

NOTICE:

Prices and availability are subject to change without notice.

Please contact Marlin Manufacturing before ordering for updated pricing.

THERMOCOUPLE WIRE GENERAL

Accuracy of Marlin Wire

Marlin insulated and bare thermocouple wire is matched to meet standard initial calibration tolerances for temperatures above 0°C as given in ANSI MC96.1 and shown in the table below without regard for wire size (see page E-0 for wire size upper temperature limits).

Wire conforming to special initial calibration tolerances, wire for use at sub-zero temperatures, and wire with certified traceable calibration is available on request. Designate special limit grade wire using a double ANSI symbol (e.g. KK,JJ). Sub-zero and calibration requirements should be spelled out on the Purchase Order.

INITIAL CALIBRATION TOLERANCES FOR THERMOCOUPLE WIRE							
THERMOCOUPLE TYPE		°C.			°F.		
WIRE ALLOYS	ANSI TYPE SYMBOL	TEMPERATURE RANGE	STANDARD LIMITS	SPECIAL LIMITS	TEMPERATURE RANGE	STANDARD LIMITS	SPECIAL LIMITS
Copper (+) vs. Constantan (-)	T	-200° to -65° -65° to +130° +130° to +350°	±1.5% ±1° ±0.75%	±0.8% ±0.5% ±0.4%	-330° to -85° -85° to +270° +270° to +660°	±1.5% ±1.8° ±0.75%	±0.8% ±0.9° ±0.4%
*Iron (+) vs. Constantan (-)	J	0° to +285° +285° to +750°	±2.2° ±0.75%	±1.1° ±0.4%	+32° to +545° +545° to +1400°	±4° ±0.75%	±2° ±0.4%
Chromel™ (+) vs. Constantan (-)	E	-200° to -170° -170° to +250° +250° to +340° +340° to +900°	±1% ±1.7° ±1.7° ±0.5%	±1° ±1° ±0.4% ±0.4%	-330° to -270° -270° to +480° +480° to +640° +640° to +1600°	±1% ±3° ±3° ±0.5%	±1.8° ±1.8° ±0.4% ±0.4%
Chromel™ (+) vs. *Alumel™ (-)	K	-200° to -110° -110° to 0° 0° to +285° +285° to +1250°	±2% ±2.2° ±2.2° ±0.75%	±1.1° ±0.4%	-330° to -165° -165° to +32° +32° to +545° +545° to +2300°	±2% ±4° ±4° ±0.75%	±2° ±0.4% ±0.4%
Nicrosil (+) vs. Nilil (-)	N	0° to +285° +285° to +1250°	±2.2° ±0.75%	±1.1° ±0.4%	+32° to +545° +545° to 2300°	±4° ±0.75%	±2° ±0.4%
Platinum -10% Rhodium (+) vs. Platinum (-)	S	0° to +600° +600° to +1450°	±1.5° ±0.25%	±0.6° ±0.1%	+32° to +1110° +1110° to 2650°	±2.7° ±0.25%	±1.1° ±0.1%
Platinum -13% Rhodium (+) vs. Platinum (-)	R	0° to +600° +600° to +1450°	±1.5° ±0.25%	±0.6° ±0.1%	+32° to +1110° +1110° to +2650°	±2.7° ±0.25%	±1.1° ±0.1%
Platinum -30% Rhodium (+) vs. Platinum -6% Rhodium (-)	B	+870° to +1700°	±0.5%	±0.25%	+1600° to +3100°	±0.5%	±0.25%
Tungsten -5% Rhenium (+) vs. Tungsten -26% Rhenium (-)	C†	+400° to +2300°	±1%		+800° to +4200°	±1%	

*Magnetic

™TradeMark, Hoskins Mfg. Co.

†NOT ANSI Type Symbol

NOTE — Per cent limits apply directly to temperatures in °C units, but for °F equivalents are applied to the number of °F above or below the ice point (+32°F).

[i.e., Limit (°F) = (Temp. °F - 32°F) × Percentage]

Thermocouple Extension Wire

Thermocouple extension wire has approximately the same thermoelectric characteristic as thermocouple wire but its accuracy is guaranteed over a more limited range of temperatures. Thermocouple extension wire can offer advantages in cost or mechanical properties when used for connections between thermocouples and instruments. For base metal types of thermocouples, extension wire is of substantially the same composition as the corresponding thermocouple type. For noble metal types, however, an entirely different alloy is formulated to match the noble metal characteristics over a specified temperature range. This is necessary due to the high cost of the noble metals which could otherwise be necessary for the interconnection. The "X" in the ANSI code denotes extension grade wire.

INITIAL CALIBRATION TOLERANCES FOR THERMOCOUPLE EXTENSION WIRE							
THERMOCOUPLE TYPE		°C.			°F.		
EXTENSION WIRE ALLOY	ANSI TYPE SYMBOL	TEMPERATURE RANGE	STANDARD LIMITS	SPECIAL LIMITS	TEMPERATURE RANGE	STANDARD LIMITS	SPECIAL LIMITS
Copper vs. Constantan	TX	-60° to +100°	±1°	±5°	-75° to +210°	±2°	±1°
*Iron vs. Constantan	JX	0° to +200°	±2.2°	±1.1°	+32° to +400°	±4°	±2°
Chromel™ vs. Constantan	EX	0° to +200°	±1.7°	±1.1°	+32° to +400°	±3°	±2°
Chromel™ vs. *Alumel™	KX	0° to +200°	±2.2°	±1.1°	+32° to +400°	±4°	±2°
Nicrosil vs. Nilil	NX	0° to +200°	±2.2°	±1.1°	+32° to +400°	±4°	±2°
Copper vs. Copper Alloy	SX RX	+25° to +200°	±7°		+75° to +400°	±12°	
PCLW630 vs. Copper	BX	0° to +200°	±2.2°		+32° to +400°	±4°	
Copper vs. Copper	BX	0° to 65°	±1°		+32° to +150°	±2°	
Alloy 405 vs Alloy 426	CX†	0° to 870°	±7°		+32° to +1600°	±12°	

*Magnetic

™Trade Mark Hoskins Mfg. Co.

†NOT ANSI Symbol



Calibration Type Characteristics

Type T (COPPER vs CONSTANTAN) is used for service in oxidizing, inert or reducing atmospheres or in vacuum. It is highly resistant to corrosion from atmospheric moisture and condensation and exhibits high stability at low temperatures; it is the only type with limits of error guaranteed for cryogenic temperatures.

Type J (IRON vs CONSTANTAN) is used protected or unprotected in vacuum, oxidizing, inert or reducing atmospheres. Iron element oxidizes rapidly at temperatures exceeding 1000°F, and therefore heavier gauge wire is recommended for longer life at these temperatures.

Type E (CHROMEL vs CONSTANTAN) May be used protected or unprotected in oxidizing, inert or dry reducing atmospheres, or for short periods of time under vacuum. Must be protected from sulfurous and marginally oxidizing atmospheres. Produces the highest EMF per degree of any standardized thermocouple.

Type K (CHROMEL™ vs ALUMEL™) is used protected or exposed in oxidizing, inert or dry reducing atmospheres. Exposure to vacuum limited to short time periods. Must be protected from sulfurous and marginally oxidizing atmospheres. Reliable and accurate at high temperatures.

*Hoskins Mfg. Co.

