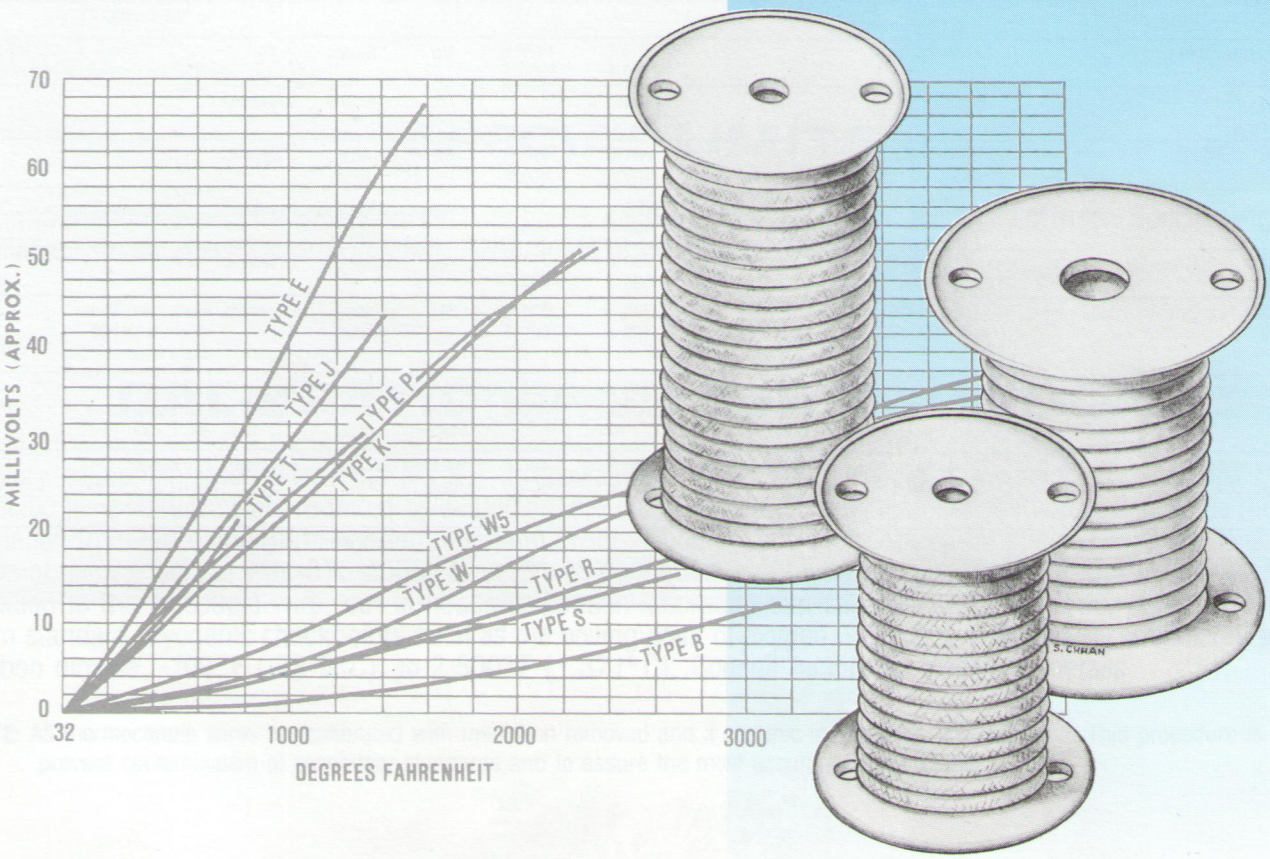
C-TEMP

INSULATED THERMOCOUPLE WIRE AND THERMOCOUPLE EXTENSION WIRE



INSULATED THERMOCOUPLE WIRE

Thermocouple Wire Types, Construction and Characteristics

Type	Single Conductor		Duplex Conductors		Temperature Rating		ANSI Color Coded	Physical Properties		Notes
	Insulation	Impregnation	Insulation	Impregnation	Continuous	Single Reading		Abrasion Resistance	Moisture Resistance	
301	Vitreous Silica Fiber .015"	None	Vitreous Silica Fiber .020"	None	871 C 1600 F	1093 C 2000 F	No	Fair	Fair	Impregnation retained to 204 C (400 F)
302	Double Glass Braid .012" Wall	Silicone Modified Resin	Glass Braid .006"	Silicone Modified Resin	482 C 900 F	538 C 1000 F	Yes	Good	Good	Impregnation retained to 204 C (400 F)
304	Glass Braid .006"	Silicone Modified Resin	Glass Braid .006"	Silicone Modified Resin	482 C 900 F	538 C 1000 F	Yes	Fair	Good	Impregnation retained to 204 C (400 F)
305	Double Glass Wrap .005"	High Temp. Varnish	Glass Braid .006"	Silicone Modified Resin	482 C 900 F	538 C 1000 F	Yes	Fair	Good	Impregnation retained to 204 C (400 F)
307	Teflon* TFE Tape (not fused) .004" TFE Coated Glass .006"	—	Teflon Coated Glass Braid	—	482 C 900 F	538 C 1000 F	Yes	Good	Excellent	Teflon good to 260 C (500 F)
308-002	Double Cotton Wrap .005"	None	Twisted with Double Cotton Braid .020"	Light Lacquer Coating	88 C 190 F	—	Yes	Fair	Fair	
309	High Temp. Glass Braid .012"	None	High Temp. Glass Braid .012"	Silicone Modified Resin	704 C 1300 F	871 C 1600 F	Both legs have tracer	Good	Fair	Impregnation retained 204 C (400 F)
311	High Temp. Glass Braid .012"	—	High Temp. Glass Braid .012"	Light Lacquer Coating	704 C 1300 F	871 C 1600 F	No	Fair	Fair	Coating retained to 149 C (300 F)
313	Glass Braid .008"	Silicone Modified Resin	Glass Braid .008"	Silicone Modified Resin	482 C 900 F	538 C 1000 F	Yes	Good	Good	Impregnation retained to 204 C (400 F)
314	High Temp. Glass Braid .008"	Silicone Modified Resin	None Twisted	—	704 C 1300 F	871 C 1600 F	Yes	Good	Good	Impregnation retained to 204 C (400 F)
315	Glass Braid .008"	Silicone Modified Resin	None Twisted	—	482 C 900 F	538 C 1000 F	Yes	Good	Good	Impregnation retained to 204 C (400 F)
316	Glass Braid .008"	Silicone Modified Resin	High Temp. Glass Braid .012"	Light Lacquer Coating	538 C 1000 F	650 C 1200 F	Yes singles only	Good	Good	Duplex coating retained to 149 C (300 F); single impregnation retained to 204 C (400 F)
350	Ceramic Fiber .018	—	Ceramic Fiber .018	—	1204 C 2200 F	1427 C 2600 F	No	Good	Fair	
505	Polyvinyl .012"-.014"	—	Ripcord	—	-29 to +105 C -20 to +221 F	—	Yes	Good	Excellent	
506	Teflon FEP Extr. .005"	—	Teflon FEP Extr. .005"	—	204°C 400°F	316°C 600°F	Yes	Very Good	Excellent	
507	Teflon FEP Extr. .008"	—	Teflon FEP Extr. .010"	—	204 C 400 F	316 C 600 F	Yes	Very Good	Excellent	
508	Teflon TFE Tape fused .006"	—	Teflon TFE Tape fused .0075"	—	260 C 500 F	316 C 600 F	Yes	Good	Excellent	
509	Teflon FEP Extr. .009"	—	Teflon FEP Extr. .010", twisted	—	204 C 400 F	316 C 600 F	Yes	Very Good	Excellent	Aluminum/Mylar* shield with #20 drain wire
511	Fused Kapton* Tape .004"	—	None Twisted	—	316 C 600 F	427 C 800 F	Both legs have tracer	Excellent	Excellent	FEP binder melts at approx. 260 C (500 F)
