale sizes from 5½" through 12". Cases are available in adjustable angle, rigid straight, and rigid 90° and 45° angle configurations. The adjustable angle case can be moved to any viewing position for enhanced readability.

Stem

The stem is the sensitive portion of the instrument that is inserted into the process. Stems can be provided in aluminum, brass, or stainless steel. Aluminum and brass stems include a brass coupling nut, while the stainless steel stem includes a stainless steel coupling nut.

Aluminum stems must always be installed in a thermowell. Brass and stainless steel stems may be installed using a union connection bushing in place of a thermowell. Trerice however, recommends the use of a thermowell to facilitate the removal of the thermometer.

Window

Windows are supplied in clear acrylic (ranges through 300°F), or double-strength glass (standard on ranges above 300°F). For direct sunlight applications, an ultraviolet protective plastic window is available. This window helps prevent sunlight induced deterioration of thermoactive fills.

Accuracy

The accuracy of an industrial thermometer is expressed as a variance (plus or minus) in scale divisions. All Trerice Industrial Thermometers are accurate to within one scale division of the temperature range.

Extreme ambient conditions above 120° F or below 30° F may more than double the allowable accuracy tolerance of spirit filled thermometers. This effect increases on thermometers operating at the high end of their scale, and decreases on thermometers operating at the low end of their scale. Please consult factory for further information.

Range and Scale

A wide variety of ranges are available in Fahrenheit, Celsius, or dual scale; in temperatures from -40°F (-40°C) through 500°F (260°C). Ranges are indelibly presented in black figures and markings upon an aluminum scale in lengths from 5½" to 12". Space constraints, as well as measurement readability, should be considered when selecting a scale size.

Thermoactive Fills

Trerice Industrial Thermometers are available with either of the following fill types:

- **Spirit** – A blue-colored, organic, spirit fill is standard. This proprietary fill is available for use with temperatures of 500°F and below and can be supplied in alternate colors (consult factory).
- **Mercury** – Blue appearing mercury fill is only available for retort type thermometers as mercury fill is specifically required.

Thermowells

For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process. Thermowells are available in various lengths, connections, sizes, and materials. Please consult the Thermowell Section of this catalog.

To ensure minimum response time, Trerice Heat Transfer Paste should be applied to the sensing portion of the stem before installation into a thermowell. 1 oz. tube: Item No. 107-0001

SX9 Solar Therm

Light-Powered Digital Thermometer

INDUSTRIAL THERMOMETERS



SX91403 shown

- ▶ Light Powered
No Batteries Required
- ▶ 7" Case Size
- ▶ Large LCD °F/°C
Switchable Display
- ▶ Min/Max Feature
- ▶ 1% or 1°F Accuracy
- ▶ Cast Aluminum Case
- ▶ Adjustable-Angle Stem

The Trerice **SX9 "Solar Therm"** is ideally suited for replacement of existing mercury-in-glass thermometers in environmentally conscious applications. It features a rugged cast aluminum case, easy to read LCD display and an adjustable-angle stem that is fully interchangeable with industrial liquid-in-glass thermometers. Also available is a bimetal type stem for applications where a digital thermometer is preferred over existing analog bimetals. The **"Solar Therm"** requires no external power and needs only 10 lux of illumination to operate. The unique Min/Max feature provides instant recall of minimum and maximum temperatures over a given period and is easily reset.

- Optional features available:
Please consult the Options
& Accessories Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process. (Refer to page 152)

Specifications

Model	Scale Size
SX9	7" Adjustable Angle
Case	Cast Aluminum, Blue epoxy finish
Stem	Industrial, Bimetal or Air-Duct
Connection	Industrial: 1 1/4 -18 UNEF-2A coupling nut Bimetal: 304 Stainless steel 1/4" diameter Air-Duct: Reversible mounting flange with 3 bolt holes
Sensor	Glass passivated thermistor
Range	-40 to 300° F (-40° to 150° C)
Display	9/16" LCD digits switchable between F/C. Push button min/max readings with reset
Accuracy	1% or 1° F, whichever is greater
Resolution	1/10°
Update Interval	10 seconds
Lux Rating	10 Lux (one foot candle)
Ambient Operating Temperature	0 to 140° F (-20° to 60° C)
Ambient Temperature Error	None
Humidity	Maximum: 95 RH, non condensing
Approximate Shipping Weight	1.5 lbs [0.68 kg]

HOW TO ORDER

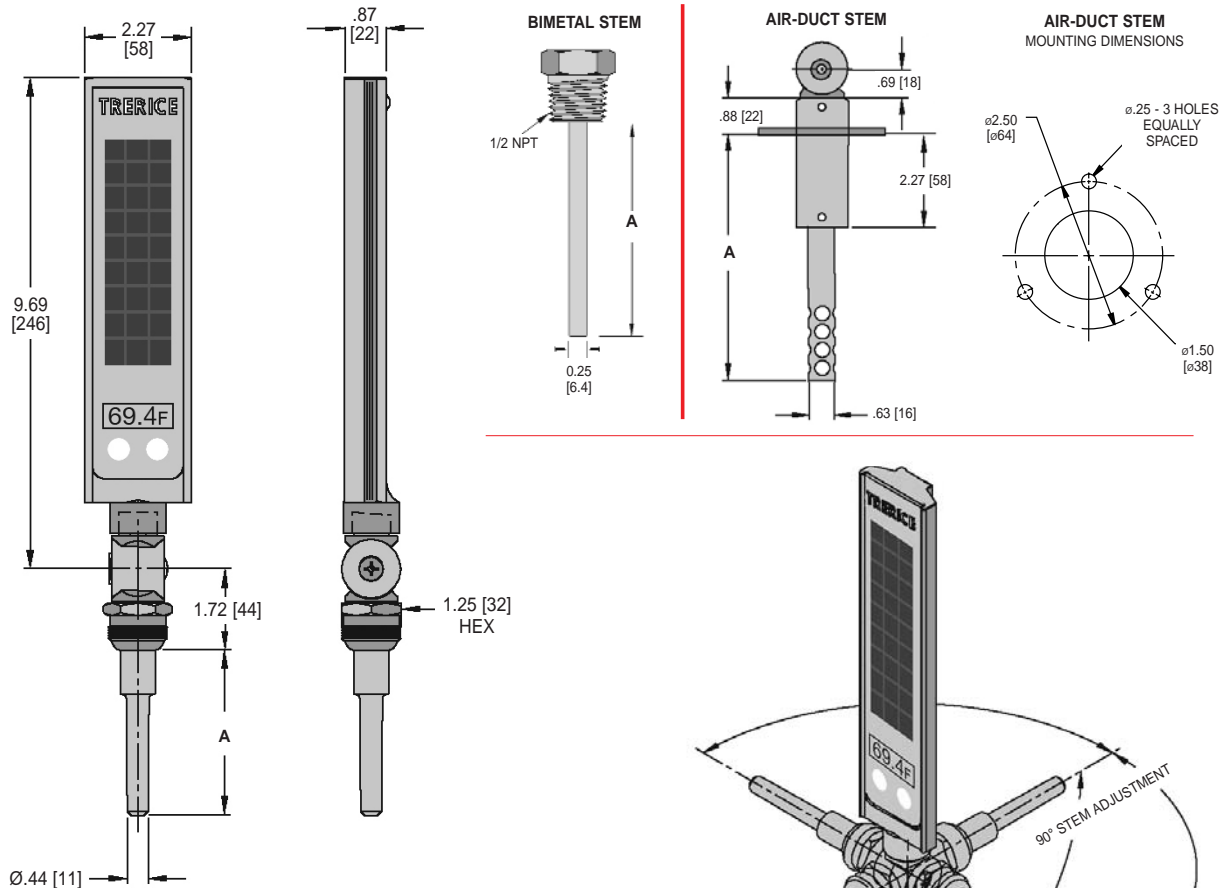
Sample Order Number: **SX9 1 403 05**

Model	Stem (Style & Material)	Stem (Length)	Specific Range
SX9 7" Adjustable	1 Industrial (Aluminum)	403 3 1/2" (standard)	05 -40° to 300° F/C
		406 6" (standard)	
	5 Bimetal (304 SS)	604 4" Bimetal	
		606 6" Bimetal	
	9 Air-Duct (Aluminum)*	006 6" Air-Duct	
		012 12" Air-Duct	

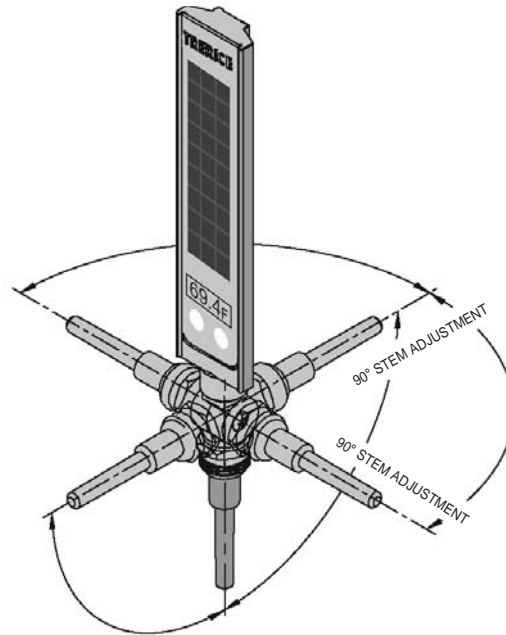
* Not for use with Thermowell

SX9 Solar Therm

All dimensions are nominal.
Dimensions in [] are in millimeters.



(A) Stem Length	Dimension
3 1/2" Industrial	3.50 [88.9]
6" Industrial	6.00 [152.4]
4" Bimetal	4.00 [101.6]
6" Bimetal	6.00 [152.4]
6" Air-Duct	6.00 [152.4]
12" Air-Duct	12.00 [304.8]



Thermowells for SX9 Solar-Therm

for INDUSTRIAL STYLE Stems				for BIMETAL STYLE Stems			
Model	Stem Length	Insertion Length	Material	Model	Stem Length	Insertion Length	Model
3-4F2	3 1/2"	2 1/2"	Brass	76-4G2	4"	2 1/2"	Brass
3-4FA2	3 1/2"	1.7" with 1" lagging extension	Brass	76-4GA2	4"	2" with 1" lagging extension	Brass
3-4J2	6"	5"	Brass	76-4J2	6"	4 1/2"	Brass
3-4JD2	6"	2 1/2" with 2 1/2" lagging extension	Brass	76-4JC2	6"	2 1/2" with 2" lagging extension	Brass

INDUSTRIAL THERMOMETERS

Adjustable Angle

7" • 9" • 12" Scale Sizes

INDUSTRIAL THERMOMETERS



BX91403 shown

- ▶ 7", 9", 12" Scale
- ▶ ± 1 Scale Division Accuracy
- ▶ Cast Aluminum Case
- ▶ Adjustable Angle Stem


Recognized globally as the Trerice **"BX" Industrial Thermometer**, this is an instrument of extreme accuracy and rugged dependability. Available in scale sizes of 7" (AX9), 9" (BX9), & 12" (CX9), with a durable cast aluminum case, this universally adjustable, liquid-in-glass thermometer is the most widely specified instrument of its kind.

- Optional features available:
Please consult the Options & Accessories Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process. (Refer to page 152)

Specifications

Models	Scale Sizes		Adjustable Angle
AX9	7"		
BX9	9"		
CX9	12"		
Fill Type	Spirit: Blue colored, organic		
Case	Cast Aluminum, blue epoxy finish		
Stem	Aluminum, brass, 304 stainless steel or air-duct style available		
Connection	Standard: 1 1/4 -18 UNEF-2A coupling nut Air-Duct: Reversible mounting flange with 3 bolt holes		
Window	Acrylic on ranges to 300° F Glass on ranges over 300° F		
Tube	Lens front, magnifying type		
Scale	Aluminum, white background with black graduations and markings		
Top Plate	ABS		
Accuracy	±1 scale division		
Approximate Shipping Weight			
	AX9: 1.5 lbs [0.68 kg] BX9: 1.6 lbs [0.73 kg] CX9: 2.0 lbs [0.91 kg]		

HOW TO ORDER

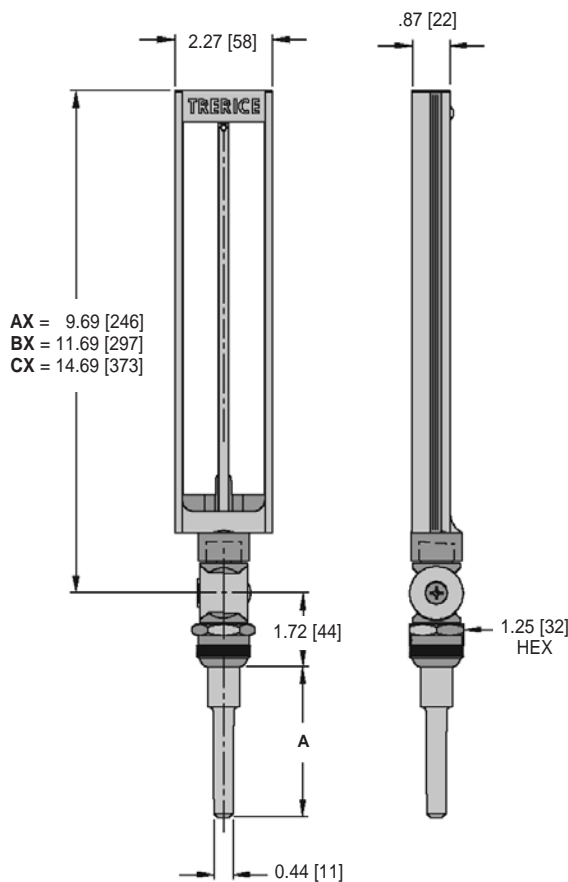
Sample Order Number: **BX9 1 403 07**

Model	Stem (Material)	Stem (Length)	Specific Range
AX9 7" Adjustable	1 Aluminum (standard)	403 3 1/2"	See Standard Ranges
BX9 9" Adjustable	2 Brass	406 6"	
CX9 12" Adjustable	3 304 SS	408 8"	
		512 12"	
	9 Air-Duct (Aluminum)*	006 6" Air-Duct	
		012 12" Air-Duct	

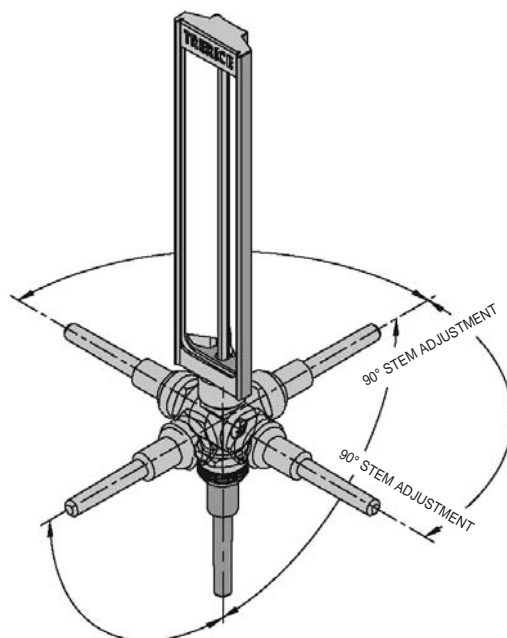
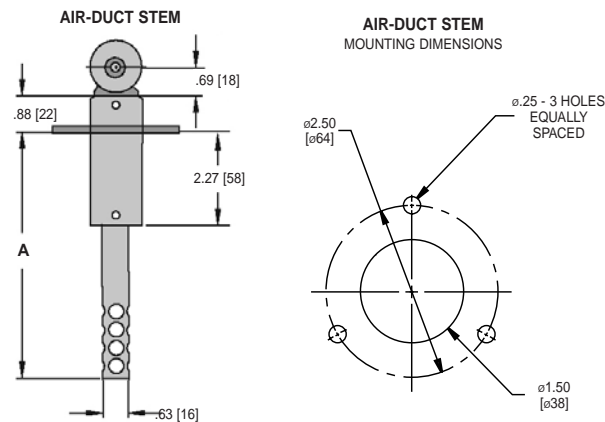
* Not for use with Thermowells

Adjustable Angle

All dimensions are nominal.
Dimensions in [] are in millimeters.



(A) Stem Length	Dimension
3 1/2"	3.50 [88.9]
6"	6.00 [152.4]
8"	8.00 [203.2]
12"	12.00 [304.8]



Standard Ranges

Fahrenheit Scale		Celsius Scale		Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-40° to 110°F	17	-40° to 40°C	41	-40° to 110°F & -40° to 40°C	10°	2°	5°	1°
02	0° to 100°F	24	-18° to 38°C	42	0° to 100°F & -18° to 38°C	5°	1°	5°	0.5°
03	30° to 130°F	25	0° to 55°C	43	30° to 130°F & 0° to 55°C	5°	1°	5°	1°
04	0° to 160°F	26	-18° to 70°C	44	0° to 160°F & -18° to 70°C	10°	2°	5°	1°
06	30° to 180°F	27	0° to 83°C	46	30° to 180°F & 0° to 83°C	10°	2°	5°	1°
07	30° to 240°F	19	0° to 115°C	47	30° to 240°F & 0° to 115°C	10°	2°	5°	1°
08	30° to 300°F	20	0° to 150°C	48	30° to 300°F & 0° to 150°C	10°	2°	10°	2°
09	50° to 400°F	28	10° to 205°C	49	50° to 400°F & 10° to 205°C	25°	5°	10°	2°
15	50° to 500°F	31	10° to 260°C	55	50° to 500°F & 10° to 260°C	25°	5°	10°	2°

Dual scale figure intervals may differ

Rigid Stem

7" • 9" • 12" Scale Sizes

INDUSTRIAL THERMOMETERS

BX12403 shown



- ▶ 7", 9", 12" Scale
- ▶ ± 1 Scale Division Accuracy
- ▶ Cast Aluminum Case
- ▶ Rigid Straight or Rigid 90° Angle Case

The **Rigid Stem Industrial Thermometer** is offered for applications where a nonadjustable case is preferred. The durable cast aluminum case is available in rigid straight or rigid 90° angle forms. This thermometer features accuracy, responsiveness and durability.

- Optional features available:
Please consult the Options & Accessories Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process. (Refer to page 152)

Specifications

Models	Scale Sizes
AX1	7"
BX1	9"
CX1	12"
	Rigid Straight
AX2	7"
BX2	9"
CX2	12"
	Rigid 90° Angle
Fill Type	Spirit: Blue colored, organic
Case	Cast Aluminum, blue epoxy finish
Stem	Aluminum, brass, 304 stainless steel
Connection	1 1/4-18 UNEF-2A coupling nut
Window	Acrylic on ranges to 300° F Glass on ranges over 300° F
Tube	Lens front, magnifying type
Scale	Aluminum, white background with black graduations and markings
Top Plate	ABS
Accuracy	± 1 scale division
Approximate Shipping Weight	
AX1: 1.2 lbs [0.55 kg]	
BX1: 1.4 lbs [0.64 kg]	
CX1: 1.8 lbs [0.82 kg]	
AX2: 1.0 lbs [0.45 kg]	
BX2: 1.3 lbs [0.59 kg]	
CX2: 1.7 lbs [0.77 kg]	

HOW TO ORDER

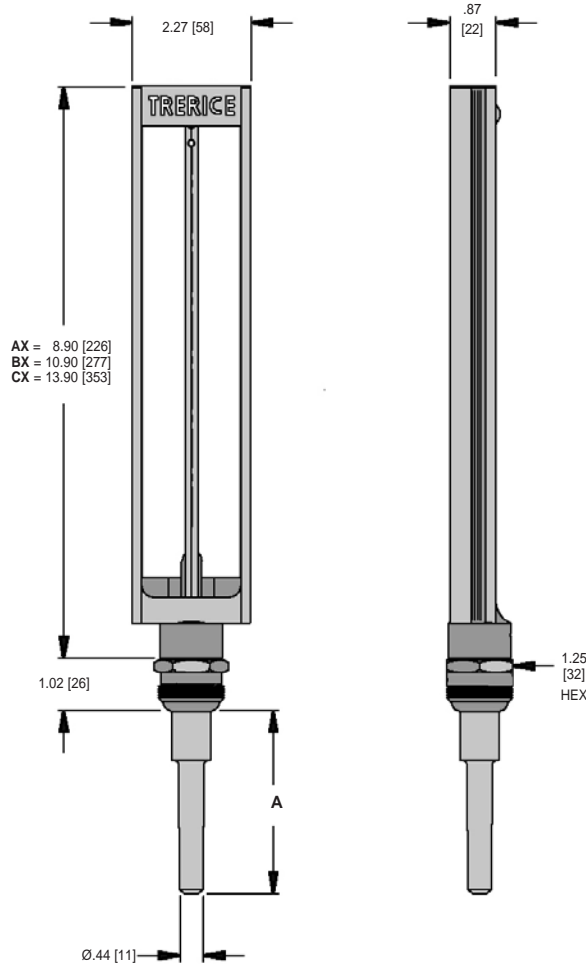
Sample Order Number: **CX1 2 406 15**

Model	Stem (Material)	Stem (Length)	Specific Range
AX1 7"	1 Aluminum	403 3 1/2"	See Standard Ranges
BX1 9"			
CX1 12"			
AX2 7"	2 Brass	406 6"	
BX2 9"			
CX2 12"			
	3 304 SS	408 8"	
		512 12"	

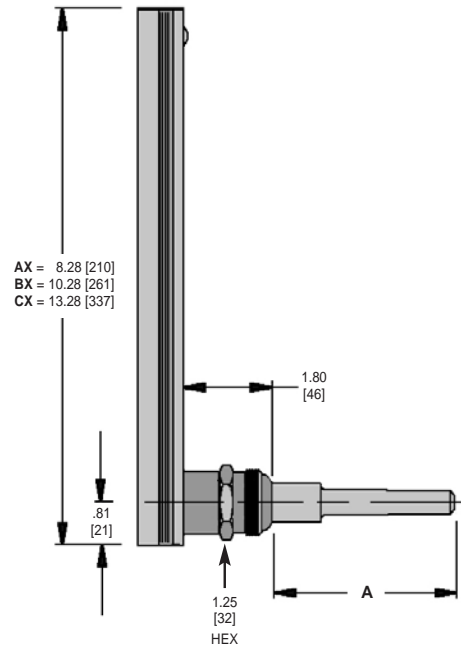
Rigid Stem

All dimensions are nominal.
Dimensions in [] are in millimeters.

Rigid-Straight



Rigid-90° Angle



(A) Stem Length	Dimension
3 1/2"	3.50 [88.9]
6"	6.00 [152.4]
8"	8.00 [203.2]
12"	12.00 [304.8]

Standard Ranges

Fahrenheit Scale		Celsius Scale		Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-40° to 110°F	17	-40° to 40°C	41	-40° to 110°F & -40° to 40°C	10°	2°	5°	1°
02	0° to 100°F	24	-18° to 38°C	42	0° to 100°F & -18° to 38°C	5°	1°	5°	0.5°
03	30° to 130°F	25	0° to 55°C	43	30° to 130°F & 0° to 55°C	5°	1°	5°	1°
04	0° to 160°F	26	-18° to 70°C	44	0° to 160°F & -18° to 70°C	10°	2°	5°	1°
06	30° to 180°F	27	0° to 83°C	46	30° to 180°F & 0° to 83°C	10°	2°	5°	1°
07	30° to 240°F	19	0° to 115°C	47	30° to 240°F & 0° to 115°C	10°	2°	5°	1°
08	30° to 300°F	20	0° to 150°C	48	30° to 300°F & 0° to 150°C	10°	2°	10°	2°
09	50° to 400°F	28	10° to 205°C	49	50° to 400°F & 10° to 205°C	25°	5°	10°	2°
15	50° to 500°F	31	10° to 260°C	55	50° to 500°F & 10° to 260°C	25°	5°	10°	2°

Dual scale figure intervals may differ

BX Plus

Industrial Thermometer with Integrated RTD

INDUSTRIAL THERMOMETERS



- ▶ 9" Scale
- ▶ ± 1 Scale Division Accuracy
- ▶ Local Indication/Remote Data Acquisition
- ▶ 100 Ω or 1000 Ω RTD Sensors available

The Trerice **BX-Plus** has all the standard features of the original BX Series Industrial Thermometer, but with a "Plus". The "Plus" being an internally mounted 100 Ω or 1000 Ω RTD, allowing for remote temperature monitoring, while simultaneously providing local indication. This patented* dual sensor design eliminates the need for additional instrumentation or connections when designing a system to include both mechanical and electronic temperature sensing.

*U.S. Pat. Nos. 5,664,885 and 5,769,542.

- Optional features available: Please consult the Options & Accessories Section for details.
- These instruments are specifically designed for use with Trerice Digital Indicators (refer to the Electronic Temperature Sensor Section) and Electronic Controllers (refer to the Control Section).