Type N (NICROSIL vs NISIL) is used protected or exposed in oxidizing, inert or dry reducing atmospheres. Must be protected from sulfurous atmospheres. Very reliable and accurate at high temperatures.

Type S (PLATINUM - 10%, RHODIUM vs PLATINUM)

Type R (PLATINUM - 13%, RHODIUM vs PLATINUM)

Type B (PLATINUM-30% RHODIUM vs PLATINUM-6% RHODIUM)

Platinum alloy thermocouples are all recommended for use in inert or oxidizing atmospheres, or for short periods of time in a vacuum. Easily contaminated, these elements must be protected from the effects of reducing atmospheres and contaminating vapors. Alumina protecting tubes are recommended for directly containing platinum element.

Type Ct (TUNGSTEN 5% RHENIUM vs TUNGSTEN 26% RHENIUM)

Tungsten Alloy thermocouples are recommended for use in vacuum, high purity hydrogen, or high purity inert atmospheres. Very poor oxidation resistance.

† — Not ANSI symbols

Thermocouple Insulation provides electrical insulation for thermocouple and thermocouple extension wire. If the insulation breaks down for any reason, the indicated temperature may be in error. When selecting insulation moisture, abrasion, flexing, chemical attack, temperature extremes and any other adverse environmental considerations must be evaluated. Insulations are rated for a maximum continuous use temperature and also a maximum single exposure temperature because after excessive temperatures have been encountered the insulation may become conductive or conductive residues may form even though the insulation remains physically intact. Also do not assume the temperature rating as the temperature at the sensing junction of the thermocouple without evaluating the thermocouple system.

Fibrous Insulation is either braided or wrapped on the conductors. In general, fibrous insulations are used for applications where extreme moisture and abrasion resistance requirements are not prevalent. Available at moderate cost for upper utilization temperatures of 900°F (482°C) for fiberglass, 1600°F (780°C) for high temperature silica fiber, and 2400°F (1315°C) for ceramic fiber.

Plastic Insulation is used on comparatively lower temperature applications and provides good moisture and abrasion resistance. Available at low to moderate cost with typical upper utilization temperatures of 220°F (104°C) for PVC and 500°F (260°C) for teflon and silicone rubber.

Wiring Electronic Instruments to conform to national and local codes does not address the "noise" problems of electronic instruments. Shielding of thermocouple and thermocouple extension wire may be necessary but not the only requirement of reducing noise. Ever since the introduction of electronics into instruments, noise generated by external relays, switches, motors, phase fired thyristors, etc. have caused problems that interfere with the instrument's operation. Now that microprocessors are being increasingly incorporated into many more varied instruments, external sources that generate noise pulses that, in some cases, may render the instrument completely inoperative, have become crucial to instrument applications. While much can be done within the instrument to reduce its sensitivity to external noise, the solution in many cases can only be resolved by suppressing the noise generation at its source.

THERMOCOUPLE WIRE GENERAL

ANSI COLOR CODE FOR THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE

ANSI TYPE	WIRE ALLOYS	POLARITY	THERMOCOUPLE WIRE COLOR		ANSI TYPE	T/C EXTENSION WIRE COLOR	
			INDIVIDUAL	OVERALL		INDIVIDUAL	OVERALL
T	COPPER CONSTANTAN	+TP -TN	BLUE RED	BROWN	TX	BLUE RED	BLUE
J	IRON CONSTANTAN	+JP -JN	WHITE RED	BROWN	JX	WHITE RED	BLACK
E	CHROMEL™ CONSTANTAN	+EP -EN	PURPLE RED	BROWN	EX	PURPLE RED	PURPLE
K	CHROMEL™ ALUMEL™	+KP -KN	YELLOW RED	BROWN	KX	YELLOW RED	YELLOW
N	NICROSIL NISIL	+NP -NN	ORANGE RED	BROWN	NX	ORANGE RED	ORANGE
R	PLATINUM 13% RHODIUM PLATINUM	+RP -RN			RX	BLACK RED	GREEN
S	PLATINUM 10% RHODIUM PLATINUM	+SP -SN			SX	BLACK RED	GREEN
B	PLATINUM 30% RHODIUM PLATINUM 6% RHODIUM	+BP -BN			BX	GREY RED	GREY

NOMINAL THERMOCOUPLE RESISTANCE Ohms per Double Foot @ 68°F (20°C)

Wire Ga B & S	Wire Size DIA.	ANSI TYPES						
		J	K	T	E	S	R	B
6	.162	.014	.023	.012	.027	.007	.007	.008
7	.144	.021						
8	.128	.022	.036	.019	.044	.010	.010	.013
14	.064	.089	.147	.074	.176	.044	.044	.054
16	.050	.141	.232	.117	.277	.069	.069	.086
18	.040	.229	.377	.190	.450	.112	.113	.139
20	.032	.357	.588	.297	.702	.175	.178	.218
24	.020	.905	1.488	.745	1.778	.449	.453	.550
26	.015	1.441	2.45	1.20	2.84	.701	.708	.875
28	.012	2.297	3.59	1.92	4.33	1.062	1.073	1.392
30	.010	3.65	6.02	2.94	7.19	1.794	1.813	2.213
36	.005	14.66	24.08	12.22	28.80	7.150	7.226	8.897

*Double feet 7 Ga Type J=7 Ga Iron/8 Ga Constantan

American Wire Gauge (AWG)	Size DIA. Inches
7/0	—
6/0	0.5800
5/0	0.5165
4/0	0.4600
3/0	0.4096
2/0	0.3648
1/0	0.3249
1	0.2893
2	0.2576
3	0.2294
4	0.2043
5	0.1819
6	0.1620
7	0.1443
8	0.1285
9	0.1144
10	0.1019
11	0.0907
12	0.0808
13	0.0720
14	0.0641
15	0.0571
16	0.0508
17	0.0453
18	0.0403
19	0.0359
20	0.0320
21	0.0285
22	0.0253
23	0.0226
24	0.0201
25	0.0179
26	0.0159
27	0.0142
28	0.0126
29	0.0113
30	0.0100
31	0.00893
32	0.00795
33	0.00708
34	0.00630
35	0.00561
36	0.00500
37	0.00445
38	0.00396
39	0.00353
40	0.00314
41	0.00280
42	0.00249
43	0.00222
44	0.00198
45	0.00176
46	0.00157
47	0.00140
48	0.00124
49	0.00111
50	0.00099

BARE THERMOCOUPLE WIRE APPROXIMATE WEIGHT FEET/LB.