512	Fused Kapton Tape .004"	—	Fused Kapton Tape .004"	—	316 C 600 F	427 C 800 F	Both legs have tracer	Excellent	Excellent	FEP binder melts at approx. 260 C (500 F)
513	Fused Kapton .006"/Polyimide .001"	—	Fused Kapton .006"	—	316 C 600 F	427 C 800 F	Yes	Excellent	Excellent	FEP binder melts at approx. 260 C (500 F)

*Trade Name of E.I. duPont de Nemours & Co.

INSULATED THERMOCOUPLE EXTENSION WIRE

Thermocouple Wire Types, Construction and Characteristics

Type	Single Conductor		Duplex Conductor		Temperature Rating		ANSI Color Coded	Physical Properties		Notes
	Insulation	Impregnation	Insulation	Impregnation	Continuous	Single Reading		Abrasion Resistance	Moisture Resistance	
151	Felted ServTex† .015" to #24; .020" to #20 & larger	Hot Melt Compound	SerTex Braid†	Moisture Resistant Compound	288°C 550°F	343°C 650°F	Yes	Good	Fair	Impregnation retained to 149°C (300°F)
153	Teflon* TFE Tape (not fused) .004"/ Felted ServTex .020"	Silicone Modified Resin	ServTex Braid †	Moisture Resistant Compound	288°C 550°F	343°C 650°F	Yes	Good	Good	Impregnation retained to 204°C (400°F); Teflon good to 260°C (500°F)
303	Enamel/Glass Braid .008"	Silicone Modified Resin	Glass Braid .008"	Silicone Modified Resin	482°C 900°F	538°C 1000°F	Yes	Fair	Good	Impregnation retained to 204°C (400°F)
401	Polyvinyl .013" to #20 .014" to #16 .016" to #14	—	Cotton Braid	Wax	88°C 190°F	—	Yes	Good	Excellent	
502	Polyvinyl .013" to #20 .014" to #16 .016" to #14	—	Polyvinyl .016"	—	-29 to +105°C -20 to +221°F	—	Yes	Good	Excellent	
503	Polyvinyl .015"	—	Twisted with Filler Cotton Serve/ PVC .030"	—	-29 to +105°C -20 to +221°F	—	Yes	Good	Excellent	Stranded conductor only.
510	Polyvinyl .015"	—	Polyvinyl .020" Twisted	—	-29 to +105°C -20 to +221°F	—	Yes	Good	Excellent	Aluminum/Mylar* shield for computer application. #16 uses #18 Drain Wire. #20 uses #20 Drain Wire.
514	Tefzel* .008"	—	Tefzel .010"	—	150°C 302°F	200°C 392°F	Yes	Excellent	Excellent	
515	Tefzel .008"	—	Tefzel .010" Twisted	—	150°C 302°F	200°C 392°F	Yes	Excellent	Excellent	Aluminum/Mylar shield with 20 AWG Drain Wire.

†*Trade name C.S. Gordon Co.*
**Trade name E.I. duPont de Nemours & Co.*

SPECIAL LIMITS

C-Temp thermocouple wire and extension wire meets ANSI MC96 1-1982 standard limits of error. Special limits are available, please specify when ordering. ANSI limits of error are listed on page 12.

CALIBRATION AND CERTIFICATION

Factory calibration traceable to the N.I.S.T. is available for most wire listed in this catalog at a nominal charge. Specific temperature points required by customers are checked using the comparison method to determine the exact deviation from our standard to one-tenth degree. When spools of wire are required for surveys, we will certify both ends of each spool per **MIL-STD-45662** to certify all continuous wire on each spool suitable for use on surveys. In addition to thermocouple wire, our in-house calibration laboratory can calibrate all types of thermocouples, RTD's from standard cryogenic checkpoints such as the boiling point of oxygen, -297.3°F (-183.0°C), sublimated point of carbon dioxide, -109°F (-78.5°C), to 2,500°F (1,371°C). Consult factory for additional details.

