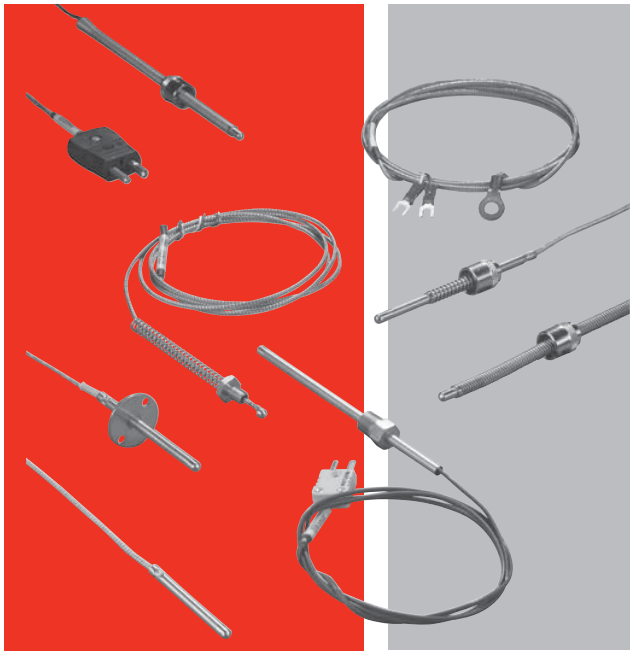
General Applications Tube and Wire



Watlow® is a world class supplier of temperature measurement products, with more than 90 years of manufacturing, research and design expertise.

Companies engaged in critical process control of food and metals rely on Watlow thermocouples. Watlow designs and manufactures sensors to meet customers' industrial and commercial equipment needs.

Watlow has developed an extensive line of thermocouples to meet a broad range of sensing needs.

Performance Capabilities

- Fiberglass insulated thermocouples can reach temperatures up to 900°F (480°C) for continuous operation.

Features and Benefits

"Custom-tailored" standard products including:

- 32 standard sheath lengths
- Lead lengths from six to 360 inches
- Stainless steel braid or hose protection
- J, K, T and E calibrations
- Grounded, ungrounded and exposed junctions
- Flat and drill point
- Epoxy sealed cold ends
- Adjustable depths
- Flexible extensions
- Washers, nozzles and clamp bands
- Custom diameters
- PFA coated and stainless steel sheaths
- Straight, 45° bend or 90° bend
- Locking bayonet caps in standard, 12 mm and 15 mm

Typical Applications

- Food processing equipment
- De-icing
- Plating baths
- Industrial processing
- Medical equipment
- Pipe tracing control
- Industrial heat treating
- Packaging equipment
- Liquid temperature measurement
- Refrigerator temperature control
- Oven temperature control

Construction and Tolerances

Thermocouples feature flexible SERV-RITE® wire insulated with woven fiberglass or high temperature engineered resins. For added protection against abrasion, products can be provided with stainless steel wire braid and flexible armor. ASTM E230 color-coding identifies standard catalog thermocouple types.

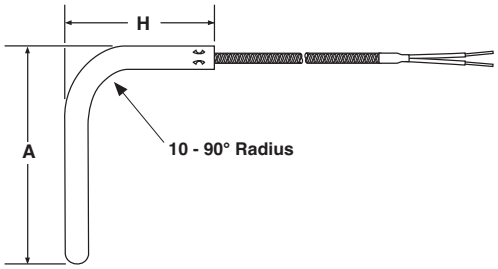
The addition of a metal sheath over the thermocouple provides rigidity for accurate placement and added protection of the sensing junction. Mounting options include springs, ring terminals, specialized bolts, pipe style clamps and shims.

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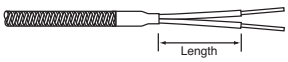
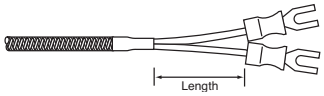
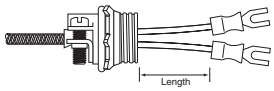
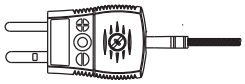
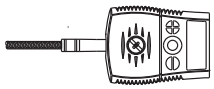
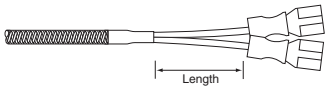
General Applications Tube and Wire

Bends

Diameter in.	Standard Bend Radius in.	Minimum "A" Dimension in.	Minimum "H" Dimension in.
0.125	3/8	1	2
0.188	3/8	1	2
0.250	1/2	2	2
0.375	3/4	3	2



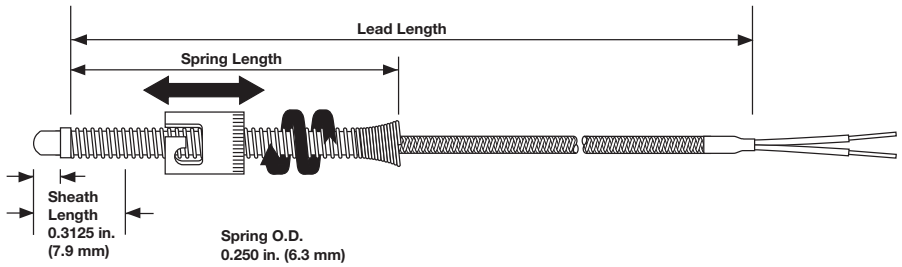
Lead Terminations

Termination	Code	Length
 Split Leads	A	2 1/2
 #6 Spade Lugs	B	2 1/2
 #6 Spade Lugs and BX Connector	C	2 1/2
 Standard Male Plug	D	—
 Standard Female Jack	E	—
 Miniature Male Plug	F	—
 Miniature Female Jack	G	—
 ¼ inch Push-on Connectors	H	2 1/2

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General Applications Tube and Wire

Adjustable Spring
Styles 10 and 11



Adjustable spring style thermocouples bend to any angle to fit a wide range of hole depths, eliminating the need to stock numerous styles.

Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
	D				B		

① ②	Construction Style
10 =	7/16 in. I.D. single slot (standard cap) - 6 in. spring
11 =	7/16 in. I.D. single slot (standard cap) - 12 in. spring

③	Sheath Diameter (in.) 316 SS
D =	3/16 in.

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
P =	Fiberglass (20 gauge stranded)
B =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
V =	PFA (20 gauge stranded)
W =	PFA with stainless steel overbraid (20 gauge stranded)

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
D =	Grounded, drill point
R =	Ungrounded, flat tip
U =	Ungrounded, round tip
P =	Ungrounded, drill point

⑦	Sheath Length (in.)
B =	1 in. (25 mm)

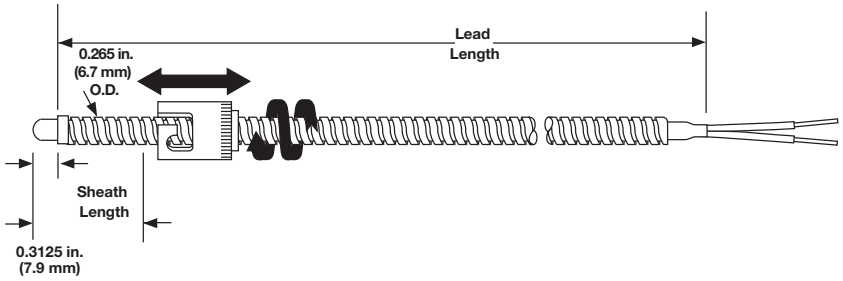
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
Firmware, Overlays, Parameter Settings	
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Adjustable Armor
Style 12



Adjustable armor thermocouples bend to any angle to fit a wide range of hole depths, eliminating the need to stock numerous styles. A stainless steel hose offers additional lead protection in demanding applications.

Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
12	D				B		

① ②	Construction Style
12 =	Adjustable armor thermocouple, 7/16 in. I.D. single slot (standard cap)

③	Sheath Diameter (in.) 316 SS
D =	3/16 in.

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
H =	Fiberglass with stainless steel flex hose (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
D =	Grounded, drill point
U =	Ungrounded, round tip
P =	Ungrounded, drill point
R =	Ungrounded, flat tip

⑦	Sheath Length (in.)
B =	1 in.

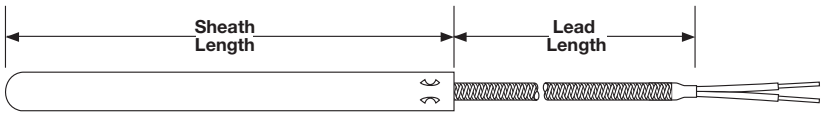
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
Firmware, Overlays, Parameter Settings	
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

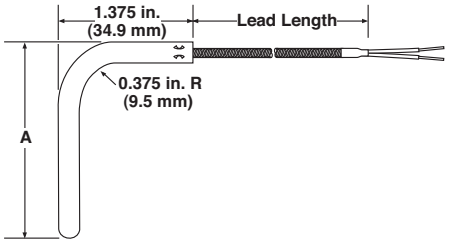
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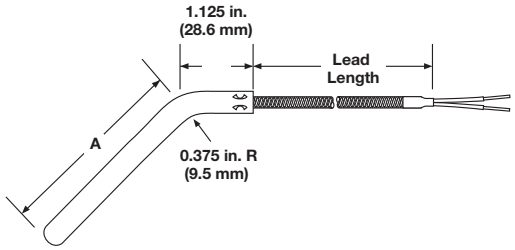
General Applications Tube and Wire

Rigid Sheath
Styles 20, 21 and 22
⅛ and 3⁄16 inch Diameter



The rigid sheath provides protection and accurate placement through bulkheads or platens. Use with a compression fitting for water tight immersion application.





The bent rigid tube offers protection and accurate lead placement around machinery.

Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options

① ②	Construction Style
20 =	Plain sheath, straight
21 =	Plain sheath, 45° bend
22 =	Plain sheath, 90° bend

③	Sheath Diameter (in.) 316 SS
C =	⅛ in.
D =	3⁄16 in.
T =	3⁄16 in. epoxy sealed 300°F (149°C)

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
H =	Fiberglass with stainless steel hose (24 gauge stranded)
P* =	Fiberglass (20 gauge stranded)
B* =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)
V* =	PFA (20 gauge stranded)
W* =	PFA with stainless steel overbraid (20 gauge stranded)
* Not available with ⅛ in. diameter sheath.	

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
D =	Grounded, drill point
R =	Ungrounded, flat tip
U =	Ungrounded, round tip
P =	Ungrounded, drill point
E =	Exposed

⑦	Sheath Length (in.)				
A* =	½ in.	J =	4½ in.	S =	8½ in.
B* =	1 in.	K =	5 in.	T =	9 in.
C =	1½ in.	L =	5½ in.	U =	9½ in.
D =	2 in.	M =	6 in.	W =	10 in.
E =	2½ in.	N =	6½ in.	Y =	11 in.
F =	3 in.	P =	7 in.	Z =	12 in.
G =	3½ in.	Q =	7½ in.		
H =	4 in.	R =	8 in.		
* Not available in construction style 21 and 22.					