MODEL BX3240307RTC

Specifications

Models	Scale Size	
BX9	9"	Adjustable Angle
BX1	9"	Rigid Straight
BX2	9"	Rigid 90° Angle
Fill Type	Spirit: Blue colored, organic	
Case	Cast Aluminum, blue epoxy finish	
Stem	Aluminum, Brass, or 304 Stainless Steel	
Process Connection	1 1/4-18 UNEF-2A coupling nut	
Electrical Connection	Molded cordset with coupling nut and six meter cable	
Window	Acrylic on ranges to 300° F Glass on ranges over 300° F	
Tube	Lens front, magnifying type	
Scale	Aluminum, white background with black graduations and markings	
Top Plate	Stainless Steel	
Sensor	International grade thin film platinum, 3-wire, 100 Ω or 1000 Ω RTD $\alpha = 0.00385\Omega/\Omega/^{\circ}\text{C}$	
Accuracy	Thermometer: ± 1 scale division RTD: $\pm 3^{\circ}\text{C}$ or 0.6% of temperature	

Approximate Shipping Weight

BX9: 1.9 lbs [0.86 kg]
BX1: 1.7 lbs [0.77 kg]
BX2: 1.6 lbs [0.73 kg]

HOW TO ORDER

Sample Order Number: **BX9 1 403 07 RTC**

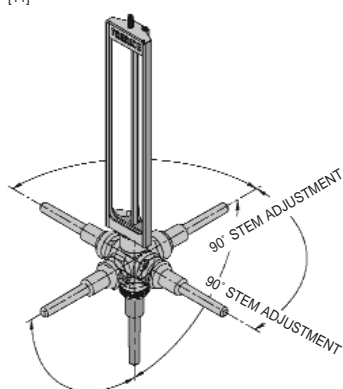
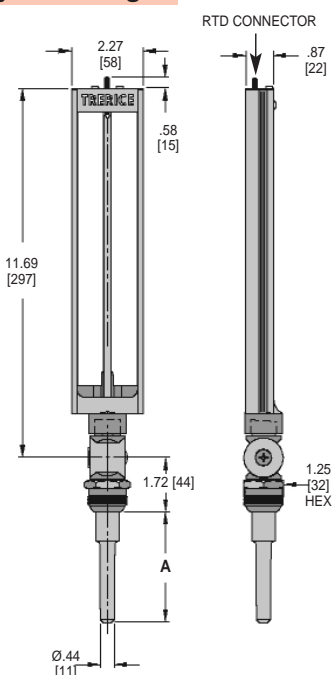
Model	Stem Material	Stem (Length)	Specific Range	Sensor Type
BX9 9" Adjustable	1 Aluminum	403 3 1/2"	See Standard Ranges	RTC 100 Ω RTD
BX1 9" Straight	(standard)	406 6"		RTM 1000 Ω RTD
BX2 9" 90° Angle	2 Brass	408 8"		
	3 304 SS	512 12"		



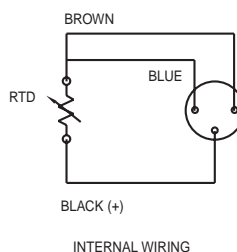
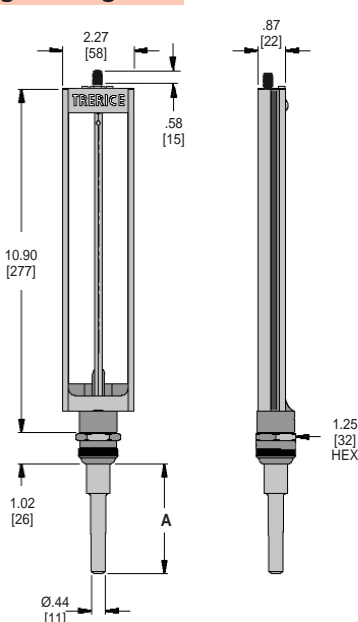
BX Plus

All dimensions are nominal.
Dimensions in [] are in millimeters.

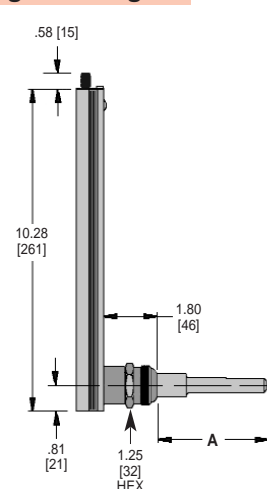
Adjustable-Angle



Rigid-Straight



Rigid-90° Angle



(A) Stem Length	Dimension
3 1/2"	3.50 [88.9]
6"	6.00 [152.4]
8"	8.00 [203.2]
12"	12.00 [304.8]

Standard Ranges

Fahrenheit Scale		Celsius Scale		Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-40° to 110°F	17	-40° to 40°C	41	-40° to 110°F & -40° to 40°C	10°	2°	5°	1°
02	0° to 100°F	24	-18° to 38°C	42	0° to 100°F & -18° to 38°C	5°	1°	5°	0.5°
03	30° to 130°F	25	0° to 55°C	43	30° to 130°F & 0° to 55°C	5°	1°	5°	1°
04	0° to 160°F	26	-18° to 70°C	44	0° to 160°F & -18° to 70°C	10°	2°	5°	1°
06	30° to 180°F	27	0° to 83°C	46	30° to 180°F & 0° to 83°C	10°	2°	5°	1°
07	30° to 240°F	19	0° to 115°C	47	30° to 240°F & 0° to 115°C	10°	2°	5°	1°
08	30° to 300°F	20	0° to 150°C	48	30° to 300°F & 0° to 150°C	10°	2°	10°	2°
09	50° to 400°F	28	10° to 205°C	49	50° to 400°F & 10° to 205°C	25°	5°	10°	2°
15	50° to 500°F	31	10° to 260°C	55	50° to 500°F & 10° to 260°C	25°	5°	10°	2°

Dual scale figure intervals may differ

Retort

for Food Processing

INDUSTRIAL THERMOMETERS



BX13403R21 shown

- ▶ 9" Scale Size
- ▶ ± 1 Scale Division Accuracy
- ▶ Cast Aluminum Case
- ▶ Rigid Straight Case
Rigid 45° Angle Case
Rigid 90° Angle Case

The Terice **Retort** Industrial Thermometer is the instrument of choice within the food processing and canning industries. The scale is configured to indicate the temperature and corresponding pressure of steam. This thermometer is furnished with a rigid, stainless steel stem, in straight or angle forms, and features a 9" scale and rugged cast aluminum case.

- Optional features available:
Please consult Options & Accessories Section for details.
- This thermometer includes a one-piece stainless steel stem and is designed to be directly installed using a union connection bushing (page 99); therefore, use of a thermowell is not required.

Specifications

Models	Scale Size
BX1	9" Rigid Straight
BX2	9" Rigid 90° Angle
BX5	9" Rigid 45° Angle
Fill Type Mercury: Blue appearing	
Case Cast Aluminum, blue epoxy finish	
Stem One-piece, 304 stainless steel	
Process Connection 1 1/4 -18 UNEF-2A coupling nut (A union connection bushing is required for installation; please consult page 99 of the Options and Accessories section.)	
Window Acrylic on ranges to 300° F Glass on ranges over 300° F	
Tube Lens Front, blue appearing mercury	
Scale Aluminum, white background with black graduations and markings	
Top Plate ABS	
Accuracy ± 1 scale division	
Approximate Shipping Weight	
BX1: 1.4 lbs [0.64 kg]	
BX2: 1.3 lbs [0.59 kg]	
BX5: 1.4 lbs [0.64 kg]	

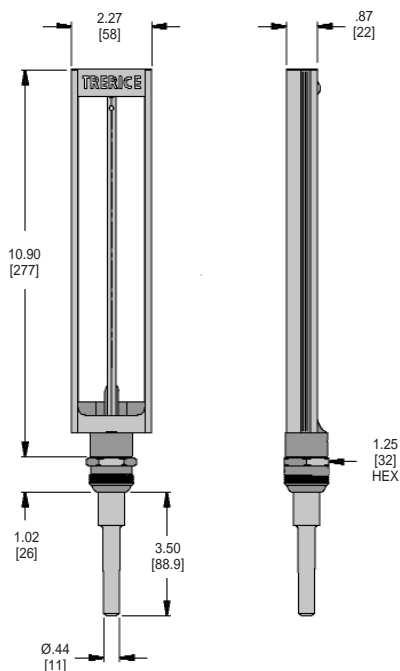
HOW TO ORDER

Sample Order Number: **BX1 3 403 R21**

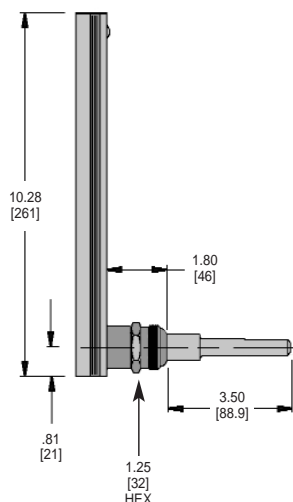
Model	Stem (Material)	Stem (Length)	Specific Range
BX1 Straight BX2 90° Angle BX5 45° Angle	3 304 SS	403 3 1/2"	See Standard Ranges

All dimensions are nominal.
Dimensions in [] are in millimeters.

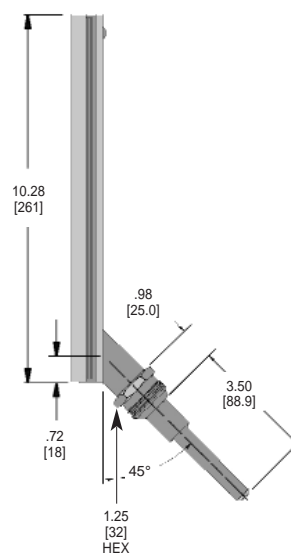
Rigid-Straight



Rigid-90° Angle



Rigid-45° Angle



INDUSTRIAL THERMOMETERS

Standard Ranges

Fahrenheit & psi Scale		Fahrenheit		psi	
Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
R21	170° to 270°F & 0 to 25 psi	10°F	1°F	5 psi	1 psi
R22	200° to 400°F & 0 to 220 psi	20°F	2°F	Progressive*	
Fahrenheit & Celsius Scale		Fahrenheit		Celsius	
Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
R24	170° to 270°F & 80° to 130°C	10°F	1°F	5°C	1°C
R23	200° to 400°F & 95° to 205°C	20°F	2°F	105°C	1°C
Celsius & kg/cm ² Scale		Celsius		kg/cm ²	
Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
R45	80° to 135°C & 0 to 2.1 kg/cm ²	5°C	0.5°C	0.5 kg/cm ²	0.1 kg/cm ²

*Progressive scale: 0-40 (10 psi intervals); 40-120 psi (20 psi intervals), 120 to 180 psi (30 psi intervals), 180 to 220 psi (40 psi interval).

Hydro-Therm

INDUSTRIAL THERMOMETERS



HT30 shown



HT31 shown

- ▶ 5 1/2" Scale Size
- ▶ $\pm 2\%$ Accuracy
- ▶ Valox Case
- ▶ 1/2 NPT Brass Thermowell included

The **NEW Trerice Hydro-Therm** is the ideal instrument for both hot and chilled water hydronic applications. The blue, organic "spirit" fill is easily read without the environmental concerns of mercury. The sturdy Valox case is available in rigid straight or rigid 90° angle configurations. The 2" stem makes this the perfect instrument for smaller pipeline and other such applications. The 1/2 NPT brass thermowell is included.

Specifications

Models	Scale Size
HT30	5 1/2" Rigid Straight
HT31	5 1/2" Rigid 90° Angle
Fill Type	Spirit: Blue colored, organic
Case	Valox
Stem	Brass
Connection	1/2 NPT brass thermowell (included)
Window	Acrylic
Tube	Lens front, magnifying type
Scale	Aluminum, white background with black graduations and markings
Top Plate	ABS
Accuracy	$\pm 2\%$
Approximate Shipping Weight	
0.5 lbs [0.23 kg]	

HOW TO ORDER

Sample Order Number: **HT30 47**

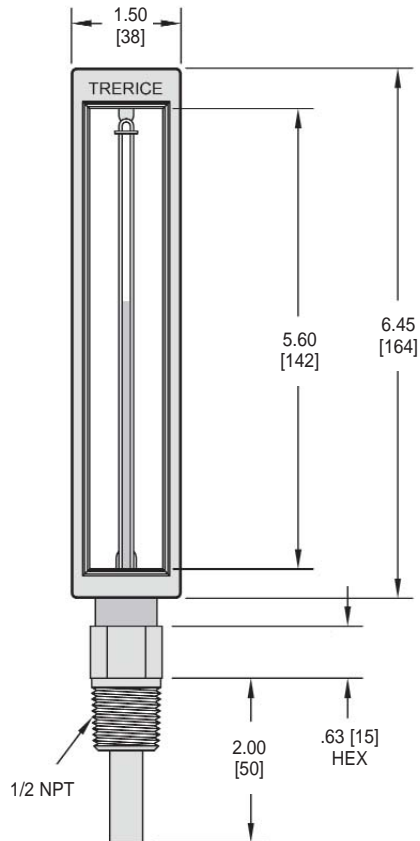
Model	Specific Range
HT30 Straight	41 -40° to 110° F/C
HT31 90° Angle	47 30° to 240° F/C

Hydro-Therm

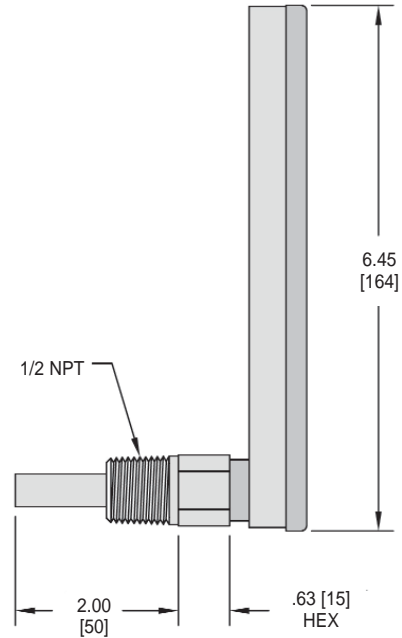
All dimensions are nominal.
Dimensions in [] are in millimeters.

INDUSTRIAL THERMOMETERS

HT30



HT31



Note: Shown with included thermowell.

Standard Ranges

Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
41	-40° to 110°F & -40° to 40°C	20°	2°	10°	1°
47	30° to 240°F & 0° to 120°C	20°	2°	20°	2°

Econo-Therm

INDUSTRIAL THERMOMETERS



4352 shown

- ▶ **5 1/2" Scale Size**
- ▶ **± 1 Scale Division Accuracy**
- ▶ **Cast Aluminum Case**
- ▶ **Rigid Straight or Rigid 90° Angle Case**

The Trerice **Econo Thermometer** provides accuracy and durability at an economical price. This liquid-in-glass thermometer has a durable cast aluminum case and a polycarbonate frame front and window. Rigid straight and rigid 90° angle cases are available.

- Optional features available: Please consult the Options & Accessories Section for details.
- Trerice Econo Thermometers (air-duct stem excluded) have no external mounting hardware, and as such, require the use of a thermowell, which is attached to the stem via a set screw. The thermowell must be ordered separately – please refer to page 153 of the Thermowell Section.

Specifications

Models	Scale Size
4350	5 1/2" Rigid Straight
4352	5 1/2" Rigid 90° Angle
Fill Type	Spirit: Blue colored, organic
Case	Cast aluminum, blue epoxy finish
Stem	Aluminum, brass or air-duct style
Connection	Use of thermowell required (must be ordered separately) Air-duct stem has mounting flange with 3 bolt holes
Window	Polycarbonate frame front
Tube	Lens front, magnifying type
Scale	Aluminum, white background with black graduations and markings
Accuracy	±1 scale division
Approximate Shipping Weight	0.5 lbs [0.23 kg]

HOW TO ORDER

Sample Order Number: **4350 1 02 07**

Model	Stem (Material)	Stem (Length)	Specific Range
4350 Straight 4352 90° Angle	1 Aluminum* 2 Brass 9 Air-Duct **	02 2" (Aluminum Stem only) 04 4" (Brass Stem only) 06 6" (Air-Duct Stem) 12 12" (Air-Duct Stem)	See Standard Ranges

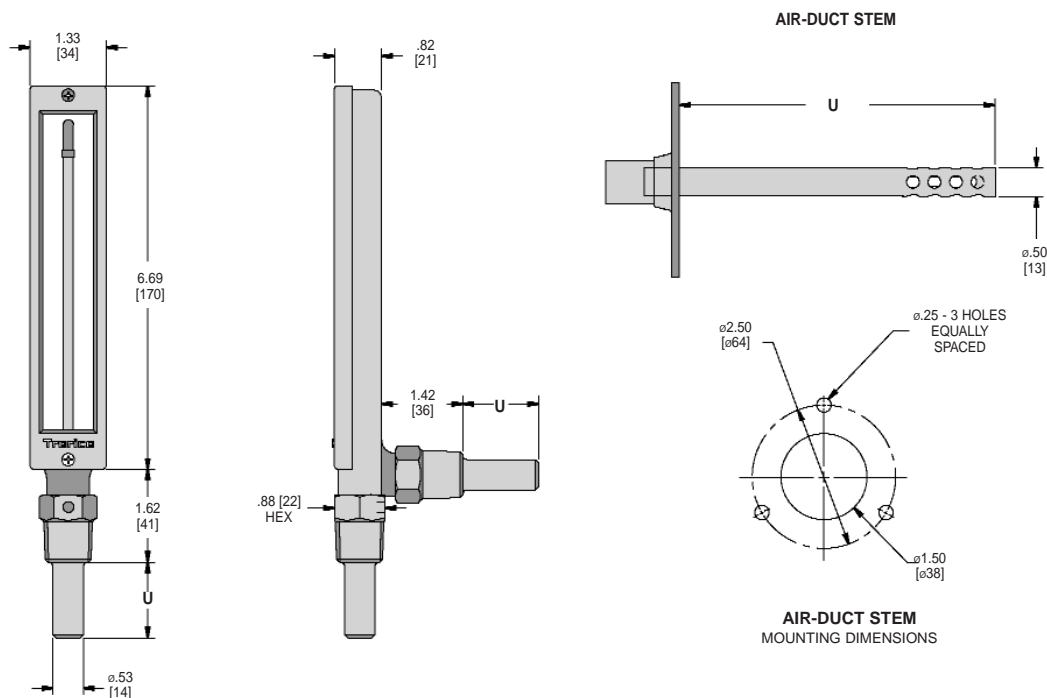
*Use of thermowell required (must be ordered separately-refer to page 153).

**Model 4352 only

Econo-Therm

All dimensions are nominal.
Dimensions in [] are in millimeters.

INDUSTRIAL THERMOMETERS



Note: Shown with required thermowell (must be ordered separately. Refer to page 153.)

U Length	Dimension
2" (Aluminum)	1.31 [33.3]
4" (Brass)	3.25 [82.6]
6" (Air-Duct)	6.00 [152.4]
12" (Air-Duct)	12.00 [304.8]

Standard Ranges

Fahrenheit Scale		Celsius Scale		Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-40° to 110°F	17	-40° to 40°C	41	-40° to 110°F & -40° to 40°C	20°	2°	10°	1°
03	30° to 130°F	25	0° to 55°C	43	30° to 130°F & 0° to 55°C	10°	1°	5°	1°
06	30° to 180°F	27	0° to 83°C	46	30° to 180°F & 0° to 83°C	20°	2°	10°	1°
07	30° to 240°F	19	0° to 115°C	47	30° to 240°F & 0° to 115°C	20°	2°	10°	1°
08	30° to 300°F	20	0° to 150°C	48	30° to 300°F & 0° to 150°C	30°	5°	10°	2°
09	50° to 400°F	28	10° to 205°C	49	50° to 400°F & 10° to 205°C	50°	5°	20°	2°
13	200° to 500°F	32	93° to 260°C	53	200° to 500°F & 93° to 260°C	25°	5°	10°	2°

Dual scale figure intervals may differ.

Options & Accessories

Industrial Thermometers

Stem Materials

Most Trerice Industrial Thermometers are furnished standard with an aluminum stem. Brass and 304 stainless steel stems are optionally available. An air-duct stem, provided with a 3" O.D. reversible aluminum flange (mounted using three sheet metal screws) and perforated aluminum guard, will deliver maximum sensitivity in air ducts. Air-duct stems are available on Adjustable Angle Industrial Thermometers and Econo Thermometers. Please consult the "How to Order" section of the appropriate product data page.

Integrated RTD "Plus" Option (RTC/RTM)

Most Trerice Industrial Thermometers can be ordered with a "Plus." The "Plus" being an internally mounted 100Ω or 1000Ω RTD, allowing for remote temperature monitoring, while simultaneously providing local indication. This patented* dual sensor design eliminates the need for additional instrumentation when designing a system to include both mechanical and electronic temperature sensing. Please order using option codes **RTC** (100Ω RTD) or **RTM** (1000Ω RTD).

**U.S. Pat. Nos. 5,664,885 and 5,769,542.*

Specifications

Sensor Temperature	Accuracy	Electrical Connection	Maximum
International grade thin film platinum, 3-wire 100Ω or 1000Ω RTD $\alpha = 0.00385\Omega/\Omega/^{\circ}\text{C}$	$\pm 0.3^{\circ}\text{C}$ or 0.6% of temperature	Molded cordset with coupling nut and six meter cable	500°F (260°C)

Cases (BPC/CPC)

Industrial Thermometers can be provided with brass or chrome plated cases in 9" (BX) scale size. Please order using option codes **BPC** (brass plated case) or **CPC** (chrome plated case).

Windows (GLW/UVW)

Windows are furnished in acrylic or double strength glass. For direct sunlight applications, an ultra-violet protective plastic window is available. This window helps prevent sunlight induced deterioration of thermoactive fill. Please consult the table below for available window options.

Window Material	Temperature Range	
	Up to 300°F (150°C)	Over 300°F (150°C)
Acrylic	Standard	N/A
Double Strength Glass	GLW	Standard
UV Protective Plastic	UVW	N/A

Options & Accessories

Industrial Thermometers

INDUSTRIAL THERMOMETERS

Weatherproofed Cases (WPC)

Trerice Industrial and Econo Thermometers may be sealed for outdoor use, or for use in applications where sprays and washes may come in contact with the thermometer. Please order using option code **WPC** (weatherproofed case).

Union Connection Bushings

Trerice Industrial Thermometers with brass or 304 stainless steel stems may be installed using a union connection bushing in place of a thermowell. Please consult the table below for bushing item numbers.

Thermometers with an aluminum stem must always be installed in a thermowell to protect the thermometer stem.



Union Connection Bushings

Material	Connection	Without Extension Neck	With 2 1/2" Extension Neck
Brass	3/4 NPT	703-05D6	082-0013
Brass	1 NPT	703-06D6	082-0096
304 Stainless Steel	3/4 NPT	703-05D6.2	082-0013.2
304 Stainless Steel	1 NPT	703-06D6.2	082-0096.2

How to Order

Specify the Optional Feature Code at the end of the Instrument Ordering Code.

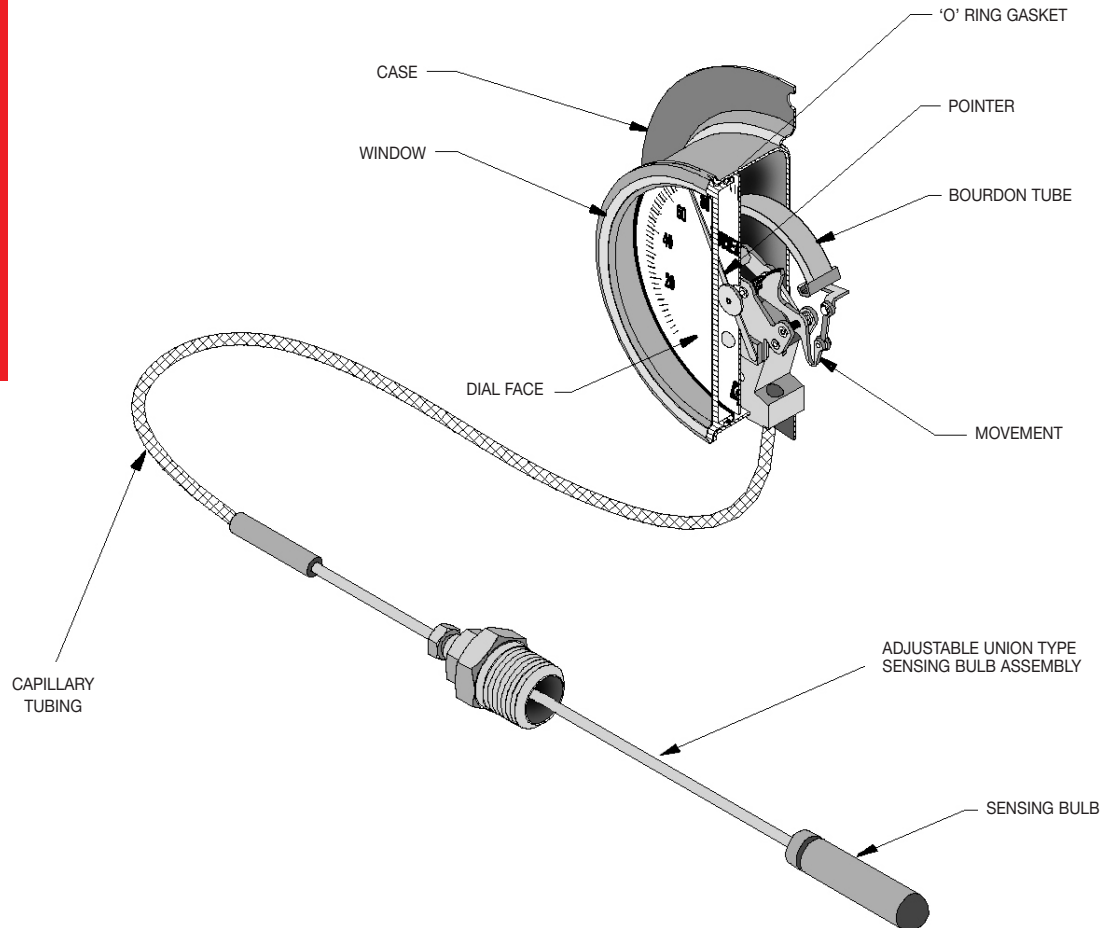
Sample Order Number: **BX1 1 403 07 WPC**

Dial Thermometers

DESIGN & OPERATION

Description

A thermometer is an instrument designed to measure and indicate the temperature of a specific application or condition. A Dial Thermometer (filled system thermometer) can either be read at the point of measurement or from a remote location using a desired length of capillary tubing.



Principles of Operation

Terice Dial Thermometers operate using a filled thermal system. This system consists of capillary tubing and a sensing bulb, which are filled with an expandable chemical compound. The fill is contained within the sealed thermal system, and is affected (expands or contracts) by temperature changes at the sensing bulb. As temperature increases, expanding fill travels via the capillary tube system to the bourdon tube within the instrument's case. The expansion causes the bourdon tube to flex and the resulting motion is transmitted as a temperature measurement through a mechanical movement to the pointer and dialface.

Selecting a Dial Thermometer

All Terice Filled System Dial Thermometers should be carefully selected to meet the demands of the particular application. The information contained in this catalog is offered only as a guide to assist in making the proper selection. Improper application may cause failure of the instrument, resulting in possible personal injury or property damage. For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

Thermal System Actuation

Terice Dial Thermometers are available with either Vapor or Liquid actuation fills.

Vapor Actuation

Terice Vapor Actuated Dial Thermometers are the industry standard and are noted for their economical cost and excellent speed of response. The physical principles of vapor actuation require that the dialface be printed with a nonlinear, progressively graduated temperature scale. These instruments are available for direct mounting, or for remote mounting with capillary lengths up to 100 feet. Sensing bulb length is dependent upon the capillary length selected (a longer capillary length will require a longer sensing bulb length). Vapor Dial Thermometers are available in temperature ranges up to 450°F (232°C). **Note: Erratic performance may be encountered if the measured process temperature rapidly crosses ambient temperature.**

CAUTION: Vapor Dial Thermometers should be installed with the case, capillary tubing, and sensing bulb located at a similar elevation to avoid measurement inaccuracies. If the sensing bulb must be installed at a different elevation than the case, please advise the factory when ordering so that the instrument can be calibrated accordingly.

