Made in USA

Thermocouple Wire and Thermocouple Extension Wire

- ***Insulated Thermocouple and Extension Wire Insulation Types*** — ***See Page 14-104***
- ***Thermocouple Wire and Extension Grade Thermocouple Wire Color Codes*** — ***See Pages 14-105 and 14-106***
- ***Thermocouple Grade Wire*** — ***See Pages 14-107 through 14-109***
- ***Thermocouple Extension Grade Wire*** — ***See Pages 14-110 and 14-111***
- ***Coil Cords and RTD Wires*** — ***See Page 14-112***

Using Thermocouple Extension Wire

Thermocouple extension wire is often used to make the connection between the thermocouple and the measuring instrument, especially when long distances are involved, due to its cost advantage. Thermocouple extension wire has approximately the same characteristics as thermocouple wire but its accuracy is guaranteed over a more limited range of temperatures.

For base metal thermocouples, extension wire is of essentially the same composition as the corresponding thermocouple wire. Because of the high cost of noble metals, noble metal thermocouple extension wires are made from alloys that match the noble metal thermocouple characteristics.

Note: Thermocouple Extension Wire should never be used in place of thermocouple wire as the actual sensor because it will not generate accurate temperature information.

Protective Wraps for Thermocouple Wire and Thermocouple Extension Wire

Many of the insulated thermocouple wire and extension wire constructions listed on the following pages are available with the following two wraps as an option.

Stainless Steel or Tinned Copper Overbraid

Stainless Steel Wrap

Tolerances and Temperatures

Table 1 Tolerances on Initial Values of Emf vs. Temperature

NOTE 1 Tolerances in this table apply to new essentially homogeneous thermocouple wire, normally in the size range 0.25 mm to 3 mm in diameter (No. 30 to No. 8 Awg) and used at temperatures not exceeding the recommended limits of Table 2. If used at higher temperatures these tolerances may not apply.

NOTE 2 The Fahrenheit tolerance is 1.8 times larger than the °C tolerance at the equivalent °C temperature. Note particularly that percentage tolerances apply only to temperatures that are expressed in °C.

NOTE 3 ***Caution:*** Users should be aware that certain characteristics of thermocouple materials, including the emf versus temperature relationship, may change with time in use; consequently, test results and performance obtained at time of manufacture may not necessarily apply throughout an extended period of use. Tolerances given in this table apply only to new wire or MI cable or thermocouples as delivered to the user and ***do not allow for changes in characteristics with use.*** The magnitude of such changes will depend on such factors as wire size, temperature, time of exposure, and environment. It should be further noted that due to possible changes in homogeneity, attempting to recalibrate ***used*** thermocouples is likely to yield irrelevant results, and is not recommended. However, it may be appropriate to compare used thermocouples ***in-situ*** with new or known good ones to ascertain their suitability for further service under the conditions of the comparison.

	Temperature Range		Tolerances—Reference Junction 0°C (32°F)			
			Standard Tolerances		Special Tolerances	
Thermocouple Type	°C	°F	°C (whichever is greater)	°F	°C (whichever is greater)	°F
T	0 to 370	32 to 700	±1 or ±0.75%	Note 2	±0.5 or 0.4%	Note 2
J	0 to 760	32 to 1400	±2.2 or ±0.75%		±1.1 or 0.4%	
E	0 to 870	32 to 1600	±1.7 or ±0.5%		±1 or ±0.4%	
K or N	0 to 1260	32 to 2300	±2.2 or ±0.75%		±1.1 or ±0.4%	
R or S	0 to 1480	32 to 2700	±1.5 or ±0.25%		±0.6 or ±0.1%	
B	870 to 1700	1600 to 3100	±0.5%			
T[A]	–200 to 0	–328 to 32	±1 or ±1.5%		[B]	
E[A]	–200 to 0	–328 to 32	±1.7 or ±1%		[B]	
K[A]	–200 to 0	–328 to 32	±2.2 or ±2%		[B]	

[A] Thermocouples and thermocouple materials are normally supplied to meet the tolerances specified in the table for temperatures above 0°C. The same materials, however, may not fall within the tolerances given for temperatures below 0°C in the second section of the table. If materials are required to meet the tolerances stated for temperatures below 0°C the purchase order must so state. Selection of materials usually will be required.

