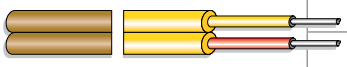
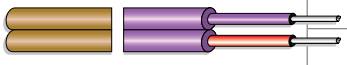
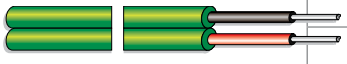
KEY INFORMATION

Application/Selection Guide

Physical Characteristics of Thermocouples

Type	Outer Insulation: Thermocouple grade	Outer Insulation: Extension grade	Wire insulation color	Polarity	Wire material of construction	Properties for identification	Atmosphere for exposed junction
J				+	Iron	Strongly magnetic	Reducing
				–	Constantan	—	
K				+	Chromel	Moderately magnetic	Clean oxidizing
				–	Alumel	—	
T				+	Copper	Copper color	Mildly oxidizing and reducing or with moisture
				–	Constantan	—	
E				+	Chromel	Greater stiffness	Vacuum, inert, mildly oxidizing or reducing
				–	Constantan	—	
R				+	87% Platinum 13% Rhodium	Greater stiffness	Resists oxidation and corrosion, but contaminated by hydrogen, carbon, and metal vapors
				–	Platinum	—	
S				+	90% Platinum 10% Rhodium	Greater stiffness	
				–	Platinum	—	

Maximum Thermocouple Probe Error Limits

Tolerances apply only to new thermocouples from –200°C to the recommended upper temperature limit of the probe. Tolerances change with use and it is up to the user to establish acceptable limits of error for used thermocouples. Calculated from ASTM tolerances.

Type	Maximum error limit
Probes with detachable handles	
J, K	±4.0°F (±2.2°C), or ±0.4% of reading above 32°F (0°C); ±2.0% of reading below 32°F (0°C)
T	±1.8°F (±1.0°C), or ±0.4% of reading above 32°F (0°C); ±0.8% of reading below 32°F (0°C)
E	±3.6°F (±2.0°C), or ±0.4% of reading above 32°F (0°C); ±0.5% of reading below 32°F (0°C)
Probes with metal sheath, coiled cord, and connector	
J, K	±7.9°F (±4.4°C), or ±0.4% of reading above 32°F (0°C); ±2.0% of reading below 32°F (0°C)
T	±3.6°F (±2.0°C), or ±0.4% of reading above 32°F (0°C); ±0.8% of reading below 32°F (0°C)
E	±6.7°F (±3.7°C), or ±0.4% of reading above 32°F (0°C); ±0.5% of reading below 32°F (0°C)
Probes with metal sheath, straight cable, and connector	
J, K	±5.9°F (±3.3°C), or ±0.4% of reading above 32°F (0°C); ±2.0% of reading below 32°F (0°C)
T	±2.7°F (±1.5°C), or ±0.4% of reading above 32°F (0°C); ±0.8% of reading below 32°F (0°C)
E	±5.4°F (±3.0°C), or ±0.4% of reading above 32°F (0°C); ±0.5% of reading below 32°F (0°C)
Probes with metal sheath, straight cable, and stripped ends	
J, K	±4.0°F (±2.2°C), or ±0.4% of reading above 32°F (0°C); ±2.0% of reading below 32°F (0°C)
T	±1.8°F (±1.0°C), or ±0.4% of reading above 32°F (0°C); ±0.8% of reading below 32°F (0°C)
E	±3.6°F (±2.0°C), or ±0.4% of reading above 32°F (0°C); ±0.5% of reading below 32°F (0°C)
Probes made of one piece of thermocouple wire with a connector	
J, K	±4.0°F (±2.2°C), or ±0.4% of reading above 32°F (0°C); ±2.0% of reading below 32°F (0°C)
T	±1.8°F (±1.0°C), or ±0.4% of reading above 32°F (0°C); ±0.8% of reading below 32°F (0°C)
E	±3.6°F (±2.0°C), or ±0.4% of reading above 32°F (0°C); ±0.5% of reading below 32°F (0°C)
Thermocouple wire only, no connector	
J, K	±2.0°F (±1.1°C), or ±0.4% of reading above 32°F (0°C); ±2.0% of reading below 32°F (0°C)
T	±0.9°F (±0.5°C), or ±0.4% of reading above 32°F (0°C); ±0.8% of reading below 32°F (0°C)
E	±1.8°F (±1.0°C), or ±0.4% of reading above 32°F (0°C); ±0.5% of reading below 32°F (0°C)

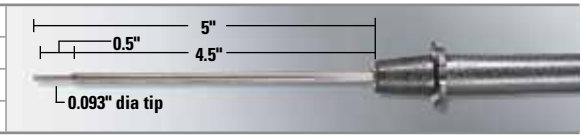
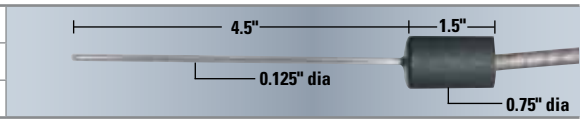
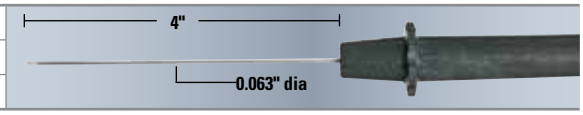
Selection Chart

Choose the right temperature probe for your application based on the following features:

Feature	Thermocouple	Platinum RTD	Thermistor
Temperature range	High	Medium	Low
Accuracy	Low	Medium	High
Long-term stability	Low	High	Medium
Repeatability	Low	High	Medium
Linearity	Average	Good	Poor
Size	Large	Small	Medium
Time response	2 to 5 sec	2 to 5 sec	1 to 2 sec

OAKTON® General-Purpose Thermocouple Probes with Miniconnector End

Choose from a wide variety of general-purpose standard, micro-, and heavy-duty probes. Probes with handle feature strain relief spring that protects the cable connection against damage due to repeated flexing and tugging. Standard glass-filled nylon handles measure 5.5"L. Feature color-coded ANSI miniconnectors: type J—black, type K—yellow, type T—blue, and type E—purple. Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

Catalog number	Type	Temperature range °F (°C)	Description	Price	Photo/Dimensions†
Standard probes, 5"L; for use with liquids, gases, and semisolids. Include standard handle and 5-ft coiled cable.					
TW-08517-55	J	–310 to 1400 (–190 to 760)	Junction: grounded Time constant: 3 sec (liquids) Response time: 15 sec (liquids) 316 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-08516-55	K	–418 to 1650 (–250 to 899)			
TW-08500-55	T	–418 to 752 (–250 to 400)			
TW-08512-55	E	–418 to 1600 (–250 to 871)			
Low-cost probes, 4.5"L; for use with liquids, gases, and semisolids. Include 5-ft coiled cable.					
TW-08439-60	J	–310 to 1400 (–190 to 760)	Junction: grounded Time constant: 6 sec (liquids) Response time: 30 sec (liquids) 304 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-08439-62	K	–418 to 1650 (–250 to 899)			
TW-08439-64	T	–418 to 752 (–250 to 400)			
Small-diameter standard probes, 4"L; for use with liquids, gases, and semisolids. Include standard handle and 5-ft coiled cable.					
TW-08505-55	J	–310 to 1300 (–190 to 704)	Junction: grounded Time constant: 2 sec Response time: 10 sec 316 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-08505-56	K	–418 to 1500 (–250 to 816)			
TW-08505-57	T	–418 to 650 (–250 to 343)			
Small-diameter probes with miniature stainless steel handles, 8"L. Ideal for checking food temperatures. Include 5-ft coiled cable.					
TW-08505-61	J	–310 to 1300 (–190 to 704)	Junction: grounded Time constant: 2 sec Response time: 10 sec 316 SS sheath; Miniconnector; SS handle		
TW-08505-62	K	–418 to 1500 (–250 to 816)			
TW-08505-63	T	–418 to 650 (–250 to 343)			
All stainless steel probes, 8"L; for added durability—ideal for food processing applications. Include 4.5"L SS handle and 4-ft STW-armored cable.					
TW-93600-02	J	–310 to 1400 (–190 to 760)	Junction: grounded Time constant: 6 sec Response time: 30 sec 316 SS sheath; Miniconnector; SS handle		
TW-93600-22	K	–418 to 1650 (–250 to 899)			
TW-93600-42	T	–418 to 752 (–250 to 400)			
Extra-long stainless steel probes, 10"L. Use with liquids, gases, and semisolids. Include standard handle and 5-ft coiled cable.					
TW-93756-00	J	–310 to 1400 (–190 to 760)	Junction: grounded Time constant: 3 sec (liquids) Response time: 15 sec (liquids) 316 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-93756-20	K	–418 to 1650 (–250 to 899)			
TW-93756-40	T	–418 to 752 (–250 to 400)			
Extra-long stainless steel probes with ungrounded junction, 10"L. Use in electrically noisy environments. Include standard handle and 5-ft coiled cable.					
TW-93758-00	J	–310 to 1400 (–190 to 760)	Junction: grounded Time constant: 5 sec Response time: 25 sec 316 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-93758-02	K	–418 to 1650 (–250 to 899)			
TW-93758-04	T	–418 to 752 (–250 to 400)			
Extra-long PFA-coated probes, 10"L; for use with corrosive chemicals and strong acids. Include standard handle and 5-ft coiled cable.					
TW-93812-00	J	–310 to 500 (–190 to 260)	Junction: grounded Time constant: 11 sec Response time: 55 sec 316 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-93812-02	K	–418 to 500 (–250 to 260)			
TW-93812-04	T	–418 to 500 (–250 to 260)			
Low-cost PTFE-coated probes, 4.5"L; for use with corrosive liquids. Include 5-ft coiled cable.					
TW-08441-10	J	–310 to 302 (–190 to 150)	Junction: grounded Time constant: 11 sec (liquids) Response time: 55 sec (liquids) 304 SS sheath; Miniconnector; Glass-filled nylon handle		
TW-08441-12	K	–418 to 302 (–250 to 150)			
TW-08441-14	T	–418 to 302 (–250 to 150)			
Straight-shaft microprobes, 4"L. Include 4-ft straight PVC-insulated cable.					
TW-08116-60	J	–310 to 750 (–190 to 399)	Junction: grounded Time constant: 5 sec Response time: 25 sec 316 SS sheath; Miniconnector; Miniature SS handle		
TW-08117-60	K	–418 to 800 (–250 to 427)			
TW-08113-60	T	–418 to 450 (–250 to 232)			
Fast response microprobe with 90 -angle tip, 4"L. Include 5-ft straight PVC-insulated cable.					
TW-08506-95	T	–418 to 752 (–250 to 400)	Junction: grounded Time constant: 0.15 sec Response time: 0.75 sec 304 SS sheath; Miniconnector; PVC handle		

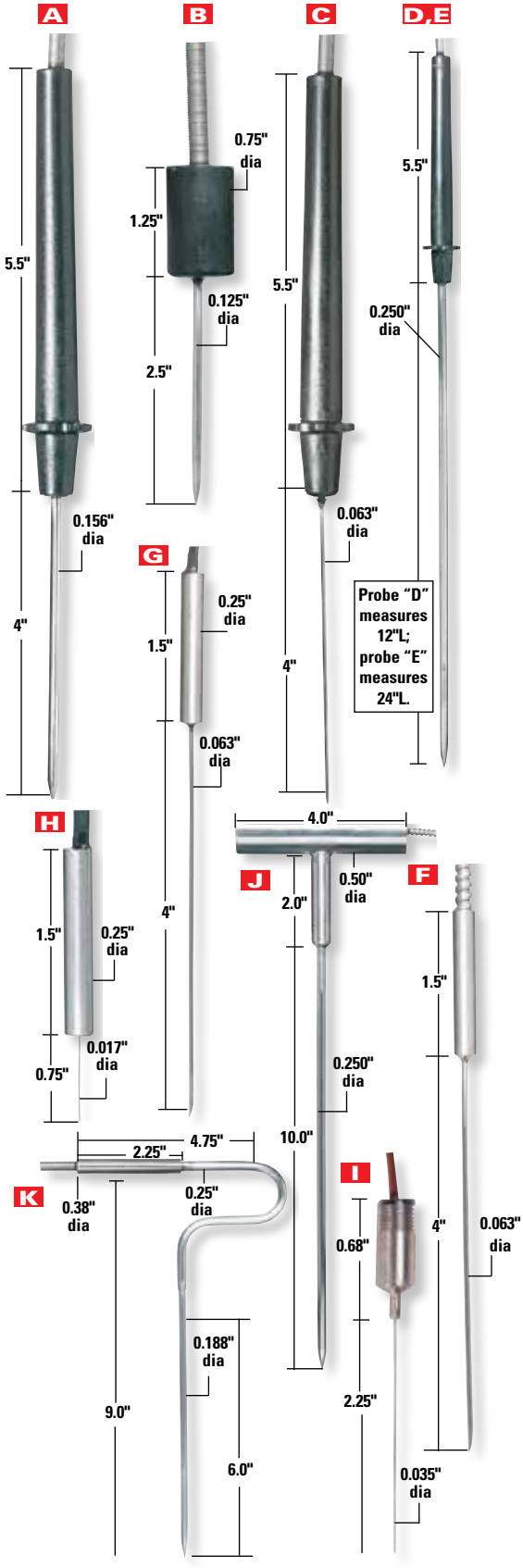
†Overall probe sheath lengths may vary up to ±0.25".