Liquid Actuation

Terice Liquid Actuated Dial Thermometers have a good response time and are furnished with a temperature scale of linear graduation. These instruments are available for direct mounting, or for remote mounting with capillary lengths up to 20 feet. Sensing bulb length is consistent and not affected by capillary length or temperature range. Liquid Dial Thermometers are available in temperature ranges up to 300°F (150°C), and are ideally suited for measuring process temperatures which routinely cross ambient. However, care should be taken to insure against the exposure of the capillary to temperatures above or below the factory calibration temperature of 75°F (24°C).

CAUTION: Temperature indication error will be introduced whenever the capillary tubing is exposed to ambient temperatures above or below 75°F. The following formula **MUST** be considered when specifying liquid actuation:

Where: S = thermometer range span in °F
 L = capillary length in feet
 T = capillary temperature variation from 75°F

Error = $0.000082 \times S \times L \times T$

Example: S = 210 (30 to 240°F)
 L = 20
 T = 10 (85°F)

Error = $0.000082 \times 210 \times 20 \times 10 = 3.4^\circ$

Vapor and Liquid Actuated Dial Faces

The physical principles of vapor actuation require that the dialface for vapor dial thermometers be printed with a non-linear progressively graduated temperature scale. Liquid actuated dial thermometers are furnished with linear dialfaces. Please see the Thermal System Selection section of our online catalog for sample vapor and liquid actuated dialfaces.

Dial Thermometers

DESIGN & OPERATION

Thermal System Actuation Comparison

Consideration	Vapor Actuation	Liquid Actuation
Price	Economical	Premium
Response Time	Excellent	Good
Dialface	Non-linear	Linear
Maximum Temperature Range	450°F (232°C)	300°F (149°C)
Cross Ambient Applications	Not recommended	Recommended
Available Thermal Systems	All (except averaging)	All
Bulb Size	Dependent on capillary length	Consistent
Maximum Capillary Length	100 feet	20 feet
Accuracy	±1 scale division	±1 scale division

Case

Cases are made from stainless steel or cast aluminum, in sizes from 3 1/2" through 8 1/2". Trerice Dial Thermometers can be directly mounted, or remotely mounted using capillary tubing, so that the measurement can be read from a convenient viewing location. Direct mounted thermometers are available with adjustable angle or universal angle connections, while remote mounted thermometers can be ordered for almost any surface or panel mounting requirement.

Window and Ring

The window is normally held in place by a ring or snapped directly to the case of the thermometer. Plastic and clear glass are typical window materials. Ring styles include threaded, friction and hinged, depending upon the case type chosen.

Accuracy

The accuracy of a dial thermometer is expressed as a variance (plus or minus) in scale divisions. All Trerice Dial Thermometers are accurate to within one scale division of the measured range. Ambient temperature conditions and elevation variances may affect measurement accuracy.

Measurement Range and Dial

Trerice Dial Thermometers are available in Fahrenheit, Celsius, and Dual Scale temperature ranges from -40°F (-40°C) through 450° (-230°C). Ranges are indelibly presented in black figures and markings upon a white finished aluminum dialface. The physical principles of vapor actuation require the dialface to have a non-linear, progressively graduated temperature scale; therefore, the temperature range should be selected so that the intended measuring point falls within the upper two-thirds of the range scale. Liquid Actuated Dial Thermometers have temperature scales of linear graduation, thus, the intended measuring point should fall within the middle third of the range scale.

Thermal System

- **Bulb** – Trerice Dial Thermometers are furnished with copper, brass or stainless steel sensing bulbs, depending upon the system actuation and the requirements of the application. A fixed union connection is standard, with an adjustable union connection optionally available. The fixed union connection is furnished with a standard sensing bulb length of 13/4" to 55/8", depending upon the actuation and capillary length. The adjustable union connection may be adjusted over a 24-inch length prior to initial insertion. This allows the sensing bulb to be installed at any desired insertion length (U-length). Plain and Teflon covered bulbs are available for open tank applications. Other bulb styles, including averaging and air-sensing, can be furnished on some models. Please see the Dial Thermometer Sensing Bulb Section for complete bulb specifications.
- **Capillary** – Trerice Dial Thermometers can be specified with various capillary materials and special covers to meet the requirements of any application.

Thermowells

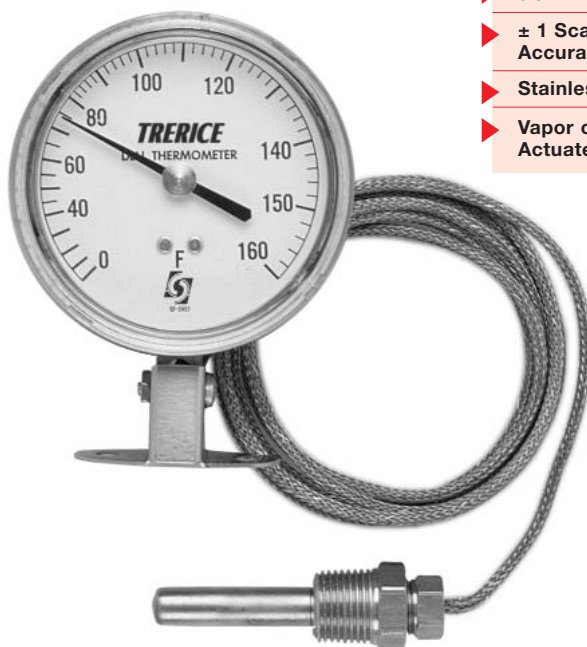
For applications where the process media may be corrosive or contained under pressure, the use of a Trerice Thermowell is required to prevent damage to the thermometer and facilitate its removal from the process. Thermowells are available in various lengths, connections, sizes, and materials. Please consult page 154 of the Thermowell Section.

To ensure minimum response time, Trerice Heat Transfer Paste should be applied to the sensing portion of the bulb before installation into a thermowell. 1 oz. tube: Item No. 107-0001

Remote Mounted Dial Thermometer

3 1/2" Stainless Steel Case

DIAL THERMOMETERS



V80025 shown

The Trerice **Remote Mounted Dial Thermometer** is used extensively in the building and construction industry and is the preferred temperature instrument for OEMs worldwide. The stainless steel case is available in many styles for panel and surface mounting. This instrument has a 3 1/2" dial size and is available with either vapor or liquid actuation.






- Optional features available: Please consult the Optional Features Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

(Refer to page 154)

Specifications

Models	Dial Size	Case Styles
80025	3 1/2"	 Adjustable Angle , with mounting bracket
80035	3 1/2"	 Surface Mounted , back flanged, with bottom outlet
80036	3 1/2"	 Surface Mounted , back flanged with back outlet
80040	3 1/2"	 Flush Mounted , front flanged, with back outlet
80041	3 1/2"	 Flush Mounted , u-clamp with back outlet

Movement Brass

Case Material

Stainless Steel

Window

Acrylic, snap-in with Nitrile O-ring seal

Pointer

Adjustable, black finish

Dialface

Aluminum, white background with black graduations and markings

Accuracy

±1 scale division

Approximate Shipping Weight

1.3 lbs [0.59 kg]

HOW TO ORDER

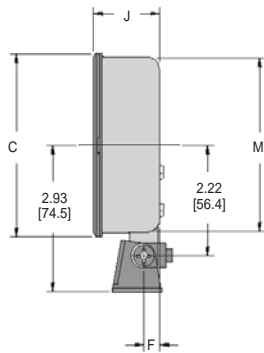
Sample Order Number: **V 80035 110 B01 05**

Actuation	Model	Range Code	Thermal System	Capillary Length*
V Vapor	80025	See Standard Ranges	See Thermal Selection (pages 112-113)	05 5 Feet
L Liquid	80035			10 10 Feet
	80036			15 15 Feet
	80040			20 20 Feet
	80041			

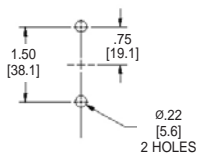
* Other Capillary lengths available: Specify in feet. Vapor: 100 Feet Max
Liquid: 20 Feet Max

All dimensions are nominal.
Dimensions in [] are in millimeters.

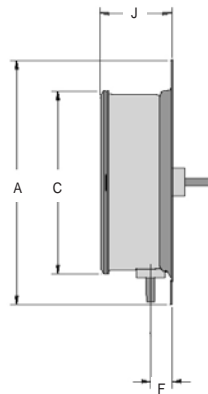
80025 Adjustable Angle with mounting bracket



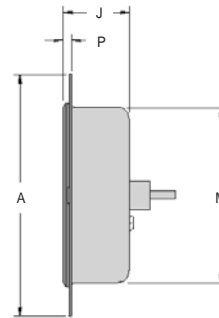
Mounting Dimensions for
80025



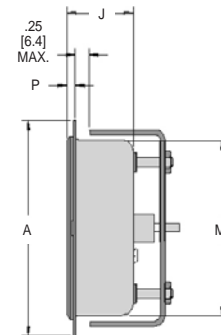
80035 & 80036 Surface Mounted back flanged



80040 Flush Mounted front flanged

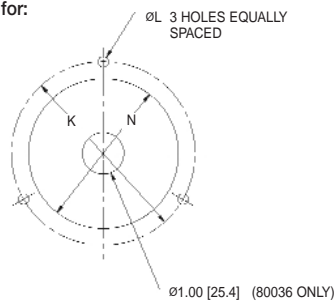


80041 Flush Mounted U-clamp



Drilling Dimensions for:

80035
80036
80040
80041



Model	A	C	F	J	K	L	M	N	P
80025	N/A	3.67 [93.2]	0.32 [8.2]	1.33 [33.9]	N/A	N/A	3.51 [89.2]	N/A	N/A
80035	4.91 [124.7]	3.67 [93.2]	0.43 [11.0]	1.44 [36.6]	4.50 [114.3]	0.25 [6.4]	N/A	N/A	N/A
80036	4.91 [124.7]	3.67 [93.2]	N/A	1.44 [36.6]	4.50 [114.3]	0.25 [6.4]	N/A	N/A	N/A
80040	4.84 [122.9]	N/A	N/A	1.33 [33.6]	4.44 [112.8]	0.25 [6.4]	3.51 [89.2]	3.62 [92.0]	0.17 [4.3]
80041	4.31 [109.5]	N/A	N/A	1.33 [33.8]	N/A	N/A	3.51 [89.2]	3.62 [92.0]	0.17 [4.3]

Standard Ranges (Dual Scale includes both Fahrenheit & Celsius)

Vapor Actuated				
Fahrenheit Scale Range Code	Range	Celsius Scale Range Code	Range	Dual Scale Range Code
030	-40° to 150°F	430	-40° to 65°C	230
040	-20° to 100°F	440	-30° to 40°C	240
050	0° to 100°F	450	-20° to 40°C	250
065	0° to 160°F	465	-20° to 70°C	265
100	30° to 180°F	500	0° to 85°C	300
110	30° to 240°F	510	0° to 115°C	310
120	30° to 300°F	520	0° to 150°C	320
145	100° to 350°F	545	40° to 180°C	345
160	200° to 450°F	560	90° to 230°C	360

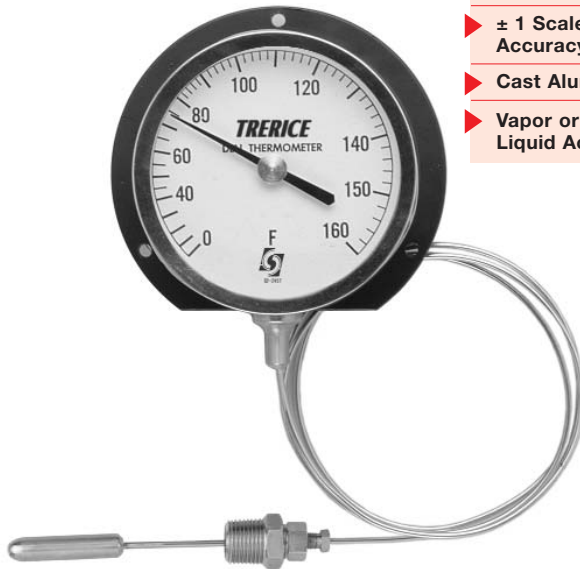
Liquid Actuated				
Fahrenheit Scale Range Code	Range	Celsius Scale Range Code	Range	Dual Scale Range Code
020	-40° to 120°F	420	-40° to 50°C	220
050	0° to 100°F	450	-20° to 40°C	250
060	0° to 160°F	460	-20° to 70°C	260
100	30° to 180°F	495	0° to 80°C	300
110	30° to 240°F	510	0° to 115°C	310
130	50° to 300°F	530	10° to 150°C	330

DIAL THERMOMETERS

Remote Mounted Dial Thermometer

4 1/2" • 6" • 8 1/2" Cast Aluminum Case

DIAL THERMOMETERS



V80341 shown

This Trerice **Remote-Mounted Dial Thermometer** is furnished with a rugged cast aluminum case in 4 1/2", 6" and 8 1/2" dial sizes. This instrument is designed for a wide variety of industrial applications, and is available with vapor or liquid actuation.




- Optional features available: Please consult the Optional Features Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

(Refer to page 154)

Specifications

Models	Dial Sizes	Case Styles
80341 80361 80381	4 1/2" 6" 8 1/2"	 Surface Mounted, back flanged, with bottom outlet
80342 80362 80382	4 1/2" 6" 8 1/2"	 Surface Mounted, back flanged, with back outlet
80345 80365	4 1/2" 6"	 Flush Mounted, hinged ring, with back outlet

Movement Brass

Case Material

Cast Aluminum, black finish

Window

Clear glass

Ring

Friction type, 304 stainless steel (hinged type, black finished aluminum; 80345, 80365 only)

Pointer

Adjustable, black finish

Dialface

Aluminum, white background with black graduations and markings

Accuracy

±1 scale division

Approximate Shipping Weight

4 1/2" Dial: 2.4 lbs [1.09 kg]
6" Dial: 3.0 lbs [1.36 kg]
8 1/2" Dial: 4.0 lbs [1.82 kg]

HOW TO ORDER

Sample Order Number: **V 80341 050 B02 20**

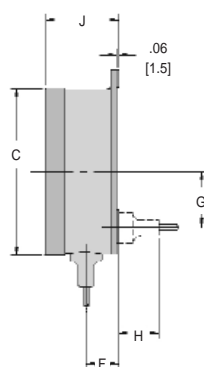
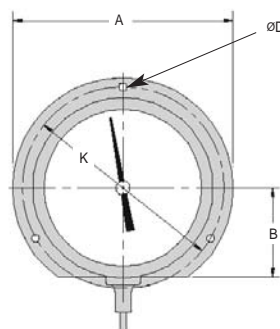
Actuation	Model	Range Code	Thermal System	Capillary Length*
V Vapor	80341 4 1/2"	See Standard Ranges	See Thermal System Selection (pages 112-113)	05 5 Feet
L Liquid	80361 6"			10 10 Feet
	80381 8 1/2"			15 15 Feet
	80342 4 1/2"			20 20 Feet
	80362 6"			
	80382 8 1/2"			
	80345 4 1/2"			
	80365 6"			

* Other Capillary lengths available: Specify in feet. Vapor: 100 Feet Max
Liquid: 20 Feet Max

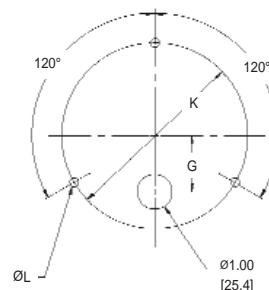
All dimensions are nominal. Dimensions in [] are in millimeters.

Surface Mount Back Flange Case

Models 80341, 80361, 80381 (bottom outlet), Models 80342, 80362, 80382 (back outlet)



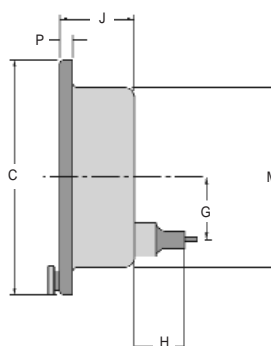
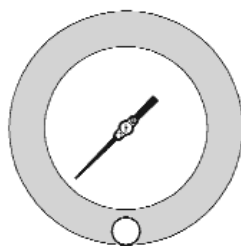
MOUNTING DIMENSIONS



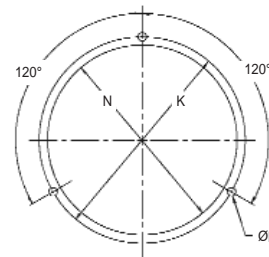
Dial Size	A	B	C	D	F	G	H	J	K	L
4 1/2"	5.88 [149.7]	2.39 [60.7]	4.79 [121.7]	0.22 [5.6]	0.94 [23.8]	1.63 [41.3]	1.41 [35.7]	2.06 [52.4]	5.38 [136.5]	0.25 [6.4]
6"	7.62 [193.6]	3.14 [79.8]	6.29 [159.8]	0.28 [7.1]	0.94 [23.8]	1.63 [41.3]	1.41 [35.7]	2.09 [53.0]	7.00 [177.8]	0.31 [7.9]
8 1/2"	10.25 [260.4]	4.38 [111.1]	8.80 [223.4]	0.28 [7.1]	0.97 [24.6]	1.63 [41.3]	1.41 [35.7]	2.24 [56.8]	9.63 [244.5]	0.31 [7.9]

Flush Mount Hinged Ring Case

Models 80345 & 80365



PANEL CUTOUT



Dial Size	C	G	H	J	K	L	M	N	P
4 1/2"	6.10 [155.0]	1.62 [41.1]	1.31 [33.4]	1.97 [50.0]	5.38 [136.7]	0.22 [5.6]	4.78 [121.4]	4.94 [125.5]	0.34 [8.6]
6"	7.69 [195.3]	1.62 [41.1]	1.31 [33.4]	1.97 [50.0]	7.00 [177.8]	0.28 [7.1]	6.22 [158.0]	6.44 [163.5]	0.34 [8.6]

Standard Ranges (Dual Scale includes both Fahrenheit & Celsius)

Vapor Actuated				
Fahrenheit Scale Range Code	Fahrenheit Scale Range	Celsius Scale Range Code	Celsius Scale Range	Dual Scale Range Code
030	-40° to 150°F	430	-40° to 65°C	230
040	-20° to 100°F	440	-30° to 40°C	240
050	0° to 100°F	450	-20° to 40°C	250
065	0° to 160°F	465	-20° to 70°C	265
100	30° to 180°F	500	0° to 85°C	300
110	30° to 240°F	510	0° to 115°C	310
120	30° to 300°F	520	0° to 150°C	320
145	100° to 350°F	545	40° to 180°C	345
160	200° to 450°F	560	90° to 230°C	360

Liquid Actuated				
Fahrenheit Scale Range Code	Fahrenheit Scale Range	Celsius Scale Range Code	Celsius Scale Range	Dual Scale Range Code
020	-40° to 120°F	420	-40° to 50°C	220
050	0° to 100°F	450	-20° to 40°C	250
060	0° to 160°F	460	-20° to 70°C	260
100	30° to 180°F	495	0° to 80°C	300
110	30° to 240°F	510	0° to 115°C	310
130	50° to 300°F	530	10° to 150°C	330

Direct Mounted Dial Thermometer

4 1/2" & 6" Cast Aluminum Case • Universal Angle

DIAL THERMOMETERS



V80742 shown

The Trerice **Universal Angle Dial Thermometer** is available in 4 1/2" and 6" dial sizes with a rugged cast aluminum case. After the sensing bulb has been installed, the case may be adjusted 180° front to back, and rotated 360° for maximum readability. This instrument is available with vapor or liquid actuation.

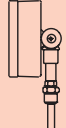
- Optional features available: Please consult the Optional Features Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

(Refer to page 154)

Specifications

Models	Dial Sizes	Case Style
80742	4 1/2"	 Universal Angle
80762	6"	

Movement Brass

Case Material
Cast Aluminum, black finish

Window Clear glass

Ring Friction type, stainless steel

Pointer Adjustable, black finish

Dialface Aluminum, white background with black graduations and markings

Accuracy ±1 scale division

Approximate Shipping Weight

80742: 2.0 lbs [0.91 kg]

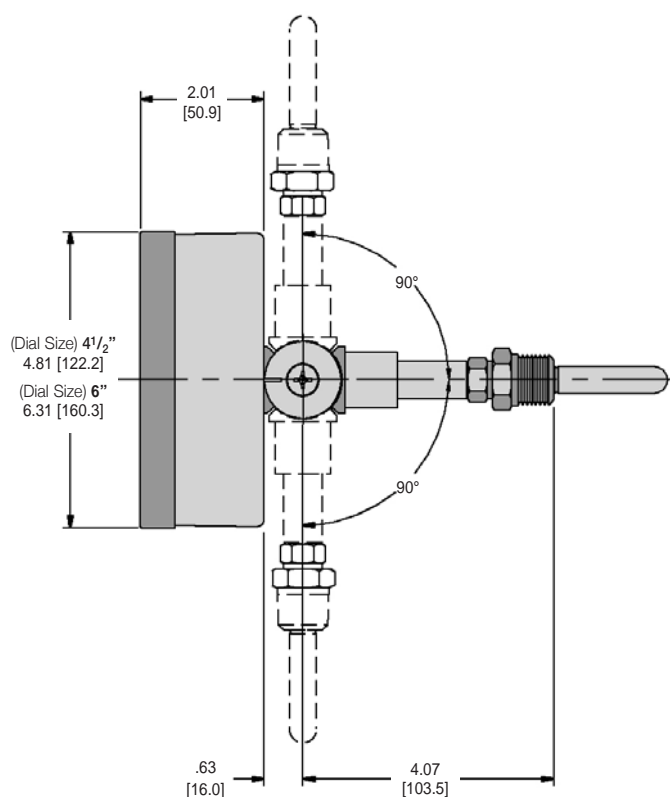
80762: 2.4 lbs [1.09 kg]

HOW TO ORDER

Sample Order Number: **L 80742 110 B35**

Actuation	Model	Range Code	Thermal System
V Vapor	80742	See Standard Ranges	See Thermal System Selection (pages 112-113)
L Liquid	80762		

All dimensions are nominal. Dimensions in [] are in millimeters.



DIAL THERMOMETERS

Standard Ranges (Dual Scale includes both Fahrenheit & Celsius)

Vapor Actuated				
Fahrenheit Scale Range Code	Range	Celsius Scale Range Code	Range	Dual Scale Range Code
030	-40° to 150°F	430	-40° to 65°C	230
040	-20° to 100°F	440	-30° to 40°C	240
050	0° to 100°F	450	-20° to 40°C	250
065	0° to 160°F	465	-20° to 70°C	265
100	30° to 180°F	500	0° to 85°C	300
110	30° to 240°F	510	0° to 115°C	310
120	30° to 300°F	520	0° to 150°C	320
145	100° to 350°F	545	40° to 180°C	345
160	200° to 450°F	560	90° to 230°C	360

Liquid Actuated				
Fahrenheit Scale Range Code	Range	Celsius Scale Range Code	Range	Dual Scale Range Code
020	-40° to 120°F	420	-40° to 50°C	220
050	0° to 100°F	450	-20° to 40°C	250
060	0° to 160°F	460	-20° to 70°C	260
100	30° to 180°F	495	0° to 80°C	300
110	30° to 240°F	510	0° to 115°C	310
130	50° to 300°F	530	10° to 150°C	330

Direct Mounted Dial Thermometer

3 1/2" Stainless Steel Case & 4 1/2" Cast Aluminum Case • Adjustable Angle

DIAL THERMOMETERS



V80445 shown

The Terrice **Adjustable Angle Dial Thermometer** is intended for use within the construction and HVAC industries. Once the sensing bulb has been installed, the angle of the dial-face may be adjusted forward and backward to provide maximum readability. This instrument is available in 3 1/2" and 4 1/2" dial sizes with a flangeless, stainless steel or cast aluminum case.

- Optional features available: Please consult the Optional Features Section for details.

Thermowell

- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

(Refer to page 154)

Specifications

Models	Dial Sizes	Case Styles
80030	3 1/2"	Adjustable Angle



80445 (Vapor Only)	4 1/2"	Adjustable Angle
-----------------------	--------	------------------



Movement Brass

Case Material

80030: Stainless steel

80445: Cast aluminum, black finish

Window

80030: Acrylic, snap-in with Nitrile O-ring seal

80445: Clear glass

Ring

80030: None

80445: Friction-type, stainless steel

Pointer

Adjustable, black finish

Dialface

Aluminum, white background with black graduations and markings

Accuracy

±1 scale division

Approximate Shipping Weight

80030: 1.3 lbs [0.59 kg]

80445: 1.4 lbs [0.64 kg]

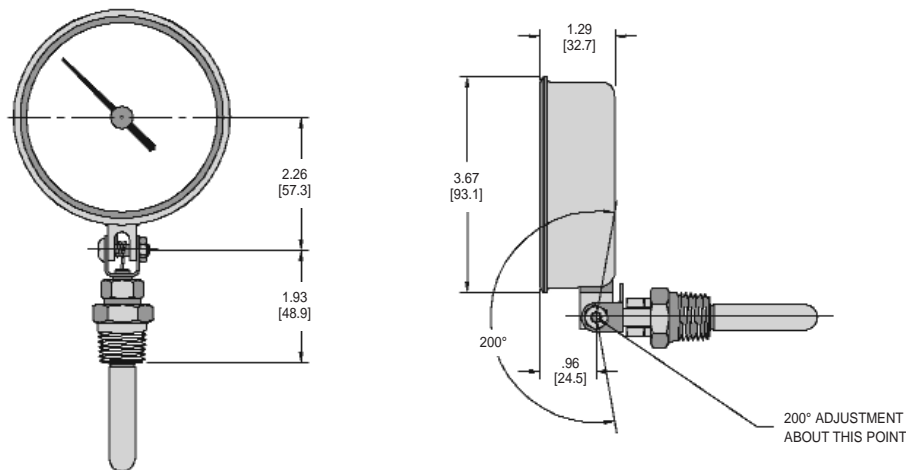
HOW TO ORDER

Sample Order Number: **V 80445 110 B31**

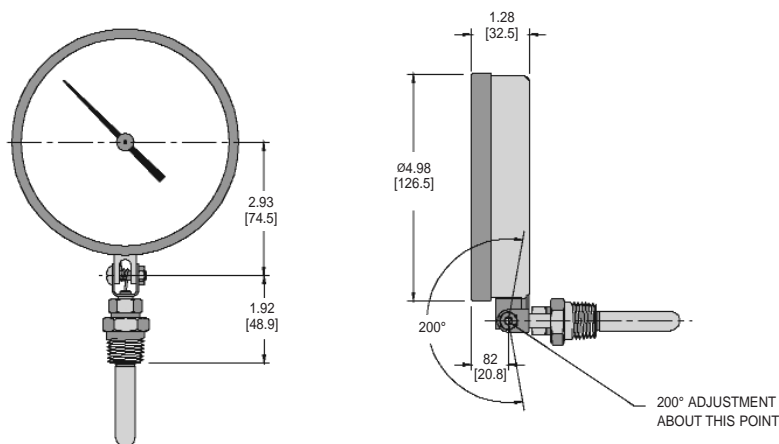
Actuation	Model	Specific Range	Thermal System
V Vapor	80030	See Standard Ranges	See Thermal System Selection (pages 112-113)
L Liquid	80445 (vapor only)		

All dimensions are nominal. Dimensions in [] are in millimeters.