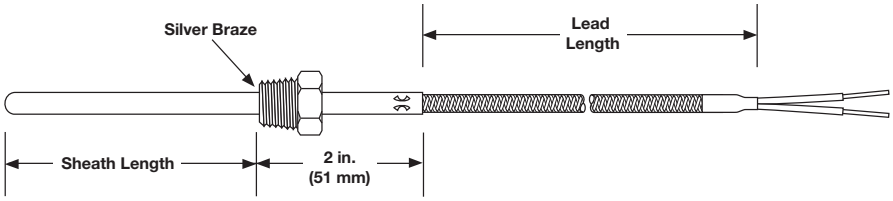
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2½ in. split leads
B =	2½ in. split leads with #6 spade lugs
C =	2½ in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	¼ in. push-on connector

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General Applications Tube and Wire

Rigid Sheath with Threaded Fitting
Styles 23 and 24
1/8 and 3/16 inch Diameter



Rigid sheath with threaded fitting provides accurate placement in process applications.

Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options

① ②	Construction Style
23 =	Straight sheath with 1/8 in. National Pipe Thread (NPT) SS fitting
24 =	Straight sheath with 1/2 in. NPT SS fitting

③	Sheath Diameter (in.) 316 SS
C =	1/8 in.
D =	3/16 in.
T =	3/16 in. epoxy sealed 300°F (149°C)

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
H =	Fiberglass with stainless steel hose (24 gauge stranded)
P* =	Fiberglass (20 gauge stranded)
B* =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)
V* =	PFA (20 gauge stranded)
W* =	PFA with stainless steel overbraid (20 gauge stranded)
* Not available with 1/8 in. diameter sheath.	

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
D =	Grounded, drill point
R =	Ungrounded, flat tip
U =	Ungrounded, round tip
P =	Ungrounded, drill point
E =	Exposed

⑦	Sheath Length (in.)				
A =	1/2 in.	J =	4 1/2 in.	S =	8 1/2 in.
B =	1 in.	K =	5 in.	T =	9 in.
C =	1 1/2 in.	L =	5 1/2 in.	U =	9 1/2 in.
D =	2 in.	M =	6 in.	W =	10 in.
E =	2 1/2 in.	N =	6 1/2 in.	Y =	11 in.
F =	3 in.	P =	7 in.	Z =	12 in.
G =	3 1/2 in.	Q =	7 1/2 in.		
H =	4 in.	R =	8 in.		

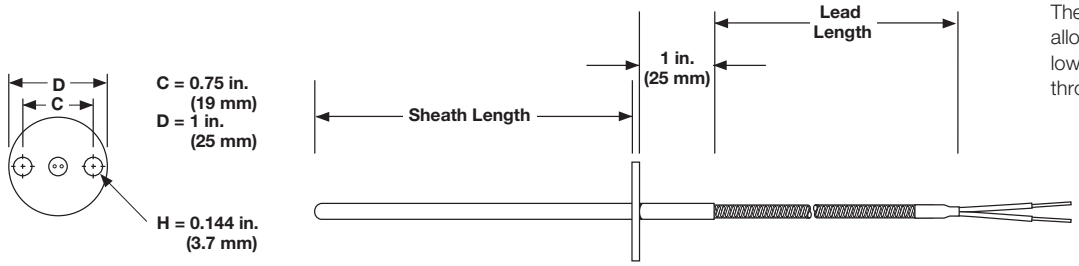
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Flange
Style 25



The flanged thermocouple allows rapid assembly and low profile when going through bulkheads.

Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
25							

① ②	Construction Style
25 =	Thermocouple with flange

③	Sheath Diameter (in.) 316 SS
C =	1/8 in.
D =	3/16 in.
T =	3/16 in. epoxy sealed 300°F (149°C)

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
H =	Fiberglass with stainless steel hose (24 gauge stranded)
P* =	Fiberglass (20 gauge stranded)
B* =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)
V* =	PFA (20 gauge stranded)
W* =	PFA with stainless steel overbraid (20 gauge stranded)
* Not available with 1/8 in. diameter sheath.	

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
D =	Grounded, drill point
R =	Ungrounded, flat tip
U =	Ungrounded, round tip
P =	Ungrounded, drill point
E =	Exposed
* Not available with 1/8 in. diameter sheath.	

⑦	Sheath Length (in.)				
D =	2 in.	L =	5 1/2 in.	T =	9 in.
E =	2 1/2 in.	M =	6 in.	U =	9 1/2 in.
F =	3 in.	N =	6 1/2 in.	W =	10 in.
G =	3 1/2 in.	P =	7 in.	Y =	11 in.
H =	4 in.	Q =	7 1/2 in.	Z =	12 in.
J =	4 1/2 in.	R =	8 in.		
K =	5 in.	S =	8 1/2 in.		