OAKTON® Penetration Thermocouple Probes with Miniconnector End

These probes are great for penetrating soft or semisoft materials. Choose from a variety of sharp penetration tip, hypodermic-tip, or heavy-duty probes. Probes include handle with strain relief spring and feature color-coded ANSI miniconnectors: type J—black, type K—yellow, type T—blue, and type E—purple. Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

Key	Catalog number	Type	Temperature range °F (°C)	Description	Price
Standard probes, 4"L. Include 5-ft coiled cable. Ideal for soft or semisoft materials.					
A	TW-08517-65	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 25 sec (liquids) 304 SS sheath; Miniconnector; Glass-filled nylon handle	
	TW-08516-65	K	–418 to 1650 (–250 to 899)		
	TW-08500-65	T	–418 to 752 (–250 to 400)		
Low-cost probes, 2.5"L. Include 5-ft coiled cable.					
B	TW-08439-80	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 25 sec (liquids) 316 SS sheath; Miniconnector; Glass-filled nylon handle	
	TW-08439-82	K	–418 to 1650 (–250 to 899)		
	TW-08439-84†	T	–418 to 752 (–250 to 400)		
Small-diameter probes with hypodermic tip, 4"L. Include 5-ft coiled cord.					
C	TW-93601-02	J	–310 to 1300 (–190 to 704)	Junction: grounded Response time: 15 sec 316 SS sheath; Miniconnector; Glass-filled nylon handle	
	TW-93601-04	K	–418 to 1500 (–250 to 816)		
	TW-93601-06	T	–418 to 650 (–250 to 343)		
Heavy-duty probes, 12"L—extra length for large samples. Include 5-ft coiled cable. Ideal for use in soft ground and semifrozen materials.					
D	TW-93601-22	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 50 sec 316 SS sheath; Miniconnector	
	TW-93601-24	K	–418 to 1652 (–250 to 900)		
	TW-93601-26	T	–418 to 700 (–250 to 371)		
Extra-long heavy-duty probes, 24"L—extra length for large samples. Include 5-ft coiled cable. Ideal for use in soft ground and semifrozen materials.					
E	TW-93601-42	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 50 sec 316 SS sheath; Miniconnector	
	TW-93601-44	K	–418 to 1652 (–250 to 900)		
	TW-93601-46	T	–418 to 550 (–250 to 287)		
Food-service probes with hypodermic tip, 4"L. Include 4-ft straight armored cable.					
F	TW-93607-20	J	–310 to 700 (–190 to 371)	Junction: grounded Response time: 10 sec 316 SS sheath; Miniconnector; 316 SS handle	
	TW-93607-22	K	–418 to 700 (–250 to 371)		
	TW-93607-24	T	–418 to 700 (–250 to 371)		
Hypodermic probes, 4"L. Include 4-ft straight PVC-insulated cable and bendable sheath.					
G	TW-08116-65	J	–310 to 700 (–190 to 371)	Junction: grounded Response time: 10 sec 316 SS sheath; Miniconnector; 316 SS handle	
	TW-08117-65	K	–418 to 700 (–250 to 371)		
	TW-08113-65	T	–418 to 700 (–250 to 371)		
Needle microprobes, 0.75"L. Include 5-ft straight PVC-insulated cable. Use for liquids, soft materials, and semisolids.					
H	TW-08505-97	J	–310 to 392 (–190 to 200)	Junction: grounded Response time: 5 sec 316 SS sheath; Miniconnector	
	TW-08505-96	K	–418 to 392 (–250 to 200)		
	TW-08505-95	T	–418 to 392 (–250 to 200)		
Small-diameter hypodermic probes, 2.25"L. Include 2.5-ft straight PTFE-insulated cable. Hypodermic tip penetrates soft or semisoft materials without disturbing large sample areas.					
I	TW-08505-89	J	–310 to 600 (–190 to 315)	Junction: grounded Response time: 5 sec 316 SS sheath; Miniconnector; Miniature handle	
	TW-08505-92	K	–418 to 600 (–250 to 315)		
	TW-08505-93	T	–418 to 600 (–250 to 315)		
Heavy-duty stainless steel probes with T handle, 10"L. Include 4-ft SS armored cable for added durability. Rugged handle is ideal for use with all types of aggregates in the construction industry.					
J	TW-93601-82	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 50 sec 316 SS sheath; Miniconnector	
	TW-93601-84	K	–418 to 1652 (–250 to 900)		
	TW-93601-86	T	–418 to 550 (–250 to 287)		
Heavy-duty stainless steel probes, 6"L. Include 5-ft coiled cable. Use for soft or semisoft materials such as semifrozen meats, liquids, or plastics. Sharp tip penetrates 6".					
K	TW-08517-67	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 30 sec 316 SS sheath; Miniconnector	
	TW-08516-67	K	–418 to 1652 (–250 to 900)		
	TW-08500-67	T	–418 to 550 (–250 to 287)		

†Max error limit: ±7.9°F (±4.4°C) or ±0.4% of reading, above 32°F (0°C). ‡Overall probe sheath lengths may vary up to ±0.25".

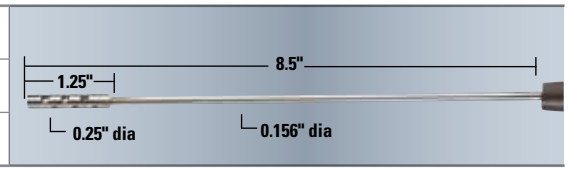
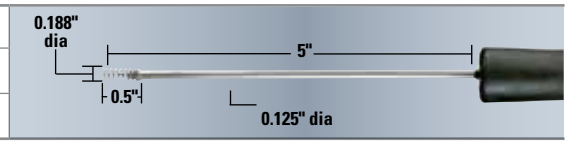


INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

TW-17001-10 NIST-traceable calibration for thermocouple probe

OAKTON® Air/Gas Thermocouple Probes with Miniconnector End

Air/gas probes feature a wire coil or perforated shield to minimize error from radiated heat. Probes include handle with strain relief spring and feature color-coded ANSI miniconnectors: type J—black, type K—yellow, and type T—blue. Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

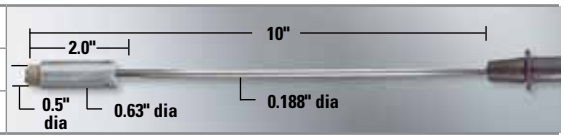
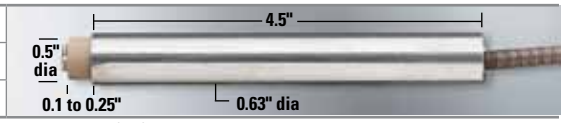
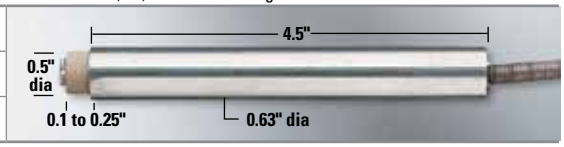
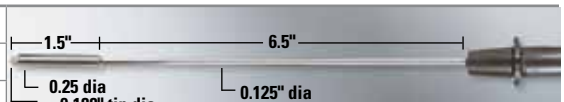
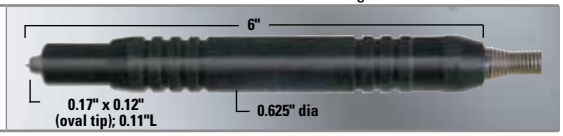
Catalog number	Type	Temperature range °F (°C)	Description	Price	Photo/Dimensions†
General-purpose air/gas probes, 8.5"L; for general-purpose air temperature measurement. Includes 5-ft coiled cable.					
TW-08517-75	J	–310 to 1000 (–190 to 537)	Junction: exposed; isolated Time constant: 45 s at 5 m/s airflow Response time: 225 s at 5 m/s airflow 316 SS sheath and radiation shield Miniconnector; nylon handle		
TW-08516-75	K	–418 to 1000 (–250 to 537)			
TW-08500-75	T	–418 to 1000 (–250 to 537)			
Low-cost air/gas probes, 5"L; for general-purpose air temperature measurement. Includes 5-ft coiled cable.					
TW-08439-90	J	–310 to 572 (–190 to 300)	Junction: exposed; isolated Time constant: 45 s at 5 m/s airflow Response time: 225 s at 5 m/s airflow 304 SS sheath and SS wire coil Miniconnector; nylon handle		
TW-08439-92	K	–418 to 572 (–250 to 300)			
TW-08439-94	T	–418 to 572 (–250 to 300)			

†Overall probe sheath lengths may vary up to ±0.25".

TW-17001-10 **NIST-traceable calibration** for thermocouple probe

OAKTON® Surface Thermocouple Probes with Miniconnector End

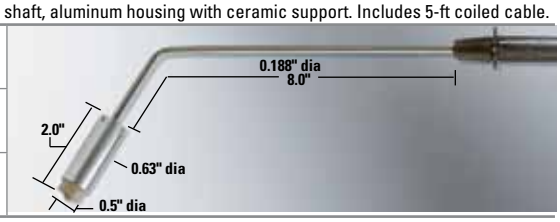
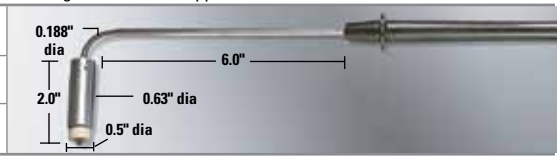
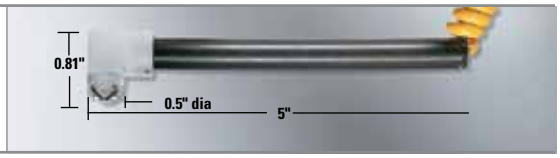
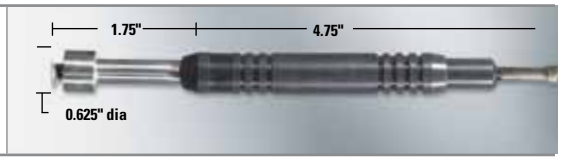
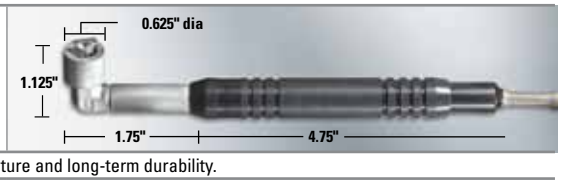
Probes are designed for monitoring a wide range of flat surfaces. Choose from a variety of surface probes—standard, angled for hard-to-reach areas, heavy-duty, or special-purpose surface probes for specific applications. These probes include a handle; strain relief spring on handle protects the cable connection against damage due to repeated flexing and tugging. Probes feature color-coded ANSI miniconnectors for easy identification: type J—black, type K—yellow, type T—blue. Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