NOTE: All thermocouple wires are calibrated with insulation removed and a ceramic insulator used in its place. This procedure is used to prevent contamination of secondary standards and to assure the most accurate data available.

INSULATED THERMOCOUPLE WIRE

Series 51 — Iron/Constantan ANSI Type J

ANSI Color Code: Negative Wire, Red; Positive Wire, White; Over-all, Brown with Tracer

Cat. No.	Size of Wire		Type of Wire	Ohms†	Insulations		Nominal Over-all Size§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Over-all		
*51-14-309	14	.0641	Solid	.086	High Temp. Glass Braid	High Temp. Glass Braid	.112 x .200	36
51-18-313-ST	18	.0490	Stranded	.185	Glass Braid	Glass Braid	.077 x .143	18
51-20-302-ST	20	.0390	Stranded	.343	Double Glass Braid	Glass Braid	.068 x .120	9
51-20-302-ST-SS	20	.0390	Stranded	.343	Double Glass Braid	Glass Braid/Stainless Braid	.100 x .162	16
51-20-304	20	.0320	Solid	.357	Glass Braid	Glass Braid	.056 x .096	8
51-20-305	20	.0320	Solid	.357	Glass Wrap	Glass Braid	.051 x .089	8
51-20-307	20	.0320	Solid	.357	Teflon (TFE) Tape, Teflon (TFE) Impregnated Glass Braid	Teflon (TFE) Impregnated Glass Braid	.071 x .120	11
51-20-314	20	.0320	Solid	.357	High Temp. Glass Braid	None Twisted	.098	8
51-20-315	20	.0320	Solid	.357	Glass Braid	None Twisted	.095	8
51-20-507	20	.0320	Solid	.357	Teflon (FEP) Extruded	Teflon (FEP) Extruded	.070 x .120	11
51-20-508	20	.0320	Solid	.357	Fused Teflon (TFE) Tape	Fused Teflon (TFE) Tape	.065 x .110	10
51-20-509	20	.0320	Solid	.357	Teflon (FEP) Extruded	Twisted Alum. Mylar/Teflon (FEP) Extruded	.131	16
51-20-511	20	.0320	Solid	.357	Fused Kapton Tape	Twisted	.085	8
*51-20-512-ST	20	.0390	Stranded	.343	Kapton	Kapton	.055 x .102	11
51-20-513	20	.0320	Solid	.357	Fused Kapton Tape	Fused Kapton Tape	.057 x .103	11
51-20-514	20	.0320	Solid	.357	Tefzel	Tefzel	.068 x .116	10
51-20-P04-ST	20	.0390	Stranded	.062	JP Single Conductor	Silicone Impregnated Double Glass Braid	.060	4
51-20-N04-ST	20	.0390	Stranded	.281	JN Single Conductor	Silicone Impregnated Double Glass Braid	.060	4
51-24-304	24	.0201	Solid	.877	Glass Braid	Glass Braid	.045 x .077	4
51-24-305	24	.0201	Solid	.877	Glass Wrap	Glass Braid	.041 x .069	4
51-24-505	24	.0201	Solid	.877	Polyvinyl	None—Rip-Cord Construction	.048 x .092	4
51-24-508	24	.0201	Solid	.877	Fused Teflon (TFE) Tape	Fused Teflon (TFE) Tape	.048 x .080	5
51-24-511	24	.0201	Solid	.877	Fused Kapton Tape	Twisted	.063	4
51-24-513	24	.0201	Solid	.877	Fused Kapton Tape	Fused Kapton Tape	.045 x .079	6
51-28-305	28	.0126	Solid	2.216	Glass Wrap	Glass Braid	.035 x .058	3
51-30-304	30	.0100	Solid	3.520	Glass Braid	Glass Braid	.044 x .068	3
51-30-305	30	.0100	Solid	3.520	Glass Wrap	Glass Braid	.032 x .051	3
51-30-308-002	30	.0100	Solid	3.520	Cotton Wrap	Twisted, Double/Cotton Braid	.085	3
51-30-513	30	.0100	Solid	3.520	Fused Kapton Tape	Fused Kapton Tape	.038 x .063	4

THERMOCOUPLE EXTENSION WIRE

Series 51 — Iron/Constantan ANSI Type JX

ANSI Color Code: Negative Wire, Red; Positive Wire, White; Over-all Black

51-14-151	14	.0641	Solid	.086	Felted ServTex	ServTex Braid	.195 x .288	40
51-14-502	14	.0641	Solid	.086	Polyvinyl	Polyvinyl	.124 x .221	37
51-16-151	16	.0508	Solid	.137	Felted ServTex	ServTex Braid	.174 x .250	32
51-16-151-ST	16	.0600	Stranded	.125	Felted ServTex	ServTex Braid	.188 x .281	31
51-16-153	16	.0508	Solid	.137	Teflon TFE/Felted Se vTex	ServTex Braid	.183 x .264	32
51-16-303	16	.0508	Solid	.137	Enamel, Glass Braid	Glass Braid	.087 x .151	18
51-16-502	16	.0508	Solid	.137	Polyvinyl	Polyvinyl	.122 x .193	27
51-16-401	16	.0508	Solid	.137	Polyvinyl	Weatherproof Braid	.110 x .179	25
51-16-510	16	.0508	Solid	.137	Polyvinyl	Twisted, Alum. Mylar/PVC	.217	28
51-16-515-ST	16	.0600	Stranded	.125	Tefzel	Twisted, Alum. Mylar/Tefzel	.160	29
51-18-503-ST	18	.0490	Stranded	.185	Polyvinyl	Twisted, Filler, Polyvinyl	.258	35
51-20-502	20	.0320	Solid	.357	Polyvinyl	Polyvinyl	.093 x .149	14
51-20-502-ST	20	.0390	Stranded	.343	Polyvinyl	Polyvinyl	.113 x .182	
51-20-509-ST	20	.0390	Stranded	.343	Fused Kapton Tape	Fused Kapton Tape	.186	20
51-20-510	20	.0320	Solid	.357	Polyvinyl	Twisted, Alum. Mylar/PVC	.182	20
51-20-514	20	.0320	Solid	.357	Tefzel	Tefzel	.068 x .116	10

