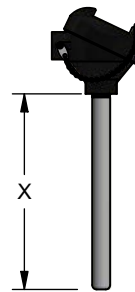


METAL PROTECTION TUBE THERMOCOUPLE ASSEMBLY

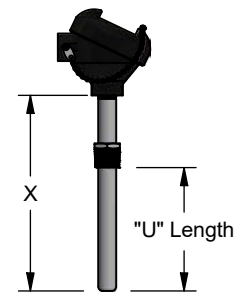
REOTEMP Metal Protection Tube Thermocouple Assemblies are used in high temperature, corrosive or hostile environments.



Made in USA



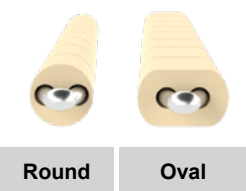
Standard Assembly



Welded Bushing Option

THERMOCOUPLES

BUILD YOUR PROTECTION TUBE: Choose options to build a part number. For example: **MTAAK8RS524-W3/4U20**

MTA	A	K	8	R	S												
SERIES	HEAD TYPE/ CONNECTION	THERMOCOUPLE TYPE	WIRE GAUGE	INSULATOR	TUBE MATERIAL												
MTA = Metal Tube Assembly	A = Cast Iron B = Cast Aluminum See page 49 for additional head styles.	J = Type J K = Type K JJ = Dual Type J KK = Dual Type K For thermocouple accuracy information see page 5. For thermocouple temperature operating ranges see page 6.	8 = 8 AWG 14 = 14 AWG 20 = 20 AWG	R = Round C = Oval 	<table border="1"> <tr> <td>C</td> <td>Carbon Steel</td> <td>Up to 700°F</td> </tr> <tr> <td>F</td> <td>304SS</td> <td>Up to 1,650°F</td> </tr> <tr> <td>S</td> <td>316SS</td> <td>Up to 1,650°F</td> </tr> <tr> <td>I</td> <td>Inconel 600</td> <td>Up to 2,150°F</td> </tr> </table>	C	Carbon Steel	Up to 700°F	F	304SS	Up to 1,650°F	S	316SS	Up to 1,650°F	I	Inconel 600	Up to 2,150°F
C	Carbon Steel	Up to 700°F															
F	304SS	Up to 1,650°F															
S	316SS	Up to 1,650°F															
I	Inconel 600	Up to 2,150°F															
5	24	W3/4U20															
PIPE SIZE	TUBE LENGTH "X"	OPTIONS															
2 = 1/4" (0.540" OD) 5 = 1/2" (0.840" OD) 7 = 3/4" (1.050" OD) 1 = 1" (1.315" OD)	12 = 12" 18 = 18" 24 = 24" 30 = 30" 36 = 36" ?? = Length in Inches	Process Connection, Leave Blank for None W = Welded Bushing, Specify NPT & Insertion Length "U" (See example above, 3/4" NPT with 20" Insertion Length) N = Union Nipple (Specify Extension Length) F = Malleable Iron Flange For additional options see page 146.															

REFERENCE INFORMATION

THERMOCOUPLE WIRE COLOR CODES (U.S.A. ANSI)					
Thermocouple Grade	Extension Grade	Plug/Jack	Thermocouple Grade	Extension Grade	Plug/Jack
K		Yellow	N		Orange
J		Black	S		Green
T		Blue	R		Green
E		Purple	B		White