[B] Special tolerances for temperatures below 0°C are difficult to justify due to limited available information. However, the following values for Types E and T thermocouples are suggested as a guide for discussion between purchaser and supplier:

Type E –200 to 0°C ±1°C or ±0.5% (whichever is greater) **Type T** –200 to 0°C ±0.5°C or ±0.8% (whichever is greater)

Initial values of tolerance for Type J thermocouples at temperatures below 0°C and special tolerances for Type K thermocouples below 0°C are not given due to the characteristics of the materials.

Table 2 Suggested Upper Temperature Limits for Protected Thermocouples

NOTE 1 This table gives the recommended upper temperature limits for the various thermocouples and wire sizes. These limits apply to protected thermocouples: that is, thermocouples in conventional closed-end protection tubes. They do not apply to sheathed thermocouples having compacted mineral oxide insulation.

NOTE 2 The temperature limits given here are intended only as a guide to the user and should not be taken as absolute values nor as guarantees of satisfactory life or performance. These types and sizes are sometimes used at temperatures above the given limits, but usually at the expense of stability or life or both. In other instances, it may be necessary to reduce the given limits in order to achieve adequate service. ASTM MNL-12[C] and other literature sources should be consulted for additional application information.

	Upper Temperature Limit for Various Wire Sizes (Awg), °C (°F)					
Thermocouple Type	No. 8 Gauge 3.25 mm (0.128 in)	No. 14 Gauge 1.63 mm (0.064 in)	No. 20 Gauge 0.81 mm (0.032 in)	No. 24 Gauge 0.51 mm (0.020 in)	No. 28 Gauge 0.33 mm (0.013 in)	No. 30 Gauge 0.25 mm (0.010 in)
T		370 (700)	260 (500)	200 (400)	200 (400)	150 (300)
J	760 (1400)	590 (1100)	480 (900)	370 (700)	370 (700)	320 (600)
E	870 (1600)	650 (1200)	540 (1000)	430 (800)	430 (800)	370 (700)
K and N	1260 (2300)	1090 (2000)	980 (1800)	870 (1600)	870 (1600)	760 (1400)
R and S				1480 (2700)		
B				1700 (3100)		

[C] "Manual on the Use of Thermocouples in Temperature Measurement," ASTM MNL-12, 1993.

Tables courtesy ASTM

Thermocouple Extension Wire

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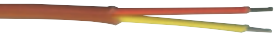
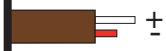
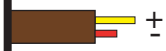
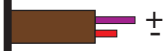
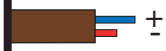
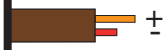
Insulated Thermocouple and Extension Wire Insulation Types

	Single Conductor		Duplex Conductors		Temperature Rating†		ANSI	Physical Properties		
	Insulation	Impregnation	Insulation	Impregnation	Continuous	Single Reading	Color Coded	Abrasion Resist.	Moisture Resist.	Chemical Resist.
 Glass Braid	Glass Braid	Silicone Modified Resin (retained to 400°F [204°C])	Glass Braid	Silicone Modified Resin (retained to 400°F [204°C])	900°F (482°C)	1000°F (538°C)	Yes	Fair	Good	Good
 Double Glass Wrap	Double Glass Wrap	Silicone Modified Resin (retained to 400°F [204°C])	Glass Braid	Silicone Modified Resin (retained to 400°F [204°C])	900°F (482°C)	1000°F (538°C)	Yes	Fair	Good	Good
 High Temperature Glass Braid	High Temp Glass Braid	High Temp Varnish (retained to 400°F [204°C])	High Temp Glass Braid	High Temp Varnish	1300°F (704°C)	1600°F (871°C)	Yes	Good	Fair	Good
 Polyvinyl (PVC)	Polyvinyl (PVC)	—	Polyvinyl (PVC)	—	-20 to +221°F (-29 to 105°C)	221°F (105°C)	Yes	Good	Excellent	Good
 FEP Extr.	FEP Extr.	—	FEP Extr.	—	400°F (204°C)	500°F (260°C)	Yes	Excellent	Excellent	Excellent
 Kapton®	Kapton®	—	Kapton®	—	500°F (260°C)	800°F (427°C)	Yes (Indiv. only)	Excellent	Excellent	Excellent
 Polyvinyl (PVC) with Drain Wire & Aluminum/Mylar Shield	Polyvinyl (PVC)	—	Polyvinyl (PVC) Twisted	—	-20 to +221°F (-29 to +105°C)	221°F (105°C)	Yes	Good	Excellent	Good
 Vitreous Silica Fiber	Vitreous Silica Fiber	—	Vitreous Silica Fiber	—	1600°F (871°C)	2000°F (1093°C)	No	Fair	Fair	Good
 Ceramic Fiber	Ceramic Fiber	—	Ceramic Fiber	—	2200°F (1204°C)	2600°F (1427°C)	No	Good	Fair	Good

†Thermocouple extension grade wire is only calibrated up to 400°F (204°C).