INSULATED THERMOCOUPLE WIRE

Series 52 — Chromel/Alumel ANSI Type K

ANSI Color Code: Negative Wire, Red; Positive Wire, Yellow; Over-all, Brown with Tracer

Cat. No.	Size of Wire		Type of Wire	Ohms†	Insulations		Nominal Over-all Sizes§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Over-all		
*52-14-309	14	.0641	Solid	.147	High Temp. Glass Braid	High Temp. Glass Braid	.112 x .200	39
**52-20-301	20	.0320	Solid	.590	Vitreous Silica Fiber Braid	Vitreous Silica Fiber Braid	.102 x .174	16
52-20-302-ST	20	.0390	Stranded	.538	Double Glass Braid	Glass Braid	.068 x .120	9
52-20-304	20	.0320	Solid	.590	Glass Braid	Glass Braid	.056 x .096	8
52-20-305	20	.0320	Solid	.590	Glass Wrap	Glass Braid	.051 x .089	8
**52-20-311	20	.0320	Solid	.590	High Temp. Glass Braid	High Temp. Glass Braid	.099 x .151	16
52-20-313	20	.0320	Solid	.590	Glass Braid	Glass Braid	.065 x .110	9
52-20-316	20	.0320	Solid	.590	Glass Braid	High Temp. Glass Braid	.074 x .122	12
**52-20-350	20	.0320	Solid	.590	Ceramic Fiber	Ceramic Fiber	.096 x .147	16
52-20-507	20	.0320	Solid	.590	Teflon (FEP) Extruded	Teflon (FEP) Extruded	.070 x .120	11
52-20-508	20	.0320	Solid	.590	Fused Teflon (TFE) Tape	Fused Teflon (TFE) Tape	.059 x .102	10
52-20-509	20	.0320	Solid	.590	Teflon (FEP) Extruded	Twisted Alum. Mylar/ Teflon (FEP) Extruded	.131	16
*52-20-511	20	.0320	Solid	.590	Fused Kapton Tape	Twisted	.085	8
*52-30-512-ST	20	.0390	Stranded	.538	Kapton	Kapton	.055 x .102	11
52-20-513	20	.0320	Solid	.590	Fused Kapton Tape	Fused Kapton Tape	.057 x .103	11
52-24-304	24	.0201	Solid	1.490	Glass Braid	Glass Braid	.045 x .077	4
52-24-305	24	.0201	Solid	1.490	Glass Wrap	Glass Braid	.041 x .069	4
52-24-505	24	.0201	Solid	1.490	Polyvinyl	None—Rip-Cord Construction	.048 x .092	4
52-24-508	24	.0201	Solid	1.490	Fused Teflon (TFE) Tape	Fused Teflon (TFE) Tape	.048 x .080	5
52-24-513	24	.0201	Solid	1.490	Fused Kapton Tape	Fused Kapton Tape	.045 x .079	6
52-26-305	26	.0159	Solid	2.370	Glass Wrap	Glass Braid	.037 x .062	3
52-28-304	28	.0126	Solid	3.770	Glass Braid	Glass Braid	.041 x .068	3
52-28-305	28	.0126	Solid	3.770	Glass Wrap	Glass Braid	.035 x .058	3
52-30-305	30	.0100	Solid	5.980	Glass Wrap	Glass Braid	.032 x .051	2
52-30-506	30	.0100	Solid	.352	Extruded FEP	Extruded FEP	.030 x .050	4
52-30-513	30	.0100	Solid	5.980	Fused Kapton Tape	Fused Kapton Tape	.038 x .063	4

THERMOCOUPLE EXTENSION WIRE

Series 52 — Chromel/Alumel ANSI Type KX

ANSI Color Code: Negative Wire, Red; Positive Wire, Yellow; Over-all, Yellow

Cat. No.	Size of Wire		Type of Wire	Ohms†	Insulations		Nominal Over-all Wt., Lbs. Inch	Approx. Shipping per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Sizes§ Over-all		
52-14-151	14	.0641	Solid	.147	Felted ServTex	ServTex Braid	.195 x .288	44
52-14-502	14	.0641	Solid	.147	Polyvinyl	Polyvinyl	.124 x .221	38
52-14-151-ST	14	.0760	Stranded	.134	Felted ServTex	ServTex Braid	.208 x .316	40
52-16-151	16	.0508	Solid	.233	Felted ServTex	ServTex Braid	.174 x .250	33
52-16-151-ST	16	.0600	Stranded	.213	Felted ServTex	ServTex Braid	.188 x .281	33
52-16-153	16	.0508	Solid	.233	Teflon TFE, Felted ServTex	ServTex Braid	.183 x .264	33
52-16-303	16	.0508	Solid	.233	Enamel, Glass Braid	Glass Braid	.087 x .151	23
52-16-502	16	.0508	Solid	.233	Polyvinyl	Polyvinyl	.122 x .193	27
52-16-510	16	.0508	Solid	.233	105 C PVC	Twisted, Alum. Mylar/PVC	.217	28
52-16-515-ST	16	.0600	Stranded	.213	Tefzel	Twisted, Alum. Mylar/Tefzel	.160	30
52-20-502	20	.0320	Solid	.590	Polyvinyl	Polyvinyl	.093 x .149	14
52-20-502-ST	20	.0390	Stranded	.538	Polyvinyl	Polyvinyl	.113 x .182	14
52-20-510	20	.0320	Solid	.590	Polyvinyl	Twisted, Alum. Mylar/PVC	.182	20
52-20-510-ST	20	.0390	Stranded	.538	Polyvinyl	Twisted, Alum. Mylar/PVC	.198	20
52-20-514	20	.0320	Solid	.590	Tefzel	Tefzel	.068 x .116	10