Catalog number	Type	Temperature range °F (°C)	Description	Price	Photo/ dimensions†
Standard straight probes, 10"L. Use to monitor such surfaces as hot plates, furnaces, and molds. Exposed junction is isolated from 316 SS shaft and aluminum housing with ceramic support. Includes a 5-ft coiled cable.					
TW-08517-60	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 30 sec 316 SS shaft; aluminum housing Miniconnector; nylon handle		
TW-08516-60	K	–418 to 1200 (–250 to 649)			
TW-08500-60	T	–418 to 650 (–250 to 343)			
Low-cost probes, 4.75"L. Exposed junction is isolated from aluminum housing with ceramic support. Includes a 5-ft coiled cable.					
TW-08439-70	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 30 sec Aluminum housing Miniconnector		
TW-08439-72	K	–418 to 1200 (–250 to 649)			
TW-08439-74‡	T	–418 to 700 (–250 to 371)			
Low-cost probes, 4.75"L. Exposed junction is isolated from aluminum housing with ceramic support. Includes 3-ft stainless steel (SS) braid over fiberglass wire.					
TW-08519-66	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 30 sec Aluminum housing Miniconnector		
TW-08514-66	K	–418 to 1200 (–250 to 649)			
TW-08525-66‡	T	–418 to 750 (–250 to 399)			
Small-diameter probes, 8"L. Small diameter is ideal for confined areas. Exposed junction is isolated from 316 SS shaft and housing with ceramic support. Includes a 5-ft coiled cable.					
TW-08517-62	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 15 sec 316 SS shaft and housing Miniconnector; nylon handle		
TW-08516-62	K	–418 to 1200 (–250 to 649)			
TW-08500-62	T	–418 to 650 (–250 to 343)			
Fast-response probes, 6"L. Ideal for small-scale stationary applications, including electronics. Exposed junction is isolated from 304 SS shaft.Includes a 3-ft straight PVC cable.					
TW-08533-96	K	–418 to 752 (–250 to 400)	Junction: exposed; isolated Response time: 0.5 sec 304 SS tip and shaft Miniconnector; nylon handle		

†Overall probe sheath lengths may vary up to ±0.25". ‡Max. error limit: ±7.9°F (±4.4°C) or ±0.4% of reading, above 32°F (0°C).

OAKTON® Surface Thermocouple Probes with Miniconnector End (continued from page 1751)

Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

Catalog number	Type	Temperature range in °F (°C)	Description	Price	Photo/ dimensions†
45°-angle probes, 10"L. Angled probe for measuring hard-to-reach areas. Exposed junction is isolated from 316 SS shaft, aluminum housing with ceramic support. Includes 5-ft coiled cable.					
TW-08517-61	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 30 sec 316 SS shaft; aluminum housing Miniconnector; nylon handle		
TW-08516-61	K	–418 to 1200 (–250 to 649)			
TW-08500-61	T	–418 to 650 (–250 to 343)			
Compact 90°-angle probes, 8.5"L. Ideal for hard-to-reach areas. Exposed junction is isolated from 316 SS shaft and housing with ceramic support. Includes a 5-ft coiled cable.					
TW-08517-63	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 30 sec 316 SS shaft; aluminum housing Miniconnector; nylon handle		
TW-08516-63	K	–418 to 1200 (–250 to 649)			
TW-08500-63	T	–418 to 650 (–250 to 343)			
90°-angle probes, 8.5"L. Ideal for hard-to-reach areas. Exposed junction is isolated from 316 SS shaft and aluminum housing with ceramic support. Includes a 5-ft coiled cable.					
TW-08517-64	J	–310 to 1200 (–190 to 649)	Junction: exposed; isolated Response time: 30 sec 316 SS shaft; aluminum housing Miniconnector; nylon handle		
TW-08516-64	K	–418 to 1200 (–250 to 649)			
TW-08500-64	T	–418 to 650 (–250 to 343)			
90°-angle probe with guarded tip, 5"L. Ideal for hard-to-reach or difficult-to-contact areas. PTFE-guarded tip protects the exposed junction. Angled probe allows you to take measurements on hard-to-reach surfaces. Includes a 3-ft coiled cable.					
TW-08445-10	K	–418 to 500 (–250 to 260)	Junction: exposed; isolated Response time: 5 sec Guarded tip Miniconnector		
Stainless steel straight guard probes, 6.5"L. Durable precision construction offers high accuracy and extra-fast response—ideal for industrial applications. Exposed junction is isolated by 304 SS guard. Includes a 3-ft straight PVC-insulated cable.					
TW-08447-21	K	–418 to 932 (–250 to 500)	Junction: exposed; isolated Response time: 0.75 sec 304 SS shaft and guard Miniconnector		
Stainless steel 90°-angle guard probes, 6.5"L. Durable precision construction offers high accuracy and extra-fast response—ideal for industrial applications. Exposed junction is isolated by 304 SS guard. Includes a 3-ft straight PVC-insulated cable.					
TW-08447-41	K	–418 to 932 (–250 to 500)	Junction: exposed; isolated Response time: 0.75 sec 304 SS shaft and guard Miniconnector		
Self-adhesive probes, adhere to most surfaces, Kapton®-insulated wire and industrial adhesives for high temperature and long-term durability.					
TW-08519-50	J	–310 to 760 (–190 to 404)	Junction: grounded Response time: 5 sec 316 SS sheath Miniconnector; nylon handle Kapton tape glue is rated to 400°F (204°C)	/ pk of 3	
TW-08519-52	K	–418 to 760 (–250 to 404)		pk of 3	
TW-08519-54	T	–418 to 760 (–250 to 404)		/ pk of 3	

†Overall probe sheath lengths may vary up to ±0.25".

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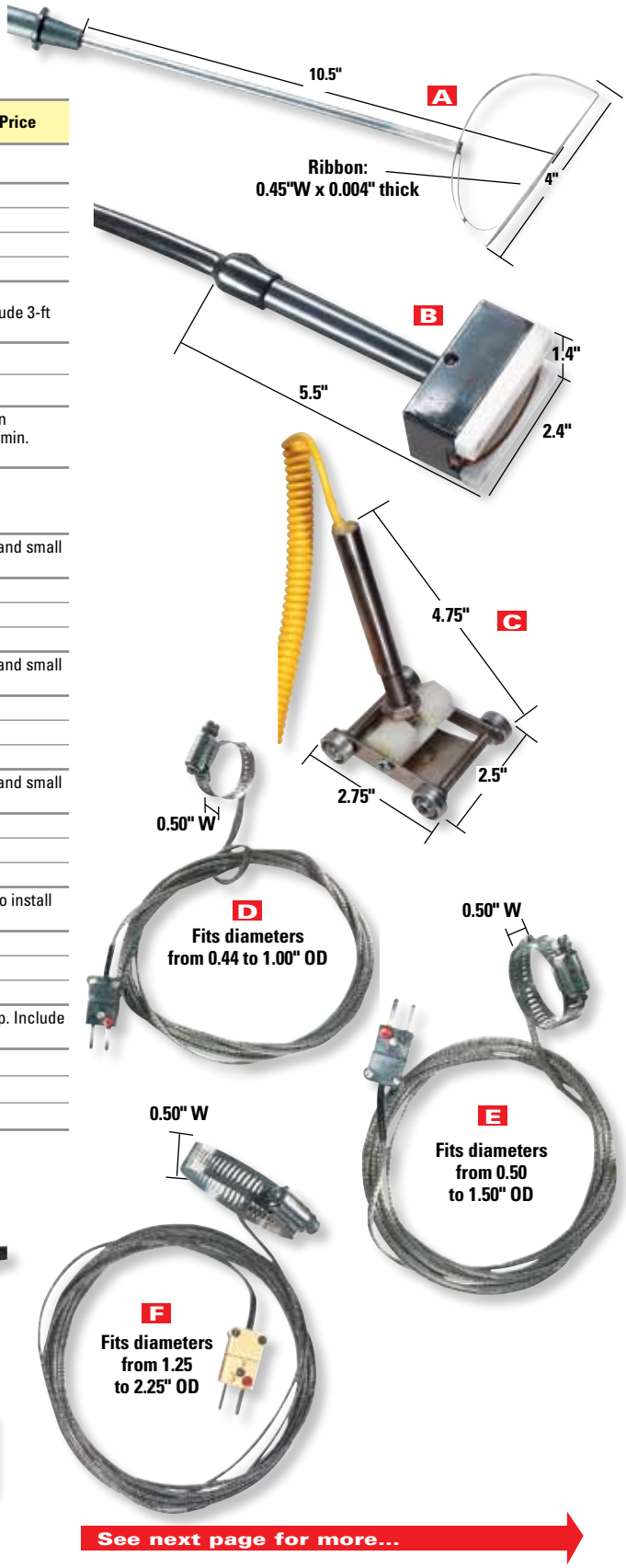
OAKTON® Specialty Surface Thermocouple Probes with Miniconnector End

Probes feature color-coded ANSI miniconnectors for easy identification: type J—black, type K—yellow, type T—blue, and type E—purple. Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

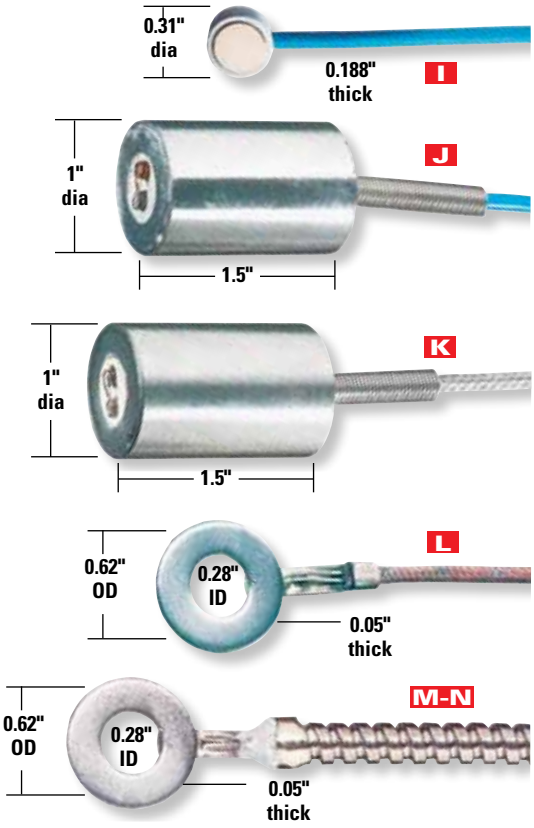
Key	Catalog number	Type	Temperature range °F (°C)	Description	Price
Roller probes, 10.5"L with 4"L bow. Measure moving rollers and similar convex surfaces; feature a ribbon-mounted thermocouple stretched across a C-shaped bow. Include 5-ft coiled cable.					
A	TW-08517-95	J	–310 to 600 (–190 to 316)	Junction: exposed Response time: 75 sec (metals) 304 SS sheath and ribbon Miniconnector	
	TW-08516-95	K	–418 to 932 (–250 to 500)		
	TW-08500-95	T	–418 to 450 (–250 to 232)		
	TW-08512-95	E	–418 to 600 (–250 to 316)		
PTFE moving surface probes, 2.4"L x 1.4"W; for quick, precise temperature measurements of moving or stationary surfaces. Maximum surface speed is 2500 ft/min. PTFE guard protects exposed junction. Include 3-ft SS braided cable.					
B	TW-08533-69	J	–310 to 482 (–190 to 250)	Junction: exposed Response time: 2 sec PTFE guard; Miniconnector	
	TW-08533-63	K	–418 to 482 (–250 to 250)		
Rolling wheel moving surface probe. Measure temperature of rotary and other moving surfaces; use on 7" dia to flat surfaces. Feature adjustable handle for use at any angle. Maximum surface speed is 300 ft/min. Include 3-ft coiled cable.					
C	TW-08445-31	K	–418 to 500 (–250 to 260)	Junction: exposed Response time: 7.5 sec PTFE body; Miniconnector	
Hose clamp probes; fit diameters from 0.44 to 1.00" dia. Durable—permanently install on hoses, piping, and small round vessels. Include 10-ft SS braided cable.					
D	TW-08469-20	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 25 sec 304 SS clamp; Miniconnector	
	TW-08469-22	K	–418 to 900 (–250 to 482)		
	TW-08469-24	T	–418 to 750 (–250 to 399)		
Hose clamp probes; fit diameters from 0.50 to 1.50" OD. Durable—permanently install on hoses, piping, and small round vessels. Include 10-ft SS braided cable.					
E	TW-08469-30	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 25 sec 304 SS clamp; Miniconnector	
	TW-08469-32	K	–418 to 900 (–250 to 482)		
	TW-08469-34	T	–418 to 750 (–250 to 399)		
Hose clamp probes; fit diameters from 1.25 to 2.25" OD. Durable—permanently install on hoses, piping, and small round vessels. Include 10-ft SS braided cable.					
F	TW-08469-40	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 25 sec 304 SS clamp; Miniconnector	
	TW-08469-42	K	–418 to 900 (–250 to 482)		
	TW-08469-44	T	–418 to 750 (–250 to 399)		
Velcro® strap-on probes, 8"L. Temporarily or permanently strap onto tubing or pipes—probes are easy to install and remove. Strap fits diameters from 0.75 to 2.75" OD. Include 10-ft straight PTFE cable.					
G	TW-08469-80	J	–310 to 212 (–190 to 100)	Junction: ungrounded Response time: 300 sec Miniconnector	
	TW-08469-82	K	–418 to 212 (–250 to 100)		
	TW-08469-84	T	–418 to 212 (–250 to 100)		
Alligator clip oven probes, 2"L. Clip onto objects inside ovens. Exposed junction probe is mounted in clip. Include 10-ft 304 SS braid over fiberglass-insulated cable—resists higher temperatures.					
H	TW-08468-20	J	–310 to 650 (–190 to 343)	Junction: exposed Response time: 60 sec Nickel-plated steel clip; Miniconnector	
	TW-08468-22	K	–418 to 650 (–250 to 343)		
	TW-08468-24	T	–418 to 650 (–250 to 343)		