THERMOCOUPLE & RTD ACCURACIES

	Type K	Type J	Type T	Type E	Type N	Type S	Type R	Type B	RTD Class B	RTD Class A
-328°F	*	—	*	*	—	—	—	—	± 2.34°F	± 2.34°F
-148°F	*	—	*	*	—	—	—	—	± 1.44°F	± 1.44°F
32°F	± 3.96°F	± 3.96°F	± 1.8°F	± 3.06°F	± 3.96°F	± 2.7°F	± 2.7°F	—	± 0.54°F	± 0.27°F
392°F	± 3.96°F	± 3.96°F	± 2.7°F	± 3.06°F	± 3.96°F	± 2.7°F	± 2.7°F	—	± 2.34°F	± 0.99°F
752°F	± 5.4°F	± 5.4°F	—	± 3.6°F	± 5.4°F	± 2.7°F	± 2.7°F	—	± 4.14°F	± 4.14°F
1112°F	± 8.1°F	± 8.1°F	—	± 5.4°F	± 8.1°F	± 2.7°F	± 2.7°F	—	± 5.94°F	± 5.94°F
1472°F	± 10.8°F	—	—	± 7.2°F	± 10.8°F	± 3.6°F	± 3.6°F	—	—	—
1832°F	± 13.5°F	—	—	—	± 13.5°F	± 4.5°F	± 4.5°F	± 9°F	—	—
2192°F	± 16.2°F	—	—	—	± 16.2°F	± 5.4°F	± 5.4°F	± 10.8°F	—	—
2552°F	—	—	—	—	—	± 6.3°F	± 6.3°F	± 12.6°F	—	—
2912°F	—	—	—	—	—	—	—	± 14.4°F	—	—

Note: The accuracies in the above table are estimates given at fixed points, they do not apply to temperature ranges and are intended only as examples to give a general idea of what can be expected. Consult Reotemp if a specific accuracy is required or to confirm accuracies at any points not listed in the above table.

*Thermocouples are normally supplied to meet the tolerances specified in the table for temperatures above 32°F. The same materials, however, may not fall within the tolerances for temperatures below 32°F. If materials are required to meet the tolerances stated for temperatures below 32°F, contact Reotemp sales.

Looking for better accuracy?



Reotemp offers **RTDs** up to 5x more accurate than Class B RTDs with the Hi-Accuracy™ option.

Thermocouples up to 2x more accurate with the Special Limits of Error option.

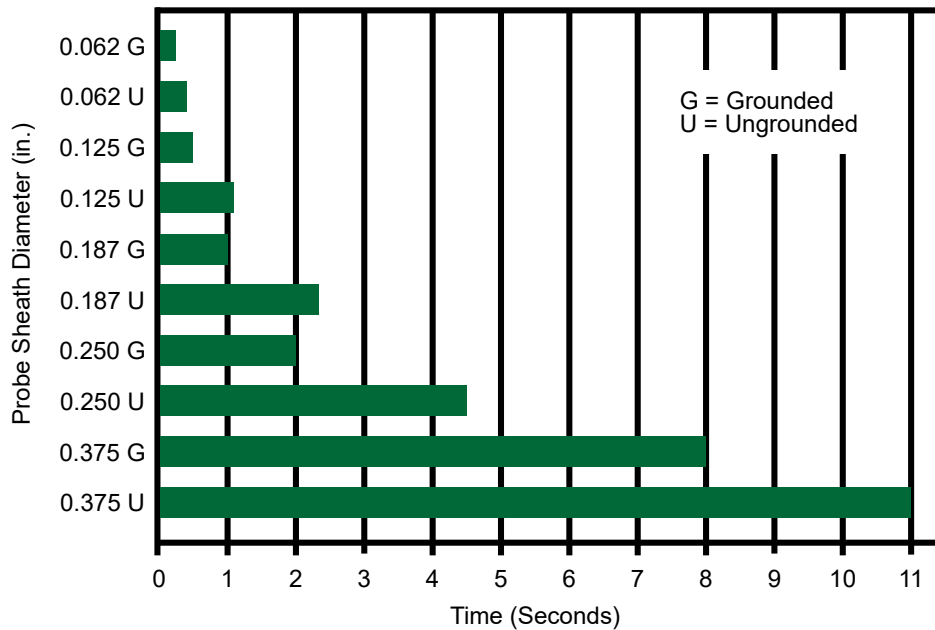
REFERENCE INFORMATION

THERMOCOUPLE TEMPERATURE OPERATING RANGES

Type	Minimum Temp. °F	Maximum Temp. °F
K	-328	2300
J	32	1400
T	-328	700
E	-328	1600
N	32	2300
S	32	2700
R	32	2700
B	1600	3100