INSULATED THERMOCOUPLE WIRE

Series 53 — Copper/Constantan ANSI Type T

ANSI Color Code: Negative Wire, Red; Positive Wire, Blue; Over-all, Brown with Tracer

Cat. No.	Size of Wire		Type of Wire	Ohms†	Insulations		Nominal Over-all Sizes§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Over-all		
53-20-304	20	.0320	Solid	.298	Glass Braid	Glass Braid	.056 x .096	5
53-20-305	20	.0320	Solid	.298	Glass Wrap	Glass Braid	.051 x .089	8
53-20-507	20	.0320	Solid	.298	Teflon (FEP) Extruded	Teflon (FEP) Extruded	.070 x .120	11
53-20-508	20	.0320	Solid	.298	Fused Teflon (TFE) Tape	Fused Teflon (TFE) Tape	.059 x .102	10
53-20-509	20	.0320	Solid	.298	Teflon (FEP) Extruded	Twisted Alum. Mylar/ Teflon (FEP) Extruded	.131	16
*53-20-512-ST	20	.0390	Stranded	.272	Kapton	Kapton	.055 x .102	11
53-20-513	20	.0320	Solid	.298	Fused Kapton Tape	Fused Kapton Tape	.057 x .103	11
53-24-304	24	.0201	Solid	.753	Glass Braid	Glass Braid	.045 x .077	4
53-24-305	24	.0201	Solid	.753	Glass Wrap	Glass Braid	.041 x .069	4
53-24-505	24	.0201	Solid	.753	Polyvinyl	None—Rip-Cord Construction	.048 x .092	3
53-24-508	24	.0201	Solid	.753	Fused Teflon (TFE) Tape	.048 x .080	5	
53-24-513	24	.0201	Solid	.753	Fused Kapton Tape	Fused Kapton Tape	.045 x .079	6
53-24-514	24	.0201	Solid	.753	Tefzel	Tefzel	.056 x .092	6
53-30-305	30	.0100	Solid	3.025	Glass Wrap	Glass Braid	.032 x .051	2
53-30-506	30	.0050	Solid	3.025	Extruded FEP	Extruded FEP	.030 x .050	4
53-30-513	30	.0100	Solid	3.025	Fused Kapton Tape	Fused Kapton Tape	.038 x .063	4

Series 57 — Chromel/Constantan ANSI Type E

ANSI Color Code: Negative Wire, Red; Positive Wire, Purple; Over-all, Brown with Tracer

Cat. No.	Size of Wire		Type of Wire	Ohms†	Insulations		Nominal Over-all Size§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Over-all		
57-20-304	20	.0320	Solid	.704	Glass Braid	Glass Braid	.056 x .096	8
57-20-513	20	.0320	Solid	.704	Fused Kapton Tape	Fused Kapton Tape	.065 x .100	11
57-24-304	24	.0201	Solid	1.780	Glass Braid	Glass Braid	.047 x .081	4

THERMOCOUPLE EXTENSION WIRE

Series 53 — Copper/Constantan ANSI Type TX

ANSI Color Code: Negative Wire, Red; Positive Wire, Blue; Over-all, Blue

Cat. No.	Size of Wire		Wire Wire	Ohms†	Insulations		Nominal Over-all Size§ Inch	Approx Shipping Wt., Lbs. per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Over-all		
53-16-502	16	.0508	Solid	.118	Polyvinyl	Polyvinyl	.122 x .193	28
53-16-510	16	.0508	Solid	.118	Polyvinyl	Twisted, Alum. Mylar PVC	.217	28
53-16-515-ST	16	.0600	Stranded	.108	Tefzel	Twisted, Alum. Mylar/Tefzel	.160	30
53-20-502	20	.0320	Solid	.298	Polyvinyl	Polyvinyl	.093 x .149	15
53-20-502-ST	20	.0390	Stranded	.272	Polyvinyl	Polyvinyl	.097 x .162	14
53-20-510	20	.0320	Solid	.298	Polyvinyl	Twisted, Alum. Mylar/PVC	.182	20
53-20-514	20	.0320	Solid	.298	Tefzel	Tefzel	.068 x .116	11

Series 57 — Chromel/Constantan ANSI Type EX

ANSI Color Code: Negative Wire, Red; Positive Wire, Purple; Over-all, Purple

Cat. No.	Size of Wire		Type of Wire	Ohms†	Insulations		Nominal Over-all Size§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
	B. & S. Gauge	Inch			Each Conductor	Over-all		
57-16-502	16	.0508	Solid	.278	Polyvinyl	Polyvinyl	.111 x .188	26
57-16-510	16	.0508	Solid	.278	Polyvinyl	Twisted, Alum. Mylar/PVC	.222	20
57-16-515-ST	16	.0600	Stranded	.254	Tefzel	Twisted, Alum. Mylar/Tefzel	.160	30
57-20-502	20	.0320	Solid	.704	Polyvinyl	Polyvinyl	.093 x .149	15
57-20-514	20	.0320	Solid	.704	Tefzel	Tefzel	.068 x .116	10

THERMOCOUPLE EXTENSION WIRE

Series 58 — Nicrosil/Nisil-ANSI Type NX

Color Code: Negative Wire. Red: Positive Wire. Orange: Over-all. Orange

Cat. No.	Size of Wire B. & S. Gauge	Size of Wire Inch	Type of Wire	Ohms†	Insulations Each Conductor	Insulations Over-all	Nominal Over-all Sizes§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
58-14-502	14	.0641	Solid	.20	PVC	PVC	.225	37
58-16-510	16	.0508	Solid	.30	PVC	PVC	.225	28
58-20-502	20	.0320	Solid	.80	PVC	PVC	.145	14
58-24-305	20	.0320	Solid	.940	Glass Wrap	Glass Braid	.050 x .090	5