Wire Ga B & S	Wire Size DIA.	TYPE J		TYPE K		TYPE T		TYPE E	
		Iron + JP	Constantan— JN	Chromel + KP	Alumel— KN	Copper + TP	Constantan— TN	Chromel + EP	Constantan— EN
6	.162	14.2	12.6	13	13	12.6	12.6	13	12.6
7	.144	18.0							
8	.128	22.8	20.2	21	21	19.8	20.2	21	20.2
14	.064	91.2	80.9	83	83	80.5	80.9	83	80.9
16	.050	144	127	130	130	128	127	130	127
18	.040	233	207	212	212	203	207	212	207
20	.032	365	324	331	331	324	324	331	324
24	.020	925	821	838	838	820	821	838	821
26	.015	1478	1312	1340	1340	1299	1312	1340	1312
28	.012	2353	2089	2130	2130	2062	2089	2130	2089
30	.010	3736	3316	3370	3370	3294	3316	3370	3316
36	.005	14940	13260	13500	13500	13250	13260	13500	13260



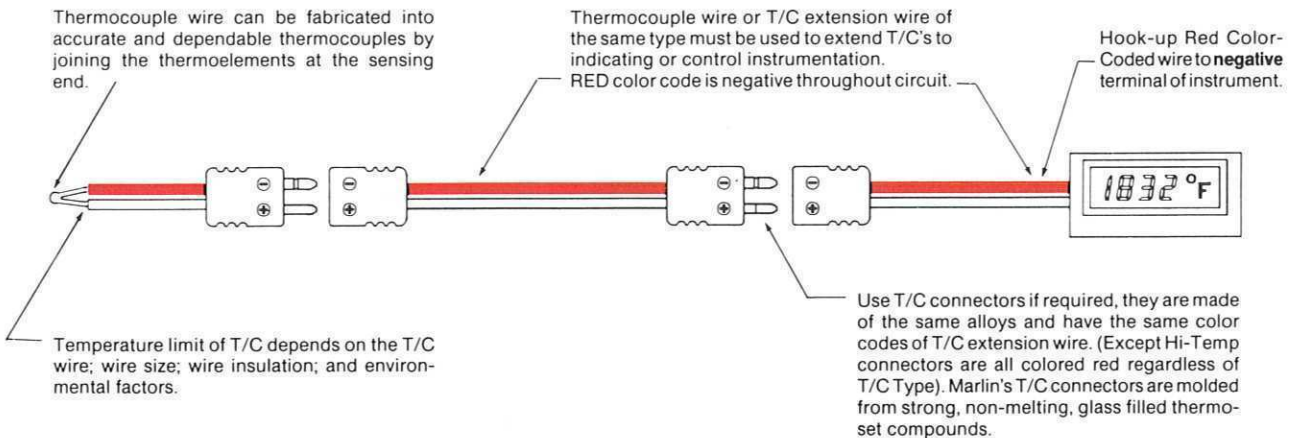
MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111 FAX: (216) 941-6207

(216) 941-6200

THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE COLOR CODES

MARLIN THERMOCOUPLE WIRE	Thermocouple wire Letter Designator	T	J	E	K	N
	Alloy Combination & Polarity	(+) Copper (-) Constantan	(+) Iron (magnetic) (-) Constantan	(+) Chromel™ (-) Constantan	(+) Chromel™ (-) Alumel™ (magnetic)	(+) Nicrosil (-) Nilil
	Insulated Thermocouple wire Color Code Note: Some insulations cannot be color coded	 BLUE (+) RED (-) BROWN	 (magnetic) WHITE (+) RED (-) BROWN	 PURPLE (+) RED (-) BROWN	 YELLOW (+) RED (-) (magnetic) BROWN	 ORANGE (+) RED (-) BROWN
	Bare Wire Temperature Range Note: Smaller wire sizes have shorter T/C life at higher temperatures	660°F (350°C) -330°F (-200°C)	1400°F (750°C) 32°F (0°C)	1600°F (900°C) 32°F (0°C)	2300°F (1250°C) 32°F (0°C)	2300°F (1250°C) 32°F (0°C)

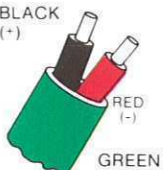
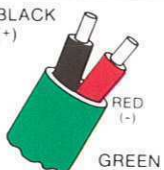
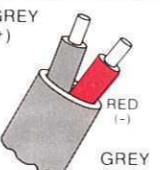

MARLIN T/C EXTENSION WIRE	T/C Extension wire Letter Designator	TX	JX	EX	KX	NX
	Alloy Combination & Polarity	(+) Copper (-) Constantan	(+) Iron (magnetic) (-) Constantan	(+) Chromel™ (-) Constantan	(+) Chromel™ (-) Alumel™ (magnetic)	(+) Nicrosil (-) Nilil
	Insulated T/C Extension Wire Color Code	 BLUE (+) RED (-) BLUE	 (magnetic) WHITE (+) RED (-) BLACK	 PURPLE (+) RED (-) PURPLE	 YELLOW (+) RED (-) (magnetic) YELLOW	 ORANGE (+) RED (-) ORANGE
	Bare Extension Wire Temperature Range	210°F (100°C) -75°F (-60°C)	400°F (200°C) 32°F (0°C)	400°F (200°C) 32°F (0°C)	400°F (200°C) 32°F (0°C)	400°F (200°C) 32°F (0°C)



THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE COLOR CODES

R	S	B	C	Thermocouple wire Letter Designator
(+) Platinum 13% Rhodium (-) Platinum	(+) Platinum 10% Rhodium (-) Platinum	(+) Platinum 30% Rhodium (-) Platinum 6% Rhodium	(+) Tungsten 5% Rhenium (-) Tungsten 26% Rhenium	Alloy Combination & Polarity
NOT AVAILABLE INSULATED	NOT AVAILABLE INSULATED	NOT AVAILABLE INSULATED	NOT AVAILABLE INSULATED	Insulated Thermocouple Wire Color Code Note: Some insulations cannot be color coded
2650° F (1450° C)	2650° F (1450° C)	3100° F (1700° C)	4200° F (2300° C) (for vacuum or inert atmospheres)	Bare Wire Temperature Range Note: Smaller wire sizes have shorter T/C life at higher temperatures
32° F (0° C)	32° F (0° C)	1600° F (870° C)	800° F (400° C)	

MARLIN THERMOCOUPLE WIRE

RX	SX	BX	CX	T/C Extension wire Letter Designator
(+) Copper (-) Copper Alloy II	(+) Copper (-) Copper Alloy II	(+) Copper Alloy 630 (-) Copper	(+) Copper Alloy 405 (-) Copper Alloy 426	Alloy Combination & Polarity
BLACK (+)  RED (-) GREEN	BLACK (+)  RED (-) GREEN	GREY (+)  RED (-) GREY	WHITE/RED (+)  RED (-) WHITE/ RED	Insulated T/C Extension wire Color Code
400° F (200° C)	400° F (200° C)	400° F (200° C)	1600° F (870° C)	Bare Extension Wire Temperature Range
75° F (25° C)	75° F (25° C)	32° F (0° C)	32° F (0° C)	