Thermocouple Wire Color Code & Specifications (United States, Canada & Mexico)

ANSI Code	Color Code	Positive (+) Lead	Negative (-) Lead	Temperature Range	Initial Calibration Tolerances	
					Standard °C (whichever is greater)	Special °C (whichever is greater)
J		Iron	Constantan (45% Nickel, 55% Copper)	32-1382°F (0-750°C)	±2.2°C or ±0.75%	±1.1°C or ±0.4%
K		Chromel® (90% Nickel, 10% Chromium)	Alumel (95% Nickel, 2% Aluminum, 2% Manganese, 1% Silicon)	32-2282°F (0-1250°C)	±2.2°C or ±0.75%	±1.1°C or ±0.4%
E		Chromel® (90% Nickel, 10% Chromium)	Constantan (45% Nickel, 55% Copper)	32-1652°F (0-900°C)	±1.7°C or ±0.5%	±1.0°C or ±0.4%
T		Copper	Constantan (45% Nickel, 55% Copper)	32-662°F (0-350°C)	±1°C or ±0.75%	±.5°C or ±0.4%
N		Nicrosil (84.6% Nickel, 14% Chromium, 1.4% Silicon)	Nisil (95.6% Nickel, 4.4 % Silicon)	32-2282°F (0-1250°C)	±2.2°C or ±0.75%	±1.1°C or ±0.4%

Thermocouple Extension Wire

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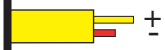
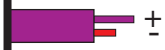
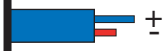
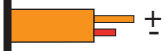
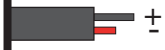
Thermocouple Extension Wire Color Code & Specifications (United States, Canada & Mexico)

ANSI Code	ANSI Color Code	Positive (+) Lead	Negative (-) Lead	Temperature Range	Initial Calibration Tolerances Standard	Special
JX		Iron	Constantan (45% Nickel, 55% Copper)	32-392°F (0-200°C)	±2.2°C	±1.1°C
KX		Chromel® (90% Nickel, 10% Chromium)	Alumel (95% Nickel, 2% Aluminum, 2% Manganese, 1% Silicon)	32-392°F (0-200°C)	±2.2°C	±1.1°C
EX		Chromel® (90% Nickel, 10% Chromium)	Constantan (45% Nickel, 55% Copper)	32-392°F (0-200°C)	±1.7°C	±1.1°C
TX		Copper	Constantan (45% Nickel, 55% Copper)	32 to 212°F (0-100°C)	±1.0°C	±0.5°C
NX		Nicrosil (84.6% Nickel, 4% Chromium, 1.4 % Silicon)	Nisil (95.6% Nickel, 4.4 % Silicon)	32-392°F (0-200°C)	±2.2°C	±1.1°C
Compensating Extension Wire Type						
RX*		Copper	Copper Alloy	32-392°F (0-200°C)	±9°F (±5°C)	N/A
SX*		Copper	Copper Alloy	32-392°F (0-200°C)	±9°F (±5°C)	N/A
BX†*		Copper	Copper	32 to 212°F (0-100°C)	+0°F –6.7°F (+0°C –3.7°C)	N/A

∗ Due to the non-linearity of the types R, S, and B temperature-emf curves, the error introduced into a thermocouple system by the compensating wire will be variable when expressed in degrees. The degree C tolerances are based on the following measuring junction temperatures.

Type Wire	Measuring Junction Temperature
SX	Greater than 1598°F (870°C)
BX	Greater than 1832°F (1000°C)

†Copper versus copper compensating extension wire, usable to 100°C (212°F) with maximum deviations as indicated, but with no significant deviation over 0°C to 50°C (32°F to 122°F) range.

Thermocouple Tolerances and Calibration

ANSI Tolerances

All thermocouple wire and extension wire is supplied to meet Standard Tolerances of ANSI Circular MC96.1–1982. Special tolerances are also available per ANSI MC96.1 at an extra charge. The standard and special tolerances for thermocouple and extension wires are given in the accompanying tables — see pages 14-103 and 14-105. Where tolerances are given in percent, the percentage applies to the temperature being measured.