Series 55 — Platinum/Platinum-Rhodium ANSI Type SX & RX

Compensating Extension Wires for ANSI Type R, S Thermocouples
ANSI Color Code: Negative Wire. Red: Positive Wire. Black: Over-all. Green

Cat. No.	Size of Wire B. & S. Gauge	Size of Wire Inch	Type of Wire	Ohms†	Insulations Each Conductor	Insulations Over-all	Nominal Over-all Size§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
55-16-151	16	.0508	Solid	.016	Felted ServTex	ServTex Braid	.174 x .250	30
55-16-151-ST	16	.0600	Stranded	.014	Felted ServTex	ServTex Braid	.188 x .281	31
55-16-153	16	.0508	Solid	.016	Teflon TFE, Felted ServTex	ServTex Braid	.183 x .264	30
55-20-304	20	.0320	Solid	.040	Glass Braid	Glass Braid	.056 x .096	8
55-20-502	20	.0320	Solid	.040	Polyvinyl	Polyvinyl	.090 x .148	13
55-20-507	20	.0320	Solid	.040	Extruded FEP	Extruded FEP	.070 x .120	11
55-24-304	24	.0201	Solid	.087	Glass Braid	Glass Braid	.045 x .077	4

Type BX

Compensating Extension Wire for Type B Thermocouples is copper/copper.

Series 58 — Tungsten/Tungsten-Rhenium Type W5

Compensating Extension Wires for Tungsten 5% / Tungsten 26% Rhenium Thermocouples (405 / 426)*
Color Code: Negative Wire. Red: Positive Wire. Orange: Over-all. Orange

Cat. No.	Size of Wire B. & S. Gauge	Size of Wire Inch	Type of Wire	Ohms†	Insulations Each Conductor	Insulations Over-all	Nominal Over-all Sizes§ Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
58-24-305	24	.0201	Solid	.940	Glass Wrap	Glass Braid	.050 x .090	5

*Hoskins Alloys.
†Ohms per double foot at 68°F.
§Two figures are the small and large dimensions of the oval cross section. A single figure is the diameter of the round section of twisted wires.
*Not color coded. Both legs have tracer.
**Not color coded

OVERBRAID FOR INSULATED THERMOCOUPLE AND EXTENSION WIRE

OVERBRAIDING SYMBOLS

Symbol	Type of Overbraid
SS	Stainless Steel Wire Braid
*CU	Tinned Copper Wire Braid
*FSS	Flat Stainless Steel Ribbon Braid
*SSW	Flat Stainless Steel Spiral Wrap
*GSW	Flat Galvanized Steel Spiral Wrap

*Quoted on "Special Order" basis only.

All thermocouple and extension wire listed on Pages 1-6 are available with overbraids as listed above with the exceptions of insulation types 505 and 510 in all ISA types.

To order wire with overbraid, select the type required and add the symbol to the end of the wire part number.

EXAMPLE: Type J 20 gauge with 304 insulation and stainless steel wire braid would be: 51-20-304-SS

STANDARD MULTIPAIR EXTENSION CABLE

ANSI Type JX Pairs

ANSI Color Code: Negative Wire, Red; Positive Wire, White; Over-all, Black

Cat. No.	No. of Pairs	B. & S. Gauge	Approx. O.D., Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
51-20-904	4—Twisted	20	.360	83
51-20-908	8—Twisted	20	.465	131
51-20-912	12—Twisted	20	.520	198
51-20-916	16—Twisted	20	.610	245
51-20-920	20—Twisted	20	.730	285
51-20-924	24—Twisted	20	.775	338

Insulation Each Conductor Polyvinyl; Over-all, Aluminum-backed Mylar and Polyvinyl

ANSI Type KX Pairs

ANSI Color Code: Negative Wire, Red; Positive Wire, Yellow; Over-all, Yellow

Cat. No.	No. of Pairs	B. & S. Gauge	Approx. O.D., Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
52-20-904	4—Twisted	20	.360	83
52-20-908	8—Twisted	20	.465	131
52-20-912	12—Twisted	20	.520	198
52-20-916	16—Twisted	20	.610	245
52-20-920	20—Twisted	20	.730	285
52-20-924	24—Twisted	20	.775	338