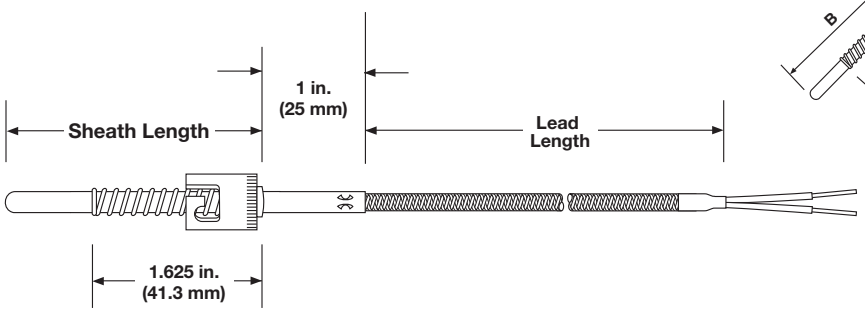
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

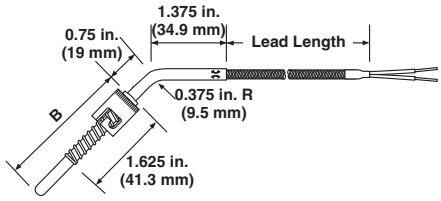
⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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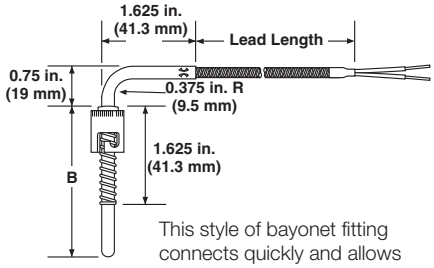
General Applications Tube and Wire

Rigid Sheath
Styles 30, 31 and 32





Bayonet fittings allow rapid attachment. Spring pressure on the junction tip assures fast response time.



This style of bayonet fitting connects quickly and allows leads to exit with a protective sheath.

Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options

① ②	Construction Style
30 =	7/16 in. I.D. single slot (standard cap) straight
31 =	7/16 in. I.D. single slot (standard cap) with spring, 45° bend
32 =	7/16 in. I.D. single slot (standard cap) with spring, 90° bend

③	Sheath Diameter (in.) 316 SS
C =	1/8 in.
D =	3/16 in.
T =	3/16 in. epoxy sealed 300°F (149°C)

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
H =	Fiberglass with stainless steel hose (24 gauge stranded)
P* =	Fiberglass (20 gauge stranded)
B* =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)
V* =	PFA (20 gauge stranded)
W* =	PFA with stainless steel overbraid (20 gauge stranded)

* Not available with 1/8 in. diameter sheath.

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
D =	Grounded, drill point
R =	Ungrounded, flat tip
U =	Ungrounded, round tip
P =	Ungrounded, drill point
E =	Exposed

⑦	Sheath Length (in.)				
D =	2 in.	L =	5 1/2 in.	T =	9 in.
E =	2 1/2 in.	M =	6 in.	U =	9 1/2 in.
F =	3 in.	N =	6 1/2 in.	W =	10 in.
G =	3 1/2 in.	P =	7 in.	Y =	11 in.
H =	4 in.	Q =	7 1/2 in.	Z =	12 in.
J =	4 1/2 in.	R =	8 in.		
K =	5 in.	S =	8 1/2 in.		

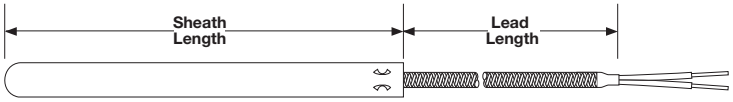
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

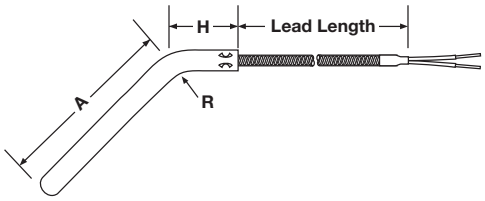
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General Applications Tube and Wire

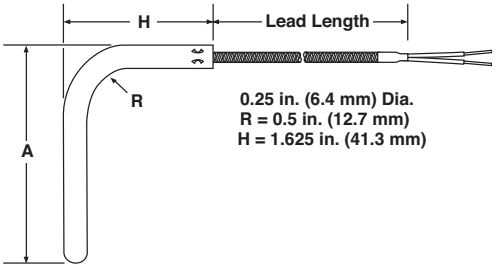
Large Diameter Rigid Sheath
Styles 40, 41 and 42



The rigid sheath provides protection and accurate placement through bulkheads or platens. Use with a compression fitting for water tight immersion application.



The bent rigid tube offers protection and accurate lead placement around machinery.



Ordering Information

Part Number

① ② Const. Style	③ Sheath Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options

① ②	Construction Style
40 =	Plain sheath, straight, large, diameter
41 =	Plain (45°) large diameter
42 =	Plain (90°) large diameter

③	Sheath Diameter (in.) 316 SS
E =	1/4 in.
U =	1/4 in. epoxy sealed 300°F (149°C)

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
H =	Fiberglass with stainless steel hose (24 gauge stranded)
P =	Fiberglass (20 gauge stranded)
B =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)
V =	PFA (20 gauge stranded)
W =	PFA with stainless steel overbraid (20 gauge stranded)

⑥	Junction
F =	Grounded, flat tip
G =	Grounded, round tip
R =	Ungrounded, flat tip
U =	Ungrounded, round tip
E =	Exposed

⑦	Sheath Length (in.)				
A =	1 in.	J =	9 in.	S =	17 in.
B =	2 in.	K =	10 in.	T =	18 in.
C =	3 in.	L =	11 in.	U =	19 in.
D =	4 in.	M =	12 in.	W =	20 in.
E =	5 in.	N =	13 in.	Y =	22 in.
F =	6 in.	P =	14 in.	Z =	24 in.
G =	7 in.	Q =	15 in.		
H =	8 in.	R =	16 in.		