TW-17001-10 NIST-traceable calibration
for thermocouple probe



See next page for more...

OAKTON® Specialty Surface Thermocouple Probes with Miniconnector End (continued from page 1753)



Key	Catalog number	Type	Temperature range °F (°C)	Description	Price
Disc probe; ideal for checking small-surface temperatures. Tape vinyl-insulated 10-kt gold-plated disc sensor onto any flat surface. Includes 5-ft straight PVC-insulated cable.					
I	TW-08506-80	T	–418 to 194 (–250 to 90)	Junction: grounded Response time: 0.75 sec Miniconnector	
Dropping/magnetic probes, 1.5"L. Attach magnetic probe to any flat ferrous surface. Include 5-ft coiled cable.					
J	TW-08517-86	J	–310 to 1200 (–190 to 649)	Junction: exposed Response time: 30 sec Aluminum housing; Miniconnector	
	TW-08516-86	K	–418 to 1200 (–250 to 649)		
	TW-08500-86	T	–418 to 750 (–250 to 399)		
Dropping/magnetic probes, 1.5"L. Attach magnetic probe to any flat ferrous surface. Include 10-ft straight SS braid over fiberglass-insulated wire.					
K	TW-08519-86	J	–310 to 1200 (–190 to 649)	Junction: exposed Response time: 30 sec Aluminum housing; Miniconnector	
	TW-08514-86	K	–418 to 1200 (–250 to 649)		
	TW-08525-86	T	–418 to 750 (–250 to 399)		
Bolt-on probes with fiberglass cable and miniconnector. Use for measuring machinery or mold temperatures. Include 25-ft straight fiberglass cable.					
L	TW-08519-84	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 75 sec 304 SS washer; Miniconnector	
	TW-08514-84	K	–418 to 900 (–250 to 482)		
	TW-08525-84	T	–418 to 750 (–250 to 399)		
Bolt-on probes with SS armored cable and miniconnector. Bolt washer to fixed surfaces for continuous monitoring. Include 5-ft straight 304 SS armor over fiberglass wire.					
M	TW-08517-85	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 75 sec 304 SS washer; Miniconnector	
	TW-08516-85	K	–418 to 900 (–250 to 482)		
	TW-08500-85	T	–418 to 750 (–250 to 399)		
Bolt-on probes with SS armored cable and stripped-end leads. Bolt washer to fixed surfaces for continuous monitoring. Include 5-ft straight 304 SS armor over fiberglass wire.					
N	TW-08519-85	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 75 sec 304 SS washer	
	TW-08514-85	K	–418 to 900 (–250 to 482)		
	TW-08525-85	T	–418 to 750 (–250 to 399)		

TW-17001-10 **NIST-traceable calibration** for thermocouple probe

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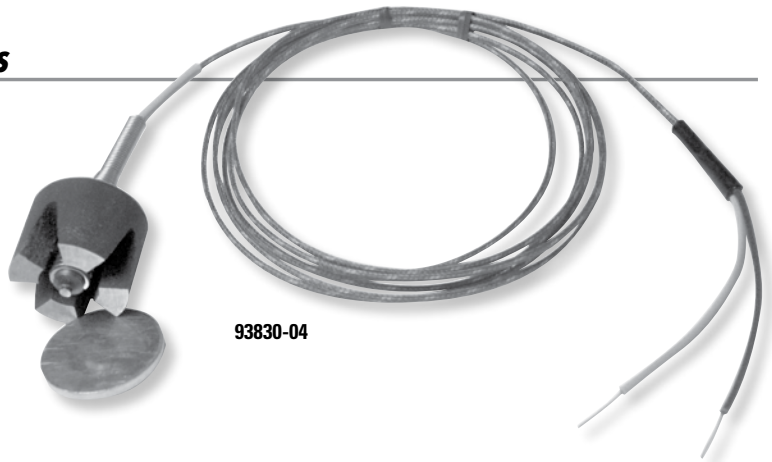
Magne-Couple Industrial Thermocouple Probes

Ruggedly designed for industrial use, but versatile for use in most applications

Magne-Couple thermocouple probes are designed for temporary surface monitoring of any ferrous surface. They attach to the surface by utilizing a powerful Alnico Magnet with a holding force of 16 lb. The magnet forces the spring loaded sensing tip into contact with the surface being monitored. Probes are capable of withstanding up to 1000°F without degradation.



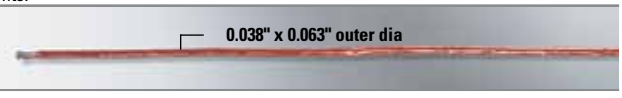
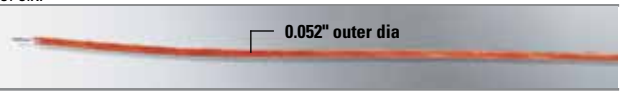
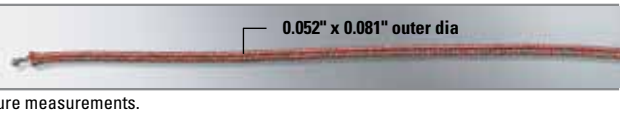
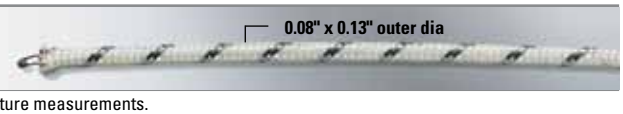
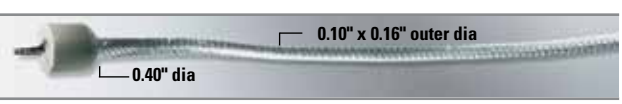
Catalog number	Type	Temperature range	Magnet strength	Termination	Price
TW-93830-04	J	32 to 1000°F (0 to 537°C)	16 lb	6-ft lead with 3" pigtail	
TW-93830-05	K				

TW-17001-10 **NIST-traceable calibration** for thermocouple probe

OAKTON® Flexible Insulated-Wire Thermocouple Probes with Miniconnector

All insulated-wire probes include straight insulated cable with no handle and feature ANSI color-coded miniconnectors: type J—black, type K—yellow, and type T—blue. Fiberglass- and ceramic-insulated probes have exposed junctions; use for high-temperature applications.

Note: Exposed-junction probes are not recommended for use with aqueous solutions. Do not subject type J exposed-junction probes to moisture—iron wire will rust.

Catalog number	Type	Temperature range °F (°C)	Description	Price	Photos/ dimensions
PVC-insulated probe with PVC-coated tip, 24-gauge (0.020" dia) wire; 5-ft L; short-term immersible.					
TW-08505-90	T	–418 to 257 (–250 to 125)	Junction: ungrounded Response time: 18 sec		
PVC-insulated probes with PVC-coated tip, 20-gauge (0.032" dia) wire; 10-ft L; short-term immersible.					
TW-08466-02	J	–310 to 221 (–190 to 105)	Junction: ungrounded Response time: 25 sec		
TW-08466-04	K	–418 to 221 (–250 to 105)			
TW-08466-06	T	–418 to 221 (–250 to 105)			
PVC-insulated probes, 24-gauge (0.020" dia) wire; 3-ft L; includes rubber strain relief.					
TW-08515-00	J	–310 to 221 (–190 to 105)	Junction: exposed Response time: 15 sec		
TW-08515-01	K	–418 to 221 (–250 to 105)			
TW-08515-02	T	–418 to 221 (–250 to 105)			
Fine-gauge PTFE-insulated probe, 0.025" outer dia; 3-ft L. Tissue implantable microprobe; for semisolids. Includes five 18-gauge hypodermic needles.					
TW-08506-75	T	–492 to 300 (–273 to 150)	Junction: ungrounded Response time: 0.5 sec		
Quick-response PFA-insulated probe, 40-gauge (0.003" dia) wire, 0.009" outer dia; 3-ft L.Tissue implantable microprobe; for semisolids. Includes five 23-gauge hypodermic needles.					
TW-08506-70	T	–492 to 300 (–273 to 150)	Junction: ungrounded Response time: 0.025 sec		
FEP-insulated probes with PTFE-coated junction, 24-gauge (0.020" dia) wire; 10-ft L; long-term immersible.					
TW-08466-81	J	–310 to 400 (–190 to 204)	Junction: ungrounded Response time: 15 sec		
TW-08466-82	K	–418 to 400 (–250 to 204)			
TW-08466-83	T	–418 to 400 (–250 to 204)			
FEP-insulated probes, 24-gauge (0.020" dia) wire; 10-ft L.					
TW-08516-81	J	–310 to 400 (–190 to 204)	Junction: exposed Response time: 15 sec		
TW-08516-82	K	–418 to 400 (–250 to 204)			
TW-08516-83	T	–418 to 400 (–250 to 204)			
Kapton®-insulated probe, 24-gauge (0.020" dia) wire; 10-ft L. Ideal for multipoint temperature measurements.					
TW-08517-90	J	–310 to 600 (–190 to 315)	Junction: exposed Response time: 15 sec		
Kapton®-insulated probes, 30-gauge (0.010" dia) wire; 5-ft L. Ideal for checking food temperatures. Pack of six.					
TW-08505-87	J	–310 to 759 (–190 to 404)	Junction: exposed Response time: 0.5 sec		
TW-08505-86	K	–418 to 759 (–250 to 404)			
TW-08505-85	T	–418 to 759 (–250 to 404)			
Fiberglass-insulated probes, 24-gauge (0.020" dia) wire; 10-ft L. Use for high-temperature measurements.					
TW-08512-81	J	–310 to 900 (–190 to 482)	Junction: exposed Response time: 15 sec		
TW-08512-82	K	–418 to 900 (–250 to 482)			
TW-08512-83	T	–418 to 750 (–250 to 400)			
High-temperature fiberglass-insulated probes, 20-gauge (0.032" dia) wire, 10-ft L. Use for high-temperature measurements.					
TW-08467-22	J	–418 to 1300 (–250 to 704)	Junction: exposed Response time: 15 sec		
TW-08467-24	K	–418 to 1300 (–250 to 704)			
High-temperature ceramic fiber-insulated probe, 20-gauge (0.032" dia) wire, 5-ft L. Use for high-temperature measurements. (Ceramic fiber cannot be handled after 800°F [426°C] due to flaking of insulation).					
TW-08467-64	K	–418 to 2500 (–250 to 1400) Response time: 15 sec	Junction: exposed		