80030



80445



Standard Ranges (Dual Scale includes both Fahrenheit & Celsius)

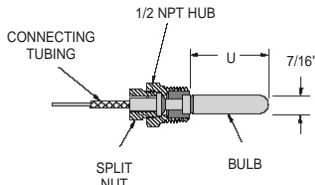
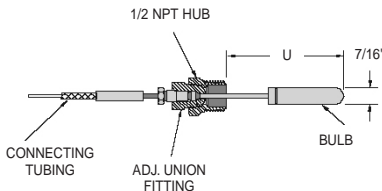
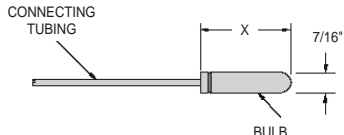
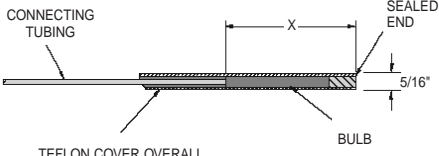
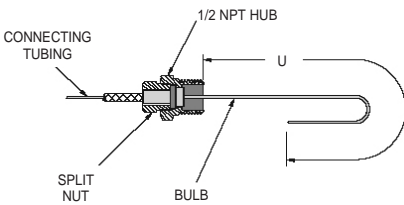
Vapor Actuated				
Fahrenheit Scale Range Code	Range	Celsius Scale Range Code	Range	Dual Scale Range Code
030	-40° to 150°F	430	-40° to 65°C	230
040	-20° to 100°F	440	-30° to 40°C	240
050	0° to 100°F	450	-20° to 40°C	250
065	0° to 160°F	465	-20° to 70°C	265
100	30° to 180°F	500	0° to 85°C	300
110	30° to 240°F	510	0° to 115°C	310
120	30° to 300°F	520	0° to 150°C	320
145	100° to 350°F	545	40° to 180°C	345
160	200° to 450°F	560	90° to 230°C	360

Liquid Actuated				
Fahrenheit Scale Range Code	Range	Celsius Scale Range Code	Range	Dual Scale Range Code
020	-40° to 120°F	420	-40° to 50°C	220
050	0° to 100°F	450	-20° to 40°C	250
060	0° to 160°F	460	-20° to 70°C	260
100	30° to 180°F	495	0° to 80°C	300
110	30° to 240°F	510	0° to 115°C	310
130	50° to 300°F	530	10° to 150°C	330

Thermal System Selection

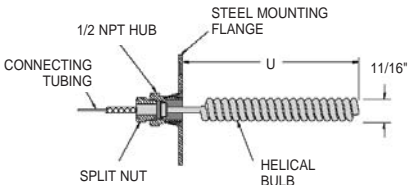
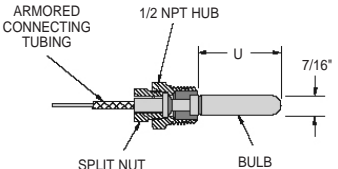
DIAL THERMOMETERS

Remote Mounted Dial Thermometers

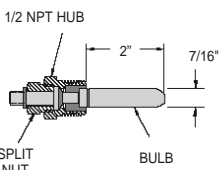
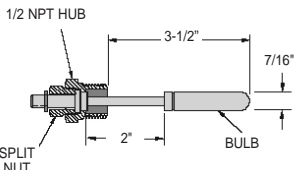
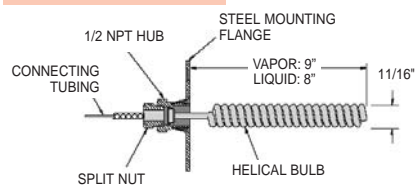
Bulb & Capillary Style	Order Code	Connection Style & Material	Bulb Material	Capillary Tubing Material	Minimum Bulb Insertion Length for Capillary Length (in feet) shown			
					Vapor Actuated			Liquid Act. All Lengths
					up to 10	15-50	over 50	
Union Connection 	B01	Brass, 1/2 NPT	Vapor: Copper Liquid: Brass	Copper with Bronze Braided Armour	2"	3 3/4"	5 5/8"	2"
	B10	Stainless Steel, 1/2 NPT	Stainless Steel	Stainless Steel	2"	3 3/4"	5 5/8"	2"
Adjustable Union Connection 	B02	Brass, 1/2 NPT	Vapor: Copper Liquid: Brass	Copper with Bronze Braided Armor	1 3/4"	3 1/2"	5 1/4"	1 3/4"
	B04	Stainless Steel, 1/2 NPT	Stainless Steel	Stainless Steel	1 3/4"	3 1/2"	5 1/4"	1 3/4"
Plain Bulb 	B05	None	Vapor: Copper Liquid: Brass	Copper with Bronze Braided Armor	2"	3 3/4"	5 5/8"	2"
	B06	None	Stainless Steel	Stainless Steel	2"	3 3/4"	5 5/8"	2"
Teflon Covered Bulb 	B08	None	Vapor: Copper Liquid: Brass with Teflon Cover	Bronze Braided Armor with Teflon Cover	15"	15"	15"	2 3/4"
	B07	None	Stainless Steel with Teflon Cover	Stainless Steel with Teflon Cover	15"	15"	15"	2 3/4"
Averaging Bulb 	B11*	Brass, 1/2 NPT	Copper	Copper with Bronze Braided Armor	N/A	N/A	N/A	Approx. 8 Feet
	B12*	Stainless Steel, 1/2 NPT	Stainless Steel	Stainless Steel	N/A	N/A	N/A	Approx. 8 Feet

* B11 and B12 Averaging Bulbs are not available with vapor actuation.

Remote Mounted Dial Thermometers (cont'd)

Bulb & Capillary Style	Order Code	Connection Style & Material	Bulb Material	Capillary Tubing Material	Minimum Bulb Insertion Length for Capillary Length (in feet) shown			
					up to 10	Vapor Actuated 15-50	over 50	Liquid Act. All Lengths
Air Sensitive Bulb 	B13	Steel Mounting Flange, Brass Fittings	Copper	Copper with Bronze Braided Armor	9"	9"	11"	8"
Union Connection with Spiral Armour 	B15	Brass, 1/2 NPT	Vapor: Copper Liquid: Brass	Copper with Bronze Braid & SS Spiral Armor	2"	3 3/4"	5 5/8"	2"
	B16	Stainless Steel, 1/2 NPT	Stainless Steel	Stainless Steel with SS Spiral Armor	2"	3 3/4"	5 5/8"	2"

Direct Mounted Dial Thermometers

Bulb Style	Order Code	Connection Material	Bulb Material	Minimum Bulb Insertion Length	
				Vapor Actuated	Liquid Act.
Union Connection 	B31	Brass, 1/2 NPT	Vapor: Copper Liquid: Brass	2"	2"
	B32	Stainless Steel, 1/2 NPT	Stainless Steel	2"	2"
Union Connection with Bendable Extension 	B33	Brass, 1/2 NPT	Vapor: Copper Liquid: Brass	3 1/2"	3 1/2"
	B34	Stainless Steel, 1/2 NPT	Stainless Steel	3 1/2"	3 1/2"
Air Sensitive Bulb 	B35	Steel Mounting Flange, Brass Fittings	Copper	9"	8"

Temperature Ranges

Dial Thermometers

Trerice offers a variety of temperature ranges to satisfy virtually any application. The following tables list the standard available ranges with figure intervals and minor divisions for Vapor or Liquid actuated dial thermometers.

Vapor actuated dial thermometers have a progressive scale. Maximum readability and stated intervals are in the upper two thirds of the scale. Liquid actuated dial thermometers have a linear scale. Figure intervals are equal throughout the range. Fahrenheit is primary (outside) scale on dual scale ranges.

Vapor Actuated Ranges with Major and Minor Divisions

Fahrenheit Scale		Celsius Scale		Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
030	-40° to 150°F	430	-40° to 65°C	230	-40° to 150°F & -40° to 65°C	20°	2°	10°	1°
040	-20° to 100°F	440	-30° to 40°C	240	-20° to 100°F & -30° to 40°C	10°	2°	5°	1°
050	0° to 100°F	450	-20° to 40°C	250	0° to 100°F & -20° to 40°C	10°	1°	10°	1°
065	0° to 160°F	465	-20° to 70°C	265	0° to 160°F & -20° to 70°C	20°	2°	10°	1°
100	30° to 180°F	500	0° to 85°C	300	30° to 180°F & 0° to 85°C	20°	2°	10°	1°
110	30° to 240°F	510	0° to 115°C	310	30° to 240°F & 0° to 115°C	20°	2°	10°	1°
120	30° to 300°F	520	0° to 150°C	320	30° to 300°F & 0° to 150°C	20°	2°	10°	1°
145	100° to 350°F	545	40° to 180°C	345	100° to 350°F & 40° to 180°C	30°	2°	10°	1°
160	200° to 450°F	560	90° to 230°C	360	200° to 450°F & 90° to 230°C	30°	2°	10°	2°

Vapor actuated dial thermometers have a progressive scale. Maximum readability and stated intervals are in the upper two thirds of the scale.

Liquid Actuated Ranges with Major and Minor Divisions

Fahrenheit Scale		Celsius Scale		Dual Scale		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Division
020	-40° to 120°F	420	-40° to 50°C	220	-40° to 120°F & -40° to 50°C	20°	2°	10°	1°
050	0° to 100°F	450	-20° to 40°C	250	0° to 100°F & -20° to 40°C	10°	1°	10°	0.5°
060	0° to 160°F	460	-20° to 70°C	260	0° to 160°F & -20° to 70°C	20°	2°	10°	1°
100	30° to 180°F	495	0° to 80°C	300	30° to 180°F & 0° to 85°C	20°	2°	10°	1°
110	30° to 240°F	510	0° to 115°C	310	30° to 240°F & 0° to 115°C	20°	2°	10°	1°
130	50° to 300°F	530	10° to 150°C	330	50° to 300°F & 10° to 150°C	50°	5°	20°	2°

Liquid actuated dial thermometers have a linear scale. Figure intervals are equal throughout the range.

Vapor and Liquid Actuated Dial Faces

The physical principles of vapor actuation require that the dialface for vapor dial thermometers be printed with a non-linear progressively graduated temperature scale. Liquid actuated dial thermometers are furnished with linear dialfaces. Please see the Thermal System Selection section of our online catalog for sample vapor and liquid actuated dialfaces.

Options & Accessories

Dial Thermometers

DIAL THERMOMETERS

Windows (PLW/GLW/SGW)

Terice offers a complete set of window options, including: plastic (acrylic PLW), glass (GLW), and laminated safety glass (SGW). Please consult the Option Availability Table for window availability. Replacement windows are sold separately, please consult the price sheet for item numbers.

Set Hand (RSH)

Attached at the center of the dialface, a red set hand can be adjusted to indicate a desired pre-determined reference point. The set point is adjusted by removing the ring and window of the thermometer. Please consult the Option Availability Table for set hand availability. A second red set hand may be available on some models – please consult factory.



Maximum Registering Pointer (MAX)

A maximum registering pointer can be furnished on most Terice Dial Thermometers. This pointer is designed to indicate the maximum or minimum temperature attained by the process being measured since the pointer was last reset. The pointer assembly is installed to an acrylic window, with an external knob for manually resetting the pointer. Please consult the Option Availability Table for maximum registering pointer availability.



Electric Contacts

Electric contact assemblies can be supplied on most 4½" & 6" dial thermometers. These units are well suited for making the electrical contact required to activate alarms, signals, or other electrical devices. Each unit is provided with an external adjustment key, making it easy to adjust and providing for tamper resistant operation. The contacts have adjustable magnets to eliminate bounce caused by vibration, and have pass/repass capability, allowing the pointer to move past the set point while maintaining contact.



Electric Contact Configurations

Optional Feature Code	Contact Style	Contact Action
EC1	Single High	Single contact: Makes on clockwise rotation
EC2	Single Low	Single contact: Breaks on clockwise rotation
EC3	High-Low	Double contact: High contact makes on clockwise rotation Low contact breaks on clockwise rotation
EC4	Double High	Double contact: 1st makes on clockwise rotation 2nd makes on clockwise rotation

Please consult the Option Availability Table for electric contact availability.

Recommended Load Limits

Volts	Resistive	Inductive
110 Vac	0.25 A	0.13 A
24 Vdc	0.40 A	0.25 A

Options & Accessories (cont'd)

Dial Thermometers

All dimensions are nominal. Dimensions in [] are in millimeters.

DIAL THERMOMETERS

Weatherproofed Cases (WPC)

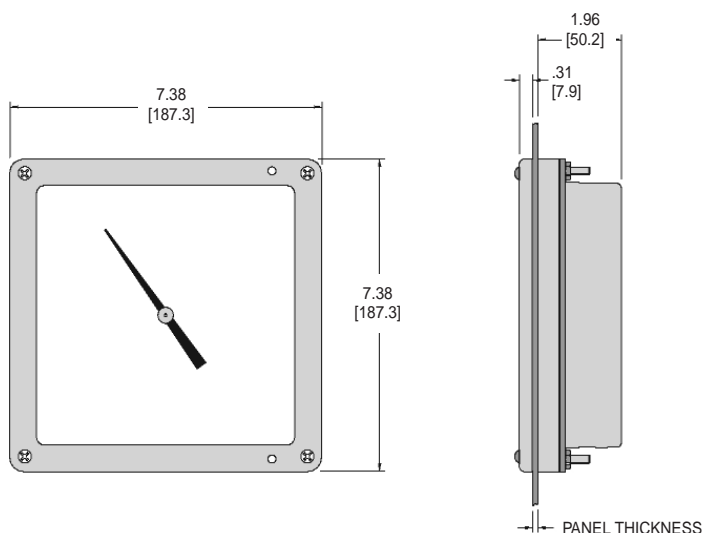
Terice Dial Thermometers may be sealed (NEMA 3) for outdoor use, or for use in applications where sprays and washes may come in contact with the thermometer. Please consult the Option Availability Table for weatherproofed case availability.

Silicone Dampened Movements (SDM)

The application of highly viscous silicone to the gear, sector, and all bearing points of the movement will help reduce the effects of vibration to which the thermometer may be subjected. This feature will extend the life of the instrument by reducing wear on the movement, and is available on most Terice Filled System Dial Thermometers. Please consult the Option Availability Table for silicone dampened movement availability.

7 3/8" Square Case

This 7 3/8" square front, back outlet case (Model 80373) is constructed from black finished cast aluminum. A black steel bezel ring is included for panel mounting the thermometer. Please consult the Option Availability Table for square case availability, and order as model V80373 or L80373.



Micro Switches (MSS/MSD)

Single (MSS) or double (MSD) Micro Switches, designed to operate low current alarms and warning lights, are available on 6" and 7 3/8" Terice Vapor Dial Thermometers. The switches are factory-set to close and operate a circuit when the temperature reaches a predetermined point. Red set hands are provided to indicate the temperature at which the switches have been set to operate. Although Micro Switches are designed for applications where the alarm temperature remains at the factory set point, they may be field adjusted if required. When ordering, please provide the set point(s) required.

Recommended Load Limits

Volts	Resistive	Inductive
250 VAC	10 A	10 A
125 VDC	0.4 A	0.3 A

3/4 NPT Hub (SHB/SHS)

A 3/4 NPT union connection hub is available in brass (SHB) or 316 stainless steel (SHS). This hub may be installed by the factory or ordered as a separate unit. When ordering separately, please use the item numbers listed in table.

Material	Item Number
Brass	082-0015
316 Stainless Steel	082-0015.2

Options & Accessories

Option Availability Table

The following table indicates optional features that are available for Trerice Dial Thermometers.

Optional Feature Code	Plastic Window (acrylic)	Laminated Safety Glass Window	Glass Window	Red Set Hand	Maximum Registering Pointer	Electric Contact	Weatherproofed Case	Silicone Dampened Movement	Micro Switch Single or Double	3/4 NPT Hub Brass or SS
	PLW	SGW	GLW	RSH	MAX	EC-X	WPC	SDM	MS-X	SH-X
Model										
80025	S	N/A	O	O	O	N/A	N/A	O	N/A	O
80030	S	N/A	O	O	O	N/A	N/A	O	N/A	O
80035	S	N/A	O	O	O	N/A	N/A	O	N/A	O
80036	S	N/A	O	O	O	N/A	O	O	N/A	O
80040	S	N/A	O	O	O	N/A	O	O	N/A	O
80041	S	N/A	O	O	O	N/A	O	O	N/A	O
80341	O	O	S	O	O	O	O	O	N/A	O
80342	O	O	S	O	O	O	O	O	N/A	O
80345	O	O	S	O	O	O	O	O	N/A	O
80361	O	O	S	O	O	O	O	O	O*	O
80362	O	O	S	O	O	O	O	O	O*	O
80365	O	O	S	O	O	O	O	O	O*	O
80381	O	O	S	O	O	N/A	O	O	N/A	O
80382	O	O	S	O	O	N/A	O	O	N/A	O
80445	O	N/A	S	O	N/A	N/A	N/A	O	N/A	O
80742	O	O	S	O	O	O	O	O	N/A	O
80762	O	O	S	O	O	O	O	O	O	O
80373	N/A	N/A	S	O	O	N/A	O	O	O	O

S - Standard Product Feature O - Optional Feature at Additional Charge N/A - Not Available

* 6" Vapor Dial Thermometers only.

DIAL THERMOMETERS

How to Order

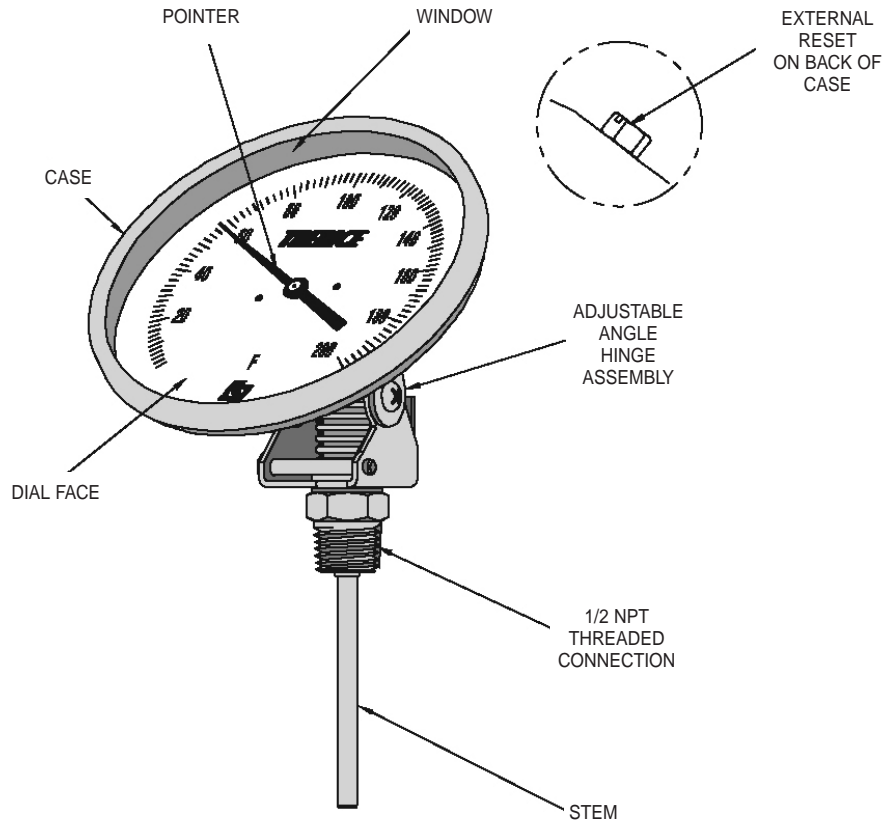
Specify the Optional Feature Code (from the table above) at the end of the Instrument Ordering Code.

Sample Order Number: V 80341 110 B01 05 EC1

Bimetal Thermometers

DESIGN & OPERATION

BIMETAL THERMOMETERS



Description

A thermometer is an instrument designed to measure and indicate the temperature of a specific application or condition. A bimetallic dial thermometer, commonly known as a bimetal thermometer, is installed at the point of measurement and is usually read from that location.

Principles of Operation

The Trerice Bimetal Thermometer employs a bimetallic sensing element which reacts consistently to temperature change, producing an accurately calibrated temperature measurement. The sensing element consists of two dissimilar metals welded together (in the form of a coil), and encased in a stainless steel stem. The coil is silicone dampened (ranges up to 300°F) to protect against vibration, and connected to a dial pointer on the instrument face. When the stem is exposed to temperature change, the coil expands or contracts, and the corresponding reaction is transmitted to the pointer, thereby indicating the temperature of the process.

Selecting a Bimetal Thermometer

All Trerice Bimetal Thermometers should be carefully selected to meet the demands of the particular application. The information contained in this catalog is offered only as a guide to assist in making the proper selection. Improper application may cause failure of the instrument, resulting in possible personal injury or property damage. For correct use and application of all bimetal thermometers, please refer to Bimetallic Actuated Thermometer Standard ASME B40.3. This document may be obtained from the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990.

For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process.

Case

The Trerice Bimetal Thermometer is available in an adjustable angle, rear or lower connected case. The hermetically sealed case is made from highly polished, type 300 stainless steel in sizes from 1" through 5".

Window and Ring

Double strength glass and plastic are standard window materials. The window is held in place by a ring, which is crimped around the case of the instrument.

Accuracy

The accuracy of a bimetal thermometer is expressed as a percentage (plus or minus) of the maximum scale range. Trerice Bimetal Thermometers are accurate to $\pm 1.0\%$ Full Scale, ASME B40.3 Grade A (except pocket type: $\pm 5.0\%$ Full Scale, ASME B40.3 Grade 3).

Measurement Range and Dial

A wide variety of measurement ranges are available in Dual Scales (Fahrenheit and Celsius) from -100° through 1000°F . Single scale Fahrenheit or Celsius is available on special order. Ranges are indelibly presented in black ($^{\circ}\text{F}$) and blue ($^{\circ}\text{C}$) graduations with black markings upon a white painted dialface. Fahrenheit is the primary (outside) scale on dual scale ranges.

Ranges up to 250°F (120°C) are provided with overrange protection of 100% of range span. Ranges over 250°F (120°C) are provided with overrange protection of 50% of range span.

External Reset

Most Trerice Bimetal Thermometers are equipped with an external reset. This feature allows the instrument to be calibrated at any specific point within the measuring range.

Stem and Connection

Trerice Bimetal Thermometers are furnished with a 0.250" or 0.125" O.D. stainless steel stem in lengths from 2 1/2" though 72". Connection styles are either threaded (1/4 or 1/2 NPT) or plain (non-threaded).

Environmental Conditions

The Trerice Bimetal Thermometer is hermetically sealed. The case should not be exposed to sustained temperatures in excess of 200°F (93°C). For applications where vibration may be present, the thermometer case can be silicone filled to protect the internals of the instrument.

The thermometer should not be operated continuously above 800°F (425°C), as damage to the instrument may result.

Thermowells

For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the thermometer and facilitate its removal from the process. Thermowells are available in various lengths, connections, sizes, and materials. Please consult the Thermowell Section of this catalog.

To ensure minimum response time, Trerice Heat Transfer Paste should be applied to the sensing portion of the stem before installation into a thermowell. 1 oz. tube: Item No. 107-0001

Adjustable Angle

BIMETAL THERMOMETERS



B85606 shown

The Terice **Adjustable Angle Bimetal Thermometer** can be configured to the most desirable viewing angle. This instrument has a hermetically sealed, stainless steel case designed to withstand the rigors of industrial environments, while producing an accurate, responsive measurement.

- Optional features available: Please consult the Options & Accessories Section for details.

Thermowell

- For corrosive or pressure applications, use of a thermowell is recommended to prevent damage to the thermometer and facilitate its removal from the process (refer to pages 155-161). For correct use and application of all Bimetallic thermometers, please refer to the Bimetallic Actuated Thermometer Standard ASME B40.3.

- ▶ 3", 5" Dial Size
- ▶ $\pm 1.0\%$ Full Scale Accuracy
- ▶ Stainless Steel Case & Stem
- ▶ External Reset

Specifications

Models	Dial Sizes
B836	3"
B856	5"
Case	300 stainless steel, hermetically sealed
Stem	300 stainless steel 1/4" diameter
Coil	Bimetallic, silicone dampened on ranges to 300°F (148°C), above 300°F not dampened
Connection	Adjustable angle, 1/2 NPT
Window	Double strength glass
Pointer	Balanced, black finish
Dial Face	Aluminum, white background with black and blue graduations and markings
External Reset	Yes
Accuracy	$\pm 1.0\%$ Full Scale ASME B40.3 Grade A

Approximate Shipping Weight

B836: 1.1 lbs [0.5 kg]
B856: 1.5 lbs [0.68 kg]

HOW TO ORDER

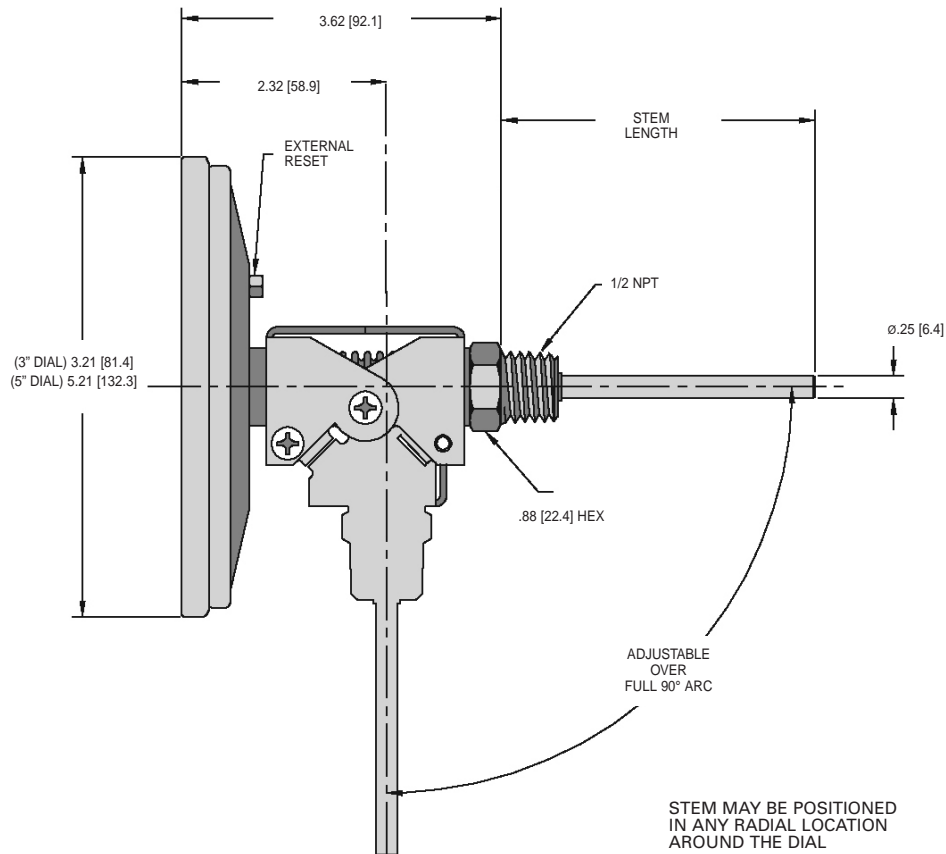
Sample Order Number: **B856 06 05**

Model	Stem (Length)	Range Code
B836	02 2 1/2" Stem	See Standard Ranges
B856	04 4" Stem	
	06 6" Stem	
	09 9" Stem	
	12 12" Stem	
	15 15" Stem	
	18 18" Stem	
	24 24" Stem	

Other lengths available: Specify in inches (72" maximum)

Adjustable Angle

All dimensions are nominal. Dimensions in [] are in millimeters.