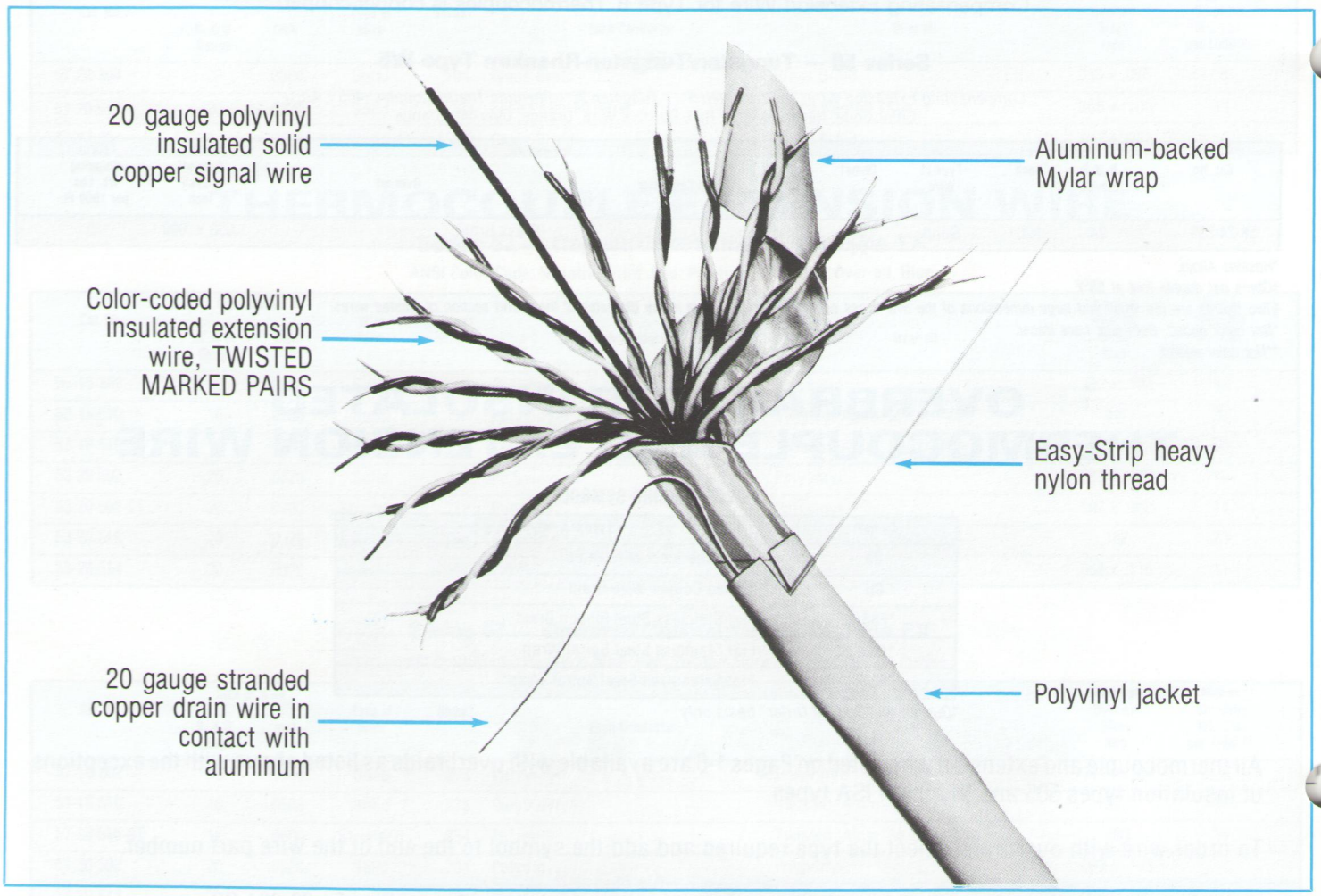
ANSI Type TX Pairs

ANSI Color Code: Negative Wire, Red; Positive Wire, Blue; Over-all, Blue

Cat. No.	No. of Pairs	B. & S. Gauge	Approx. O.D., Inch	Approx. Shipping Wt., Lbs. per 1000 Ft.
53-20-904	4—Twisted	20	.360	82
53-20-908	8—Twisted	20	.465	128
53-20-912	12—Twisted	20	.550	194
53-20-924	24—Twisted	20	.775	332

Minimum order 100 ft.

Series 900 T/X Extension Cable — Twisted Pairs



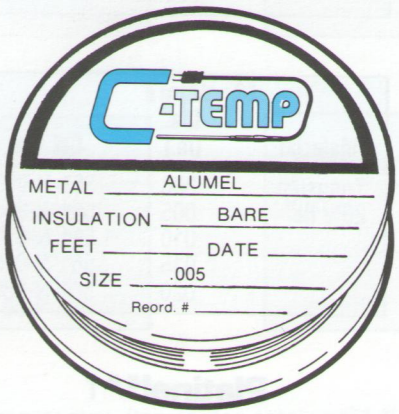
FINE GAUGE BARE THERMOCOUPLE WIRE

Base Metals

Material	Wire Dia. (In.)	Cat. No.
Iron	0.001	51-P-001
	0.002	51-P-002
	0.003	51-P-003
	0.005	51-P-005
	0.010	51-P-010
	0.015	51-P-015

Material	Wire Dia. (In.)	Cat. No.
Chromel	0.0005	52-P-0005
	0.001	52-P-001
	0.002	52-P-002
	0.003	52-P-003
	0.005	52-P-005
	0.010	52-P-010
	0.015	52-P-015

Material	Wire Dia. (In.)	Cat. No.
Copper	0.001	53-P-001
	0.002	53-P-002
	0.003	53-P-003
	0.005	53-P-005
	0.010	53-P-010
	0.015	53-P-015



Material	Wire Dia. (In.)	Cat. No.
*Constantan	0.001	51-N-001
	0.002	51-N-002
	0.003	51-N-003
	0.005	51-N-005
	0.010	51-N-010
	0.015	51-N-015

Material	Wire Dia. (In.)	Cat. No.
Alumel	0.0005	52-N-0005
	0.001	52-N-001
	0.002	52-N-002
	0.003	52-N-003
	0.005	52-N-005
	0.010	52-N-010
	0.015	52-N-015

Material	Wire Dia. (In.)	Cat. No.
*Constantan	0.0005	53-N-0005
	0.001	53-N-001
	0.002	53-N-002
	0.003	53-N-003
	0.005	53-N-005
	0.010	53-N-010
	0.015	53-N-015

***CONSTANTAN NOTE:** There are two grades of constantan. Constantan catalog #51-N-000 is specifically matched for Iron #51-P-000 to form Type J thermocouples. Constantan catalog #53-N-000 may be used with Copper catalog #53-P-000 to form Type T thermocouples or Chromel catalog #52-P-000 to form Type E thermocouples. When ordering fine wire for Type E thermocouples, use the prefix 57 for both positive and negative legs.