TW-17001-10 **NIST-traceable calibration** for thermocouple probe

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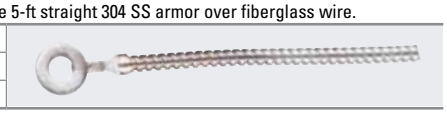
TW-17001-10 **NIST-traceable calibration** for thermocouple probe

OAKTON® Flexible, Insulated Wire Thermocouple Probes with Stripped Ends

Catalog number	Type	Temperature range °F (°C)	Description	Price	Photo
PVC-insulated probe with PVC-coated tip, 10-ft L; 20-gauge; short-term immersible					
TW-08113-15	J	–310 to 221 (–190 to 105)	Junction: Ungrounded Response time: 25 sec.		
TW-08113-16	K	–418 to 221 (–250 to 105)			
TW-08113-17	T	–418 to 221 (–250 to 105)			
PVC-insulated probe with exposed tip, 10-ft L; 20-gauge; quick response time					
TW-08113-18	J	–310 to 221 (–190 to 105)	Junction: Exposed Response time: 15 sec		
TW-08113-19	K	–418 to 221 (–250 to 105)			
TW-08113-20	T	–418 to 221 (–250 to 105)			
PTFE-insulated probe with PTFE-coated tip, 10-ft L; 20-gauge; long-term immersion, corrosion resistant, higher temperature use					
TW-08113-21	J	–310 to 400 (–190 to 204)	Junction: Ungrounded Response time: 15 sec		
TW-08113-22	T	–418 to 400 (–250 to 204)			
TW-08113-23	K	–418 to 400 (–250 to 204)			
PTFE-insulated probe with exposed tip, 10-ft L; 20-gauge; corrosion resistant, quick response time, higher temperature use					
TW-08113-24	J	–310 to 400 (–190 to 204)	Junction: Exposed Response time: 15 sec		
TW-08113-25	K	0 to 400 (–17 to 204)			
TW-08113-26	T	–418 to 400 (–250 to 204)			
PTFE-insulated probe, 3-ft L; 40-gauge (fine); implant in semisolids, higher temperature range. Five 40-gauge needles included					
TW-08113-27	J	–310 to 400 (–190 to 204)	Junction: Ungrounded Response time: 0.025 sec		
TW-08113-28	K	–418 to 400 (–250 to 204)			
PTFE-insulated probe, 3-ft L; 40-gauge (fine); implant in semisolids, higher temperature range. Five 23-gauge needles included					
TW-08113-29	T	–418 to 400 (–250 to 204)	Junction: Ungrounded Response time: 0.025 sec		
High-temperature fiberglass-insulated probe with exposed tip, 10-ft L; use for high-temperature measurement					
TW-08113-30	J	–418 to 1300 (–250 to 704)	Junction: Exposed Response time: 15 sec		
TW-08113-31	K	–418 to 1300 (–250 to 704)			
Bolt-on probes with SS armored cable and stripped-end leads. Bolt washer to fixed surfaces for continuous monitoring. Include 5-ft straight 304 SS armor over fiberglass wire.					
TW-08519-85	J	–310 to 900 (–190 to 482)	Junction: Grounded Response time: 75 sec 304 SS washer		
TW-08514-85	K	0 to 900 (–17 to 482)			
TW-08525-85	T	0 to 750 (–17 to 399)			

Find MORE!

Connectors withstand continuous temperatures up to 350°F (177°C) and maximum temperature of 400°F (204°C). Feature glass-filled nylon casing with finger grips and polarity indicators; negative terminals are marked with red discs for easy identification. See **page 1768** for ordering information.


Type K miniconnector


Type J standard connector

OAKTON® Fine-Gauge Probes with Bare Wire Ends

Fine-gauge, bare-wire probes with 0.005" and 0.010" diameters provide quick temperature measurements (time constant typically less than 0.3 seconds). Larger probes with 0.020", and 0.032" diameters ensure long-term durability but have a slower response time (time constant typically 1.5 seconds or less). Probes feature beaded junctions and 12" leads. (Connectors sold separately on page 1768). The negative lead is slightly shorter than the positive lead for easy identification. Probes come in packs of five.

Note: Probes have no insulation. Keep wires from touching or insulate to prevent a false junction.

Catalog number	Sheath dia	Resistance at 68°F (20°C)	Time constant	Response time	Price/ pk of 5
Type J†; temp range is 32 to 900°F (0 to 482°C)					
TW-08419-06	0.005"	14.20 Ω	0.10 sec	0.5 sec	
TW-08419-07	0.010"	3.551 Ω	0.15 sec	0.8 sec	
TW-08419-09	0.020"	0.878 Ω	0.3 sec	1.5 sec	
TW-08419-10	0.032"	0.357 Ω	0.6 sec	3.0 sec	
Type K; temp range is –328 to 1800°F (–200 to 982°C)					
TW-08419-01	0.005"	24.08 Ω	0.10 sec	0.5 sec	
TW-08419-02	0.010"	5.984 Ω	0.15 sec	0.8 sec	
TW-08419-04	0.020"	1.490 Ω	0.3 sec	1.5 sec	
TW-08419-05	0.032"	0.568 Ω	0.6 sec	3.0 sec	
Type T; temp range is –418 to 750°F (–250 to 399°C)					
TW-08419-41	0.005"	12.22 Ω	0.10 sec	0.5 sec	
TW-08419-42	0.010"	3.043 Ω	0.15 sec	0.8 sec	
TW-08419-44	0.020"	0.754 Ω	0.3 sec	1.5 sec	
TW-08419-45	0.032"	0.297 Ω	0.6 sec	3.0 sec	

†Not recommended for use with aqueous solutions.

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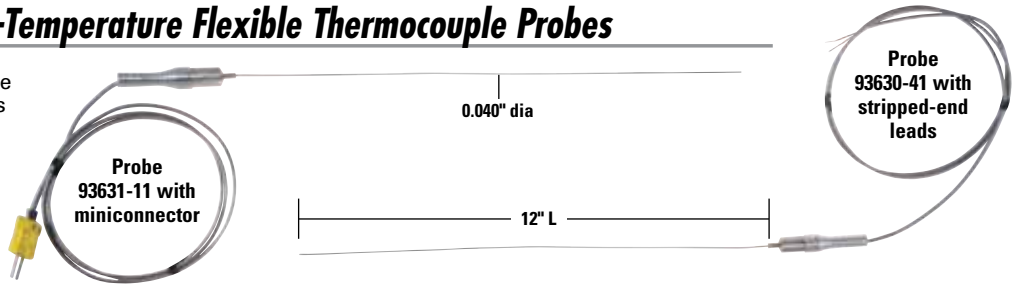
TW-17001-10 **NIST-traceable calibration** for thermocouple probe

OAKTON® Industrial High-Temperature Flexible Thermocouple Probes

Use high-temperature probes to measure temperature in tight places. Bend probes around pipe diameters as small as twice the sheath diameter to easily determine your pipe temperature. Probes are tightly packed with powdered MgO in 12" or 25"L sheaths. Type J and type K probes feature Inconel® sheaths; type T probes feature 316 stainless steel sheaths. Probes include 3-ft stranded 24-gauge (0.020" dia) fiberglass wire with stainless steel overbraid.
Note: Type J exposed junction probes are not recommended for use with aqueous solutions. Temperature range is for the probe only. Extension wire has a maximum temperature of 500°F (260°C) before being affected.

Temperature Range

Type	0.020" and 0.040" dia probes	0.063" dia probes
J	–300 to 500°F (–185 to 260°C)	–310 to 825°F (–190 to 440°C)
K	–418 to 1290°F (–250 to 700°C)	–418 to 1690°F (–250 to 920°C)
T	–418 to 500°F (–250 to 260°C)	–418 to 500°F (–250 to 260°C)



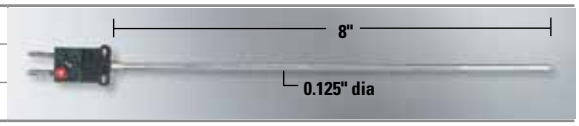
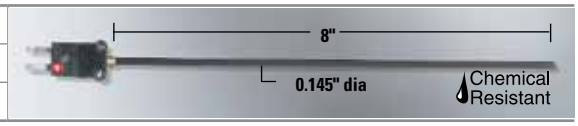
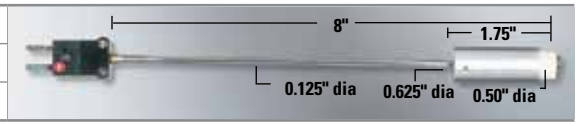
Sheath diameter	Junction	Response time	Type J Cat. no.	Type J Price	Type K Cat. no.	Type K Price	Type T Cat. no.	Type T Price
12" L probes with miniconnector								
0.020" (0.5 mm)	Exposed	0.7 sec	TW-93630-00†		TW-93631-00		TW-93632-00	
	Grounded	2 sec	TW-93630-01		TW-93631-01		TW-93632-01	
	Ungrounded	3 sec	TW-93630-02		TW-93631-02		TW-93632-02	
0.040" (1 mm)	Exposed	1.5 sec	TW-93630-10†		TW-93631-10		TW-93632-10	
	Grounded	5 sec	TW-93630-11		TW-93631-11		TW-93632-11	
	Ungrounded	7.5 sec	TW-93630-12		TW-93631-12		TW-93632-12	
12" L probes with stripped ends								
0.040" (1 mm)	Grounded	5 sec	TW-93630-41		TW-93631-41		TW-93632-41	
	Ungrounded	7.5 sec	TW-93630-42		TW-93631-42		TW-93632-42	
25" L probes with miniconnector								
0.063" (1.6 mm)	Exposed	3 sec	TW-93630-20†		TW-93631-20		TW-93632-20	
	Grounded	10 sec	TW-93630-21		TW-93631-21		TW-93632-21	
	Ungrounded	15 sec	TW-93630-22		TW-93631-22		TW-93632-22	
25" L probes with stripped ends								
0.063" (1.6 mm)	Grounded	10 sec	TW-93630-51		TW-93631-51		TW-93632-51	
	Ungrounded	15 sec	TW-93630-52		TW-93631-52		TW-93632-52	

†Not recommended for use with aqueous solutions.