Calibration and Certification

Thermocouple wire and elements can be factory calibrated and certified at an extra charge. Each thermocouple, coil, reel, or spool of wire is then tagged to show the individual departure from curve.

The normal calibrating temperature range is 32°F–2000°F (0°C–1093°C), depending on wire type, gauge size and insulation type.

A certificate of calibration is furnished upon request for all calibrated items. Each item calibrated is also tagged with the results.

ANSI Type J Duplex Thermocouple Wire

ANSI color code—White positive/Red negative—Over All Brown

"J" Thermocouple Wire — Stocked on 100 and 250 Foot Spools

TC Type	Wire Type	Insulation	Insulation Temperature Limits (°F/°C)	Nominal Overall Dimensions (inches)	Part Number 100 Foot Spool	Part Number 250 Foot Spool
J	20 Gauge Solid	Fiberglass	900/482	.060 × .106	TCWR-1028	TCWR-1032
J	20 Gauge Stranded	Fiberglass	900/482	.066 × .118	TCWR-1033	TCWR-1035
J	24 Gauge Solid	Fiberglass	900/482	.048 × .082	TCWR-1037	TCWR-1069
J	24 Gauge Stranded	Fiberglass	900/482	.048 × .082	TCWR-1038	TCWR-1070
J	20 Gauge Stranded	Fiberglass with SS overbraid	900/482	.088 × .140	TCWR-1047	TCWR-1051
J	20 Gauge Solid	FEP Teflon®	400/204	.068 × .116	TCWR-1060	TCWR-1062
J	24 Gauge Stranded	Fiberglass with SS overbraid	900/482	.074 × .100	TCWR-1048	TCWR-1052

"J" Thermocouple Wire — Order Length Required (50 Foot Minimum)

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
16	Solid	Glass Braid	Glass Braid	900	482	.080 × .144	TCW-101-123
18	Stranded (7/26)	Glass Braid w/ SS Braid O/A	Glass Braid	900	482	.122 × .175	TCW-101-130
20	Solid	Hi-temp Glass Braid	Hi-temp Glass Braid	1400	760	.086 × .136	TCW-101-115
20	Solid	Amber colored Kapton® tape	Color coded Kapton® tape	500	260	.055 × .099	TCW-101-112
20	Stranded (7/28)	Kapton®	Kapton®	500	260	.058 × .108	TCW-101-131
24	Solid	Glass Braid	Double Glass wrap	900	482	.043 × .074	TCW-101-113
24	Solid	Rip-cord construction	PVC (extruded)	221	105	.046 × .092	TCW-101-116
24	Solid	Glass Braid w/ SS Braid	Glass Braid	900	482	.074 × .100	TCW-101-119
30	Solid	Glass Braid	Double Glass wrap	900	482	.033 × .054	TCW-101-114

Made in USA

ANSI Type J Single Conductor Construction Thermocouple Wire

Individual wires ANSI color code—Negative (JN) wire Red—Positive (JP) wire White

B & S ga.	Conductor Type	Nominal O.D. (inches)	Wire Type	Insulation Each Conductor	Max. Temp °F	Max. Temp °C	Part Number
20	Iron (JP)	.050"	Stranded	Glass Braid	900	482	TCW-104-105
20	Constantan (JN)	.050"	Stranded	Glass Braid	900	482	TCW-105-105
24	Iron (JP)	.036"	Stranded	Glass Braid	900	482	TCW-104-106
24	Constantan (JN)	.036"	Stranded	Glass Braid	900	482	TCW-105-106

ANSI Type K Duplex Insulated Thermocouple Wire

ANSI color code—Yellow positive/Red negative—Over All Brown

"K" Thermocouple Wire — Stocked on 100 and 250 Foot Spools

TC Type	Wire Type	Insulation	Insulation Temperature Limits (°F/°C)	Nominal Overall Dimensions (inches)	Part Number 100 Foot Spool	Part Number 250 Foot Spool
K	20 Gauge Solid	Fiberglass	900/482	.060 × .116	TCWR-1025	TCWR-1029
K	20 Gauge Stranded	Fiberglass	900/482	.066 × .118	TCWR-1034	TCWR-1036
K	24 Gauge Solid	Fiberglass	900/482	.044 × .074	TCWR-1039	TCWR-1071
K	24 Gauge Stranded	Fiberglass	900/482	.050 × .082	TCWR-1040	TCWR-1072
K	20 Gauge Stranded	Fiberglass with SS overbraid	900/482	.088 × .140	TCWR-1049	TCWR-1053
K	20 Gauge Solid	FEP Teflon®	400/204	.068 × .116	TCWR-1061	TCWR-1063
K	24 Gauge Stranded	Fiberglass with SS overbraid	900/482	.074 × .100	TCWR-1050	TCWR-1054