THERMOCOUPLE TYPICAL RESPONSE TIMES

63.2% Temperature Change in an Agitated Water Bath



TEMP. LIMITS OF WIRE JACKETS

Jacket	Temp. Limit
PVC	221°F
Teflon	400°F
Fiberglass	900°F

THERMOCOUPLE & RTD OPTIONS

		Thermocouple	RTD	Digital Thermometers	Handheld Digital
CERTIFICATION OPTIONS					
-R1	1 Point Calibration Certification, Reotemp Chooses	✓	✓	✓	✓
-R3	3 Point Calibration Certification, Reotemp Chooses	✓	✓	✓	✓
-C1	1 Point Calibration Certification, Customer Chooses	✓	✓	✓	✓
-C3	3 Point Calibration Certification, Customer Chooses	✓	✓	✓	✓
-CC	Certificate of Conformance	✓	✓	✓	✓
-CS	NIST Calibration Sticker (No Logged Points)	✓	✓	✓	✓
OTHER OPTIONS					
-VB	Hi-Vibration	N/A	✓	✓	✓
-AC	Hi-Accuracy	N/A	✓	N/A	N/A
-PS	Pointed Stem	✓	✓	✓	✓
-TF	Teflon Coating	✓	✓	✓	✓
-SS	316 SS stem	N/A	STD	✓	✓
-NL	No Logo	✓	✓	✓	✓
-HT	Heat Transfer Compound (2 oz)	✓	✓	✓	N/A
-GL	Plain Glass Lens	N/A	N/A	✓	✓
-CL	Custom Logo Dial	N/A	N/A	✓	✓
-BP	Replacement Battery Pack	N/A	N/A	✓	✓
-WD	White Dial	N/A	N/A	✓	✓
-AS	Allows to Fit 1-1/4-18 Industrial Thermowell	✓	✓	✓	N/A
TAG OPTION					
-TS	Stainless Steel Tag (1-10 Characters)			✓	
-TM	Stainless Steel Tag (11-80 Characters)			✓	
-TP	Paper Tag			✓	

✓	Indicates that the option is available with this model.
N/A	Indicates the option is not available with this model.
STD	Indicates standard options with no additional cost.

HEAD STYLES

All head styles are IP65 or greater. Additional head styles available, contact customer service for more information.

Head	Code	Description	NEMA Rating	IP Rating				Display	STD Conduit	Material
	A	Cast Iron Black	4	65					3/4"	Cast Iron
	B	Cast Aluminum	4X	68					3/4"	Cast Aluminium
	E	Explosion Proof Aluminum	4X	68	✓	✓			3/4"	Cast Aluminium
	I	Blue Epoxy Aluminum	4X	68					3/4"	Cast Aluminium
	S	Polypropylene White	4	65					3/4"	Polypropylene
	W	Explosion Proof Field HART Transmitter	4X	68	✓	✓	✓	✓	1/2"	Cast Aluminium
	Z	Z-Temp™ Explosion Proof Aluminum	4X	66	✓	✓	✓	✓	1/2"	Cast Aluminium
	C	Polypropylene Black	4	65					3/4"	Polypropylene
	G	316SS	4X	65					3/4"	316SS
	H	Aluminum Flip Top	4	65					3/4"	Cast Aluminium
	J	Explosion Proof 316SS	4X	65	✓	✓			3/4"	316SS
	T	ATEX Explosion Proof Aluminum	4X	68	✓	✓	✓		1/2"	Cast Aluminium
	L	Explosion Proof Epoxy Coated Aluminium	4X	68	✓	✓			3/4"	Cast Aluminium
	D	Mini Cast Aluminum	4	65					3/4"	Cast Aluminium
	K	Polished 316SS Knurl	4X	65					1/2"	316SS
	P	DIN Black Polypropylene	4	65					3/4"	Polypropylene
	U	Hi-dome Aluminum Fliptop	4	65					3/4"	Cast Aluminium
	V	Ball-dome Aluminum Fliptop	4	65					3/4"	Cast Aluminium