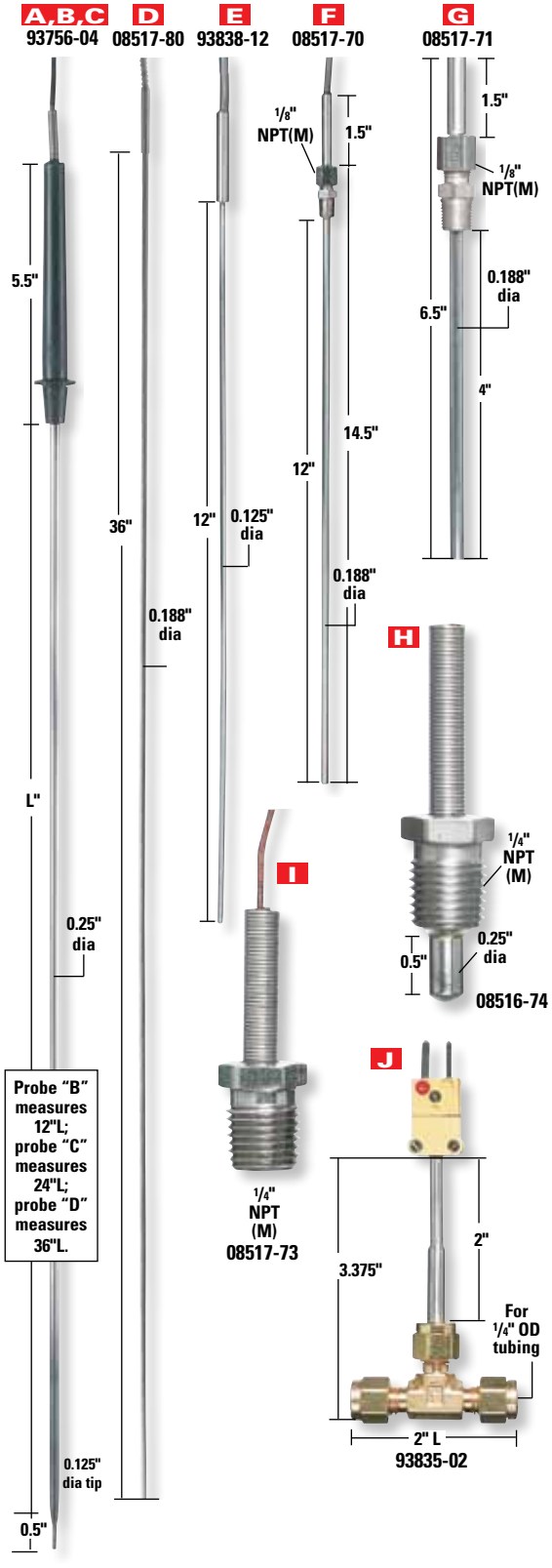
TW-17001-10 **NIST-traceable calibration** for thermocouple probe

OAKTON® Industrial Detachable Thermocouple Probes

Detachable Probes attach directly to your meter. Easily connect probes to a handle. Select a general-purpose, penetration, surface, or air/gas probe. All probes have ANSI color-coded miniconnectors—type J are black, type K are yellow, and type T are blue.

Catalog number	Type	Temperature range in °F (°C)	Description	Price	Photo/dimensions†
General-purpose probes, 8"L. Use with liquids, gases, and semisolids.					
TW-08116-40	J	–310 to 1200 (–190 to 649)	Junction: grounded Time constant: 6 sec Response time: 30 sec 316 SS sheath		
TW-08117-40	K	–418 to 1200 (–250 to 649)			
TW-08113-40	T	–418 to 750 (–250 to 399)			
General-purpose PFA-coated probes, 8"L. Use with corrosive materials.					
TW-93810-00	J	–310 to 500 (–190 to 260)	Junction: grounded Time constant: 7 sec Response time: 35 sec 316 SS sheath; 0.010" thick PFA		
TW-93810-02	K	–418 to 500 (–250 to 260)			
TW-93810-04	T	–418 to 500 (–250 to 260)			
Penetration probes, 4"L. Use for internal temperature measurements—ideal for meat, food products, and semisoft materials.					
TW-08116-45	J	–310 to 800 (–190 to 427)	Junction: grounded Time constant: 6 sec Response time: 30 sec 316 SS sheath		
TW-08117-45	K	–418 to 800 (–250 to 427)			
TW-08113-45	T	–418 to 750 (–250 to 399)			
Surface probes, 8"L. Use on surfaces by direct contact with exposed spring-loaded junction.					
TW-08116-50	J	–310 to 1200 (–190 to 649)	Junction: exposed Time constant: 6 sec Response time: 30 sec 316 SS sheath; aluminum housing		
TW-08117-50	K	–418 to 1200 (–250 to 649)			
TW-08113-50	T	–418 to 750 (–250 to 399)			
Air/gas probes, 8"L. Use to measure temperature of air or gas. Polyurethane-coated junction is isolated by sheath and shield.					
TW-08116-55	J	–310 to 572 (–190 to 300)	Junction: exposed Time constant: 45 s at 5 m/s airflow Response time: 225 s at 5 m/s airflow 316 SS sheath and radiation shield		
TW-08117-55	K	–418 to 572 (–250 to 300)			
TW-08113-55	T	–418 to 572 (–250 to 300)			

†Overall probe sheath lengths may vary up to ±0.25".



OAKTON® General-Purpose Specialty Thermocouple Probes with Miniconnector End

All general-purpose specialty probes feature color-coded ANSI miniconnectors for easy identification: type J—black, type K—yellow, type T—blue, and type R/S—green. Temperature range is for the probe only. Probes with a plastic handle have a maximum temperature of 275°F (135°C) before being affected.

Key	Catalog number	Type	Temperature range°F (°C)	Description	Price
Heavy-duty probes, 12" L. Include a 5-ft coiled cable.					
A	TW-93756-03	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 15 sec 316 SS sheath; Miniconnector Glass-filled nylon handle	
	TW-93756-23	K	–418 to 1650 (–250 to 899)		
	TW-93756-63	T	–418 to 752 (–250 to 400)		
Heavy-duty probes, 24"L. Include 5-ft coiled cable.					
B	TW-93756-04	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 15 sec 316 SS sheath; Miniconnector; Glass-filled nylon handle	
	TW-93756-24	K	–418 to 1650 (–250 to 899)		
	TW-93756-44	T	–418 to 752 (–250 to 400)		
Heavy-duty probes, 36"L. Include 5-ft coiled cable.					
C	TW-93756-06	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 15 sec 316 SS sheath; Miniconnector; Glass-filled nylon handle	
	TW-93756-26	K	–418 to 1650 (–250 to 899)		
	TW-93756-46	T	–418 to 752 (–250 to 400)		
Heavy-duty industrial probes, 36" L, MgO-insulated Inconel 600 sheath; for industrial furnaces—use with tongs or insulated gloves. Include 304 SS transition joint and 3-ft 304 SS-armored cable.					
D	TW-08517-80	J	–310 to 1400 (–190 to 760)	Junction: grounded Response time: 15 sec (solids) Inconel® 600 sheath†; Miniconnector	
	TW-08516-80	K	–418 to 1700 (–250 to 927)		
	TW-08500-80	T	–418 to 752 (–250 to 400)		
Type R and type S probes, 12"L. Include SS transition joint and 3-ft straight PVC-insulated cable.					
E	TW-93838-12	R	600 to 2100 (316 to 1149); Intermittent use to 2500 (1371)	Junction: ungrounded Response time: 50 sec 310 SS sheath; Miniconnector	
	TW-93839-12	S			
Pipe-fitting probes, 12" immersion depth. Use for pressurized chambers and pipelines—adjust immersion depth using compression fitting. Withstand pressures to 2000 psi at 1000°F (538°C). Include 6-ft straight fiberglass/fiberglass-insulated, 24-gauge cable and ⅛" NPT(M) 316 stainless steel compression fitting.					
F	TW-08517-70	J	–310 to 1600 (–190 to 871)	Junction: grounded Response time: 45 sec (liquids) Inconel 600 sheath†; Miniconnector	
	TW-08516-70	K	–418 to 2012 (–250 to 1100)		
	TW-08500-70	T	–418 to 750 (–250 to 399)		
Pipe-fitting probes, 4" immersion depth. Use for pressurized chambers and pipelines—adjust immersion depth using compression fitting. Withstand pressures to 2000 psi at 1000°F (538°C). Include 6-ft straight fiberglass-insulated, 24-gauge cable and ⅛" NPT(M) 316 stainless steel compression fitting.					
G	TW-08517-71	J	–310 to 1600 (–190 to 871)	Junction: grounded Response time: 45 sec (liquids) Inconel 600 sheath†; Miniconnector	
	TW-08516-71	K	–418 to 2012 (–250 to 1100)		
	TW-08500-71	T	–418 to 750 (–250 to 399)		
Pipe-plug probes—¼" NPT(M). Use wherever space is limited; sheath extends 0.5" past the end of the pipe plug for fast response. Withstand pressures to 2000 psi at ambient temperatures. Include 5-ft straight fiberglass-insulated, 24-gauge cable.					
H	TW-08517-74	J	–310 to 900 (–190 to 482)	Junction: grounded Response time: 30 sec 316 SS sheath; Miniconnector	
	TW-08516-74	K	–418 to 900 (–250 to 482)		
	TW-08500-74	T	–418 to 700 (–250 to 371)		
Pipe-plug probes—¼" NPT(M). Use where space is limited. Withstand pressures to 100 psi at ambient temperatures. Epoxy-potted junction. Include 5-ft straight fiberglass-insulated, 24-gauge cable.					
I	TW-08517-73	J	–310 to 221 (–190 to 105)	Junction: ungrounded Response time: 50 sec Miniconnector	
	TW-08516-73	K	–418 to 221 (–250 to 105)		
	TW-08500-73	T	–418 to 221 (–250 to 105)		
Flow-through probes. Connect to ¼" OD tubing systems. Use with clean fluids at flow rates up to 50 liters per minute; withstand pressure to 250 psi. Includes brass union tee.					
J	TW-93835-02	K	–418 to 500 (–250 to 260)	Junction: grounded Response time: 10 sec 316 SS sheath; Miniconnector	

†Type J and K probes have Inconel sheaths; type T probes have 316 SS sheaths.

INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

TW-17001-10 **NIST-traceable calibration** for thermocouple probe

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Cole-Parmer® Twin Temp Industrial Thermocouple Probes

Critical process data can be captured remotely while still allowing local monitoring by the operator

Twin Temp thermometers are the perfect solution for systems requiring local and remote temperature readings. Local readings are provided by an analog gauge. The remote reading is achieved by a continuous 4 to 20 mA output signal. All sensors are located in the thermometer stem and will easily fit into existing bimetal thermowells of corresponding length. Housing is manufactured of rugged 304 stainless steel and is guaranteed to be hermetically sealed to prevent fogging.


98940-72

Specifications

7 year warranty

Accuracy: ±1% full-scale
Probe: type K thermocouple
Output: 4 to 20 mA
Materials: 304 SS dial and stem, glass lens, cast iron case
Dimensions: ¼"-dia stem, 3"-dia dial
Connection: ½" NPT(M)

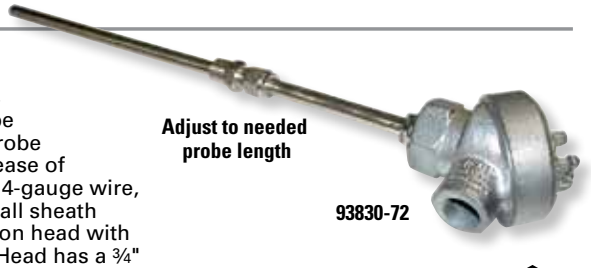
Catalog number	Stem length	Temperature range	Price
TW-98940-71	2.5"	0 to 250°F (–20 to 120°C)	
TW-98940-72	4"		
TW-98940-73	6"		
TW-98940-74	9"		
TW-98940-75	12"		
TW-98940-76	2.5"	50 to 500°F (–10 to 260°C)	
TW-98940-77	4"		
TW-98940-78	6"		
TW-98940-79	9"		
TW-98940-80	12"		

Note: Other configurations are available; contact our Application Specialists for details.

Uniwell Universal Industrial Thermocouple Probes

Unique compression fitting design allows for customized probe length

The Uniwell eliminates the need for thermowells and spring-loaded probes. Comes equipped with a unique adjustable ½" NPT compression fitting that allows the probe to be customized to the required insertion length. Plus you can directly insert the probe into the medium being measured without the use of a thermowell. This allows for ease of installation where a thermowell is not required. The probe's conductor is made of 14-gauge wire, is encased with magnesium oxide insulation, and has a 446 stainless steel heavy-wall sheath producing an increased life span. Probes feature a standard size aluminum protection head with a gasketed cap to seal out dust and moisture, and house a ceramic terminal block. Head has a ¾" NPT(F) opening on the side for easy connection to electrical conduit.