BIMETAL THERMOMETERS

Standard Ranges

Dual Scale (Fahrenheit & Celsius Range)		Fahrenheit only Range		Celsius only Range		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01*†	-100° to 100°F & -75° to 40°C	01F*†	-100° to 100°F	01C*†	-75° to 40°C	20°	2°	10°	1°
02	-40° to 160°F & -40° to 70°C	02F	-40° to 160°F	02C	-40° to 70°C	20°	2°	10°	1°
12*†	0° to 100°F & -20° to 40°C	12F*†	0° to 100°F	12C*†	-20° to 40°C	10°	1°	10°	1°
03*†	25° to 125°F & -5° to 50°C	03F*†	25° to 125°F	03C*†	-5° to 50°C	10°	1°	5°	1/2°
04	0° to 200°F & -20° to 95°C	04F	0° to 200°F	04C	-20° to 95°C	20°	2°	10°	1°
05	20° to 240°F & -10° to 115°C	05F	20° to 240°F	05C	-10° to 115°C	20°	2°	10°	1°
27	0° to 250°F & -20° to 120°C	27F	0° to 250°F	27C	-20° to 120°C	50°	2°	20°	2°
06	50° to 300°F & 10° to 150°C	06F	50° to 300°F	06C	10° to 150°C	50°	2°	20°	2°
07	50° to 400°F & 10° to 200°C	07F	50° to 400°F	07C	10° to 200°C	50°	5°	50°	2°
08	50° to 500°F & 10° to 260°C	08F	50° to 500°F	08C	10° to 260°C	50°	5°	50°	2°
09*	150° to 750°F & 50° to 400°C	09F*	150° to 750°F	09C*	50° to 400°C	100°	10°	50°	5°
10*	200° to 1000°F & 100° to 550°C	10F*	200° to 1000°F	10C*	100° to 550°C	100°	10°	100°	5°

* Minimum stem length for these ranges is 4".

† Minimum insertion length for these ranges is 3".

Bottom Connect

BIMETAL THERMOMETERS



B85404 shown

The Trerice **Bottom Connection Bimetal Thermometer** has been designed to meet the needs of standard industrial applications and installations. This instrument features a stainless steel, hermetically sealed case, providing weather tight protection.

- Optional features available: Please consult the Options & Accessories Section for details.

Thermowell

- For corrosive or pressure applications, use of a thermowell is recommended to prevent damage to the thermometer and facilitate its removal from the process (refer to pages 155-161). For correct use and application of all Bimetallic thermometers, please refer to the Bimetallic Actuated Thermometer Standard ASME B40.3.

- ▶ 3", 5" Dial Size
- ▶ $\pm 1.0\%$ Full Scale Accuracy
- ▶ Stainless Steel Case & Steel
- ▶ External Reset

Specifications

Models	Dial Sizes
B834	3"
B854	5"
Case	300 stainless steel, hermetically sealed
Stem	300 stainless steel, 1/4" diameter
Coil	Bimetallic, silicone dampened on ranges to 300°F (148°C), above 300°F not dampened
Connection	Bottom, 1/2 NPT
Window	Double strength glass
Pointer	Balanced, black finished
Dial Face	Aluminum, white background with black and blue graduations and markings
External Reset	Yes
Accuracy	$\pm 1.0\%$ Full Scale ASME B40.3 Grade A

Approximate Shipping Weight

B834: 0.8 lbs [0.36 kg]
B854: 1.6 lbs [0.72 kg]

HOW TO ORDER

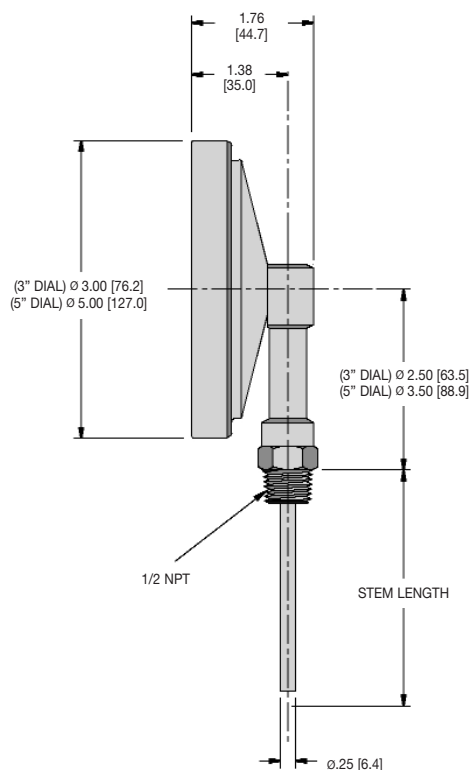
Sample Order Number: **B834 04 04**

Model	Stem Length	Range Code
B834 B854	02 2 1/2" Stem 04 4" Stem 06 6" Stem 09 9" Stem 12 12" Stem 15 15" Stem 18 18" Stem 24 24" Stem	See Standard Ranges

Other lengths available: Specify in inches (72" maximum)

Bottom Connect

All dimensions are nominal. Dimensions in [] are in millimeters.



BIMETAL THERMOMETERS

Standard Ranges

Dual Scale (Fahrenheit & Celsius Range)		Fahrenheit only Range		Celsius only Range		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01*†	-100° to 100°F & -75° to 40°C	01F*†	-100° to 100°F	01C*†	-75° to 40°C	20°	2°	10°	1°
02	-40° to 160°F & -40° to 70°C	02F	-40° to 160°F	02C	-40° to 70°C	20°	2°	10°	1°
03*†	25° to 125°F & -5° to 50°C	03F*†	25° to 125°F	03C*†	-5° to 50°C	10°	1°	5°	1/2°
04	0° to 200°F & -20° to 95°C	04F	0° to 200°F	04C	-20° to 95°C	20°	2°	10°	1°
05	20° to 240°F & -10° to 115°C	05F	20° to 240°F	05C	-10° to 115°C	20°	2°	10°	1°
27	0° to 250°F & -20° to 120°C	27F	0° to 250°F	27C	-20° to 120°C	50°	2°	20°	2°
06	50° to 300°F & 10° to 150°C	06F	50° to 300°F	06C	10° to 150°C	50°	2°	20°	2°
07	50° to 400°F & 10° to 200°C	07F	50° to 400°F	07C	10° to 200°C	50°	5°	50°	2°
08	50° to 500°F & 10° to 260°C	08F	50° to 500°F	08C	10° to 260°C	50°	5°	50°	2°
09*	150° to 750°F & 50° to 400°C	09F*	150° to 750°F	09C*	50° to 400°C	100°	10°	50°	5°
10*	200° to 1000°F & 100° to 550°C	10F*	200° to 1000°F	10C*	100° to 550°C	100°	10°	100°	5°

* Minimum stem length for these ranges is 4".

† Minimum insertion length for these ranges is 3".

Rear Connect

BIMETAL THERMOMETERS



B85204 shown

The Trerice **Rear Connect Bimetal Thermometer** has been designed to meet the needs of standard industrial applications and installations. This instrument features a stainless steel, hermetically sealed case, providing weather tight protection.

- Optional features available: Please consult the Options & Accessories Section for details.

Thermowell

- For corrosive or pressure applications, use of a thermowell is recommended to prevent damage to the thermometer and facilitate its removal from the process (refer to pages 155-161). For correct use and application of all Bimetallic thermometers, please refer to the Bimetallic Actuated Thermometer Standard ASME B40.3.

- ▶ 3", 5" Dial Sizes
- ▶ $\pm 1.0\%$ Full Scale Accuracy
- ▶ Stainless Steel Case & Stem
- ▶ External Reset

Specifications

Models	Dial Sizes
B832	3"
B852	5"
Case	300 stainless steel, hermetically sealed
Stem	300 stainless steel, 1/4" diameter
Coil	Bimetallic, silicone dampened ranges to 300°F (148°F), above 300°F not dampened
Connection	Rear, 1/2 NPT
Window	Double strength glass
Pointer	Balanced, black finished
Dial Face	Aluminum, white background with black and blue graduations and markings
External Reset	Yes
Accuracy	$\pm 1.0\%$ Full Scale ASME B40.3 Grade A

Approximate Shipping Weight

B832: 0.7 lbs [0.31 kg]
B852: 1.2 lbs [0.54 kg]

HOW TO ORDER

Sample Order Number: **B832 02 06**

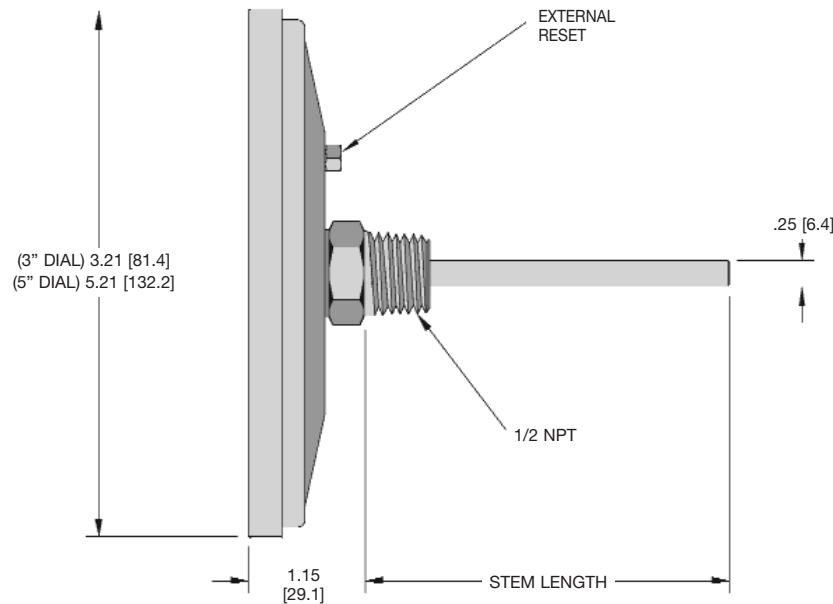
Model	Stem Length	Range Code
B832 B852	02 2 1/2" Stem 04 4" Stem 06 6" Stem 09 9" Stem 12 12" Stem 15 15" Stem 18 18" Stem 24 24" Stem	See Standard Ranges

Other lengths available: Specify in inches (72" maximum)

Rear Connect

All dimensions are nominal. Dimensions in [] are in millimeters.

BIMETAL THERMOMETERS



Standard Ranges

Dual Scale (Fahrenheit & Celsius Range)		Fahrenheit only Range		Celsius only Range		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-100° to 100°F & -75° to 40°C	01F	-100° to 100°F	01C	-75° to 40°C	20°	2°	10°	1°
02	-40° to 160°F & -40° to 70°C	02F	-40° to 160°F	02C	-40° to 70°C	20°	2°	10°	1°
12*†	0° to 100°F & -20° to 40°C	12F*†	0° to 100°F	12C*†	-20° to 40°C	10°	1°	10°	1°
03	25° to 125°F & -5° to 50°C	03F	25° to 125°F	03C	-5° to 50°C	10°	1°	5°	1/2°
04	0° to 200°F & -20° to 95°C	04F	0° to 200°F	04C	-20° to 95°C	20°	2°	10°	1°
05	20° to 240°F & -10° to 115°C	05F	20° to 240°F	05C	-10° to 115°C	20°	2°	10°	1°
27	0° to 250°F & -20° to 120°C	27F	0° to 250°F	27C	-20° to 120°C	50°	2°	20°	2°
06	50° to 300°F & 10° to 150°C	06F	50° to 300°F	06C	10° to 150°C	50°	2°	20°	2°
07	50° to 400°F & 10° to 200°C	07F	50° to 400°F	07C	10° to 200°C	50°	5°	50°	2°
08	50° to 500°F & 10° to 260°C	08F	50° to 500°F	08C	10° to 260°C	50°	5°	50°	2°
09*	150° to 750°F & 50° to 400°C	09F*	150° to 750°F	09C*	50° to 400°C	100°	10°	50°	5°
10*	200° to 1000°F & 100° to 550°C	10F*	200° to 1000°F	10C*	100° to 550°C	100°	10°	100°	5°

* Minimum stem length for these ranges is 4".

† Minimum stem length for these ranges is 3".

Rear Connect X-Series

BIMETAL THERMOMETERS



- ▶ 3" Dial Size
- ▶ $\pm 1.0\%$ Full Scale Accuracy
- ▶ Stainless Steel Case & Stem
- ▶ Hermetically Sealed Design

Perfect for OEM Applications

B831X04 shown

The Trerice **X-Series OEM Bimetal Thermometer** is designed to meet the demands of the OEM and industrial marketplace, but at an economical price. It features a hermetically sealed case with a narrow, space saving profile. This instrument does not include an external reset, ensuring tamperproof operation throughout the life of the unit.

- Optional features available: Please consult the Options & Accessories Section for details.

Thermowell

- For corrosive or pressure applications, use of a thermowell is recommended to prevent damage to the thermometer and facilitate its removal from the process (refer to pages 155-161). For correct use and application of all Bimetallic thermometers, please refer to the Bimetallic Actuated Thermometer Standard ASME B40.3.

HOW TO ORDER

Sample Order Number: **B831X 04 05**

Model	Stem Length	Range Code
B831X	02 2 1/2" Stem	See Standard Ranges
	04 4" Stem	
	06 6" Stem	
	09 9" Stem	
	12 12" Stem	
	15 15" Stem	
	18 18" Stem	
	24 24" Stem	

Other lengths available: Specify in inches (72" maximum)

Specifications

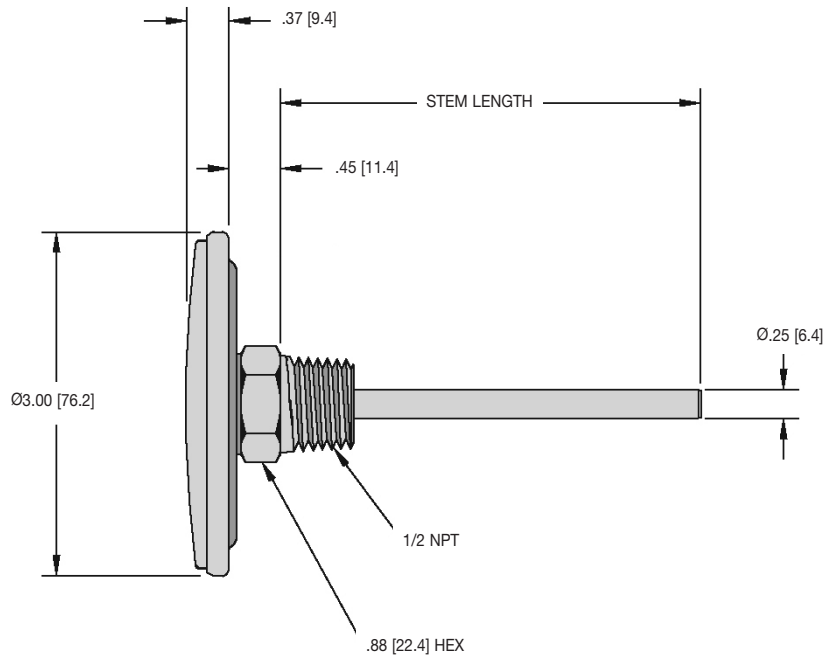
Model	Dial Size
B831X	3"
Case	300 stainless steel, hermetically sealed
Stem	300 stainless steel 1/4" diameter
Coil	Bimetallic, silicone dampened ranges to 300°F (148°F), above 300°F not dampened
Connection	Rear 1/2 NPT
Window	Polycarbonate
Pointer	Balanced, black finished
Dial Face	Aluminum, white background with black and blue graduations and markings
External Reset	No
Accuracy	$\pm 1.0\%$ Full Scale ASME B40.3 Grade A

Approximate Shipping Weight

B831X: 0.5 lbs [0.22 kg]

Rear Connect X-Series

All dimensions are nominal. Dimensions in [] are in millimeters.



BIMETAL THERMOMETERS

Standard Ranges

Dual Scale (Fahrenheit & Celsius Range)		Fahrenheit Only Range		Celsius Only Range		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-100° to 100°F & -75° to 40°C	01F	-100° to 100°F	01C	-75° to 40°C	20°	2°	10°	1°
02	-40° to 160°F & -40° to 70°C	02F	-40° to 160°F	02C	-40° to 70°C	20°	2°	10°	1°
12*†	0° to 100°F & -20° to 40°C	12F*†	0° to 100°F	12C*†	-20° to 40°C	10°	1°	10°	1°
03	25° to 125°F & -5° to 50°C	03F	25° to 125°F	03C	-5° to 50°C	10°	1°	5°	1/2°
04	0° to 200°F & -20° to 95°C	04F	0° to 200°F	04C	-20° to 95°C	20°	2°	10°	1°
05	20° to 240°F & -10° to 115°C	05F	20° to 240°F	05C	-10° to 115°C	20°	2°	10°	1°
27	0° to 250°F & -20° to 120°C	27F	0° to 250°F	27C	-20° to 120°C	50°	2°	20°	2°
06	50° to 300°F & 10° to 150°C	06F	50° to 300°F	06C	10° to 150°C	50°	2°	20°	2°
07	50° to 400°F & 10° to 200°C	07F	50° to 400°F	07C	10° to 200°C	50°	5°	50°	2°
08	50° to 500°F & 10° to 260°C	08F	50° to 500°F	08C	10° to 260°C	50°	5°	50°	2°

* Minimum stem length for these ranges is 4".

† Minimum insertion length for these ranges is 3".

Rear Connect Compact Style

BIMETAL THERMOMETERS



B822Y04 shown

Designed for minimum space applications, this compact, low-cost thermometer maintains the accuracy, responsiveness, and durability for which the Trerice Line of Bimetal Thermometers is known. The stainless steel case is hermetically sealed.

- Optional features available: Please consult the Options & Accessories Section for details.

Thermowell

- For corrosive or pressure applications, use of a thermowell is recommended to prevent damage to the thermometer and facilitate its removal from the process (refer to pages 155-161).

For correct use and application of all Bimetallic thermometers, please refer to the Bimetallic Actuated Thermometer Standard ASME B40.3.

- ▶ 2" Dial Size
- ▶ $\pm 1.0\%$ Full Scale Accuracy
- ▶ Stainless Steel Case & Stem
- ▶ Hermetically Sealed Design

HOW TO ORDER

Sample Order Number: **B822Y 04 05**

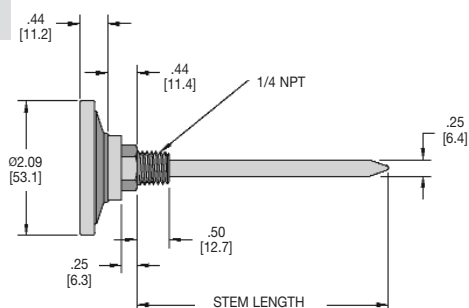
Model	Stem Length	Range Code
B822Y	02 2 1/2"	Stem See Standard Ranges
B822YP	04 4" Stem	
	06 6" Stem	

Other stem lengths and ranges available. Please consult factory.

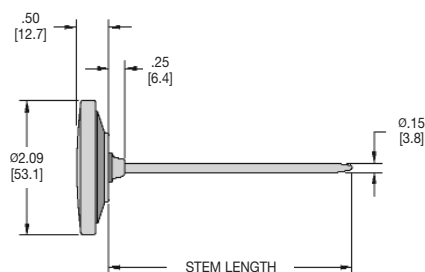
Standard Ranges

Dual Scale (Fahrenheit & Celsius Range)		Fahrenheit		Celsius	
Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
02	-40° to 160°F & -40° to 70°C	20°	2°	10°	1°
03	25° to 125°F & -5° to 50°C	10°	1°	5°	1/2°
27	0° to 250°F & -20° to 120°C	50°	2°	20°	2°
05	20° to 240°F & -10° to 115°C	20°	2°	10°	1°
08	50° to 500°F & 10° to 260°C	50°	5°	20°	2°

B822Y



B822YP



All dimensions are nominal. Dimensions in [] are in millimeters.

Specifications

Models	Dial Size
B822Y	2" (Threaded)
B822YP	2" (Plain)
Case	
300 stainless steel, hermetically sealed	
Stem	
B822Y: 300 stainless steel 1/4" diameter	
B822YP: 300 stainless steel 9/64" diameter	
Coil	
Bimetallic, silicone dampened on ranges to 300°F (148°C), above 300°F not dampened	
Connection	
B822Y: Rear, 1/4 NPT	
B822YP: Rear, unthreaded	
Window	
Glass	
Pointer	
Balanced, black finished	
Dial Face	
Aluminum, silver background with black graduations and markings	
External Reset	
Yes	
Accuracy	
$\pm 1.0\%$ Full Scale ASME B40.3 Grade A	
Approximate Shipping Weight	
0.4 lbs [0.18 kg]	

Pocket Bimetal

Specifications

Model	Dial Size
B811	1"
Case	300 stainless steel, hermetically sealed
Stem	300 stainless steel, 9/64" diameter
Coil	Bimetallic
Connection	Rear, unthreaded
Window	Acrylic
Pointer	Black finished
Dial Face	White background with black graduations and markings
External Reset	Yes
Accuracy	±5.0 % Full Scale ASME B40.3 Grade C
Approximate Shipping Weight	0.1 lbs [0.05 kg]



B81106 shown

- ▶ 1" Dial Size
- ▶ ± 5.0% Full Scale Accuracy
- ▶ Stainless Steel Case & Stem
- ▶ Plastic Stem Protector with Pocket Clip

The Trerice **Pocket Bimetal Thermometer** is designed to deliver temperature indications for general and informal testing purposes. This thermometer has a hermetically sealed stainless steel case with a plain connection and comes complete with a plastic stem protector with pocket clip.

For correct use and application of all bimetallic thermometers, please refer to Bimetallic Actuated Thermometer Standard ASME B40.3.

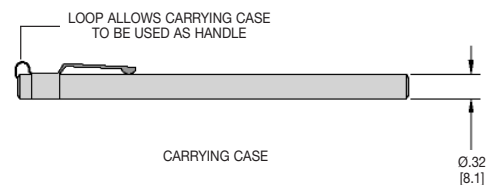
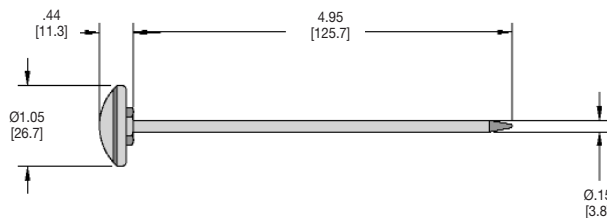
BIMETAL THERMOMETERS

HOW TO ORDER

Sample Order Number: **B811 05 13**

Model	Stem Length	Range Code
B811	05 5" Stem	11 -20° to 120°F (20° Figure intervals / 2° Minor Divisions)
		13 0° to 220°F (20° Figure intervals / 2° Minor Divisions)
		15 50° to 500°F (50° Figure intervals / 5° Minor Divisions)
		18 0° to 120°C (10° Figure intervals / 1° Minor Divisions)
		20 0° to 250°C (50° Figure intervals / 2° Minor Divisions)

All dimensions are nominal. Dimensions in [] are in millimeters



Bimetal Plus

Integrated Thermocouple or RTD

BIMETAL THERMOMETERS



MODEL B85606

The Trerice **Bimetal Plus** has all the standard features of the Trerice Bimetal Thermometer, but with a "Plus." The "Plus" being an internally mounted thermocouple or RTD. This allows for remote temperature monitoring while still providing local indication. This dual sensor design eliminates the need for additional instrumentation or connections when designing a system to include both mechanical and electronic temperature sensing.

- Optional features available: Please consult the Options & Accessories Section for details.

Thermowell

- For corrosive or pressure applications, use of a thermowell is recommended to prevent damage to the thermometer and facilitate its removal from the process (refer to pages 155-161). For correct use and application of all Bimetallic thermometers, please refer to the Bimetallic Actuated Thermometer Standard ASME B40.3.