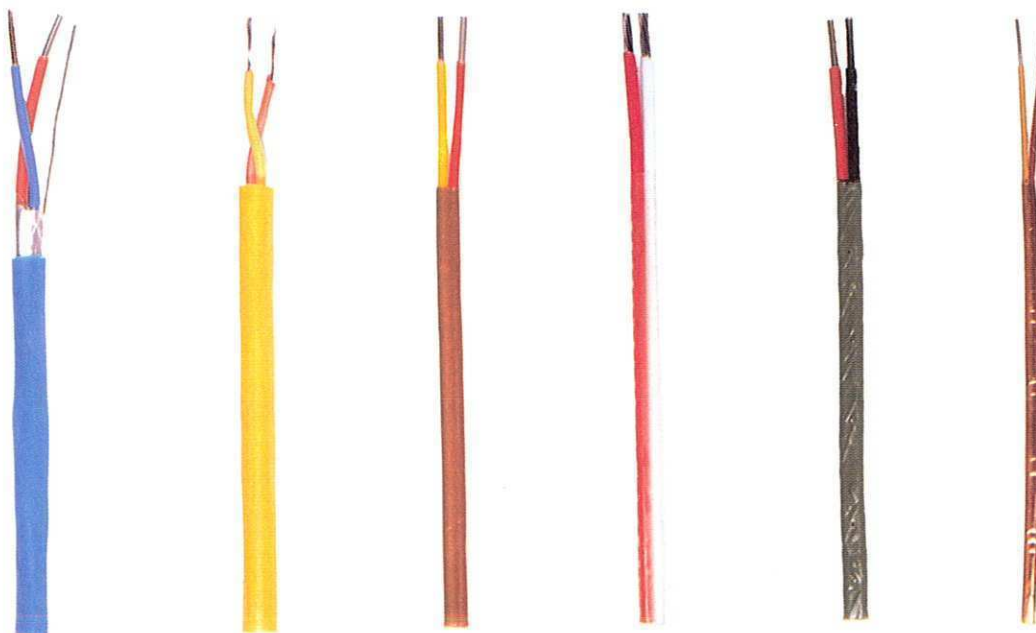
MARLIN T/C EXTENSION WIRE

Insulation Temperature Range	PVC 221° F (105° C) Silicone Rubber 500° F (260° C) FEP Teflon 400° F (204° C) PFA Teflon 500° F (260° C) TFE Teflon (tape) 500° F (260° C) Kapton (tape) 600° F (316° C) Glass (braid) 900° F (482° C) *High-Temp. Glass 1300° F (704° C) *Refrasil® 1600° F (871° C) *Ceramic (braid) 2400° F (1315° C) *(Not available color coded)
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THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE INSULATIONS — PLASTIC

Notes: Trade Names Teflon, Kapton, E.I. Dupont de Nemours & Co., Refrasil, Hitco.	PVC is the lowest cost of all the insulations. Mostly used with extension grade wire with the exception of ripcorp, code 3, construction which is T/C grade. Very easy to strip.	Silicone Rubber is a soft, flexible and tough insulation. Moderate in cost, it retains flexibility at lower temperatures and has higher upper utilization temperature than PVC. Outstanding fuel and solvent resistance.	Teflon FEP is not affected by most corrosives, lubricants or weather. Moderate in cost, FEP will not crack or embrittle with heat aging. Good for cryogenic use if not flexed.	Teflon PFA is higher in cost than FEP but has higher upper utilization temperature. Resistant to most corrosives, lubricants and weather. Good for cryogenic use if not flexed.	Teflon TFE is higher in cost than FEP but has higher upper utilization temperature. Tape is helically applied and cured. Difficult to strip.	Kapton is a high cost insulation. It is resistant to radiation. The tape is helically applied and cured with FEP binder. Difficult to strip.
Flexibility	Very Good	Excellent	Good	Good	Good	Good
Moisture Resistance	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Abrasion Resistance	Very Good	Excellent	Excellent	Excellent	Very Good	Very Good
ANSI Color Coded	Yes	Yes	Yes	Yes	Yes	Yes
Temperature Rating Continuous	-15 to +221°F -26 to +105°C	-75 to +500°F -100 to +260°C	-90 to +400°F -67 to +204°C	-90 to +500°F -67 to +260°C	-90 to +500°F -67 to +260°C	-90 to +500°F -67 to +260°C
Single Reading	N/A	N/A	600°F (316°C)	550°F (288°C)	600°F (316°C)	800°F (427°C)
Mfg. Method	Extruded	Extruded	Extruded	Extruded	Fused Tape	Fused Tape
Description	Polyvinyl Chloride (PVC)	Silicone Rubber	Teflon FEP	Teflon PFA	Teflon TFE	Kapton
Insulation Code	P	L	E	F	T	K



THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE INSULATIONS — FIBEROUS

Synthetic Fiber insulation is bulky because of the heavy application of the fiber. Used for extension grade wire, it can take rough handling. Not for use in conduits. Binder burn-off above 400°F (204°C)	Wrapped glass is used only on the single conductors. Usually used on the smaller gage wires because it is easier to strip without fraying. For thermocouple grade wire only. Binder burn-off above 400°F (204°C)	Braided glass is used on singles and for all jackets. Glass will not burn at any temperature but will melt if over-temperated. Any burn-off is due to binders and colorings. Has very high tensile strength. Binder burn-off above 400°F (204°C)	High-Temp glass extends the upper utilization temperature of fiberglass. Although higher in cost it is better suited for the aluminum industry than glass. Used with jacket or as twisted singles. Binder burn-off above 400°F (204°C)	Refrasil is a vitreous silica fiber that is higher in cost than High-Temp glass. Not as strong as glass but is utilized at higher temperatures. The FEP sizing can leave a residue when burned off under vacuum or restrictive atmospheres.	Ceramic fiber is designed for extreme temperature applications. Extremely high in cost. Should not be used in closed tubes. Has an abrasive feel when handling. Use appropriate protection when handling.	Notes: Trade Names Teflon, Kapton, Dupont de Nemours & Co. Refrasil, Hitco.
Good	Good	Good	Good	Good	Good	Flexibility
Fair	Fair	Fair	Fair	Fair	Fair	Moisture Resistance
Good	Fair	Fair	Fair	Fair	Fair	Abrasion Resistance
Yes	Yes	Yes	Yes by Tracer	No	No	ANSI Color Coded
500°F (260°C)	900°F (482°C)	900°F (482°C)	1300°F (704°C)	1600°F (871°C)	2200°F (1205°C)	Temperature Rating Continuous
650°F (343°C)	1000°F (538°C)	1000°F (538°C)	1600°F (871°C)	2000°F (1093°C)	2400°F (1315°C)	Single Reading
Braided Silicone Binder	Wrapped Silicone Binder	Braided Silicone Binder	Braided Silicone Binder	Braided FEP Sizing	Braided	Mfg. Method
Synthetic Fiber	Fiberglass	Fiberglass	High-Temp Fiberglass	Refrasil Silica Fiber	Ceramic Fiber	Description
S	W	G	H	R	C	Insulation Code









MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111

(216) 941-6200

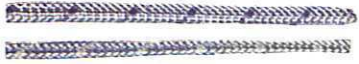

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THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE GENERAL

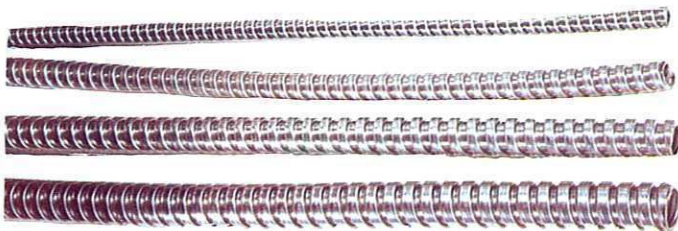
Constructions are arrangements of the conductor and insulation that suit the application. For instance, singles can be used to wire panels more easily than a jacketed construction. And duplex constructions can be more easily used in conduits. And Twisted duplex constructions are more flexible than paralleled ones and counteract flux induced noises. Twisted and shielded constructions provide the best noise reduction.