93830-72

FM APPROVED

Junction type	Head material	Process connection	Probe length†	Adjustable insertion length‡	Type J probes			Type K probes		
					Catalog number	Temperature range	Price	Catalog number	Temperature range	Price
Grounded	Cast iron	½" NPT	6"	2.5" to 4"	TW-93830-72	32 to 1400°F (0 to 760°C)		TW-93830-73	32 to 2000°F (0 to 1093°C)	
			12"	2.5" to 10"	TW-93830-74			TW-93830-75		
			24"	2.5" to 22"	TW-93830-76			TW-93830-77		

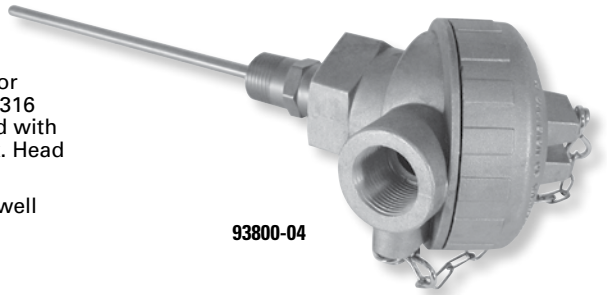
†If more than 20% of probe length including the head is outside of the media, additional structural support may be needed.
‡Once the Uniwell fitting is compressed, the probe is no longer adjustable. **Note:** Other configurations are available; contact our Application Specialists for details.

Industrial Thermocouple Probes

Available in spring-loaded and non-spring-loaded styles

Thermocouple probes are ideal for use in industrial applications, chemical processes, production lines, ovens, furnaces, and vessels. The probe's conductor is made of 18-gauge wire encased with magnesium oxide insulation and has a 316 stainless steel sheath. Probes feature a standard size aluminum protection head with gasketed cap to seal out dust and moisture and house a ceramic terminal block. Head has a ¾" NPT(F) opening on the side for easy connection to electrical conduit.

Spring-loaded probes are designed to bottom out when inserted into a thermowell to produce an accurate reading; not designed for direct insertion in to medium. Non-spring-loaded probes are designed to be directly inserted into the medium being measured without the use of a thermowell.


93800-04

Junction type	Head material	Process connection	Sheath dia	Sheath material	Spring loading	Type J probes			Type K probes		
						Catalog number	Temperature range	Price	Catalog number	Temperature range	Price
4" stem length											
Ungrounded	Cast iron	½" NPT(F)	¼"	316 SS	No	TW-93800-04	32 to 1330°F (0 to 732°C)		TW-93800-10	32 to 1650°F (0 to 898°C)	
					Yes	TW-93800-07			TW-93800-13		
6" stem length											
Ungrounded	Cast iron	½" NPT(F)	¼"	316 SS	No	TW-93800-05	32 to 1330°F (0 to 732°C)		TW-93800-11	32 to 1650°F (0 to 898°C)	
					Yes	TW-93800-08			TW-93800-14		
12" stem length											
Ungrounded	Cast iron	½" NPT(F)	¼"	316 SS	No	TW-93800-06	32 to 1330°F (0 to 732°C)		TW-93800-12	32 to 1650°F (0 to 898°C)	
					Yes	TW-93800-09			TW-93800-15		

Note: Other configurations are available; contact our Application Specialists for details.

Industrial Thermocouple Probes with Thermowell

Convenient "all-in-one" assembly includes industrial probe head, element, and thermowell

Thermocouple probes assemblies are ideal for use in industrial applications, chemical processes, production lines, ovens, furnaces, and vessels. The probe conductor is made of 20-gauge wire encased by ceramic insulators, along with a standard-size aluminum protection head. Probe features a gasketed cap to seal out dust and moisture, and houses a ceramic terminal block. Head has a ¾" NPT(F) opening on the side for easy connection to electrical conduit. The 316 stainless steel thermowell is included in the assembly and is ideal for applications where removing the probe without draining the vessel is necessary.

Replacement thermocouple elements are sold separately below; replacement thermocouple probe assemblies are on page 1759; replacement thermowells are on page 1767.

93830-52

Pressure Ratings (psig)

Material	Temperature						
	70°F	200°F	400°F	600°F	800°F	1000°F	1200°F
316 SS	7000	7000	6400	6200	6100	5100	2500

Junction type	Head material	Thermowell Specifications†					Type J			Type K		
		Process connection (P)	Shank dia (Q)	Shank dia (tip)	Insert depth (U)	Material	Catalog number	Temperature range	Price	Catalog number	Temperature range	Price
4" stem length (probe depth "A")												
Grounded	Cast iron	½" NPT(F)	⅝"	½"	2½"	316 SS	TW-93830-48	32 to 1400°F (0 to 760°C)		TW-93830-40	32 to 1600°F (0 to 871°C)	
		¾" NPT(F)	¾"				TW-93830-52			TW-93830-44		
Ungrounded	Cast iron	½" NPT(F)	⅝"	½"	2½"	316 SS	TW-93830-64			TW-93830-56		
		¾" NPT(F)	¾"				TW-93830-68			TW-93830-60		
6" stem length (probe depth "A")												
Grounded	Cast iron	½" NPT(F)	⅝"	½"	4½"	316 SS	TW-93830-49	32 to 1400°F (0 to 760°C)		TW-93830-41	32 to 1600°F (0 to 871°C)	
		¾" NPT(F)	¾"				TW-93830-53			TW-93830-45		
Ungrounded	Cast iron	½" NPT(F)	⅝"	½"	4½"	316 SS	TW-93830-65			TW-93830-57		
		¾" NPT(F)	¾"				TW-93830-69			TW-93830-61		
9" stem length (probe depth "A")												
Grounded	Cast iron	½" NPT(F)	⅝"	½"	7½"	316 SS	TW-93830-50	32 to 1400°F (0 to 760°C)		TW-93830-42	32 to 1600°F (0 to 871°C)	
		¾" NPT(F)	¾"				TW-93830-54			TW-93830-46		
Ungrounded	Cast iron	½" NPT(F)	⅝"	½"	7½"	316 SS	TW-93830-66			TW-93830-58		
		¾" NPT(F)	¾"				TW-93830-70			TW-93830-62		
12" stem length (probe depth "A")												
Grounded	Cast iron	½" NPT(F)	⅝"	½"	10½"	316 SS	TW-93830-51	32 to 1400°F (0 to 760°C)		TW-93830-43	32 to 1600°F (0 to 871°C)	
		¾" NPT(F)	¾"				TW-93830-55			TW-93830-47		
Ungrounded	Cast iron	½" NPT(F)	⅝"	½"	10½"	316 SS	TW-93830-67			TW-93830-59		
		¾" NPT(F)	¾"				TW-93830-71			TW-93830-63		

Note: Other configurations are available; contact our Application Specialists for details.
† See page 1752 for thermowell specification diagram.

Industrial Thermocouple Elements

Heavy-duty construction for high temperature use

Elements within an industrial thermocouple that includes a thermowell deteriorate over time and can be replaced as a more cost-effective solution. Each replacement element is made of 20-gauge wire and encased with ceramic insulators for a greater degree of protection.

93605-41

Specifications

Temperature range
Type J: 32 to 1400°F (–2 to 760°C)
Type K: 32 to 2300°F (–2 to 1260°C)

Temperature accuracy: ±4°F (±2°C)
Junction type: exposed

Wire gauge of element	Length	Type J		Type K	
		Catalog number	Price	Catalog number	Price
20	4"	TW-93605-45		TW-93605-41	
20	6"	TW-93605-46		TW-93605-42	
20	9"	TW-93605-47		TW-93605-43	
20	12"	TW-93605-48		TW-93605-44	

Note: Other gauge sizes and lengths are available; contact our Application Specialists for details.

TECHNICAL info!

Types of junctions...

Exposed junction probes have the fastest response time. Do not use with corrosive fluids or atmospheres.

Grounded junction probes have a junction welded to the tip of the sheath.

Ungrounded junction probes have a junction insulated from sheath. Use in electrically noisy environments.

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

TW-17001-10 **NIST-traceable calibration** for thermocouple probe

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Industrial Probe Accessories

A Thermocouple Connectors

Connectors withstand continuous temperature of 350°F (177°C) and maximum temperature of 400°F (204°C). Feature glass-filled nylon casing with finger grips and polarity indicators; negative terminals are marked with red discs for easy identification. Miniconnectors accept miniature cable clamps and cable up to 20 gauge; standard connectors accept standard cable clamps and cable up to 16 gauge.

Type	Connection	Color	Miniconnectors				Standard connectors			
			Pack of 10		Pack of 100		Pack of 10		Pack of 100	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
J	Plug	Black	TW-93840-50		TW-93841-50		TW-93840-60		TW-93841-60	
J	Jack	Black	TW-93840-51		TW-93841-51		TW-93840-61		TW-93841-61	
K	Plug	Yellow	TW-93840-52		TW-93841-52		TW-93840-62		TW-93841-62	
K	Jack	Yellow	TW-93840-53		TW-93841-53		TW-93840-63		TW-93841-63	
T	Plug	Blue	TW-93840-54		TW-93841-54		TW-93840-64		TW-93841-64	
T	Jack	Blue	TW-93840-55		TW-93841-55		TW-93840-65		TW-93841-65	

Type K miniconnector jack and plug

Type J standard connector plug and jack

B Compression Fittings

Fittings let you adjust the depth your probe extends into a system for temperature readings. Use fittings for straight-shaft probes and metal tubing only. Tighten compression nut to secure and completely seal probe.

316 SS compression fitting
08539-36

Replacement ferrules let you reuse a compression fitting when replacing a worn out probe. Simply disassemble fitting, discard probe and old ferrule, install replacement ferrule over probe sheath, and retighten fitting.

Cat. no.	Probe dia	NPT(M)	Working pressure†	Price
Brass fittings for temperatures to 425°F (218°C)				
TW-08539-04	1/8"	1/8"	2800 psi	/ea
TW-08539-08	3/16"	1/8"	2060 psi	/ea
TW-08539-12	1/4"	1/8"	1650 psi	/ea
TW-08539-30	1/4"	1/4"	1650 psi	/ea
TW-08539-33	3/8"	3/8"	1110 psi	/ea
316 stainless steel fittings for temperatures to 1200°F (649°C)				
TW-08539-02	1/8"	1/8"	3270 psi	/ea
TW-08539-06	3/16"	1/8"	2260 psi	/ea
TW-08539-35	3/16"	1/4"	2260 psi	/ea
TW-08539-36	1/4"	1/4"	1810 psi	/ea
TW-08539-39	3/8"	3/8"	1170 psi	/ea
TW-08539-41	1/2"	1/2"	860 psi	/ea

†Maximum pressure at 72°F (22°C).

C Wire Stripper/Terminal Crimper

Crimper offers all of the functions of a wire stripper, terminal crimper, wire cutter, and small bolt cutter.

93785-90

Cat. no.	Description	Price
TW-93785-90	Wire stripper/ terminal crimper	

D Thermocouple Feedthroughs

Use these two-wire feedthroughs to make connections inside vessels or chambers. Use with probes with miniconnectors. Feedthroughs withstand vacuum conditions or pressures to 100 psi. Stainless steel and epoxy construction. Temperature range: –40 to 250°F (–40 to 121°C). Feedthroughs have a 1/2" NPT(M) fitting. Include 48"L, PTFE- insulated, 24-gauge (0.0201" wire dia) lead wires.

93870-02

Cat. no.	Type	Price
TW-93870-00	J	
TW-93870-02	K	
TW-93870-04	T	

E Thermocouple Attachment Pads

Use self-adhesive attachment pads to affix small-diameter wire thermocouples to surfaces. Temperature range: –58 to 392°F (–50 to 200°C).

93785-50

Cat. no.	Quantity	Price/pk
TW-93785-50	Five sheets of 20 pads each (100 pads/pk)	

F Thermal Transfer Compound

Nonsilicone compound helps improve heat transfer to sensor, greatly improving sensor response. Compound will not harden or dry out. Use over temperature range of –43 to 390°F (–40 to 200°C). Meets physical properties of MIL-C-47113.

93785-61

Cat. no.	Description	Price
TW-93785-61	4 oz. thermal transfer compound	

G Cable Clamps

Cable clamps secure and stabilize wire/connector junctions. Pack of 12.