- ▶ 3", 5" Dial Sizes
- ▶ $\pm 1.0\%$ Full Scale Accuracy
- ▶ Local Indication/Remote Data Acquisition
- ▶ Thermocouple or RTD Sensors available

Specifications

Models	Dial Sizes/Stem Styles
B836 B856	3" 5" } Adjustable Angle
B832 B852	3" 5" } Rear Connection
Case	300 stainless steel, hermetically sealed
Stem	300 stainless steel, 1/4" diameter
Coil	Bimetallic, silicone dampened on ranges to 300°F (148°C), above 300°F not dampened
Process Connection	Adjustable or rear, 1/2 NPT
Electrical Connection	T/C: Miniature plug RTD: Plug with molded cordset
Window	Double strength glass
Pointer	Balanced, black finished
Dial Face	Aluminum, white background with black and blue graduations and markings
External Reset	Yes
Accuracy	$\pm 1.0\%$ Full Scale ASME B40.3 Grade A
Approximate Shipping Weight	
B832: 0.9 lbs [0.41 kg]	
B852: 1.4 lbs [0.64 kg]	
B836: 1.3 lbs [0.29 kg]	
B856: 1.7 lbs [0.77 kg]	

HOW TO ORDER

Sample Order Number: **B856 06 05 TCJ**

Model	Stem Length*	Range Code	Sensor Type
B836	04 4" Stem	See Standard Ranges	TCE Type E Thermocouple
B856	06 6" Stem		TCJ Type J Thermocouple
B832	09 9" Stem		TCK Type K Thermocouple
B852	12 12" Stem		TCT Type T Thermocouple
	15 15" Stem		RTC 100Ω RTD
	18 18" Stem		
	24 24" Stem		

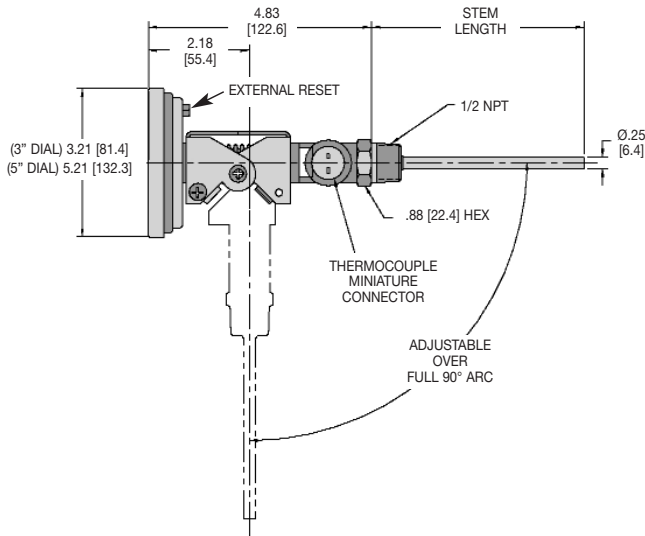
Other lengths available: Specify in inches (48" maximum).

* Minimum insertion length is 3 1/2".

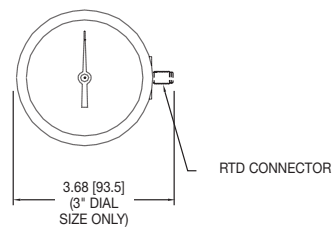
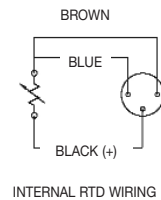
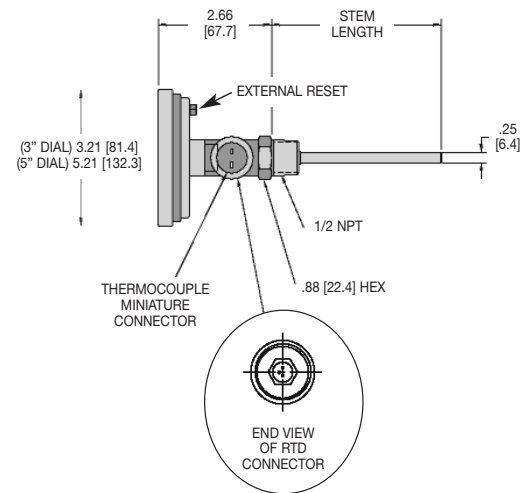
Bimetal Plus

All dimensions are nominal. Dimensions in [] are in millimeters

Adjustable Angle



Rear Connection



Standard Ranges*

Dual Scale (Fahrenheit & Celsius Range)		Fahrenheit Only Range		Celsius Scale Only Range		Fahrenheit		Celsius	
Range Code	Range	Range Code	Range	Range Code	Range	Figure Intervals	Minor Divisions	Figure Intervals	Minor Divisions
01	-100 to 100°F & -75° to 40°C	01F	-100° to 100°F	01C	75° to 40°C	20°	2°	10°	1°
02	-40° to 160°F & -40° to 70°C	02F	-40° to 160°F	02C	-40° to 70°C	20°	2°	10°	1°
12	0° to 100°F & -20° to 40°C	12F	0° to 100°F	12C	-20° to 40°C	10°	1°	10°	1°
03	25° to 125°F & -5° to 50°C	03F	25° to 125°F	03C	-5° to 50°C	10°	1°	5°	1/2°
04	0° to 200°F & -20° to 95°C	04F	0° to 200°F	04C	-20° to 95°C	20°	2°	10°	1°
05	20° to 240°F & -10° to 115°C	05F	20° to 240°F	05C	-10° to 115°C	20°	2°	10°	1°
27	0° to 250°F & -20° to 120°C	27F	0° to 250°F	27C	-20° to 120°C	50°	2°	20°	2°
06	50° to 300°F & 10° to 150°C	06F	50° to 300°F	06C	10° to 150°C	50°	2°	20°	2°
08	50° to 500°F & 10° to 260°C	08F	50° to 500°F	08C	10° to 260°C	50°	2°	50°	2°

* Minimum insertion length for all ranges is 3 1/2".

BIMETAL THERMOMETERS

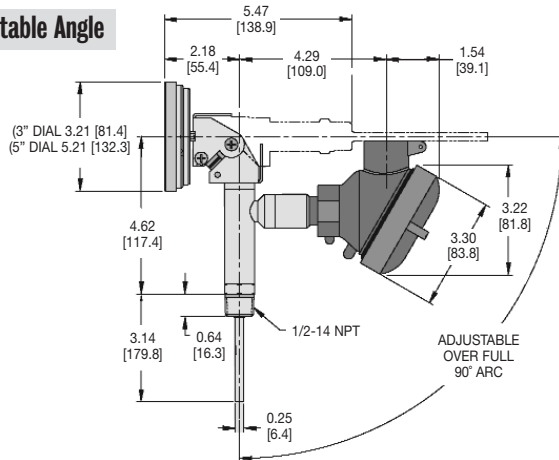
Bimetal Plus

Options & Accessories

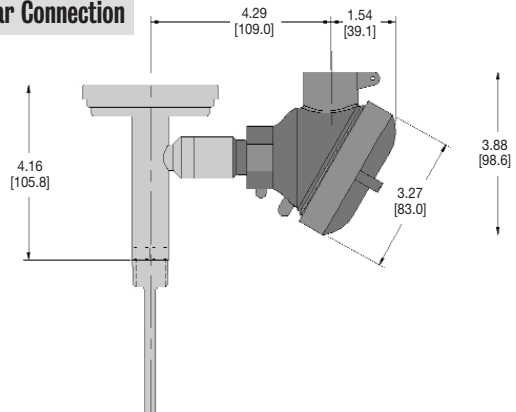
Connection Head with Terminal Block or Transmitter

The connection head is designed to provide a weatherproof, yet accessible conduit connection, and is used to house a terminal connection block or Trerice TRT30 Temperature Transmitter. The head is available with a screw cover (cast aluminum or stainless steel) or a flip cover (polypropylene), and includes a 3/4 NPT conduit connection.

Adjustable Angle

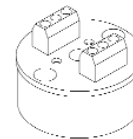


Rear Connection

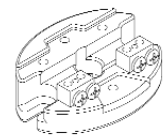


The terminal block provides an electrical hook-up point within the connection head, allowing for quick and easy attachment of extension wiring. The Terminal Block is available with either a 2-wire (thermocouple) or 3-wire (RTD) connection. The Trerice TRT30 Series Temperature Transmitter will convert a thermocouple or output signal to a 2-wire 4-20 mA signal, thus eliminating electrical interference and allowing the signal to be transmitted over long distances. These units are specifically designed for installation into the connection head.

Transmitter



Terminal Block



Specifications

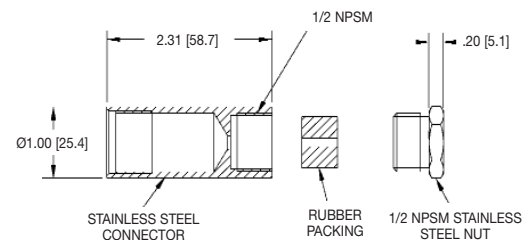
Model	Input	Accuracy	Adjustment Range	Maximum Output Load	Output Signal
TRT30	Type J, K or T Thermocouple or 100Ω Platinum RTD	±0.1% of input span	±35% for both zero and span	Thermocouple: $R_{max} = (V_{supply} - 12V) / 20 \text{ mA}$ RTD: $R_{max} = (V_{supply} - 10V) / 20 \text{ mA}$	4-20 mA

Ordering Codes

Connection Head	Terminal Block		Transmitter	
	Thermocouple	RTD	Thermocouple	RTD
Aluminum screw cover	ABT	ABR	ATT	ATR
Polypropylene flip cover	PBT	PBR	PTT	PTR
Stainless steel screw cover	SBT	SBR	STT	STR

Weatherproofed Conduit Connection (WCC)

The conduit connection allows the Trerice Bimetal Plus Thermometer to be mounted directly to conduit piping, or used in applications where sprays and washes may come in contact with the electrical connection. This option consists of a stainless steel conduit connection tube, a packing grommet and a stainless steel connection fitting. Note: The Bimetal Plus with RTD Sensor does not require this option for weatherproof protection, as the RTD connection and cable are sealed for outdoor use. Please order using Option Code **WCC** (weatherproofed conduit connection).



How to Order

Specify the Optional Feature Code at the end of the Instrument Ordering Code. Sample Order Number: **B856 06 05 TJC WCC**

Options & Accessories

Bimetal Thermometers

Windows (PLW/SGW)

Plastic (Acrylic) Windows are optionally available with ranges up to 500°F (260°C) on 3" and 5" dial size bimetal thermometers. Laminated Safety Glass Windows are available on 3" and 5" dial size bimetal thermometers (except B831X Series). Please order using Option Code **PLW** (plastic window) or **SGW** (safety glass window).

Maximum Registering Pointer (MAX)

Maximum Registering Pointers can be furnished on the B832 Series Bimetal Thermometers (except Range Codes 03, 03C, 03F). This pointer is designed to indicate the maximum or minimum temperature attained by the process being measured since the pointer was last reset. The pointer assembly is installed to a plexiglass window, with an external knob for manually resetting the pointer. Please order using Option Code **MAX** (maximum registering pointer).

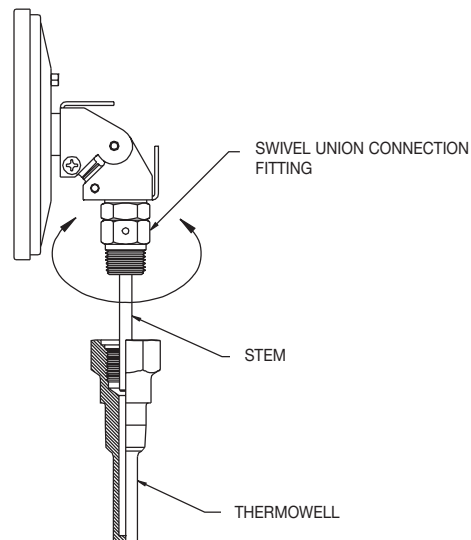


Silicone Liquid Fill (SLF)

Terice Bimetal Thermometers (except B831X and B81105 Series) with temperature ranges up to 500°F (260°C) can be silicone liquid filled to reduce pointer oscillation resulting from application vibration. This feature also acts as a permanent lubricant to the moving parts of the instrument. Please order using Option Code **SLF** (silicone liquid fill).

Swivel Union Connection (SWV)

Terice Series B832, B836, B852 and B856 Bimetal Thermometers are available with an optional swivel union connection. This feature allows the thermometer to be rotated to the desired reading position before being tightened into the process connection. Thermometers with the swivel connection must be installed with a thermowell. Please order using Option Code **SWV** (swivel union connection).



Options & Accessories

Bimetal Thermometers

Silicone Free Construction (SFC)

For applications where silicone is not permitted within the process (i.e., paint systems), Terice Bimetal Thermometers (except B831X and B81105) can be manufactured to be silicone free. Bimetal Thermometers (except B831X and B81105) with ranges above 300°F are supplied standard as "silicone free." Please order using Option Code **SFC** (silicone free construction).

Flanges and Hubs

Terice offers a variety of instrument mounting accessories. Please consult the table below for mounting flange and adapter hub item numbers.

Mounting Flanges and Adapter Hubs

Description	Material	Instrument Connection	Mounting Connection	Item Number
Mounting Flange	Zinc plated steel	1/2 NPT	2 3/8" bolt circle, 3 3/8" O.D.	065-0015
Swivel Flange	Zinc plated steel with brass hub	1/2 NPT	2 5/16" slotted bolt circle 3" O.D.	065-0032A
Adapter Hub	Brass	1/2 NPT Female	3/4 NPT Male	024-0039
Adapter Hub	Stainless steel	1/2 NPT Female	3/4 NPT Male	024-0063

Identification Tags

Terice Identification Tags are available in a variety of materials. Please consult the table below for tag item numbers.

Tag Material	Maximum No. of Characters	Item Number
Aluminum	80	152-0015.2A
Paper	90	152-0016A
Stainless steel	80	152-0015A
Stainless steel foil	25	152-0018

How to Order

Specify the Optional Feature Code at the end of the Instrument Ordering Code.

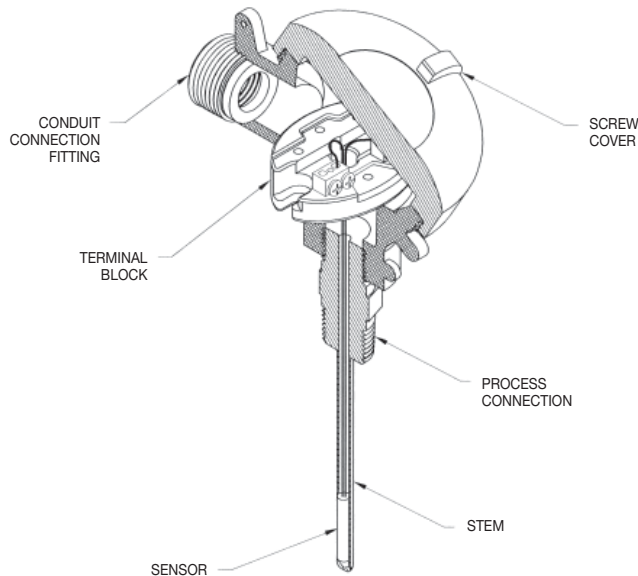
Sample Order Number: **B856 06 05** **SLF**

Notes

BIMETAL THERMOMETERS

Electronic Temperature Sensors

DESIGN & OPERATION



Description

A temperature sensor is a device, typically a thermocouple or RTD, that provides for temperature measurement through an electrical signal. A thermocouple (T/C) is made from two dissimilar metals that generate electrical voltage in direct proportion to changes in temperature. An RTD (Resistance Temperature Detector) is a variable resistor that will change its electrical resistance in direct proportion to changes in temperature in a precise, repeatable and nearly linear manner.

Principles of Operation

Thermocouples

A thermocouple is made from two dissimilar metal wires. The wires are joined together at one end to form a measuring (hot) junction. The other end, known as the reference (cold) junction, is connected across an electronic measurement device (controller or digital indicator). A thermocouple will generate a measurement signal not in response to actual temperature, but in response to a difference in temperature between the measuring and reference junctions. A small ambient temperature sensor is built into the electronic measuring device near the point where the reference junction is attached. The ambient temperature is then added to the thermocouple differential temperature by the measuring device in order to determine and display the actual measured temperature.

Only two wires are necessary to connect a thermocouple to an electrical circuit; however, these connecting wires must be made from the same metals as the thermocouple itself. Adding wire made from other materials (such as common copper wire) will create new measuring junctions that will result in incorrect readings.

RTDs

To greater or lesser degrees, all electrical conducting materials have some amount of resistance to the flow of electricity. When a known electric voltage is applied across a conductor, the resistance varies based on the temperature of the conductor. This resistance can be measured and will correspond to a specific temperature. While various elements are affected by temperature in different ways, platinum is commonly used in an RTD due to its purity, linearity and stability over a wide range of temperatures. An electronic readout device, such as a controller or digital indicator designed to measure resistance, is required for use with RTD sensors.

Only two standard copper wires are necessary to connect an RTD to an electrical circuit, however, these connecting wires are also subject to small changes in resistance based on surrounding temperature. For this reason an "extra" third hookup wire is built into most RTDs as a compensation wire to allow the controller or display unit to correct for these variations.

Selecting an Electronic Temperature Sensor

All Trerice Thermocouples and RTDs should be carefully selected to meet the demands of the particular application. The information contained in this catalog is only offered as a guide to assist in making the proper selection. Improper application may cause failure of the sensor, resulting in possible personal injury or property damage.

To ensure minimum response time, Trerice Heat Transfer Paste should be applied to the sensing portion of the stem before installation into a thermowell. 1 oz. tube: Item No. 107-0001

Style

Trerice Temperature Sensors are available in a variety of styles. The weather proofed screw cover style provides an electrical conduit connection and can be used to house a transmitter (optional). For open system sensing, a non-threaded style is offered. This design is provided with integrated leadwire and can be Teflon covered to protect the stem and leadwire against corrosive environments. A standard plug with a mating jack may also be furnished.

Stem (Sheath)

All Trerice Thermocouples and RTDs are furnished with a 316 stainless steel stem, with the internal wiring packed in powdered ceramic. The screw head cover style is available in two stem types: welded and spring loaded. The welded stem is suitable for use in liquid applications. The spring loaded stem is designed to bottom out inside a thermowell, providing maximum heat sensitivity. Spring loaded stems are not pressure tight and may allow process media to escape; therefore, they must always be installed in a thermowell.

Insertion (U) Length

The insertion (U) length of a thermocouple or RTD represents its depth into the process vessel or thermowell. Trerice Thermocouples and RTDs are available in standard U-lengths from 2" to 24". Other lengths are available upon special order; please consult factory.

Measuring (Hot) Junction

Trerice Thermocouples are available in Type J and Type K, and use ceramic insulation to provide an ungrounded measuring junction. Other thermocouple types may be available, please consult factory.

Trerice RTDs are a platinum, 3-wire design, and are furnished with either 100 Ω or 1000 Ω resistance at 32°F (0°C), and a temperature coefficient of 0.00385 $\Omega/\Omega/^{\circ}\text{C}$.

Connection (Termination)

Trerice Thermocouples are provided with terminal block (screw cover head), mating jack, or integrated leadwire connections. The terminal block connection has no leadwire, therefore extension wire must be attached and routed to the electronic measuring device. Thermocouple extension wire must be identical to the thermocouple type, otherwise multiple measuring junctions will be made, causing inaccurate temperature readings.

Trerice RTDs are provided with a terminal block (screw cover head) or integrated leadwire connection. The terminal block connection has no leadwire, therefore extension wire must be attached and routed to the indicator or controller.

Electronic Temperature Sensor

Connection Head Type • RTD or Thermocouple Element

ELECTRONIC TEMPERATURE SENSORS



TJDZ04UWA shown

The Trerice **Connection Head** is available with both Type J and Type K Thermocouples, as well as RTD sensors. The weatherproofed head provides a conduit connection and is available in cast aluminum (screw cover), polypropylene (flip cover) and stainless steel (screw cover). The stem is either welded directly to the 1/2 NPT threaded connection, or is spring loaded to provide maximum sensitivity. The spring loaded stem must always be installed in a thermowell.

- Extension wire and transmitter accessories are also available. Please consult the Temperature Sensor Accessories Section for details.
- For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the sensor and facilitate its removal from the process. To prevent leakage of the process media, spring loaded sensors must always be installed in a thermowell. (Refer to pages 155-161)

Specifications

Models	Sensor Type
TJD	Type J T/C
TKD	Type K T/C
TDD	100Ω RTD
TMD	1000Ω RTD
Hot Junction: T/C: Ungrounded RTD: Platinum, 3-wire	
Stem	316 stainless steel 1/4" diameter
Insulation	Ceramic
Head	Cast aluminum, polypropylene or stainless steel
Process Connection	1/2 NPT welded or spring loaded
Conduit Connection	3/4 NPT female

Approximate Shipping Weight

1.1 lbs [0.50 kg]

HOW TO ORDER

Sample Order Number: **TJD Z 04 U W A**

Model	Stem Style	Stem Length	Hot Junction	Connection	Head Material
TJD Type J T/C TKD Type K T/C TDD 100Ω RTD TMD 1000Ω RTD	Z 316SS, 1/4 O.D.	02 2 1/2" Stem 04 4" Stem 06 6" Stem 09 9" Stem 12 12" Stem	U Ungrounded (T/C) D 3 Wire (RTD)	S Spring Loaded, 1/2 NPT W Welded, 1/2 NPT	A Aluminum P Polypropylene S Stainless Steel

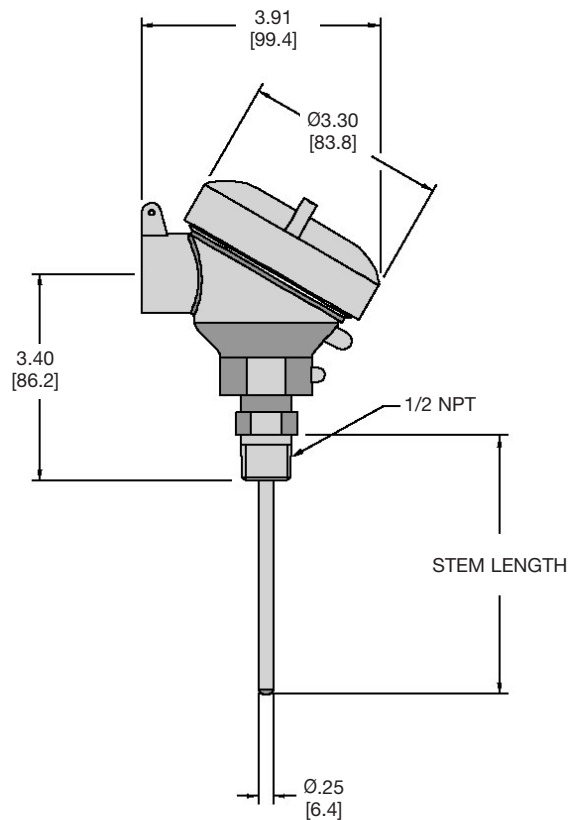
Other stem lengths available: Specify in inches (24" maximum).

Electronic Temperature Sensor

Connection Head Type

All dimensions are nominal.
Dimensions in [] are in millimeters.

ELECTRONIC TEMPERATURE SENSORS



Sensor Specifications

Thermocouple

Type	Color Code	Positive Lead	Negative Lead	Temperature Range
J	Black	Iron* (Fe) [white]	Constantan (Cu-Ni) [red]	32° to 1382°F (0° to 750°C)
K	Yellow	Nickel-Chromium (Ni-Cr) [yellow]	Nickel-Aluminum* (Ni-Al) [red]	32° to 2282°F (0° to 1250°C)

*magnetic lead

RTD

Type	Material	Resistance	Temperature Coefficient	Temperature Range
D	Platinum (Pt)	100Ω	$\alpha = 0.00385 \Omega/\Omega/^{\circ}\text{C}$	-50° to 700°F (-45° to 370°C)
M	Platinum (Pt)	1000Ω	$\alpha = 0.00385 \Omega/\Omega/^{\circ}\text{C}$	-50° to 700°F (-45° to 370°C)

Electronic Temperature Sensor

Integral Leadwire • RTD or Thermocouple Element

ELECTRONIC TEMPERATURE SENSORS



- ▶ Thermocouple or RTD
- ▶ Self-Contained Design
- ▶ Plain or Teflon Covered Stem

TJDZ06UR120 shown

Trerice **Integral Leadwire Sensors** are available with an RTD, or a Type J or K Thermocouple. The stem transition includes a spring relief to prevent damage to the leadwire. A Teflon covered sensor and leadwire is offered for use with open tanks or corrosive process media (the Teflon covered sensor does not include a spring relief).

For applications where the process media may be corrosive or contained under pressure, the use of a thermowell is required to prevent damage to the sensor and facilitate its removal from the process. (Refer to pages 155-161)

Specifications

Models Sensor Type

TJD	Type J T/C
TKD	Type K T/C
TDD	100Ω RTD
TMD	1000Ω RTD

Hot Junction: T/C: Ungrounded
RTD: Platinum, 3-wire

Stem 316 stainless steel
1/4" diameter

Insulation Ceramic

Termination Integral leadwire with spring relief or Teflon sheath
(450°F / 230°C maximum)

Leadwire Jacketing T/C: Fiberglass
RTD: Teflon

Approximate Shipping Weight

0.5 lbs [0.23 kg]

HOW TO ORDER

Sample Order Number: **TDD Z 06 D T 024**

Model	Stem Style	Stem Length	Hot Junction	Connection Style	Leadwire Length
TJD Type J T/C TKD Type K T/C TDD 100Ω RTD TMD 1000Ω RTD	Z 316SS, 1/4 O.D.	02 2 1/2" Stem 04 4" Stem 06 6" Stem 09 9" Stem 12 12" Stem	U Ungrounded (T/C) D 3 Wire (RTD)	R Integral Leadwire with Relief Spring T Integral Leadwire with Teflon Sheath	Specify Length in inches (i.e., 10 feet=120)

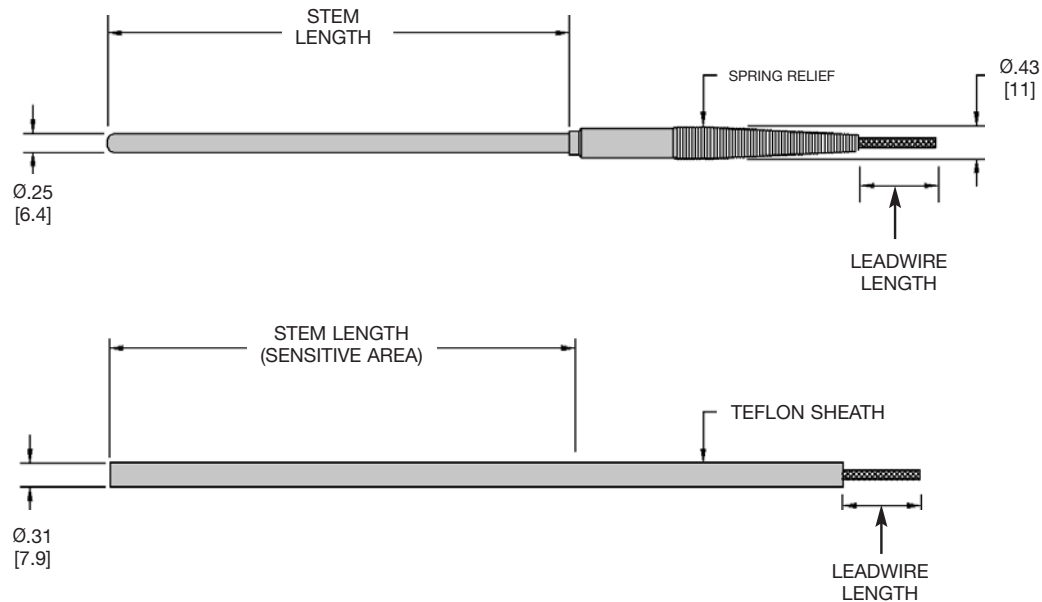
Other stem lengths available: Specify in inches (24" maximum).