"K" Thermocouple Wire — Order Length Required (50 Foot Minimum)

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	Hi-temp Glass Braid	Hi-temp Glass Braid	1400	760	.086 × .136	TCW-103-113
20	Solid	Amber colored Kapton® tape	Color coded Kapton® tape	500	260	.055 × .099	TCW-103-110
24	Solid	Glass Braid	Double Glass wrap	900	482	.043 × .074	TCW-103-111
24	Solid	Rip-cord construction	PVC (extruded)	221	105	.046 × .092	TCW-103-116
24	Solid	FEP Teflon®	FEP Teflon®	400	204	.056 × .092	TCW-103-123
24	Solid	Glass Braid w/ SS Braid	Glass Braid	900	482	.074 × .100	TCW-103-117
30	Solid	Glass Braid	Double Glass wrap	900	482	.033 × .054	TCW-103-112

ANSI Type K Special Limits Duplex Insulated Thermocouple Wire

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	NOT COLOR CODED Vitreous Silica Braid	NOT COLOR CODED Vitreous Silica Braid	1600-2300	871-1260	.092 × .154	TCW-103-114
20	Solid	NOT COLOR CODED Ceramic Fiber Braid	NOT COLOR CODED Ceramic Fiber Braid	2200-2600	1204-1427	.092 × .154	TCW-103-115

ANSI Type N Duplex Construction Insulated Thermocouple Wire

ANSI color code—Orange positive/Red negative—Brown Over All

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	
20	Solid	Glass Braid	Glass Braid	900	482	.066 × .118	TCW-118-101
20	Solid	NOT COLOR CODED Vitreous Silica Braid	NOT COLOR CODED Vitreous Silica Braid	1600-2300	871-1260	.092 × .154	TCW-118-102
24	Solid	Glass Braid	Glass Braid	900	482	.043 × .074	TCW-118-103

ANSI Type T Duplex Construction Insulated Thermocouple Wire

ANSI color code—Blue positive/Red negative—Brown Over All

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Stranded (7/28)	FEP Teflon®	FEP Teflon®	400	204	.074 × .128	TCW-113-105
20	Solid	Glass Braid	Glass Braid	900	482	.060 × .106	TCW-113-101
20	Solid	Extruded (FEP) Teflon®	Extruded (FEP) Teflon®	400	204	.068 × .116	TCW-113-102
24	Solid	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.046 × .092	TCW-113-103
24	Solid	Extruded (FEP) Teflon®	Extruded (FEP) Teflon®	400	204	.056 × .092	TCW-113-104

ANSI Type E and Chromel/Constantan Duplex Construction Thermocouple Wire

ANSI color code—Purple positive/Red negative—Brown Over All

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	Glass Braid	Glass Braid	900	482	.060 × .106	TCW-121-101
20	Solid	TFE Teflon® tape	TFE Teflon® tape	500	260	.060 × .104	TCW-121-102
20	Stranded (7/28)	Glass Braid	Glass Braid	900	482	.066 × .118	TCW-121-103
20	Stranded (7/28)	Glass Braid	Double Glass wrap	900	482	.061 × .110	TCW-121-104

Ordering Information

Order by ***Part Number*** for wire stocked on standard 100 and 250 foot spools.

Order by ***Part Number*** and ***Length*** in feet required (50 feet minimum) for wire not stocked on standard spools.