08509-81

08509-82

Cat. no.	Description	Price/pk
TW-08509-81	Cable clamp, miniature	
TW-08509-82	Cable clamp, standard	

H Spade Lugs

Choose spade lugs that match the composition of your thermocouple wires. Pack of 20.

-26 -20 -28

-22 -24

Catalog number	Thermocouple type; material	Price/ pk
TW-08539-20	E, K; Chromel	
TW-08539-22	K; Alumel	
TW-08539-24	J; Iron	
TW-08539-26	J, T, E; Constantan	
TW-08539-28	T; Copper	

Industrial Probe Accessories (continued)

I Thermocouple Switch Boxes

Connect multiple probes to your thermocouple thermometer with these switch boxes. (**Caution:** Voltage present at any probe may also be present at the instrument.)

Ten-input boxes include a 15" (38 cm) long cord with miniconnector for meter connection. Switch boxes accept ANSI miniconnectors.

Ten-input switch box 08498-10

Catalog number	Inputs	Type	Dimensions (W x H x D)	Price
TW-08498-00 TW-08498-10 TW-08498-20	Ten	J K T	6" x 2½" x 6¼" (15.2 x 6.4 x 15.9 cm)	

J Extension Cables

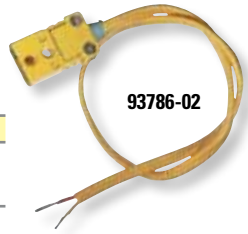
All extension cables are 20-gauge (0.032" dia) thermocouple wire with PVC/PVC insulation. Maximum temperature: 221°F (105°C).

Extension cables with miniconnectors

Type	Miniconnector		Standard connector	
	Catalog number	Price	Catalog number	Price
10-ft length cable				
J	TW-08517-30		TW-08517-32	
K	TW-08516-30		TW-08516-32	
T	TW-08505-30		TW-08505-32	
25-ft length cable				
J	TW-08517-35		TW-08517-37	
K	TW-08516-35		TW-08516-37	
T	TW-08505-35		TW-08505-37	
50-ft length cable				
J	TW-08517-50		TW-08517-52	
K	TW-08516-50		TW-08516-52	
T	TW-08505-50		TW-08505-52	

K Cable Adapter

Attach cable adapter to your probe to provide easy connection to screw terminals. Leads measure 12" (30.5 cm) L.



93786-02

Cat. no.	Description	Type	Price
TW-93786-00 TW-93786-02 TW-93786-04	Cable adapter	J K T	

L Coiled Extension Cables

Each coiled extension cable is ANSI color-coded with miniconnector on each end. Measure 5 ft (1.5 m) long when fully extended. Maximum temperature: 221°F (105°C).

93785-02

Cat. no.	Type	Connections	Price
TW-93785-00 TW-93785-02 TW-93785-04	J K T	Male to female (plug to jack)	
TW-93785-10 TW-93785-12 TW-93785-14	J K T	Male to male (plug to plug)	

M Panel Jacks

Electrical box not included

Type J miniature round panel jacks 08509-36

Type K standard round panel jacks 08509-46

Panel jacks let you connect probes to mounting panel or standard outlet box for convenient input switching or multiplexing; or for your own customized probe installation. ANSI color-coded jacks come in miniature and standard sizes. Panel jacks are rated to 350°F (177°C).

All panel jacks feature glass-filled nylon construction. Use rectangular panel jack models 08509-55 through -57 and 08509-41 through -44 with mounting panels below. Round panel jacks do not require a custom mounting panel or cutout—simply insert and secure with screws (included). Round panel jacks fit ½" electrical knockouts (⅞" holes) for miniature size; ¾" electrical knockouts (1⅛" holes) for standard size.

Type	Color	Miniature panel jacks		Standard panel jacks	
		Catalog number	Price	Catalog number	Price
Rectangular panel jacks					
J	Black	TW-08509-55		TW-08509-41	
K	Yellow	TW-08509-56		TW-08509-42	
T	Blue	TW-08509-57		TW-08509-44	
Round panel jacks					
J	Black	TW-08509-36		TW-08509-45	
K	Yellow	TW-08509-37		TW-08509-46	
T	Blue	TW-08509-38		TW-08509-47	

N Mounting Panels and Outlet Box

Use mounting panels with rectangular panel jacks and outlet box 08508-80 or with your own installation. Box serves as a junction point for up to six probes—route all extension wires through a single ¾" NPT(F) inlet. Molded, glass-reinforced nylon box includes four screws for attaching a mounting panel. Mounting panels measure 4½" (11.4 cm) W x 2¾" (7 cm) H.

08508-88

08508-94

08508-90

Outlet box 08508-80

Panels for miniature jacks		Panels for standard jacks		Number of slots
Catalog number	Price	Catalog number	Price	
TW-08508-86		TW-08508-93		2
TW-08508-87		TW-08508-94		3
TW-08508-88		TW-08508-95		4
TW-08508-89		TW-08508-96		5
TW-08508-90		TW-08508-97		6

TW-08508-80 Outlet box.
Measures 4½" (11.4 cm) W x 2¾" (7 cm) H x 1½" (3.8 cm) D

O Rubber Boots for Probe Connections

Pair of mini boots 93840-02

Pair of standard boots 93840-00 installed on probe

Waterproof your thermocouple connections. Boots fit most detachable, general-purpose, penetration, and industrial probes. Order two boots for each connection.

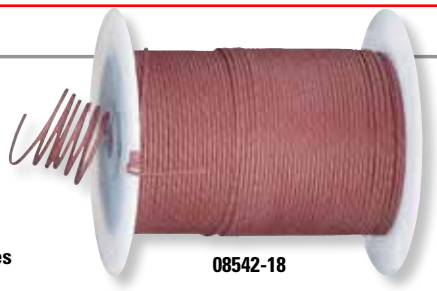
Cat. no.	Description	Price
TW-93840-00	Rubber boot, standard. Accepts probe sheaths or wires to ¼" OD	/ea
TW-93840-02	Rubber boot, miniature. Accepts probe sheaths or wires to ⅛" OD	/ea

Thermocouple and RTD Wire

Make your own extension cables

Wire comes in 30, 24, 20, or 16 gauge for fabricating your own probes or extension cables (meets ANSI and ASTM standards). Choose from wire with polyvinyl chloride (PVC), fluorinated ethylene propylene resin (FEP/FEP), fiberglass, high-temperature fiberglass, or ceramic fiber outer/inner insulation.

Convenient 100- or 1000-ft rolls in four gauges



08542-18

Specifications

Insulation type (outer/inner)	Temperature range	Advantages
Polyvinyl	–20 to 221°F (–28 to 105°C)	Good moisture and abrasion resistance
FEP/FEP	–328 to 400°F (–200 to 204°C)	Excellent chemical and moisture resistance; very good abrasion resistance
Glass braid	–100 to 900°F (–73 to 482°C)	Excellent chemical and flame resistance; fair moisture resistance; good abrasion resistance
High-temp fiberglass braid	0 to 1400°F (–18 to 750°C)	Higher temperatures than regular fiberglass insulation; fair moisture resistance; good abrasion resistance
Ceramic fiber braid	0 to 2200°F (–18 to 1427°C)	Intermittent temperatures to 3000°F (1649°C); fair moisture and abrasion resistance

Wire type	Wire gauge	Wire temp rating (Max)	Inner insulation	Outer insulation	Stranded/ Solid	Over-braid	Special features	Catalog number	Price/rl of 100 ft	Catalog number	Price /rl of 1000 ft
Thermocouple wire											
J	16	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-30		TW-08542-26	
J	16	900°F	Enamel/glass braid	Glass braid	Solid	No	—	TW-08541-31		TW-08542-27	
J	20	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-16		TW-08542-15	
J	20	221°F	Polyvinyl	Polyvinyl	Solid	No	Mylar® shield and drain wire	TW-08541-49		TW-08542-42	
J	20	400°F	FEP	FEP	Solid	No	—	TW-08541-17		TW-08542-16	
J	20	400°F	FEP	FEP	Stranded	No	—	TW-08541-46		TW-08542-39	
J	20	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-18		TW-08542-17	
J	20	900°F	Glass braid	Glass braid	Solid	Yes	Stainless steel overbraid	TW-08541-38		TW-08542-35	
J	20	900°F	Glass braid	Glass braid	Stranded	No	—	TW-08541-47		TW-08542-40	
J	24	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-06		TW-08542-06	
J	24	400°F	FEP	FEP	Solid	No	—	TW-08541-07		TW-08542-07	
J	24	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-08		TW-08542-08	
J	24	900°F	Glass wrap	Glass wrap	Solid	Yes	Stainless steel overbraid	TW-08541-35		TW-08542-32	
J	30	400°F	FEP	FEP	Solid	No	—	TW-08541-00		TW-08542-00	
J	30	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-01		TW-08542-01	
K	16	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-32		TW-08542-28	
K	16	900°F	Enamel/glass braid	Glass braid	Solid	No	—	TW-08541-33		TW-08542-29	
K	20	1300°F	High temp glass braid	High temp glass braid	Solid	No	Special limits of error (±4%)	TW-08541-23		TW-08542-22	
K	20	2200°F	Ceramic fiber braid	Ceramic fiber braid	Solid	No	—	TW-08541-24		TW-08542-23	
K	20	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-20		TW-08542-19	
K	20	221°F	Polyvinyl	Polyvinyl	Solid	No	Mylar shield and drain wire	TW-08541-48		TW-08542-41	
K	20	400°F	FEP	FEP	Solid	No	—	TW-08541-21		TW-08542-20	
K	20	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-22		TW-08542-21	
K	20	900°F	Glass braid	Glass braid	Solid	Yes	Stainless steel overbraid	TW-08541-39		TW-08542-36	
K	24	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-09		TW-08542-09	
K	24	400°F	FEP	FEP	Solid	No	—	TW-08541-10		TW-08542-10	
K	24	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-11		TW-08542-11	
K	24	900°F	Glass wrap	Glass wrap	Solid	Yes	Stainless steel overbraid	TW-08541-36		TW-08542-33	
K	30	400°F	FEP	FEP	Solid	No	Special limits of error (±4%)	TW-08541-02		TW-08542-02	
K	30	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-03		TW-08542-03	
T	16	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-34		TW-08542-30	
T	20	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-25		TW-08542-24	
T	20	400°F	FEP	FEP	Solid	No	—	TW-08541-26		TW-08542-25	
T	20	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-27		TW-08542-44	
T	20	900°F	Glass braid	Glass braid	Solid	Yes	Stainless steel overbraid	TW-08541-40		TW-08542-37	
T	24	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-12		TW-08542-12	
T	24	221°F	Polyvinyl	Polyvinyl	Solid	No	—	TW-08541-45		TW-08542-38	
T	24	400°F	FEP	Glass braid	Solid	No	—	TW-08541-13		TW-08542-13	
T	24	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-14		TW-08542-14	
T	24	900°F	Glass wrap	Glass wrap	Solid	Yes	Stainless steel overbraid	TW-08541-37		TW-08542-34	
T	30	400°F	FEP	FEP	Solid	No	Special limits of error (±4%)	TW-08541-04		TW-08542-04	
T	30	900°F	Glass braid	Glass braid	Solid	No	—	TW-08541-05		TW-08542-05	
RTD wire											
RTD	24	400°F	TFE	TFE	Stranded	No	—	TW-08542-31		—	—
RTD	24	900°F	Glass braid	Glass braid	Stranded	No	—	TW-08541-42		—	—
RTD	24	900°F	Glass braid	Glass braid	Stranded	Yes	Stainless steel overbraid	TW-08541-43		—	—
RTD	24	400°F	FEP	FEP / stainless steel overbraid	Stranded	Yes	FEP/stainless steel overbraid	TW-08541-44		—	—
RTD	28	400°F	TFE	FEP	Stranded	No	Duplex / 6 wires	TW-08541-41		—	—
RTD	20	400°F	FEP	FEP	Stranded	No	—	TW-08541-50		TW-08542-43	