Electronic Temperature Sensor

Integral Leadwire

All dimensions are nominal.
Dimensions in [] are in millimeters.

ELECTRONIC TEMPERATURE SENSORS



Sensor Specifications

Thermocouple

Type	Color Code	Positive Lead	Negative Lead	Temperature Range
J	Black	Iron* (Fe) [white]	Constantan (Cu-Ni) [red]	32° to 1382°F (0° to 750°C)
K	Yellow	Nickel-Chromium (Ni-Cr) [yellow]	Nickel-Aluminum* (Ni-Al) [red]	32° to 2282°F (0° to 1250°C)

* Magnetic lead

RTD

Type	Material	Resistance	Temperature Coefficient	Temperature Range
D	Platinum (Pt)	100Ω	$\alpha = 0.00385 \Omega/\Omega/^{\circ}\text{C}$	-50° to 700°F (-45° to 370°C)
M	Platinum (Pt)	1000Ω	$\alpha = 0.00385 \Omega/\Omega/^{\circ}\text{C}$	-50° to 700°F (-45° to 370°C)

Note: Teflon covered sensors
are limited to 450°F (232°C).

Digital Temperature Indicator TRD20

Microprocessor Based

ELECTRONIC TEMPERATURE SENSORS

- ▶ 96 mm x 48 mm (1/8 DIN)
- ▶ RTD, Thermocouple, Current & Voltage Inputs Available
- ▶ Analog Output or Interface Available
- ▶ Optional Alarm



The Trerice **TRD20 Digital Indicator** is a superb choice when remote digital indication is required. The 4 times per second sampling cycle provides accurate, reliable monitoring and the large LED display provides easy readability from a distance. The TRD20 can be used with any Trerice RTD, Thermocouple or Transmitter and can be ordered with an RS-485, RS-422A or RS-232C Communications Interface. Size is 96 mm x 48 mm (1/8 DIN).

Specifications

Model

TRD20

Display 4 digit, 14.3 mm red LED
Sampling Cycle: 4x/second

Input Thermocouple: Type J, Type K
RTD: Platinum, 100 Ω , 3-wire
Current: 4-20 mA, 0-20 mA switchable
Voltage: 0-10 mVDC, 0-50 mVDC, 0-100 mVDC switchable;
0-5VDC, 0-5VDC, 0-10VDC switchable

Power Requirements

Supply Voltage:
100-240 VAC/50/60 Hz,
24 VAC/50/60 Hz, 24 VDC

Consumption:
100-240 VAC: Approximately 6-8 VA
24 VAC: Approximately 8 VA
24 VDC: Approximately 8 W

A/D Conversion

Microprocessor

Accuracy $\pm 0.25\%$ + 1 digit of
measuring range

Ambient Temperature

Maximum: 122°F (50°C)
Minimum: 14°F (-10°C)

Humidity Maximum: 90% RH

Approximate Shipping Weight

0.7 lbs [0.31 kg]

HOW TO ORDER

Sample Order Number: **TRD20 2 90 00 04 00**

Model	Input	Power Supply	Alarms	Analog Output/Interface	Sensor DC Power Supply*
TRD20	1 Thermocouple	90 100-240 VAC 50/60 Hz	00 None	00 None	00 None
	2 RTD	10 24 VAC 50/60 Hz	10 2 point individual setting	03 0 to 10 mVDC	24 24 VDC 50 mA
	3 mVDC	02 24 VDC		04 4 to 20 mA	
	4 mA			06 0 to 10 VDC	
	5 VDC			15 RS-485	
				16 RS-422A	
				17 RS-232C	

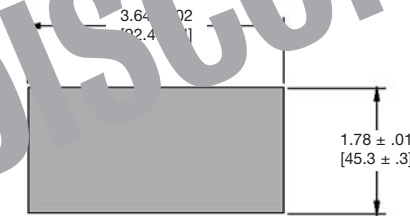
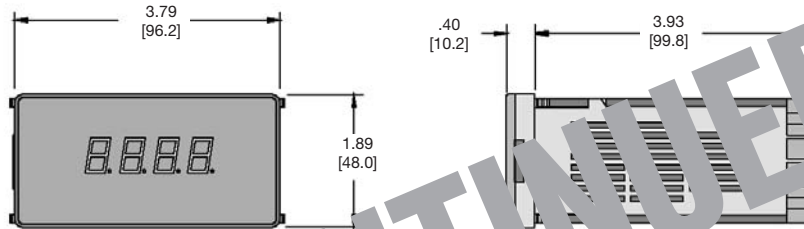
*N/A with 24 VAC or
24 VDC power supply

Digital Temperature Indicator TRD20

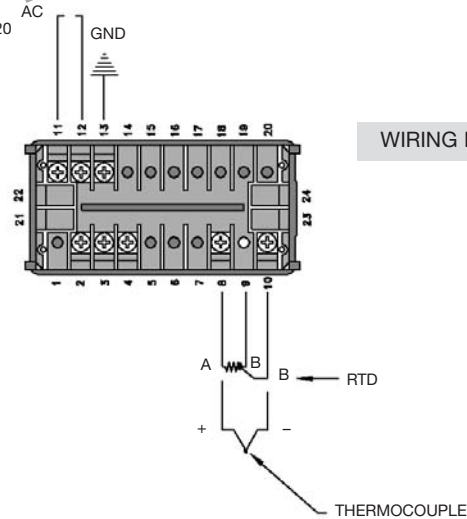
Microprocessor Based

All dimensions are nominal.
Dimensions in [] are in millimeters.

ELECTRONIC TEMPERATURE SENSORS



PANEL CUTOUT DIMENSIONS



WIRING DIAGRAM

Programmable Inputs and Ranges

Input		Range	
Code	Type	Code	Fahrenheit
1J	Type J Thermocouple	A71	-148° to 1112°F
1K	Type K Thermocouple	A79	-328° to 2192°F
		A72	-148° to 1472°F
2F	100 Ω RTD	A78	-328° to 1112°F
		A61	32.0° to 212.0°F
32	0 to 10 mV		
34	0 to 50 mV		
36	0 to 100 mV		
41	0 to 20 mA		
42	4 to 20 mA		
62	0 to 1 V		
64	0 to 5 V		
66	0 to 10 V		

Scaling Range: -1999 to 9999
Span: 100 to 10,000

Input and Range Codes are not required for ordering, but are used for field programming.

Digital Temperature Indicator TRD16

- ▶ 96 mm x 48 mm (1/8 DIN)
- ▶ Multi-inputs and Multi-Ranges
- ▶ Large 20mm Red LED Display
- ▶ 2 Times per Second Sampling Code



The Trerice **TRD16 Digital Indicator** is a superb choice when remote digital indication is required. The 2 times per second sampling cycle provides accurate, reliable monitoring, and the large LED display provides easy readability. The TRD16 can be used with any Trerice RTD or Thermocouple. Size is 96 mm x 48 mm (1/8 DIN).

The TRD16 Digital Indicator is specifically designed to interface with the TRS16 Selector Switch by means of an included snap bracket.

Specifications

Model

TRD16

Display 4 digit, 20 mm red LED
Sampling Cycle: 2x/second

Input **Multi** (switchable between)
Thermocouple: B, R, S, K, E, J, T, N;
or RTD: Platinum, 100Ω, 3-wire
Voltage (mV, V): 0-10 mVDC,
0-5 VDC, 0-10 VDC, 1-5 VDC

Current: 4-20 mA

Power Requirements

Supply Voltage:
100-240 VAC/50/60 Hz,
24 VAC/VDC (option)

Consumption:
11 VA (AC) Max
7 W (DC) Max

Accuracy ±0.3% + 1 digit of measuring range

Ambient Temperature

Maximum: 122°F (50°C)
Minimum: 14°F (-10°C)

Humidity Maximum: 90% RH
Non-condensing

Approximate Shipping Weight

0.6 lbs [0.27 kg]

HOW TO ORDER

Sample Order Number: **TRD16 8 90 0 4 0**

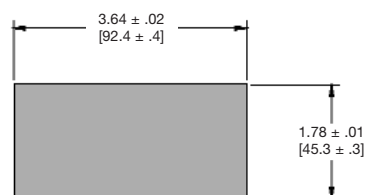
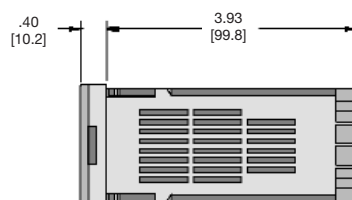
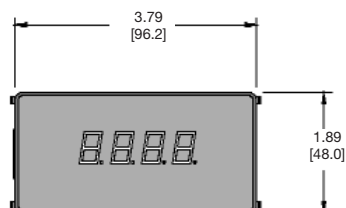
Model	Input	Power Supply	Alarm	Analog Output	Communication Function
TRD16	8 Multi (T/C, RTD mV, V) 4 mA	90 100-240 VAC 50/60 Hz 08 24 VAC or 24 VDC 50/60 Hz	0 None 1 High/Low	0 None 3 0 to 10 mVDC 4 4 to 20 mA 6 0 to 10 VDC	0 None 5 RS485 7 RS232C

Digital Temperature Indicator TRD20

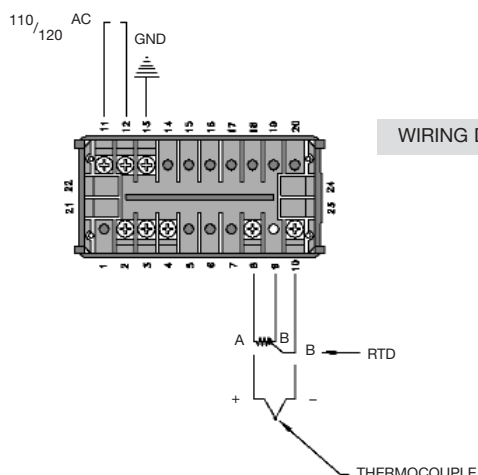
Microprocessor Based

All dimensions are nominal.
Dimensions in [] are in millimeters.

ELECTRONIC TEMPERATURE SENSORS



PANEL CUTOUT DIMENSIONS



WIRING DIAGRAM

Programmable Inputs and Ranges

Input		Range			
Code	Type	Code	Fahrenheit	Code	Celsius
1J	Type J Thermocouple	A71	-148° to 1112°F	A26	-100° to 600°C
1K	Type K Thermocouple	A79	-328° to 2192°F	A74	-200° to 1200°C
		A72	-148° to 1472°F	A27	-100° to 800°C
2F	100 Ω RTD	A78	-328° to 1112°F	A31	-199.9° to 600.0°C
		A61	32.0° to 212.0°F	A02	0.00° to 99.99°C
32	0 to 10 mV	Scaling Range: -1999 to 9999 Span: 100 to 10,000			
34	0 to 50 mV				
36	0 to 100 mV				
41	0 to 20 mA				
42	4 to 20 mA				
62	0 to 1 V				
64	0 to 5 V				
66	0 to 10 V				

Input and Range Codes are not required for ordering, but are used for field programming.

Digital Temperature Indicator TRD16

ELECTRONIC TEMPERATURE SENSORS

- ▶ 96 mm x 48 mm (1/8 DIN)
- ▶ Multi-inputs and Multi-Ranges
- ▶ Large 20mm Red LED Display
- ▶ 2 Times per Second Sampling Code



The Trerice **TRD16 Digital Indicator** is a superb choice when remote digital indication is required. The 2 times per second sampling cycle provides accurate, reliable monitoring, and the large LED display provides easy readability. The TRD16 can be used with any Trerice RTD or Thermocouple. Size is 96 mm x 48 mm (1/8 DIN).

The TRD16 Digital Indicator is specifically designed to interface with the TRS16 Selector Switch by means of an included snap bracket.

Specifications

Model

TRD16

Display 4 digit, 20 mm red LED
Sampling Cycle: 2x/second

Input **Multi** (switchable between)
Thermocouple: B, R, S, K, E, J, T, N;
or RTD: Platinum, 100Ω, 3-wire
Voltage (mV, V): 0-10 mVDC,
0-5 VDC, 0-10 VDC, 1-5 VDC

Current: 4-20 mA

Power Requirements

Supply Voltage:
100-240 VAC/50/60 Hz,
24 VAC/VDC (option)

Consumption:
11 VA (AC) Max
7 W (DC) Max

Accuracy ±0.3% + 1 digit of measuring range

Ambient Temperature

Maximum: 122°F (50°C)
Minimum: 14°F (-10°C)

Humidity Maximum: 90% RH
Non-condensing

Approximate Shipping Weight

0.6 lbs [0.27 kg]

HOW TO ORDER

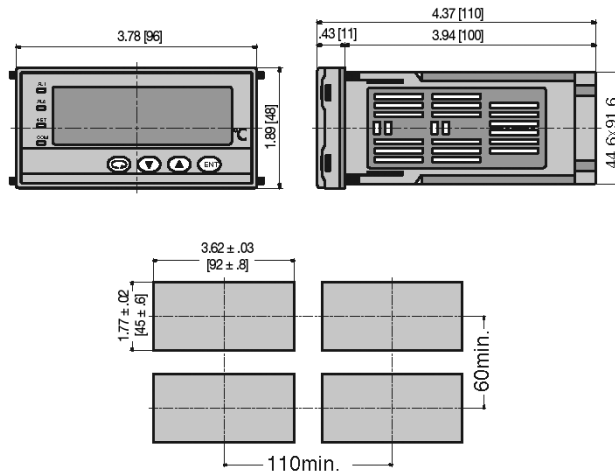
Sample Order Number: **TRD16 8 90 0 4 0**

Model	Input	Power Supply	Alarm	Analog Output	Communication Function
TRD16	8 Multi (T/C, RTD mV, V) 4 mA	90 100-240 VAC 50/60 Hz 08 24 VAC or 24 VDC 50/60 Hz	0 None 1 High/Low	0 None	0 None
				3 0 to 10 mVDC	5 RS485
				4 4 to 20 mA	7 RS232C
				6 0 to 10 VDC	

Digital Temperature Indicator TRD16

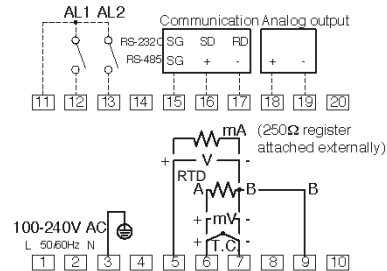
All dimensions are nominal.
Dimensions in [] are in millimeters.

EXTERNAL DIMENSIONS



PANEL CUTOUT DIMENSIONS

TERMINAL ARRANGEMENT



ELECTRONIC TEMPERATURE SENSORS

Programmable Inputs and Ranges

Thermocouple Input

Code	Type	Range (°C)	Range (°F)
01	B	0 ~ 1800	0 ~ 3300
02	R	0 ~ 1700	0 ~ 3100
03	S	0 ~ 1700	0 ~ 3100
04	K	-199.9 ~ 800.0	-300 ~ 1500
05	K	0 ~ 1200	0 ~ 2200
06	E	0 ~ 700	0 ~ 1300
07	J	0 ~ 600	0 ~ 1100
08	T	-199.9 ~ 300.0	-300 ~ 600
09	N	0 ~ 1300	0 ~ 2300
10	*1 U	-199.9 ~ 300.0	-300 ~ 600
11	*1 L	0 ~ 600	0 ~ 1100
12	*2 WRe5-26	0 ~ 2300	0 ~ 4200

RTD Input

31	Pt100Ω	-200 ~ 600	-300 ~ 1100
32	Pt100Ω	-100.0 ~ 100.0	-150.0 ~ 200.0

Input and Range Codes are not required for ordering, but are used for field programming.

Voltage Input

Code	Type	Range (°C)	Range (°F)
71	0~10mV	Initial value: 0.0~100.0	Thermocouple B, R, S, K, E, J, T, N: JIS/ANSI/IEC
81	0~ 5V	Scaling setting range: -1999~9999	*1 Thermocouple U, L: DIN 43710
82	1~ 5V		
83	0~10V	Span: 10~5000 counts	*2 Thermocouple WRe5-26: Made of Hoskins
Current Input			
95	4~20mA*		

*Uses supplied shunt resistor.

WARNING: The TRD16 Indicator is designed for the control of temperature, humidity and other physical values of general industrial equipment. (It is not to be used for any purpose which regulates the prevention of serious effects on human life or safety.)

CAUTION: If the possibility of loss or damage to your system or property as a result of failure of any part of the process exists, proper safety measures must be made before the instrument is put into use so as to prevent the occurrence of trouble.

Indicator Selector Switch TRS16

- ▶ 96 mm x 48 mm (1/8 DIN)
- ▶ Two Wire Type Switching Circuit
- ▶ Six-Point Switching
- ▶ Push Button Operation



The Trerice **TRS16 Selector Switch** is the ideal accompaniment for the Trerice TRD16 Digital Indicator. The TRS16 allows economical measurement of multiple individual processes (using the same thermocouple type) while requiring only one digital indicator. The push buttons indicate which process measurement is currently displayed on the indicator. Size is 96 mm x 48 mm (1/8 DIN).

The TRS16 Selector Switch is specifically designed to interface with the TRD16 Digital Indicator by means of an included snap bracket.

Specifications

Model
TRS16

Input Thermocouple

Switching Method
Push-button switching

Switching Points
Six (all switching points must use identical sensors)

Switching Circuits
Two wire type

Contact Rating
Voltage: 30 V maximum, AC/DC
Current: 100 mA maximum
Resistance: 300 mΩ
(0.3 ohm) maximum/circuit

Ambient Temperature
Maximum: 122°F (50°C)
Minimum: 14°F (-10°C)

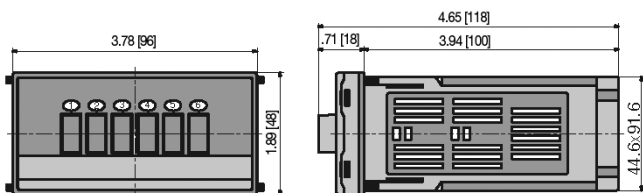
Humidity Maximum: 90% RH
Non-Condensing

Approximate Shipping Weight
0.7 lbs [0.32 kg]

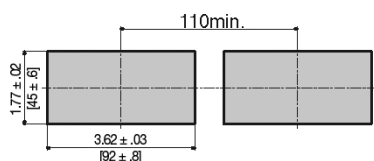
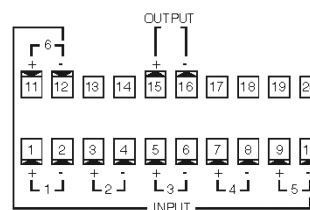
Indicator Selector Switch TRS16

All dimensions are nominal.
Dimensions in [] are in millimeters.

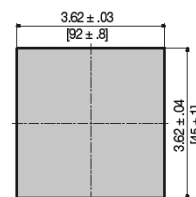
EXTERNAL DIMENSIONS



TERMINAL ARRANGEMENT

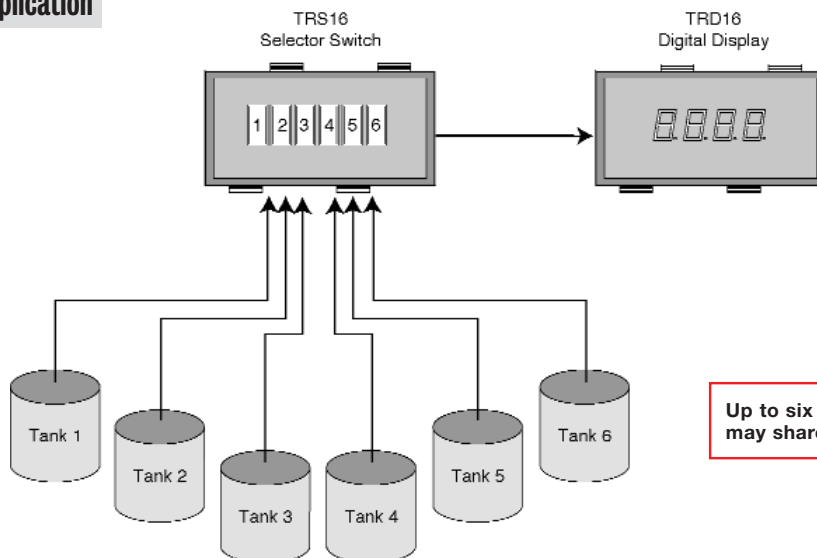


PANEL CUTOUT DIMENSIONS



WIRING DIAGRAM

Typical Application



Up to six sensors (two leads each)
may share a common display.

WARNING: The TRD16 Indicator is designed for the control of temperature, humidity and other physical values of general industrial equipment. (It is not to be used for any purpose which regulates the prevention of serious effects on human life or safety.)

CAUTION: If the possibility of loss or damage to your system or property as a result of failure of any part of the process exists, proper safety measures must be made before the instrument is put into use so as to prevent the occurrence of trouble.

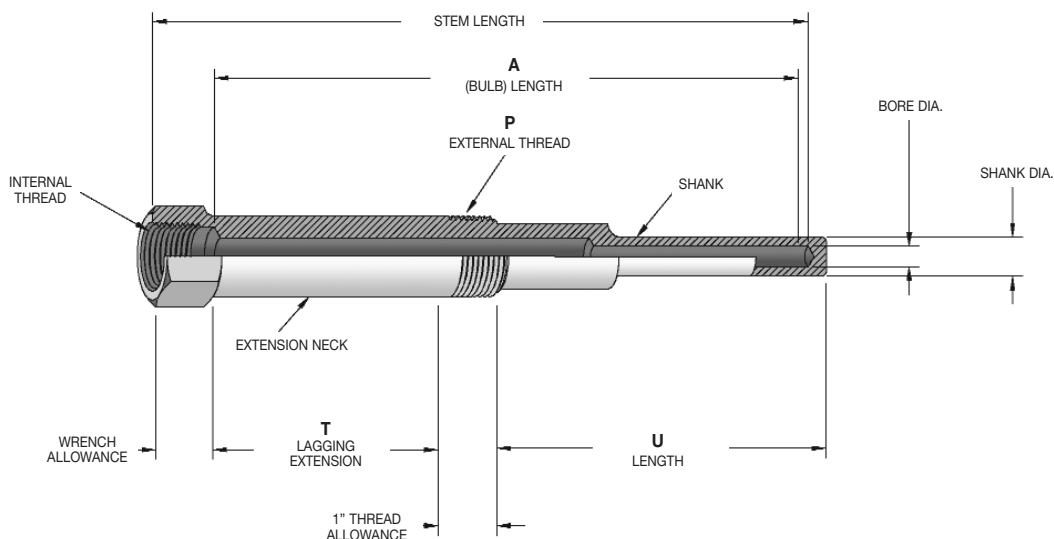
Thermowells

DESIGN & OPERATION



Description

A thermowell is a pressure tight receptacle designed to accept a temperature sensing element and provide a means to insert that element into a vessel or pipe.



Principles of Operation

A thermowell acts as a barrier between a process medium and the sensing element of a temperature measuring device. It protects against corrosive process media, media contained under pressure, or media flowing at a high velocity. A thermowell also allows the sensing element to be removed from the application while maintaining a closed system.

Selecting a Thermowell

Temperature Instrumentation and Control Products, including: Thermometers, Thermocouples, RTDs, and Temperature Controllers.

All Trerice Thermowells should be carefully selected to meet the demands of the particular application. The information contained in this catalog is only offered as a guide to assist in making the proper selection. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage.

To ensure minimum response time, Trerice Heat Transfer Paste should be applied to the sensing portion of the instrument before installation into a thermowell. 1 oz. tube: Item No. 107-0001

Connection

Trerice Thermowells are available in a variety of process connection styles. Threaded connections in 1/2, 3/4 and 1 NPT are the most widely specified. Socket weld, weld-in, raised face flanged, Van Stone flanged, and sanitary (Tri-Clamp) connection styles are also available.

All Trerice Bimetal Thermowells are provided with a 1/2 NPSM instrument connection to allow for pressure relief within the thermowell.

U-Length

The U-length (insertion length) of a thermowell indicates its insertion depth into a process vessel or piping system and is measured from the tip of the thermowell to the underside of the threads. The U-length must equal or exceed the length of the sensitive portion of the temperature instrument's stem or bulb. Trerice Thermowells are available in U-lengths from 2" to 72".

Material

The material chosen must be compatible with the process medium to which it is exposed. In applications of high pressure or velocity, the material may be chosen for its strength or durability. Trerice offers thermowells in a variety of materials, including: brass, carbon steel, stainless steel, Monel, Carpenter 20, Hastelloy B or C, Inconel 600, Incoloy 800, Nickel and Titanium. Other alloys or compounds may also be available, please consult factory.

Threaded, welded and Van Stone flanged thermowells are made from forgings or bar stock. Raised face flanged and sanitary thermowells are of a two-piece welded construction.

Bore

The bore of each Trerice Thermowell is designed to fit the sensing element of a specific Trerice Temperature Instrument.

Shank

Trerice Thermowells are available in stepped, tapered, and straight shank configurations. Stepped shank thermowells are normally used on standard duty applications. Tapered shank thermowells are designed for use on heavy duty applications. Straight shank thermowells are designed for use with instruments that have wide stem diameters or short stem lengths.

Lagging Extension

Lagging extension thermowells are used on applications where insulation covers the vessel or piping system. The extension length (T-length) is the measurement between the instrument connection and process connection of the thermowell.

Thermowells

for **Industrial** Thermometers

All dimensions are nominal. Dimensions in [] are in millimeters.

THERMOWELLS

- **SX9 Solar**
- **AX9, BX9, CX9 Adjustable Angle**
- **AX, BX, CX Rigid Stem**
- **BX Plus**



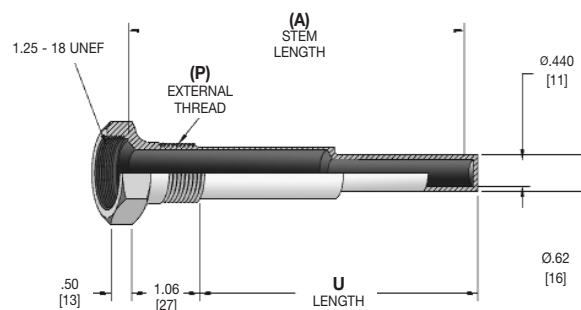
Lengths

	Standard	with Lagging Extension	
(A) Stem Length	U Length	(T)	U Length
3 1/2"	2.50 [64]	1.00 [25]	1.70 [43]
6"	5.00 [127]	2.50 [64]	2.50 [64]
8"	7.00 [178]	2.50 [64]	4.50 [114]
12"	10.50 [267]	3.00 [76]	7.50 [191]

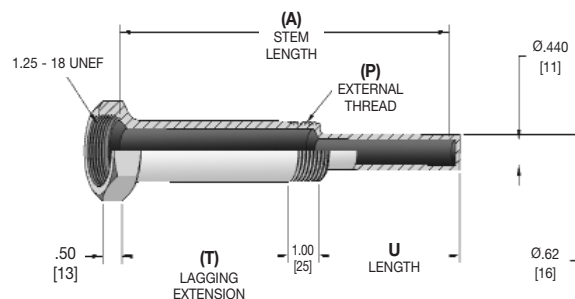
Pressure Rating (psi)

Material	Operating Temperature			
	70°F	200°F	400°F	600°F
Carbon Steel	610	550	430	350
304 Stainless Steel	630	570	460	380
316 Stainless Steel	650	600	570	500
Monel	540	480	440	400
Brass	300 psi @ 150°F, 250 @ 350°F			

Standard



with Lagging Extension



Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage.