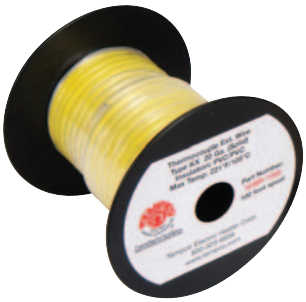
⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Made in USA

ANSI Type JX Thermocouple Extension Wire

Duplex construction—ANSI color code—White positive/Red negative— Black Over All

"JX" Thermocouple Extension Wire — Stocked on 100 and 250 Foot Spools



TC Type	Wire Type	Insulation	Insulation Temperature Limits (°F/°C)	Nominal Overall Dimensions (inches)	Part Number 100 Foot Spool	Part Number 250 Foot Spool
JX	20 Gauge Solid	PVC	221/105	.092 × .154	TCWR-1027	TCWR-1031
JX	20 Gauge Stranded	PVC	221/105	.098 × .166	TCWR-1041	TCWR-1073
JX	24 Gauge Solid	PVC	221/105	.080 × .130	TCWR-1042	TCWR-1074
JX	24 Gauge Stranded	PVC	221/105	.084 × .138	TCWR-1043	TCWR-1075
JX	20 Gauge Solid	PVC with Shield & Drain	221/105	.169 Diameter	TCWR-1055	TCWR-1057

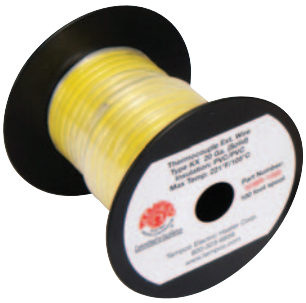
"JX" Thermocouple Extension Wire — Order Length Required (50 Foot Minimum)

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
16	Solid	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.111 × .192	TCW-102-105
16	Solid	PVC/twisted w/ alum Mylar tape shield & bare drain wire	Polyvinyl (PVC)	221	105	.207 × round	TCW-102-106

ANSI Type KX Duplex Construction Insulated Thermocouple Extension Wire

ANSI color code—Yellow positive/Red negative— Yellow Over All

"KX" Thermocouple Extension Wire — Stocked on 100 and 250 Foot Spools



TC Type	Wire Type	Insulation	Insulation Temperature Limits (°F/°C)	Nominal Overall Dimensions (inches)	Part Number 100 Foot Spool	Part Number 250 Foot Spool
KX	20 Gauge Solid	PVC	221/105	.092 × .154	TCWR-1026	TCWR-1030
KX	20 Gauge Stranded	PVC	221/105	.098 × .166	TCWR-1044	TCWR-1076
KX	24 Gauge Solid	PVC	221/105	.080 × .130	TCWR-1045	TCWR-1077
KX	24 Gauge Stranded	PVC	221/105	.084 × .138	TCWR-1046	TCWR-1078
KX	20 Gauge Solid	PVC with Shield & Drain	221/105	.169 Diameter	TCWR-1056	TCWR-1058

"KX" Thermocouple Extension Wire — Order Length Required (50 Foot Minimum)

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Stranded (7/28)	PVC/twisted w/alum. mylar tape shield & bare drain wire	Polyvinyl (PVC)	221	105	.181 round	TCW-117-105

View Product Inventory @ www.tempco.com

ANSI Type NX Duplex Construction Insulated Thermocouple Extension Wire

ANSI color code—Orange positive/Red negative—Orange Over All

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.092 × .154	TCW-119-101
20	Solid	PVC/twisted w/ alum. mylar tape shield & bare drain wire	Polyvinyl (PVC)	221	105	.098 × .166	TCW-119-102

ANSI Type TX Duplex Construction Insulated Thermocouple Extension Wire

ANSI color code—Blue positive/Red negative—Blue Over All

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.092 × .154	TCW-120-101
20	Stranded (7/28)	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.098 × .166	TCW-120-102
20	Solid	PVC/twisted w/ alum. mylar tape shield & bare drain wire	Polyvinyl (PVC)	221	105	.169 round	TCW-120-103

ANSI Type EX Duplex Construction Thermocouple Extension Wire

ANSI color code—Purple positive/Red negative—Purple Over All

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.092 × .154	TCW-122-101
20	Solid	PVC/twisted w/ alum. Mylar tape shield & bare drain wire	Polyvinyl (PVC)	221	105	.169 round	TCW-122-102

ANSI Type R/SX Copper/#11 Alloy Duplex Construction Insulated Extension Wire

ANSI color code—Black positive/Red negative—Green Over All (Compensating alloys for Type "S" and Type "R" thermocouples)

B & S ga.	Wire Type	Insulation Over All	Insulation Each Conductor	Maximum Temp. °F	Maximum Temp. °C	Nominal Overall Dimensions (inches)	Part Number
20	Solid	PVC/twisted w/ alum. Mylar tape shield & bare drain wire	Polyvinyl (PVC)	221	105	.169 round	TCW-123-101
20	Solid	Polyvinyl (PVC)	Polyvinyl (PVC)	221	105	.092 × .154	TCW-123-102
20	Solid	Extruded (FEP) Teflon®	Extruded (FEP) Teflon®	400	204	.068 × .116	TCW-123-103
20	Solid	Glass Braid	Glass Braid	900	482	.060 × .106	TCW-123-104

Ordering Information

Order by ***Part Number*** for wire stocked on standard 100 and 250 foot spools.