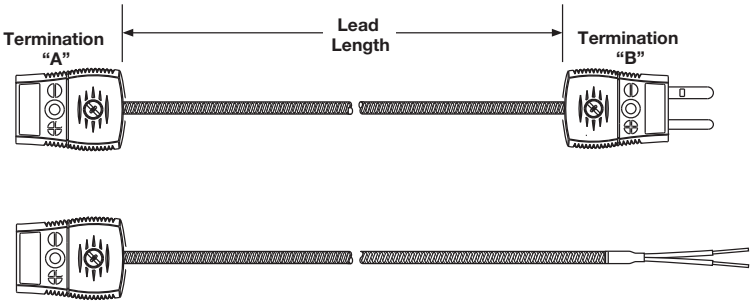
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Flexible Extensions
Style 60



Flexible extensions allow thermocouples to be disconnected from a system without disturbing the remaining wiring.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Term. "A"/ Options	⑧ ⑨ ⑩ Lead Length	⑪ Term. B/ Options
60	X			X			

① ②	Construction Style
60 =	Flexible extension

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
H =	Fiberglass with stainless steel hose (24 gauge stranded)
P =	Fiberglass (20 gauge stranded)
B =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
K =	PFA with stainless steel hose (24 gauge stranded)
V =	PFA (20 gauge stranded)
W =	PFA with stainless steel overbraid (20 gauge stranded)

⑥	Junction
X =	Not applicable

⑦	Termination "A"/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with spade lugs
C =	2 1/2 in. split leads with spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F* =	Miniature male plug, quick disconnect
G* =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector
*Not available with SS hose.	

⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

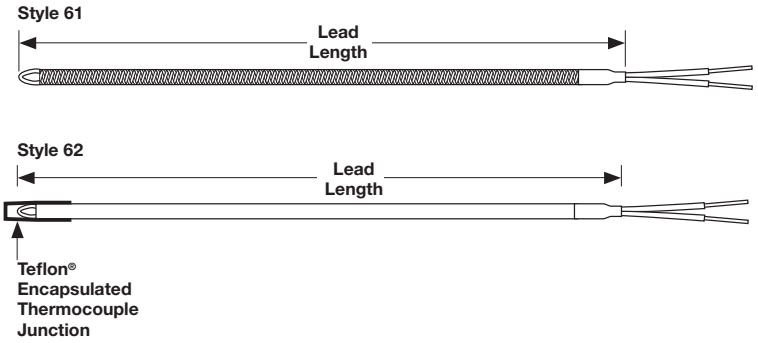
⑪	Termination "B"/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Insulated Wire
Styles 61 and 62

Constructed with SERV-RITE insulated thermocouple wire, Styles 61 and 62, are economical and versatile and can be ordered with an exposed or protected measuring junction. Style 61 is fitted with an exposed junction and is suitable for most general purpose applications, such as measuring air, gas and surface temperatures. Style 62 is fitted with an encapsulated measuring junction that is ideal for corrosive fluids and gases, such as sulfuric acid, hydrofluoric acid, strong mineral acids and oils.



Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Termination "A"	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
	X			E	X		

① ②	Construction Style
61 =	SERIES 61
62* =	SERIES 62
*Only available with wire (lead protection) options J or T (4th digit).	

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
P =	Fiberglass (20 gauge solid)
B =	Fiberglass with stainless steel overbraid (20 gauge solid)
F =	Fiberglass (24 gauge solid)
S =	Fiberglass with stainless steel overbraid (24 gauge solid)
T =	Extruded PFA (24 gauge solid)
J =	Extruded PFA (20 gauge solid)

⑥	Junction
E =	Exposed

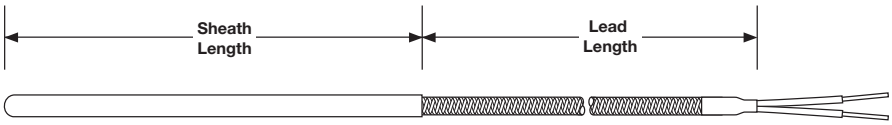
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Perfluoroalkoxy (PFA) Encapsulated
Style 65



The rigid sheath is covered with a 0.010 in. (0.25 mm) wall of PFA for corrosion resistance in acid environments. An epoxy seal improves moisture resistance of the sensor and provides a barrier for migrating fumes in corrosive applications.

Ordering Information

Part Number

① ② Const. Style	③ Diameter Under Covering	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Sheath Length	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
65							

① ② Construction Style	
65 =	PFA coated sheath

③ Diameter (in.) Under Covering	
D =	3/16 in. epoxy sealed 300°F (149°C)
E =	1/4 in. epoxy sealed 300°F (149°C)

④ Calibration	
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤ Lead Protection	
T =	PFA (24 gauge stranded)
V =	PFA (20 gauge stranded)

⑥ Junction	
U =	Ungrounded, round tip
G =	Grounded, round tip

⑦ Sheath Length (in.)					
B =	1 in.	J =	4 1/2 in.	R =	8 in.
C =	1 1/2 in.	K =	5 in.	S =	8 1/2 in.
D =	2 in.	L =	5 1/2 in.	T =	9 in.
E =	2 1/2 in.	M =	6 in.	U =	9 1/2 in.
F =	3 in.	N =	6 1/2 in.	W =	10 in.
G =	3 1/2 in.	P =	7 in.	Y =	11 in.
H =	4 in.	Q =	7 1/2 in.	Z =	12 in.