HOW TO ORDER

Sample Order Number: **3-4 F 2**

Thermowell Style	(P) External Thread	(A) Stem Length	(T) Lagging Extension	Material
3- Industrial	3 1/2 NPT*	F 3 1/2" Stem**	A 1" Extension (3 1/2" Stem only)	2 Brass
	4 3/4 NPT	J 6" Stem	D 2 1/2" Extension (6" and longer Stem only)†	3 Steel
	5 1 NPT	L 8" Stem	Omit if None	4 Monel
		R 12" Stem††		5 304SS
				6 316SS

* Only available with 3 1/2" stem and 1" extension.

** 3 1/2" stem Straight Shank.

† 3" extension on 12" stem.

†† 12" stem requires 1 NPT external thread.

Thermowells

for Dial Thermometers

All dimensions are nominal.
Dimensions in [] are in millimeters.



THERMOWELLS

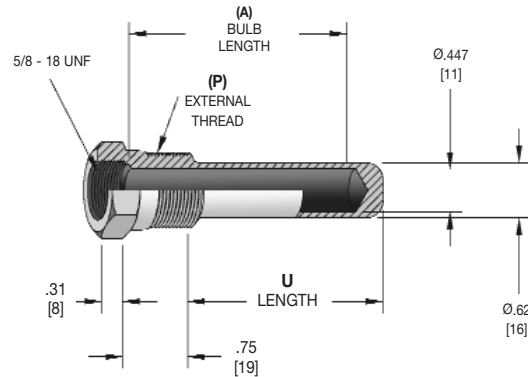
Lengths

	Standard	with Lagging Extension	
(A) Bulb Length	U Length	(T)	U Length
2"	2.13 [54]	—	—
4"	3.88 [99]	2.00 [51]	2.13 [54]
6"	5.75 [146]	2.00 [51]	3.88 [99]
8"	7.75 [197]	2.00 [51]	5.75 [146]
12"	11.75 [299]	3.00 [76]	7.50 [191]
18"	17.75 [451]	3.00 [76]	15.75 [400]
24"	23.75 [603]	3.00 [76]	21.75 [552]

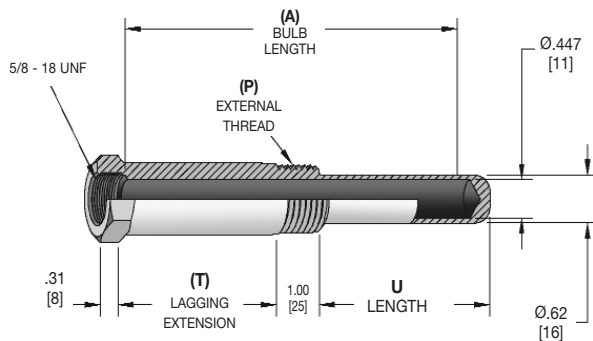
Pressure Rating (psi) per ASME Boiler Code, Section VIII, Part UG28

Material	Operating Temperature			
	70°F	200°F	400°F	600°F
Carbon Steel	2500	2240	2020	1640
304 Stainless Steel	2780	2280	2100	1700
316 Stainless Steel	2770	2660	2500	2300
Brass	1330 psi @ 150°F, 1280 @ 350°F			

Standard



with Lagging Extension



Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage.

HOW TO ORDER

Sample Order Number: **7-3 G 2**

Thermowell Style	(P) External Thread	(A) Bulb Length**	(T) Lagging Extension	Material
7- Dial	3 1/2 NPT	D 2" Bulb	C 2" Extension (4" and longer Bulb only)	2 Brass
	4 3/4 NPT	G 4" Bulb	E 3" Extension (12" and longer Bulb only)	3 Steel
		J 6" Bulb	Omit if None	5 304SS
		L 8" Bulb		6 316SS
		R 12" Bulb*		
		Wa 18" Bulb*		
		Wk 24" Bulb*		

*Not available with 1/2 NPT external thread.

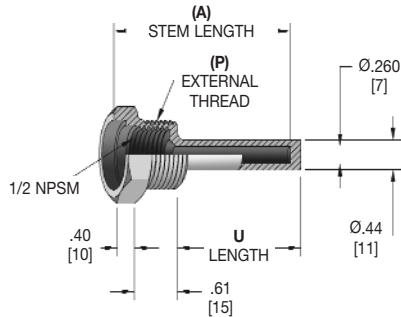
**Dial Thermowells with Bulb Lengths over 6" are typically for use with Adjustable Union or Bendable Extension Connections.

Thermowells

for Bimetal Thermometers & Temperature Sensors
Threaded-Stepped Shank

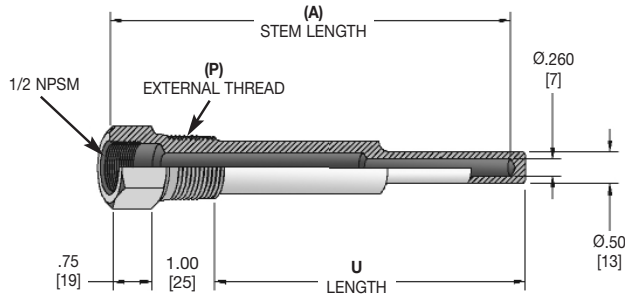
All dimensions are nominal.
Dimensions in [] are in millimeters

Standard (2 1/2" - 6")



THERMOWELLS

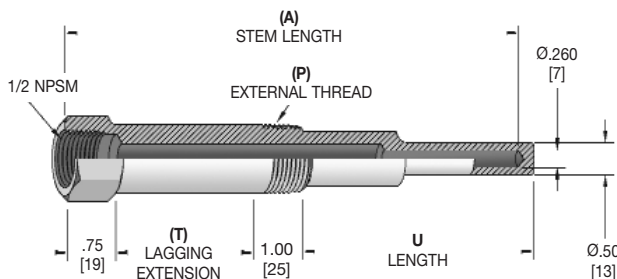
Standard (9 - 24")



Lengths

	Standard	with Lagging Extension	
(A) Stem Length	U Length	(T)	U Length
2 1/2"	1.75 [44]	-	-
4"	2.50 [64]	0.60 [15]	1.90 [48]
6"	4.50 [114]	2.00 [51]	2.50 [64]
9"	7.50 [191]	3.00 [76]	4.50 [114]
12"	10.50 [267]	3.00 [76]	7.50 [191]
15"	13.50 [343]	3.00 [76]	10.50 [267]
18"	16.50 [419]	3.00 [76]	13.50 [343]
24"	22.50 [572]	3.00 [76]	19.50 [495]

with Lagging Extension



Pressure Rating (psi)

Material	Operating Temperature					
	70°F	200°F	400°F	600°F	800°F	1000°F
Carbon steel	5000	5000	4800	4600	3500	-
304 stainless steel	6550	6000	4860	4140	3510	3130
316 stainless steel	6540	6400	6000	5270	5180	4660
Monel	5530	4990	4660	4450	4450	-
Brass	3170 psi @ 150°F, 2930 @ 350°F					

Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **76-4 J 6**

Thermowell Style	(P) External Thread	(A) Stem Length	(T) Lagging Extension	Material
76- Bimetal/Sensor Stepped shank*	3 1/2 NPT**	D 2 1/2" Stem	A 1" Extension (4" Stem only)	2 Brass
	4 3/4 NPT	G 4" Stem	C 2" Extension (6" Stem only)	3 Steel
	5 1 NPT**	J 6" Stem	E 3" Extension (9" and longer Stem only)	4 Monel
		M 9" Stem	Omit if None	5 304SS
		R 12" Stem		6 316SS
		V 15" Stem		
		Wa 18" Stem		
		Wk 24" Stem		

* 2 1/2" - 6" stem straight shank.

** Not available with 2 1/2" stem length.



Thermowells

for **Bimetal Thermometers & Temperature Sensors**

Heavy Duty • Tapered Shank for High Pressure Applications



THERMOWELLS

Lengths

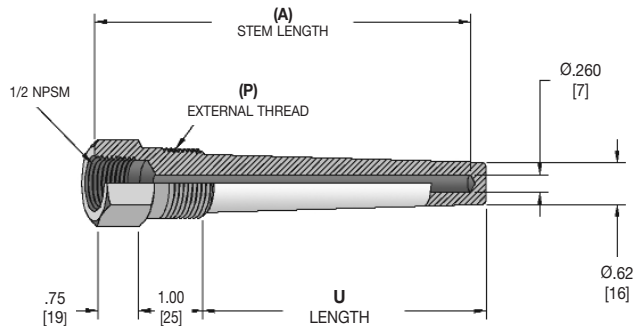
(A) Stem Length	Standard	with Lagging Extension	
	U Length	(T)	U Length
4"	2.50 [64]	1.00 [25]	1.50 [38]
6"	4.50 [114]	2.00 [51]	2.50 [64]
9"	7.50 [191]	3.00 [76]	4.50 [114]
12"	10.50 [267]	3.00 [76]	7.50 [191]
15"	13.50 [343]	3.00 [76]	10.50 [267]
18"	16.50 [419]	3.00 [76]	13.50 [343]
24"	22.50 [572]	3.00 [76]	19.50 [495]

Pressure Rating (psi)

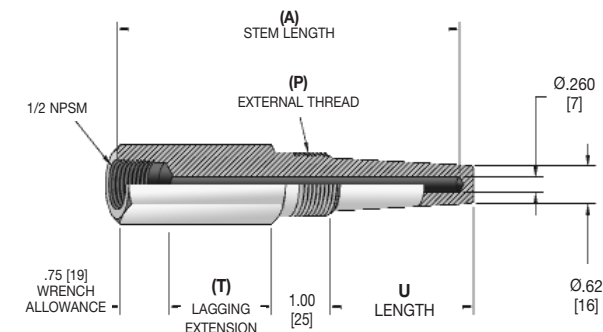
Material	Operating Temperature					
	70°F	200°F	400°F	600°F	800°F	1000°F
Brass	5950	5750	5450	5250	4000	-
Carbon steel	7800	7050	6300	5360	4350	4100
304 stainless steel	7800	7800	7250	7100	6000	5800
316 stainless steel	7170	6670	6040	5770	5770	-
Brass	4140 psi @ 150°F, 3790 @ 350°F					

Standard

All dimensions are nominal.
Dimensions in [] are in millimeters



with Lagging Extension



Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **90-4 G 4**

Thermowell Style	(P) External Thread	(A) Stem Length	(T) Lagging Extension	Material
90- Bimetal/Sensor Tapered Shank	4 3/4 NPT	G 4" Stem	C 2" Extension (6" Stem only)	2 Brass
	5 1 NPT	J 6" Stem	E 3" Extension (9" and longer Stem only)	3 Steel
		M 9" Stem	Omit if None	4 Monel
		R 12" Stem		5 304SS
		V 15" Stem		6 316SS
		Wa 18" Stem		
		Wk 24" Stem		

Thermowells

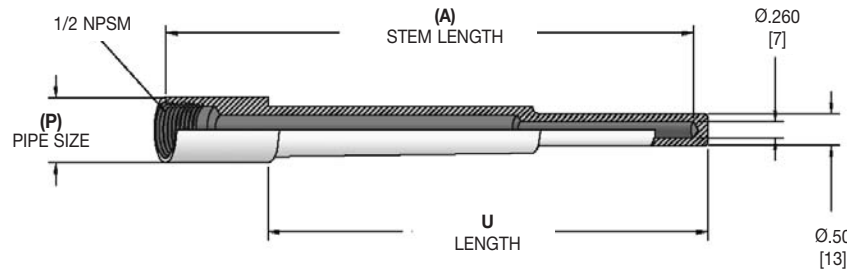
All dimensions are nominal.
Dimensions in [] are in millimeters.

for **Bimetal Thermometers & Temperature Sensors**
Socket-Weld Style • Stepped or Heavy Duty Tapered Shank

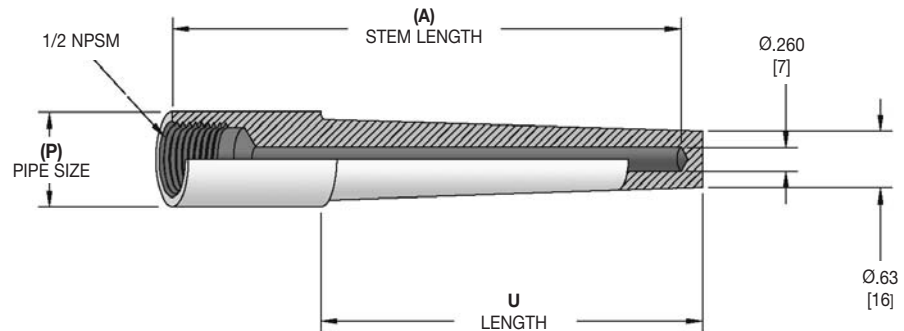


Thermowells

Stepped Shank



Tapered Shank



Lengths

(A) Stem Length	U Length
4"	2.50 [64]
6"	4.50 [114]
9"	7.50 [191]
12"	10.50 [267]
15"	13.50 [343]
18"	16.50 [419]
24"	22.50 [572]

Other Dimensions

Nominal Pipe Size	Actual (P) Diameter
3/4"	1.050 [23.67]
1"	1.315 [33.40]

Pressure Rating (psi)

		Operating Temperature					
	Material	70°F	200°F	400°F	600°F	800°F	1000°F
Stepped Shank	Carbon Steel	5200	5000	4800	4600	3500	-
	304 Stainless Steel	6550	6000	4860	4140	3510	3130
	316 Stainless Steel	6540	6400	6000	5270	5180	4660
Tapered Shank	Carbon Steel	5950	5750	5450	5250	4000	-
	304 Stainless Steel	7800	7050	6300	5360	4350	4100
	316 Stainless Steel	7800	7800	7250	7100	6700	5800

Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **90-S5 M 6**

Thermowell Style	(P) Nominal Pipe Size	(A) Stem Length	Material
76- Bimetal/Sensor Stepped Shank	S4 3/4"	G 4" Stem	3 Steel
	S5 1"	J 6" Stem	5 304SS
90- Bimetal/Sensor Tapered Shank		M 9" Stem	6 316SS
		R 12" Stem	
		V 15" Stem	
		Wa 18" Stem	
		Wk 24" Stem	

Thermowells

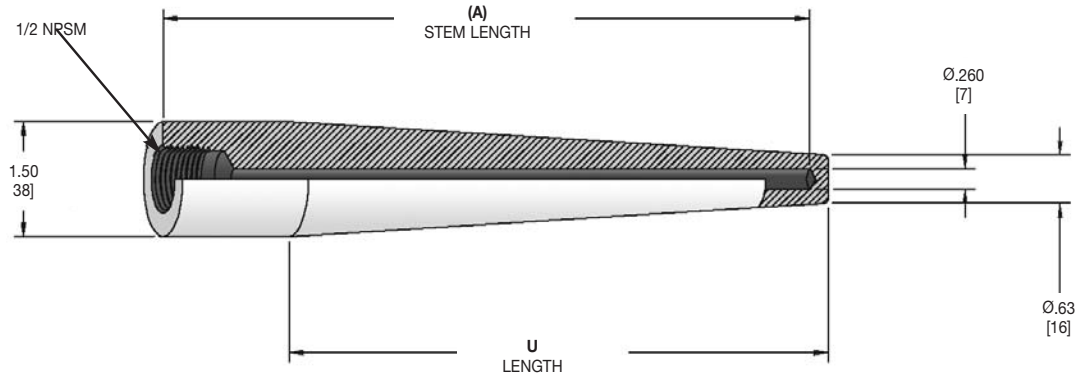
for Bimetal Thermometers & Temperature Sensors

Weld-In Style



Tapered Shank

All dimensions are nominal. Dimensions in [] are in millimeters



Lengths

(A) Stem Length	U Length
4"	2.50 [64]
6"	4.50 [114]
9"	7.50 [191]
12"	10.50 [267]
15"	13.50 [343]
18"	16.50 [419]
24"	22.50 [572]

Pressure Rating (psi) *

Material	Operating Temperature					
	70°F	200°F	400°F	600°F	800°F	1000°F
Carbon steel	5950	5750	5450	5250	4000	-
304 stainless steel	7800	7050	6300	5360	4350	4100
316 stainless steel	7800	7800	7250	7100	6700	5800

* Thermowell Pressure ratings for CRN differ from those shown above. Please see CRN under Approvals in Technical Specifications of our website.

Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **90-W7 V 6**

Thermowell Style	Connection	(A) Stem Length	Material
90- Bimetal/Sensor Tapered Shank	W7 1 1/2"	G 4" Stem	3 Steel
		J 6" Stem	5 304SS
		M 9" Stem	6 316SS
		R 12" Stem	
		V 15" Stem	
		Wa 18" Stem	
		Wk 24" Stem	

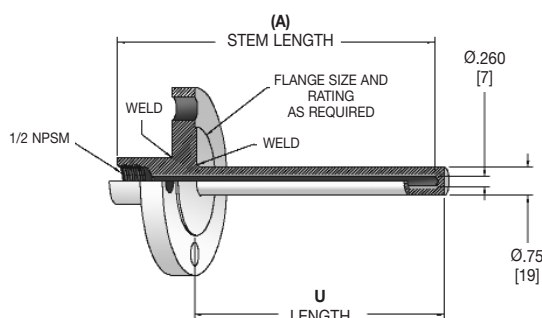
Thermowells

for **Bimetal Thermometers & Temperature Sensors**

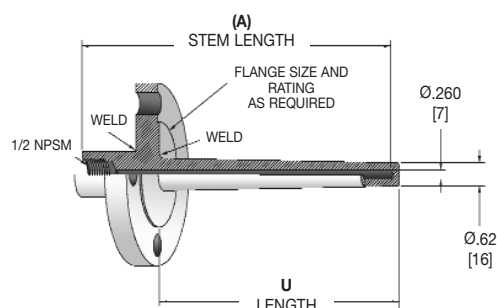
Flanged Style • Straight or Heavy Duty Tapered Shank

All dimensions are nominal.
Dimensions in [] are in millimeters.

Straight Shank



Tapered Shank



Pressure Rating

Maximum pressure and temperature ratings are limited by the choice of flange. Please see ANSI/ASME B16.5-2003 for more information.

Lengths

(A) Stem Length	U Length
4"	2.00 [51]
6"	4.00 [102]
9"	7.00 [178]
12"	10.00 [254]
15"	13.00 [330]
18"	16.00 [406]
24"	22.00 [559]

Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **78-81 J 6**

Thermowell Type	Flange Size and Rating	(A) Stem Length	Material
78- Bimetal/Sensor Straight Shank	51 1"	G 4" Stem	3 Steel
	71 1 1/2"	J 6" Stem	4 Monel
	81 2"	M 9" Stem	5 304SS
	181 3"	R 12" Stem	6 316SS
90- Bimetal/Sensor Tapered Shank	53 1"	V 15" Stem	
	73 1 1/2"	Wa 18" Stem	
	83 2"	Wk 24" Stem	
	183 3"		
	56 1"		
	76 1 1/2"		
	86 2"		
	186 3"		

Other Flange Sizes and Ratings
available; consult factory.

THERMOWELLS

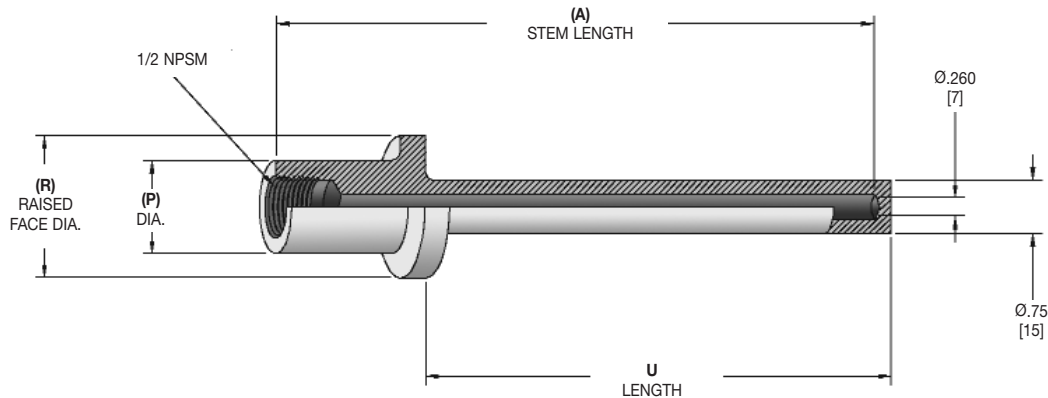
Thermowells

for Bimetal Thermometers & Temperature Sensors

Van Stone Style

All dimensions are nominal. Dimensions in [] are in millimeters..

Straight Shank



Thermowell does not include backing flange; when required, a carbon steel backing flange can be supplied. Consult factory.

Lengths

(A) Stem Length	U Length
4"	2.00 [51]
6"	4.00 [102]
9"	7.00 [178]
12"	10.00 [254]
15"	13.00 [330]
18"	16.00 [406]
24"	22.00 [559]

Other Dimensions

Nominal Pipe Size	Actual (P) Diameter	Raised Face (R) Diameter
1"	1.32 [33]	2.00 [51]
1 1/2"	1.90 [48]	2.88 [73]

Pressure Rating

Maximum pressure and temperature ratings are limited by the choice of flange. Please see ANSI/ASME B16.5-2003 for more information.

Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **78-V7 R 6**

Thermowell Style	(P) Nominal Pipe Size	(A) Stem Length	Material
78- Bimetal/Sensor Straight Shank	V5 1"	G 4" Stem	3 Steel
	V7 1 1/2"	J 6" Stem	4 Monel
		M 9" Stem	5 304SS
		R 12" Stem	6 316SS
		V 15" Stem	
		Wa 18" Stem	
		Wk 24" Stem	

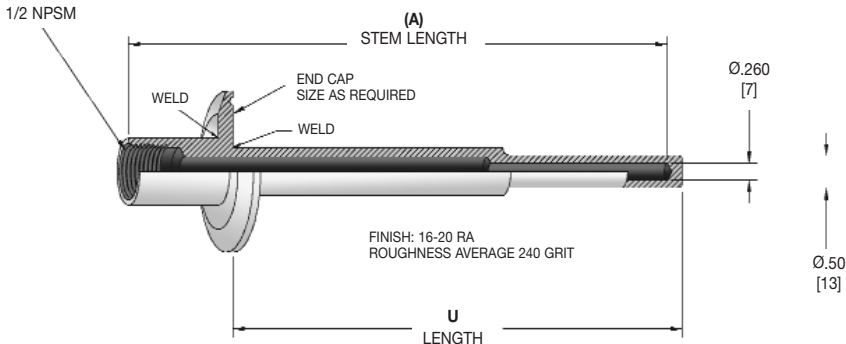
Thermowells

for **Bimetal Thermometers & Temperature Sensors**

Sanitary Style

All dimensions are nominal.
Dimensions in [] are in millimeters.

Stepped



THERMOWELLS

Lengths

(A) Stem Length	U Length
4"	2.50 [64]
6"	4.50 [114]
9"	7.50 [191]
12"	10.50 [267]
15"	13.50 [343]
18"	16.50 [419]
24"	22.50 [572]

Designed to meet 3A Dairy Certification requirements.

Pressure ratings are dependent upon the clamps, gaskets and ferrules used, which are not supplied by Trerice.

Alternative materials and accessories are also available. Please consult the Options and Accessories Section for details.

Selection of the proper thermowell is the sole responsibility of the user. Temperature and pressure limitations must be considered. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage. For correct use and application, please refer to the Thermowells For Thermometers and Electrical Temperature Sensors Standard ASME B40.9.

HOW TO ORDER

Sample Order Number: **76-T8 M 6**

Thermowell Type	End Cap Size	(A) Stem Length	Material
76- Bimetal/Sensor Stepped Shank	T7 1 1/2"	G 4" Stem	5 304SS
	T8 2"	J 6" Stem	6 316SS
	T18 3"	M 9" Stem	
		R 12" Stem	
		V 15" Stem	
		Wa 18" Stem	
		Wk 24" Stem	

Thermowells

Options & Accessories

Thermowells

Alternative Materials

Terice offers a variety of alternative thermowell materials to ensure compatibility with special service applications. Please order using the material code listed in the table below. Other alloys or compounds may also be available, please consult factory.

Code	Material
7	Carpenter 20
8	Hastelloy B
9	Hastelloy C
10	Inconel 600
11	Incoloy 800
12	Nickel
13	Titanium

Protective Caps for Test Wells

A cap and lanyard is available to keep the thermowell bore clean when used in non permanent instrument installations. Please order using the item numbers listed in the table below.

Thermowell Style	Cap Material			
	Aluminum	Brass	Steel	Stainless Steel
Industrial	N/A	026-0032A	N/A	N/A
Econo	N/A	N/A	116-0193A	N/A
Dial	026-0001A	N/A	N/A	N/A
Bimetal or Sensor	N/A	026-0034A	N/A	026-0034.1A

Thermowell Conversion Kits

A Thermowell Conversion Kit permits the installation of a Terice Bimetal Thermometer into an existing Industrial Thermometer thermowell. The kit includes an aluminum stem spacer, a brass (400°F max.) or stainless steel (750°F max.) 1/2" NPT x 1 1/4-18 bushing, and a tube of heat transfer paste. Maximum operating temperature 750°F.

Description	Item Number
Thermowell Adapter Kit; Industrial to Bimetal	001-0099A (400°F max.)
High Temperature Thermowell Adapter Kit; Industrial to Bimetal	001-0099AH (750°F max.)

Industrial Thermowell (A) Length	Bimetal Thermometer Stem Length Required
3 1/2"	4" Stem
6"	7" Stem (special order length)
8"	9" Stem

Heat Transfer Paste

To ensure minimum response time, Terice Heat Transfer Paste should be applied to the sensing portion of the instrument before installation into a thermowell.

Description	Item Number
1 oz. Tube	107-0001