	CONSTRUCTIONS	
	Code	Description
	1	Insulated Single Conductor
	3	Insulated Duplex Conductors — Ripcord
	4	Insulated Duplex Conductors — Paralleled with Overall Insulation Jacket
	7	Insulated Duplex Conductors — Twisted
	8	Insulated Duplex Conductors — Twisted with Overall Insulation Jacket
	9	Insulated Duplex Conductors — Twisted with Mylar backed Aluminum Shield, Drain Wire, and Overall Insulation Jacket

Protective metal overbraids are used to enhance abrasion and cut-through resistance. With an approximately 85% coverage they also provide a noise shield although not as effective as the aluminized mylar tape full coverage shields.

	Protective Overbraid	
	Code	Description
None	0	No Attendant
	1	Stainless Steel 1400°F (760°C) Wire Braided over Insulated Construction
	2	Inconel wire 1800°F (982°C) Braided over Insulated Construction

[Sold Separately]



SS Flex Tubing			
Code	*Price \$/Ft.	I.D.	Approx. O.D.
FT-125	1.30	0.125"	0.200"
FT-187	0.90	0.187"	0.280"
FT-250	1.00	0.250"	0.340"
FT-312	1.10	0.310"	0.420"

*No Discounts.



THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE GENERAL

Example: J-20-GG40

Type J, T/C Grade, Standard Tolerance, Solid, 20 GA., Glass/Glass Insulation, Parallel, No Overbraid

CONDUCTOR:
T/C Type/
Grade - T/C or Extension
Tolerance
Solid or Standard

WIRE GA.:

INSULATION:
CONDUCTOR OVERALL

CONSTRUCTION: PROTECTIVE OVERBRAID

J

↑

CODE
T
J
E
K
N
TX
JX
EX
NX
RX
SX
BX
CX

-

20

↑

CODE
14
16
18
20
24
30
36
40

-

G G

↑

INSULATION	CODE
NONE	—
PVC	P
Silicone	L
Rubber	L
Extruded Teflon FEP	E
Extruded Teflon PFA	F
Taped Teflon TFE	T
Kapton	K
Synthetic Fiber	S
Wrapped Glass	W
Glass Braid	G
Hi-Temp Glass	H
Refrasil	R
Ceramic	C

↑

CODE	CODE
—	0
P	P
L	L
E	E
F	F
T	T
K	K
S	S
W	—
G	G
H	H
R	R
C	C

4

↑

CONSTRUCTION	CODE
Insulated Single	1
Insulated Duplex - Ripcord	3
Insulated Duplex - Paralleled with Overall Jacket	4
Insulated Duplex - Twisted	7
Insulated Duplex - Twisted with Overall Jacket	8
Insulated Duplex - Twisted with Mylar backed Al. Shield and Overall Jacket	9

0

↑

CODE	OVERBRAID
0	NONE
1	SS
2	INCONEL

"—" designates not available.

NOTES:
K - TYPE K,
Standard Tolerance
T/C Grade,
Solid Conductors
KK - Special Tolerance
KX - Extension Grade
KF - Stranded Conductors
(Flexible)
For Single Conductor:
KPF - Type K - Positive leg
Standard Tolerance
T/C Grade
Stranded Conductor
KNF - TYPE K - Negative leg

(SEE PRICE LISTS FOR AVAILABLE CONSTRUCTIONS)



MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111

(216) 941-6200

FAX: (216) 941-6207

THERMOCOUPLE WIRE INSULATED

Type "J" Thermocouple Wire
ANSI Color Code: Positive - White, Negative - Red, Overall - Brown

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC - Ripcord	24	J-24-P030	\$140.	Solid	.048 x .094	221°F (105°C)
Teflon FEP Ripcord	24	J-24-E030	315.	Solid	.035 x .070	400°F (209°C)
Extruded Teflon FEP Singles	20	JPF-20-E010	145.	Stranded Stranded	.062	400°F (209°C)
	20	JNF-20-E010	280.			
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	20	J-20-EE40	515.	Solid	.070 x .120	400°F (204°C)
	24	J-24-EE40	400.	Solid	.050 x .080	
	24	JF-24-EE40	450.	Stranded	.050 x .080	
	30	J-30-EE40	350.	Solid	.035 x .055	
Extruded Teflon PFA Duplex-Parallel Extruded Clear Jacket	30	J-30-FF40	370.	Solid	.022 x .042	500°F (260°C)
	36	J-36-FF40	420.	Solid	.018 x .028	
Teflon TFE Fused Tape Duplex-Parallel Fused Tape Jacket	16	J-16-TT40	800.	Solid	.115 x .165	500°F (260°C)
	20	J-20-TT40	550.	Solid	.065 x .110	
	24	J-24-TT40	435.	Solid	.050 x .080	
Kapton Fused Tape Duplex-Twisted	20	J-20-K070	605.	Solid	.085	600°F (316°C)
	24	J-24-K070	375.	Solid	.063	
Kapton Fused Tape Duplex-Parallel Fused Tape Jacket	20	J-20-KK40	990.	Solid	.057 x .103	600°F (316°C)
	20	JF-20-KK40	900.	Stranded	.057 x .103	
	24	J-24-KK40	760.	Solid	.045 x .079	
	30	J-30-KK40	840.	Solid	.038 x .063	
Glass Wrap Duplex-Parallel Braided Jacket	20	J-20-WG40	435.	Solid	.051 x .090	900°F (482°C)
	20	JF-20-WG40	670.	Stranded	.065 x .110	
	24	J-24-WG40	350.	Solid	.041 x .069	
	24	JF-24-WG40	370.	Stranded	.045 x .078	
	30	J-30-WG40	290.	Solid	.032 x .051	
	36	J-36-WG40	300.	Solid	.030 x .040	
Glass Braid Duplex-Parallel Braided Jacket	16	J-16-GG40	700.	Solid	.110 x .160	900°F (482°C)
	20	J-20-GG40	415.	Solid	.060 x .100	
	20	JF-20-GG40	700.	Stranded	.070 x .120	
	24	J-24-GG40	295.	Solid	.045 x .080	
Glass Braid Duplex-Parallel Braided Jacket SS Protective Overbraid	20	J-20-GG41	680.	Solid	.090 x .130	900°F (482°C)
	20	JF-20-GG41	735.	Stranded	.100 x .150	
	24	J-24-GG41	630.	Solid	.075 x .120	
	24	JF-24-GG41	580.	Stranded	.080 x .160	
Hi-Temp Glass Duplex-Twisted	20	J-20-H070	315.	Solid	.125	1300°F (704°C)
Hi-Temp Glass Duplex-Parallel Braided Jacket	20	J-20-HH40	420.	Solid	.110 x .150	1300°F (704°C)

*See Discounts and Notes Page E-11.



MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111 FAX: (216) 941-6207

(216) 941-6200

THERMOCOUPLE EXTENSION WIRE INSULATED

Type "JX" Thermocouple Extension Wire
ANSI Color Code: Positive - White, Negative - Red, Overall - Black

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC Duplex-Parallel Extruded Jacket	14	JX-14-PP40	\$580.	Solid	.130 x .226	221°F (105°C)
	16	JX-16-PP40	360.	Solid	.115 x .190	
	20	JX-20-PP40	185.	Solid	.095 x .158	
	20	JXF-20-PP40	410.	Stranded	.113 x .182	
PVC Duplex Twisted Shield w/Drain Extruded Jacket	16	JX-16-PP90	450.	Solid	.220	221°F (105°C)
	20	JX-20-PP90	290.	Solid	.184	
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	20	JXF-20-EE40	560.	Stranded	.075 x .122	400°F (204°C)
Extruded Teflon FEP Duplex-Twisted Shield w/Drain Extruded Jacket	16	JX-16-EE90	800.	Solid	.220	400°F (204°C)
	20	JX-20-EE90	550.	Solid	.131	
	20	JXF-20-EE90	650.	Stranded	.135	
Synthetic Fiber Braid Duplex-Parallel Braided Jacket	14	JX-14-SS40	945.	Solid	.190 x .290	500°F (260°C)
	16	JX-16-SS40	880.	Solid	.170 x .240	
	16	JXF-16-SS40	740.	Stranded	.175 x .250	

*See Discounts and Notes below.

Quantity (Feet)	Discount Factor
1 - 999	Net‡
1M - 2999	.90
3M - 4999	.85
5M - 9999	.80
10M+	.75

M = 1000

ORDER NOTES	
Code	Description
KK, JJ	Double ANSI symbol for special tolerance wire. Consult Factory for availability. Add \$30. per MFT to list price. For calibration services see page B-5.
Length	Standard packages are 1000 ft. or 2000 ft. reels. Shipping variance is plus or minus 10% of total amount ordered.
	‡Respooling charge of \$10.00 for orders less than 1000 continuous feet.

Approx. Shipping Wt. Per 1000 ft. Covered Wire	Wire Gage AWG	14	16	20	24	28	30
	Approx. lbs. per 1000 ft.		40-48	30-35	15-20	5	4



MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111

(216) 941-6200

FAX: (216) 941-6207

THERMOCOUPLE WIRE INSULATED

Type "K" Thermocouple Wire
ANSI Color Code: Positive - Yellow, Negative - Red, Overall - Brown

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC - Ripcord	24	K-24-P030	\$265.	Solid	.048 x .094	221°F (105°C)
Teflon FEP Ripcord	24	K-24-E030	370.	Solid	.035 x .070	400°F (209°C)
Extruded Teflon FEP Singles	20	KPF-20-E010	315.	Stranded Stranded	.062	400°F (204°C)
	20	KNF-20-E010	315.			
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	20	K-20-EE40	615.	Solid	.070 x .120	400°F (204°C)
	24	K-24-EE40	400.	Solid	.050 x .080	
	24	KF-24-EE40	550.	Stranded	.050 x .080	
	30	K-30-EE40	370.	Solid	.035 x .055	
Extruded Teflon PFA Duplex-Parallel Extruded Clear Jacket	30	K-30-FF40	360.	Solid	.022 x .042	500°F (260°C)
	36	K-36-FF40	395.	Solid	.018 x .028	
	40	K-40-FF40	525.	Solid	.015 x .024	
Teflon TFE Fused Tape Duplex-Parallel Fused Tape Jacket	16	K-16-TT40	1200.	Solid	.085 x .155	500°F (260°C)
	20	K-20-TT40	685.	Solid	.065 x .110	
	24	K-24-TT40	535.	Solid	.050 x .080	
Kapton Fused Tape Duplex-Twisted	20	K-20-K070	800.	Solid	.085	600°F (316°C)
Kapton Fused Tape Duplex-Parallel Fused Tape Jacket	20	K-20-KK40	1300.	Solid	.057 x .103	600°F (316°C)
	20	KF-20-KK40	1365.	Stranded	.057 x .103	
	24	K-24-KK40	840.	Solid	.045 x .079	
	30	K-30-KK40	890.	Solid	.038 x .063	
Glass Wrap Duplex-Parallel Braided Jacket	20	K-20-WG40	550.	Solid	.051 x .090	900°F (482°C)
	20	KF-20-WG40	1040.	Stranded	.065 x .110	
	24	K-24-WG40	435.	Solid	.041 x .069	
	24	KF-24-WG40	630.	Stranded	.045 x .078	
	30	K-30-WG40	375.	Solid	.032 x .051	
Glass Braid Duplex-Parallel Braided Jacket	16	K-16-GG40	950.	Solid	.110 x .160	900°F (482°C)
	20	K-20-GG40	500.	Solid	.060 x .100	
	20	KF-20-GG40	1070.	Stranded	.070 x .120	
	24	K-24-GG40	350.	Solid	.045 x .080	
Glass Braid Duplex-Parallel Braided Jacket SS Protective Overbraid	20	K-20-GG41	830.	Solid	.090 x .130	900°F (482°C)
	20	KF-20-GG41	1500.	Stranded	.100 x .150	
	24	K-24-GG41	675.	Solid	.075 x .120	
Hi-Temp Glass Duplex-Twisted	20	K-20-H070	500.	Solid	.125	1300°F (704°C)
Hi-Temp Glass Duplex-Parallel Braided Jacket	20	K-20-HH40	690.	Solid	.110 x .150	1300°F (704°C)
Refrasil Braid Duplex-Parallel Braided Jacket	20	K-20-RR40	1200.	Solid	.100 x .174	1600°F (871°C)
w/SS Protective Overbraid	20	K-20-RR41	1470.	Solid	.130 x .200	1400°F (760°C)
Ceramic Braid Duplex-Parallel Braided Jacket	20	K-20-CC40	1630.	Solid	.090 x .130	2200°F (1205°C)
w/INC. Protective Overbraid	20	K-20-CC42	2250.	Solid	.115 x .160	1800°F (982°C)

* See Discounts and Notes on next page.



(216) 941-6200
MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111 FAX: (216) 941-6207

THERMOCOUPLE EXTENSION WIRE INSULATED

Type "KX" Thermocouple Extension Wire
ANSI Color Code: Positive - Yellow, Negative - Red, Overall - Yellow

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC Duplex-Parallel Extruded Jacket	14	KX-14-PP40	\$1160.	Solid	.130 x .226	221°F (105°C)
	16	KX-16-PP40	590.	Solid	.115 x .190	
	20	KX-20-PP40	295.	Solid	.095 x .158	
	20	KXF-20-PP40	580.	Stranded	.113 x .182	
PVC Duplex Twisted Extruded Jacket	20	KXF-20-PP80	680.	Stranded	.160	221°F (105°C)
PVC Duplex Twisted Shield w/Drain Extruded Jacket	16	KX-16-PP90	710.	Solid	.220	221°F (105°C)
	20	KX-20-PP90	380.	Solid	.184	
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	16	KX-16-EE40	915.	Solid	.085 x .155	400°F (204°C)
	20	KXF-20-EE40	760.	Stranded	.075 x .122	
Extruded Teflon FEP Duplex-Twisted Shield w/Drain Extruded Jacket	16	KX-16-EE90	1400.	Solid	.220	400°F (204°C)
	20	KX-20-EE90	700.	Solid	.131	
	20	KXF-20-EE90	895.	Stranded	.135	
Silicone Rubber Duplex-Twisted Extruded Jacket	24	KXF-24-LL80	525.	Stranded	.225	500°F (260°C)
	20	KXF-20-LL80	840.	Stranded	.400	
Synthetic Fiber Braid Duplex-Parallel Braided Jacket	14	KX-14-SS40	1260.	Solid	.190 x .290	500°F (260°C)
	16	KX-16-SS40	1090.	Solid	.170 x .240	
	16	KXF-16-SS40	1160.	Stranded	.175 x .250	

*See Discounts and Notes below.