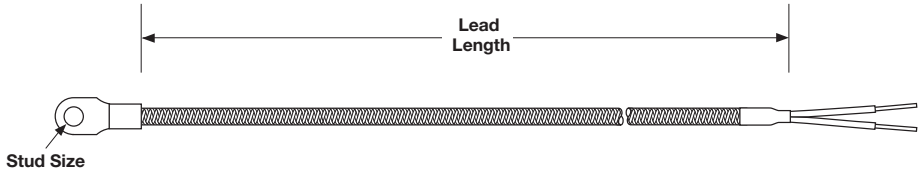
⑧ ⑨ ⑩ Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory

⑪ Termination/Options	
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Ring Terminal
Style 70



The nickel terminal can be placed beneath existing screws or bolts to permit surface temperature measurement.

Note: Grounded junction shown.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Stud Size Hole Diameter	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
70	X						

① ②	Construction Style
70 =	Ring terminal thermocouple

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
P =	Fiberglass (20 gauge stranded)
B =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
V =	PFA (20 gauge stranded)
W =	PFA with stainless steel overbraid (20 gauge stranded)

⑥	Junction
G =	Grounded
U* =	Ungrounded
*Only available with 24 gauge wire.	

⑦	Stud Size - Hole Diameter (in.)
A* =	No. 6
B* =	No. 8
C* =	No. 10
D =	1/4
E =	3/8
*Only available with 24 gauge wire.	

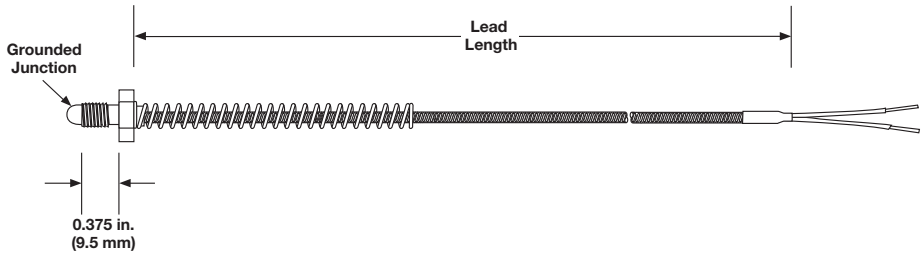
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Nozzle
Style 71



The nozzle thermocouple has a short installation depth and a low profile to allow control of thin platen sections.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ 304 SS Bolt Size	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
71	X			G			

① ②	Construction Style
71 =	Nozzle thermocouple

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
P* =	Fiberglass (20 gauge stranded)
B* =	Fiberglass with stainless steel overbraid (20 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
V* =	PFA (20 gauge stranded)
W* =	PFA with stainless steel overbraid (20 gauge stranded)

*Not available with ungrounded junction.

⑥	Junction
G =	Grounded
U =	Ungrounded

⑦	304 SS, Bolt Size
A =	1/4 in. x 28 UNF, 3/8 in. thread depth
B =	8-32 thread
C =	10-32 thread
M =	M6 x 1

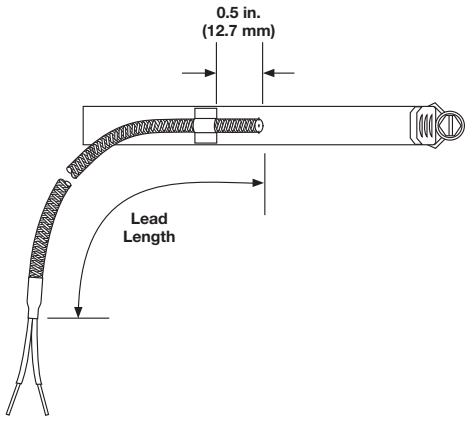
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

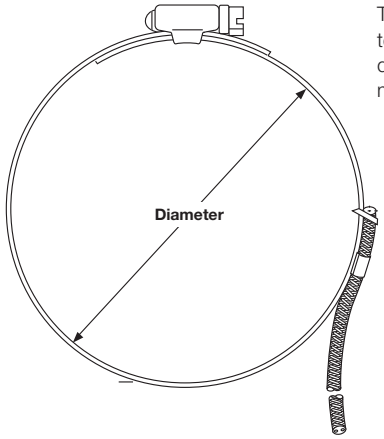
⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Pipe Clamp
Style 72





The stainless steel clamp allows temperature measurement without drilling or tapping which is ideal for measuring pipe temperatures.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Clamp Band Dia. Range	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
72	X			G			

① ②	Construction Style
72 =	Pipe clamp thermocouple

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
B =	Fiberglass with stainless steel overbraid (20 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)
W =	PFA with stainless steel overbraid (20 gauge stranded)

⑥	Junction
G =	Grounded

⑦	Clamp Band Diameter Range (in.)
A =	$11/16$ to $1\,1/4$
B =	$1\,1/4$ to $2\,1/4$
C =	$2\,1/4$ to $3\,1/4$
D =	$3\,1/4$ to $4\,1/4$
E =	$4\,1/4$ to 5
F =	5 to 6
G =	6 to 7

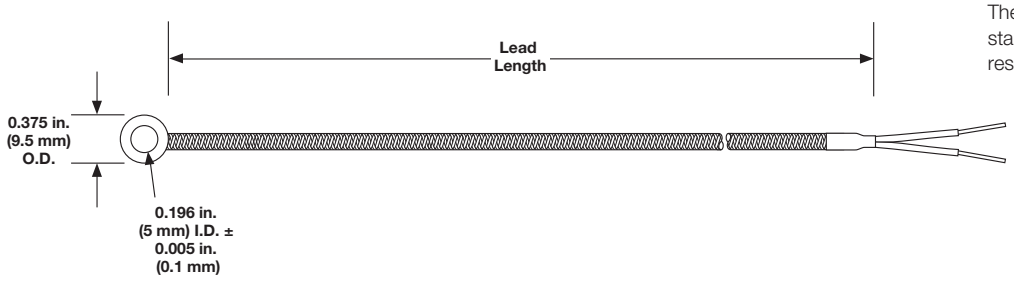
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, $2\,1/2$ in. split leads
B =	$2\,1/2$ in. split leads with #6 spade lugs
C =	$2\,1/2$ in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	$1/4$ in. push-on connector