Order by ***Part Number*** and ***Length*** in feet required (50 feet minimum) for wire not stocked on standard spools.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Made in USA

Coil Cord for Thermocouples and RTDs

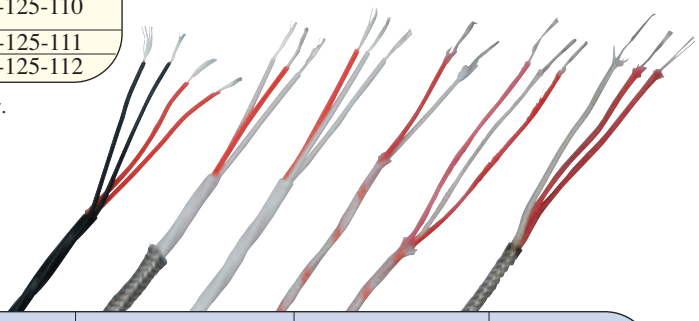
Design/Special Features

- *Complements modern instrumentation.*
- *Designed to be space saving and convenient with excellent retractability.*
- *Rated for 221°F (105°C) upper limit (above 104°F [40°C], coil form may change if stretched).*
- *ANSI Color Coded Outer Jacket.*
- *Wire is 26 gauge stranded with PVC insulation and the outer jacket is polyurethane.*
- *Available with mini plug molded on one end only for thermocouples and has open ends only for 3-wire RTDs.*
- *Can be used with all available thermocouple or RTD plugs, jacks and cable clamps, standard or miniature.*
- *Open ends have approximately 4 inches straight.*

Calibration	Outer Jacket Color	Coil Length (in)	Extended Length Maximum (in)	Part Number †With Miniature Plug Molded on One End	Part Number †Both Ends Open
J	Black	12	60	TCW-124-101	TCW-125-101
J	Black	24	120	TCW-124-102	TCW-125-102
K	Yellow	12	60	TCW-124-103	TCW-125-103
K	Yellow	24	120	TCW-124-104	TCW-125-104
E	Purple	12	60	TCW-124-105	TCW-125-105
T	Blue	12	60	TCW-124-106	TCW-125-106
T	Blue	24	120	TCW-124-107	TCW-125-107
R/S	Green	12	60	TCW-124-108	TCW-125-108
R/S	Green	32	180	—	TCW-125-109
U (2-wire uncompensated)	White	12	60	TCW-124-109	TCW-125-110
3-wire RTD	White	12	60	—	TCW-125-111
3-wire RTD	White	36	180	—	TCW-125-112

†Other configurations and lengths are available on special request. Minimum order may apply. Consult Tempco with your requirements.

RTD Multiconductor Wire



Part Number	No. of Conductors	B & S Gauge	Inner Insulation	Outer Insulation	Max. Temp. °F	Max. Temp. °C	Nom. Overall Size
LDW-126-101	2	24 Str. NPC*	Fiberglass 1xRed, 1xWhite	Fiberglass	900	480	.080"
LDW-120-101	3	24 Str. SPC**	TFE Teflon® 2xWhite, 1xRed	FEP Jacket White w/SS Overbraid	392	200	.140"
LDW-120-102	3	24 Str. SPC**	TFE Teflon® 2xWhite, 1xRed	FEP Jacket, White	392	200	.125"
LDW-120-103	3	24 Str. NPC*	Fiberglass 2xRed, 1xWhite	SS Overbraid	900	480	.115"
LDW-120-104	3	24 Str. NPC*	Fiberglass 2xRed, 1xWhite	Fiberglass	900	480	.086"
LDW-122-101	4	26 Str. SPC**	TFE Teflon® 2xRed, 2xBlack	FEP Jacket, Black	392	200	.125"

* NPC denotes nickel-plated copper ** SPC denotes silver-plated copper

International Color Codes for Thermocouple and Extension Grade Wires