Quantity (Feet)	Discount Factor
1 - 999	Net†
1M - 2999	.90
3M - 4999	.85
5M - 9999	.80
10M+	.75

M = 1000

ORDER NOTES	
Code	Description
KK, JJ	Double ANSI symbol for special tolerance wire. Consult Factory for availability. Add \$30. per MFT to list price. For calibration services see page B-5.
Length	Standard packages are 1000 ft. or 2000 ft. reels. Shipping variance is plus or minus 10% of total amount ordered.
	†Respooling charge of \$10.00 for orders less than 1000 continuous feet.

Approx. Shipping Wt. Per 1000 ft. Covered Wire	Wire Gage AWG	14	16	20	24	28	30
	Approx. lbs. per 1000 ft.		40-48	30-35	15-20	5	4



MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111

(216) 941-6200

FAX: (216) 941-6207

THERMOCOUPLE WIRE INSULATED

Type "T" Thermocouple Wire ANSI Color Code: Positive - Blue, Negative - Red, Overall - Brown

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC - Ripcord	24	T-24-P030	\$140.	Solid	.048 x .094	221° F (105° C)
Extruded Teflon FEP Singles	20	TPF-20-E010	125.	Stranded Stranded	.062	400° F (209° C)
	20	TNF-20-E010	230.			
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	20	T-20-EE40	475.	Solid Solid	.070 x .120 .050 x .080	400° F (204° C)
	24	T-24-EE40	420.			
Extruded Teflon PFA Duplex-Parallel Extruded Clear Jacket	30	T-30-FF40	420.	Solid Solid	.022 x .042 .018 x .028	500° F (260° C)
	36	T-36-FF40	475.			
Teflon TFE Fused Tape Duplex-Parallel Extruded Jacket	20	T-20-TT40	485.	Solid Solid	.065 x .110 .050 x .080	500° F (260° C)
	24	T-24-TT40	430.			
Kapton Fused Tape Duplex-Parallel Fused Tape Jacket	20	T-20-KK40	1100.	Solid	.057 x .103	600° F (316° C)
	24	T-24-KK40	780.	Solid	.045 x .079	
	30	T-30-KK40	840.	Solid	.038 x .063	
Glass Wrap Duplex-Parallel Braided Jacket	20	T-20-WG40	415.	Solid	.051 x .090	900° F (482° C)
	24	T-24-WG40	341.	Solid	.041 x .069	
	30	T-30-WG40	315.	Solid	.032 x .051	
Glass Braid Duplex-Parallel Braided Jacket	20	T-20-GG40	415.	Solid	.060 x .100	900° F (482° C)
	20	TF-20-GG40	630.	Stranded	.070 x .120	
	24	T-24-GG40	310.	Solid	.045 x .080	
w/SS Protective Overbraid	20	T-20-GG41	685.	Solid	.090 x .130	

Type "E" Thermocouple Wire ANSI Color Code: Positive - Purple, Negative - Red, Overall - Brown

PVC-Ripcord	24	E-24-P030	\$285.	Solid	.048 x .094	221° F (105° C)
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	20	E-20-EE40	645.	Solid Solid	.070 x .120 .050 x .080	400° F (204° C)
	24	E-24-EE40	420.			
Extruded Teflon PFA Duplex-Parallel Extruded Clear Jacket	30	E-30-FF40	420.	Solid Solid	.022 x .042 .018 x .028	500° F (260° C)
	36	E-36-FF40	475.			
Glass Braid Duplex-Parallel Braided Jacket	20	E-20-GG40	570.	Solid	.060 x .100	900° F (482° C)

Type "N" Thermocouple Wire ANSI Color Code: Positive - Orange, Negative - Red, Overall - Brown

PVC-Ripcord	24	N-24-P030	\$275.	Solid	.048 x .094	221° F (105° C)
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	20	N-20-EE40	685.	Solid	.070 x .120	400° F (204° C)
Glass Braid Duplex-Parallel Braided Jacket	20	N-20-GG40	550.	Solid	.060 x .100	900° F (482° C)

*See Discounts and Notes.



(216) 941-6200

MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111 FAX: (216) 941-6207

THERMOCOUPLE EXTENSION WIRE INSULATED

Type "TX" Thermocouple Extension Wire
ANSI Color Code: Positive - Blue, Negative - Red, Overall - Blue

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC Duplex-Parallel Extruded Jacket	16	TX-16-PP40	\$400.	Solid	.115 x .190	221° F (105° C)
	20	TX-20-PP40	175.	Solid	.095 x .158	
	20	TXF-20-PP40	410.	Stranded	.113 x .182	
PVC Duplex-Twisted Shield w/Drain Extruded Jacket	16	TX-16-PP90	490.	Solid	.220	221° F (105° C)
	20	TX-20-PP90	270.	Solid	.184	
Extruded Teflon FEP Duplex-Twisted Shield w/Drain Extruded Jacket	16	TX-16-EE90	630.	Solid	.220	400° F (204° C)
	20	TX-20-EE90	560.	Solid	.131	

*See Discounts & Notes on page E-11

Type "EX" Thermocouple Extension Wire
ANSI Color Code: Positive - Purple, Negative - Red, Overall - Purple

PVC Duplex-Parallel Extruded Jacket	20	EX-20-PP40	\$375.	Solid	.095 x .158	221° F (105° C)
	20	EXF-20-PP80	580.	Stranded	.180	221° F (105° C)
PVC Duplex-Twisted Shield w/Drain Extruded Jacket	16	EX-16-PP90	725.	Solid	.220	221° F (105° C)
	20	EX-20-PP90	500.	Solid	.184	

Type "NX" Thermocouple Extension Wire
ANSI Color Code: Positive - Orange, Negative - Red, Overall - Orange

PVC Duplex-Parallel Extruded Jacket	20	NX-20-PP40	\$295.	Solid	.095 x .158	221° F (105° C)
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MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111

(216) 941-6200
FAX: (216) 941-6207

THERMOCOUPLE EXTENSION WIRE INSULATED

Type "RX" or "SX" Thermocouple Extension Wire
ANSI Color Code: Positive - Black, Negative - Red, Overall - Green

INSULATION	GA.	CODE	*PRICE/1000 FT.	SOLID/ STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
PVC Duplex-Parallel Extruded Jacket	16	R,SX-16-PP40	\$580.	Solid	.115 x .190	221°F (105°C)
	20	R,SX-20-PP40	250.	Solid	.095 x .158	
PVC Duplex-Twisted Shield w/Drain Extruded Jacket	16	R,SX-16-PP90	630.	Solid	.220	221°F (105°C)
	20	R,SX-20-PP90	275.	Solid	.184	
Extruded Teflon FEP Duplex-Parallel Extruded Jacket	16	R,SX-16-EE40	700.	Solid	.085 x .155	400°F (204°C)
	20	R,SX-20-EE40	460.	Solid	.065 x .110	
Teflon TFE Fused Tape Duplex-Parallel Fused Tape Jacket	16	R,SX-16-TT40	890.	Solid	.085 x .155	†500°F (260°C)
Extruded Teflon FEP Duplex-Twisted Shield w/Drain Extruded Jacket	16	R,SX-16-EE90	840.	Solid	.220	400°F (204°C)
	20	R,SX-20-EE90	500.	Solid	.131	
Synthetic Fiber Braid Duplex-Parallel Braided Jacket	16	R,SX-16-SS40	890.	Solid	.170 x .240	†500°F (260°C)
	16	R,SXF-16-SS40	790.	Stranded	.175 x .250	
Glass Braid Duplex Parallel Braided Jacket	16	R,SX-16-GG40	590.	Solid	.110 x .160	†900°F (482°C)
	20	R,SX-20-GG40	440.	Solid	.060 x .100	
	24	R,SX-24-GG40	315.	Solid	.045 x .080	