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General Applications Tube and Wire

Grommet
Style 73



The extremely low profile of the stainless steel grommet provides fast response time.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Grommet Size	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
73	X			G	A		

① ②	Construction Style
73 =	Grommet thermocouple

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge solid)
T =	PFA (24 gauge solid)

⑥	Junction
G =	Grounded

⑦	Grommet Size (in.)
A =	0.195 in. I.D. x 0.375 in. O.D. x 0.035 in. thick

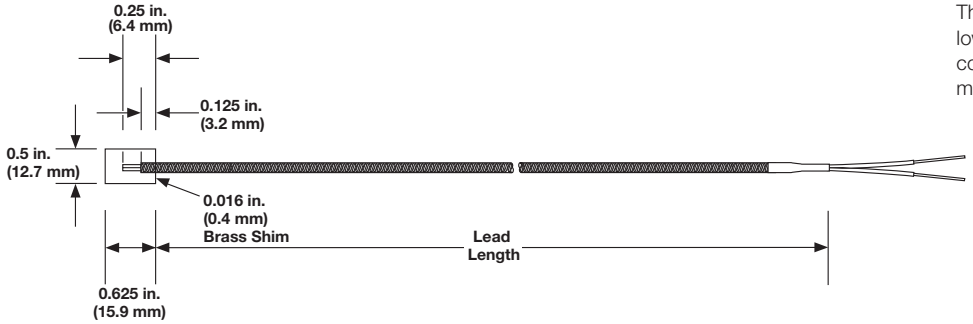
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Brass Shim
Style 74



The shim stock thermocouple has a low profile and can be placed between components for surface temperature measurement.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Shim Size	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
74	X			G	A		

① ②	Construction Style
74 =	Shim stock thermocouple

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K
T =	Type T
E =	Type E

⑤	Lead Protection
F =	Fiberglass (24 gauge solid)
T =	PFA (24 gauge solid)

⑥	Junction
G =	Grounded

⑦	Shim Size (in.)
A =	1/2 x 5/8 x 0.016 in. brass

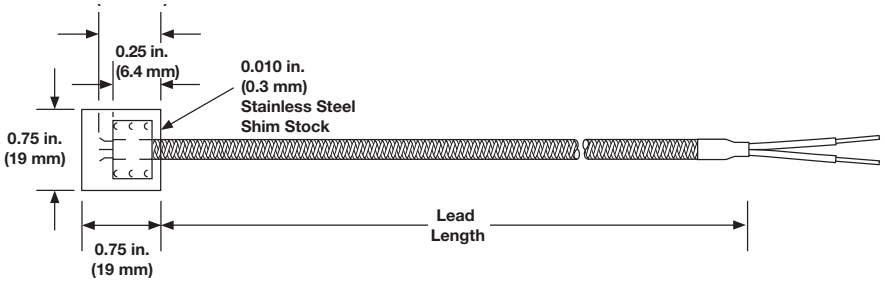
⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

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General Applications Tube and Wire

Stainless Steel Shim
Style 75



The shim stock thermocouple has a low profile and can be placed between components for surface temperature measurement.

Ordering Information

Part Number

① ② Const. Style	③ Diameter	④ Calibration	⑤ Lead Protection	⑥ Junction	⑦ Shim Size	⑧ ⑨ ⑩ Lead Length	⑪ Term./ Options
75	X			G	A		

① ②	Construction Style
75 =	Stainless steel shim stock thermocouple

③	Diameter
X =	Not applicable

④	Calibration
J =	Type J
K =	Type K

⑤	Lead Protection
F =	Fiberglass (24 gauge stranded)
S =	Fiberglass with stainless steel overbraid (24 gauge stranded)
T =	PFA (24 gauge stranded)
U =	PFA with stainless steel overbraid (24 gauge stranded)

⑥	Junction
G =	Grounded

⑦	Shim Size (in.)
A =	3/4 x 3/4 x 0.010 in., 430 SS

⑧ ⑨ ⑩	Lead Length (in.)
Available lengths: 006 to 360 in., over 360 in. contact factory	

⑪	Termination/Options
A =	Standard, 2 1/2 in. split leads
B =	2 1/2 in. split leads with #6 spade lugs
C =	2 1/2 in. split leads with #6 spade lugs and BX connector
D =	Standard male plug, quick disconnect
E =	Standard female jack, quick disconnect
F =	Miniature male plug, quick disconnect
G =	Miniature female jack, quick disconnect
H =	1/4 in. push-on connector

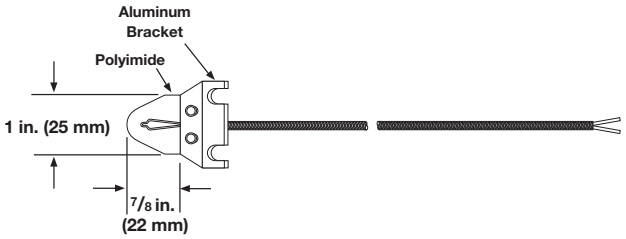
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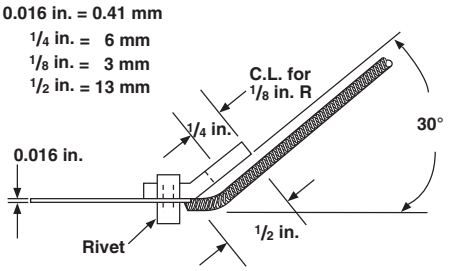
General Applications Tube and Wire

Polyimide Bracket Style

The Polyimide thermocouple, when used with the aluminum bracket, is designed primarily to measure roller temperature. Light pressure on the roller enables the Polyimide thermocouple to measure roller surface temperature without using slip rings. This type of set-up greatly reduces lag time and eliminates slip rings cost and maintenance. It can also be used to measure conveyor belt temperatures and any other moving part by riding gently on the part surface.