† Extension Wire limit 400°F (204°C)

Type "BX" Thermocouple Extension Wire (Alloy PCLW630 vs Copper)
ANSI Color Code: Positive - Gray, Negative - Red, Overall - Gray

Glass Braid Duplex-Parallel Braided Jacket	20	BX-20-GG40	\$660.	Solid	.060 x .100	900°F (482°C)
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Type "CX" Thermocouple Extension Wire (Alloy 405 vs Alloy 426)
ANSI Color Code: Positive - Orange, Negative - Red, Overall - Orange/Black Tracer

Glass Braid Duplex-Parallel Braided Jacket	24	CX-24-GG40	\$830.	Solid	.050 x .090	900°F (482°C)
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*See Discounts and Notes Page E-11



MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111 FAX: (216) 941-6207

(216) 941-6200

THERMOCOUPLE WIRE INSULATED — FINE GAGE

INSULATION	ANSI TYPE	GA.	CODE	*PRICE/1000 FT.	SOLID/STRANDED	NOMINAL SIZE	INSULATION TEMP. RATING
Extruded Teflon PFA Duplex-Parallel Extruded Clear Jacket	T	30	T-30-FF40	420.	Solid	.022 x .042	500° F (260° C)
		36	T-36-FF40	475.	Solid	.018 x .028	
	J	30	J-30-FF40	370.	Solid	.022 x .042	
		36	J-36-FF40	420.	Solid	.018 x .028	
	E	30	E-30-FF40	420.	Solid	.022 x .042	
		36	E-36-FF40	475.	Solid	.018 x .028	
	K	30	K-30-FF40	360.	Solid	.022 x .042	
		36	K-36-FF40	395.	Solid	.018 x .028	
		40	K-40-FF40	525.	Solid	.015 x .024	
			K-40-FF40	525.	Solid	.015 x .024	

*See Discounts and Notes below.

Quantity (Feet)	Discount Factor
1 - 999	Net‡
1M - 2999	.90
3M - 4999	.85
5M - 9999	.80
10M+	.75

M = 1000

ORDER NOTES	
Code	Description
KK, JJ	Double ANSI symbol for special tolerance wire. Consult Factory for availability. Add \$30. per MFT to list price. For calibration services see page B-5.
Length	Standard packages are 1000 ft. spools. Shipping variance is plus or minus 10% of total amount ordered.
‡Respooling charge of \$10.00 for orders less than 1000 continuous feet.	



Fine Gage Thermocouple Wire
Teflon PFA insulated
3 mil on each conductor
3 mil jacket
500° F (260° C) Temperature rating



MANUFACTURING CORPORATION 12404 TRISKETT ROAD CLEVELAND, OHIO 44111

(216) 941-6200
FAX: (216) 941-6207

THERMOCOUPLE WIRE BARE, BASE METAL

Marlin offers thermocouple wire in popular ANSI calibrations and in commonly used sizes. 8 Ga. and larger sizes are shipped in coils; 14 Ga. and smaller are shipped on non-returnable spools.

BASE METAL THERMOCOUPLE WIRE					Price \$ per Lb.	Standard Package C-Coil S-Spool	Finish Availability 1-Bright 2-Oxidized 3-Rust Veto
Wire Type	Element Polarity	Wire Ft./Lb.	Type Code	AWG			
Iron	Positive (+)	22.8	JP	8	12.00	60lb - C	3
		91.2		14	15.00	25lb - S	3
		365		20	17.00	25lb - S	1
Constantan	Negative (-)	20.2	JN	8	29.00	60lb - C	1
		80.9		14	30.00	25lb - S	1
		324		20	32.00	25lb - S	1
Chromel	Positive (+)	21	KP	8	35.50	60lb - C	1, 2
		83		14	37.00	25lb - S	1, 2
		130		16	38.00	25lb - S	1, 2
		331		20	42.00	25lb - S	1
		838		24	48.00	5lb - S	1
Alumel	Negative (-)	21	KN	8	35.50	60lb - C	1, 2
		83		14	36.50	25lb - S	1, 2
		130		16	37.00	25lb - S	1, 2
		331		20	41.00	25lb - S	1
		838		24	46.00	5lb - S	1

KN - 8 - 2 - 60 lbs.

KP - 8 - 2 - 60 lbs.

Order
Code:

Type	Wire	Finish	Quantity
Code	Ga.		
		1 - Bright	
		2 - Oxidized	
		3 - Rust Veto	

(Bare wire coils or spools may vary significantly due to production melt sizes, e.g. If you order 40 lbs. and receive 47 lbs. on a spool, we reserve the right to overship.)

Bare wire is sold in matched pairs. Please order equal amounts of each element.

Quantity in lbs.	Discount Factor
1 - 24 lbs.	Net *
25 - 99 lbs.	.95
100 - 499 lbs.	.90
500 - 1999 lbs.	.85
2000 lbs. +	.80

*Respooling charge of \$10 for less than Standard Pkg. Quantity.



THERMOCOUPLE WIRE BARE, HIGH TEMPERATURE

Code Type	Element Polarity	Wire In/TOz	Type Code	Wire Diameter	AWG	Price
PT- 10% Rh	Positive (+)	46.4	SP	0.050	16	Consult Factory
		118.0		0.032	20	
		302.2		0.020	24	
		715.2		0.012	28	
				0.010	30	
PT-	Negative (-)	43.3	SN	0.050	16	Consult Factory
		110.0		0.032	20	
		281.6		0.020	24	
		666.6		0.012	28	
				0.010	30	
PT- 13% Rh	Positive (+)	47.4	RP	0.050	16	Consult Factory
		120.4		0.032	20	
		308.3		0.020	24	
		729.8		0.012	28	
				0.010	30	
PT-	Negative (-)	43.3	RN	0.050	16	Consult Factory
		110.0		0.032	20	
		281.6		0.020	24	
		666.6		0.012	28	
				0.010	30	
PT- 30% Rh	Positive (+)	52.7	BP	0.050	16	Consult Factory
		134.0		0.032	20	
		343.1		0.020	24	
		812.3		0.012	28	
				0.010	30	
PT- 6% Rh	Negative (-)	45.2	BN	0.050	16	Consult Factory
		114.8		0.032	20	
		294.0		0.020	24	
		695.8		0.012	28	
				0.010	30	
Tungsten 5% Rhenium vs Tungsten 26% Rhenium		—	C	0.020	24	Consult Factory
				0.010	30	

Pt = Platinum
Rh = Rhodium

Bare wire is sold in matched pairs.
Please order equal amounts of each
element.

Order

Code:

SP - 24 - 120 inches

SN - 24 - 120 inches

Type
Code

Wire
Ga.

Length



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