- Continuous use at 400°F (200°C), 500°F (260°C) for limited periods
- Low mass
- Fast response
- Totally insulated construction
- Available in Type J or K





Polyimide Thermocouple with Bracket

Calibration	Lead Length in.	(cm)	Part No.
J	48	(122)	**OKJ30B4A**
	96	(244)	**OKJ30B4B**
K	48	(122)	**OKK30B2A**
	96	(244)	**OKK30B2B**

Sensors with 30 gauge solid thermocouple wire, with fiberglass insulation and split lead termination.

Low Profile Polyimide Peel and Stick Style



Low Profile Polyimide Thermocouple (without Bracket)

When used without the bracket it can be placed between heated parts for accurate temperature measurement. At the thermocouple junction, the overall thickness is only 0.016 in. (0.4 mm), so that it does not interfere with fit or thermo conductivity.

Calibration	Lead Length in.	(cm)	Part No.
J	48	(122)	**OKJ30B2A**
	96	(244)	**OKJ30B2B**
K	48	(122)	**OKK30B1A**
	96	(244)	**OKK30B1B**

Sensors with 30 gauge solid thermocouple wire, with fiberglass insulation and split lead termination.

Polyimide Peel and Stick

This sensor requires no bracket or special mounting. Simply peel away the backing and this self-adhesive film will bond to almost any surface. Temperature ratings for continuous use is 400°F (200°C).

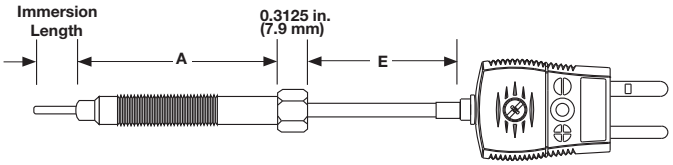
Calibration	Lead Length in.	(cm)	Part No.
J	48	(122)	**OKJ30B11A**
	96	(244)	**OKJ30B11B**
K	48	(122)	**OKK30B10A**
	96	(244)	**OKK30B10B**
T	48	(122)	**OKT30B12A**
	96	(244)	**OKT30B12B**

Sensors with 30 gauge solid thermocouple wire, with fiberglass insulation and split lead termination.

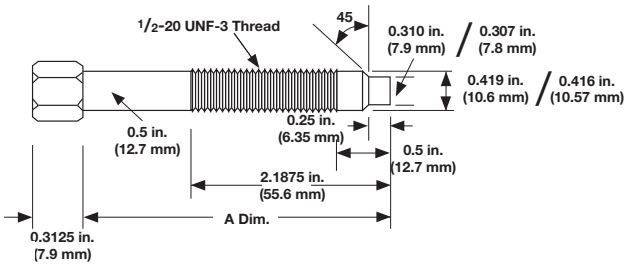
1.800.561.8187 www.itm.com information@itm.com

General Applications Tube and Wire

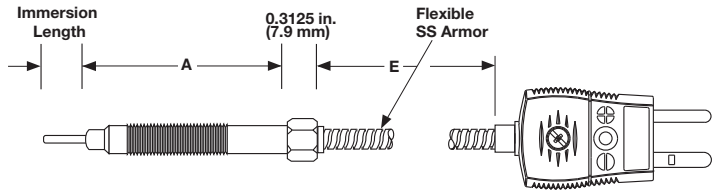
Melt Bolt



Fixed Immersion — Style M1



Standard Dimensions for Melt Bolts



Fixed Immersion — Style M3

Ordering Information

Part Number

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬ ⑭	⑮
	Style	Sheath O.D.	Lead Wire Const.	Melt Bolt Length "A"	Cold End Term.	Probe Const.		Imm. Length "I" (in.)	Imm. Length "I" (fract. in.)	Junction	Calibration	Extension Length "E"	
M						A	0						0

② Style	
1 =	Fixed immersion
3 =	Fixed immersion with flex armor

③ Sheath O.D. (in.)	
G =	0.125

④ Lead Wire Construction	
0 =	No flex armor (M1)
R =	SS flex armor (M3 only)

⑤ Melt Bolt Length "A" (in.)	
1 =	3
2 =	6

⑥ Cold End Terminations	
A =	Standard male plug
B =	Standard female jack
C =	Standard plug with mating connector
T =	Zero standard 1 1/2 in. split leads (Style M3 only)
U =	1 1/2 in. split leads with spade lugs (Style M3 only)
W=	1 1/2 in. split leads with BX connector and spade lugs (Style M3 only)

⑦ Probe Construction	
A =	Mineral insulated with 304 SS sheath

⑨ Immersion Length "I" (in.)	
1 =	1

⑩ Immersion Length "I" (fractional in.)	
1 =	1/8
0 =	Flush

⑪ Junction	
U =	Ungrounded
G =	Grounded

⑫ Calibration	
J =	Standard limits
K =	Standard limits
3 =	Special limits
4 =	Special limits

⑬ ⑭ Extension Length "E"
Whole inches: 02 to 99

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