Precious Metals

Material	Wire Dia. (In.)	Cat. No.
Platinum 10% Rh	0.001	55-S-001
	0.002	55-S-002
	0.003	55-S-003
	0.005	55-S-005
	0.005	55-N-005
	0.008	55-N-008
	0.010	55-N-010
	0.015	55-N-015
	0.020	55-N-020
	0.032	55-N-032

Material	Wire Dia. (In.)	Cat. No.
Platinum 13% RH	0.001	55-R-001
	0.002	55-R-002
	0.003	55-R-003
	0.005	55-R-005
	0.005	55-S-005
	0.008	55-S-008
	0.010	55-S-010
	0.015	55-S-015
	0.020	55-S-020
	0.032	55-S-032

Material	Wire Dia. (In.)	Cat. No.
Platinum	0.001	55-N-001
	0.002	55-N-002
	0.003	55-N-003
	0.005	55-N-005
	0.005	55-R-005
	0.008	55-R-008
	0.010	55-R-010
	0.015	55-R-015
	0.020	55-R-020
	0.032	55-R-032

Wire Dia. (In.)	Cat. No.
0.008	55-BN-008
0.010	55-BN-010
0.015	55-BN-015
0.020	55-BN-020
0.032	55-BN-032

Material	Wire Dia. (In.)	Cat. No.
Platinum 30% Rh	0.008	55-BP-008
	0.010	55-BP-010
	0.015	55-BP-015
	0.020	55-BP-020
	0.032	55-BP-032

Material
Platinum 6% Rh

STANDARD GAUGE BARE THERMOCOUPLE WIRE

Tungsten

Material	Wire Dia. (In.)	Cat. No.
Tungsten	.003	56-P-003
	.005	56-P-005
	.010	56-P-010
	.015	56-P-015
	.020	56-P-020

Material	Wire Dia. (In.)	Cat. No.
Tungsten 5% Re	.003	561-P-003
	.005	561-P-005
	.010	561-P-010
	.015	561-P-015
	.020	561-P-020

Material	Wire Dia. (In.)	Cat. No.
Tungsten 3% Re	.003	562-P-003
	.005	562-P-005
	.010	562-P-010
	.015	562-P-015
	.020	562-P-020

Material	Wire Dia. (In.)	Cat. No.
Tungsten 26% Re	.003	56-N-003
	.005	56-N-005
	.010	56-N-010
	.015	56-N-015
	.020	56-N-020

Material	Wire Dia. (In.)	Cat. No.
Tungsten 26% Re	.003	561-N-003
	.005	561-N-005
	.010	561-N-010
	.015	561-N-015
	.020	561-N-020

Material	Wire Dia. (In.)	Cat. No.
Tungsten 25% Re	.003	562-N-003
	.005	562-N-005
	.010	562-N-010
	.015	562-N-015
	.020	562-N-020

Platinel**†

Material	Wire Dia. (In.)	Cat. No.
Alloy 5355	.001	54-P-001
	.005	54-P-005
	.010	54-P-010
	.015	54-P-015
	.020	54-P-020
	.032	54-P-032

Material	Wire Dia. (In.)	Cat. No.
Alloy 7674	.001	54-N-001
	.005	54-N-005
	.010	54-N-010
	.015	54-N-015
	.020	54-N-020
	.032	54-N-032

***†Platinel is a trade name of Englehard Industries.*

Type J

Material	Wire Dia. (In.)	Gauge	Cat. No.
Iron	0.020	24	51-P-020
	0.032	20	51-P-032
	0.041	18	51-P-041
	0.051	16	51-P-051
	0.064	14	51-P-064
	0.081	12	51-P-081
	0.125	8	51-P-125

Material	Wire Dia. (In.)	Gauge	Cat. No.
*Constantan	0.020	24	51-N-020
	0.032	20	51-N-032
	0.041	18	51-N-041
	0.051	16	51-N-051
	0.064	14	51-N-064
	0.081	12	51-N-081
	0.125	8	51-N-125

Type K

Material	Wire Dia. (In.)	Gauge	Cat. No.
Chromel	0.020	24	52-P-020
	0.032	20	52-P-032
	0.041	18	52-P-041
	0.051	16	52-P-051
	0.064	14	52-P-064
	0.081	12	52-P-081
	0.125	8	52-P-125

Material	Wire Dia. (In.)	Gauge	Cat. No.
Alumel	0.020	24	52-N-020
	0.032	20	52-N-032
	0.041	18	52-N-041
	0.051	16	52-N-051
	0.064	14	52-N-064
	0.081	12	52-N-081
	0.125	8	52-N-125

STANDARD GAUGE BARE THERMOCOUPLE WIRE

(cont.)

Type T

Material	Wire Dia. (In.)	Gauge	Cat. No.
Copper	0.020	24	53-P-020
	0.032	20	53-P-032
	0.041	18	53-P-041
	0.051	16	53-P-051
	0.064	14	53-P-064
	0.081	12	53-P-081
	0.125	8	53-P-125

Material	Wire Dia. (In.)	Gauge	Cat. No.
*Constantan	0.020	24	53-N-020
	0.032	20	53-N-032
	0.041	18	53-N-041
	0.051	16	53-N-051
	0.064	14	53-N-064
	0.081	12	53-N-081
	0.125	8	53-N-125

Type N

Material	Wire Dia. (In.)	Gauge	Cat. No.
Nicrosil**	.020	24	58-P-020
	.032	20	58-P-032
	.041	18	58-P-041
	.064	14	58-P-064
	.125	8	58-P-125

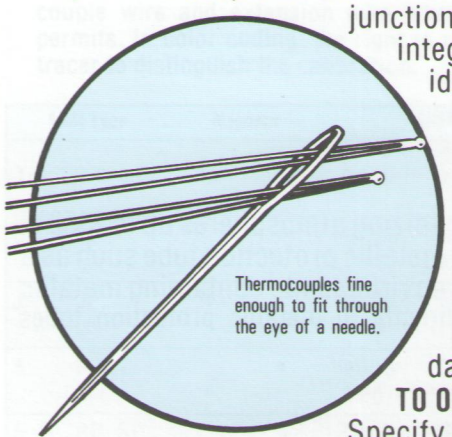
Material	Wire Dia (In.)	Gauge	Cat. No.
Nisil**	.020	24	58-N-020
	.032	20	58-N-032
	.041	18	58-N-041
	.064	14	58-N-064
	.125	8	58-N-125

***Trade name: AMAX, Hoskins Alloy 214/198*

***CONSTANTAN NOTE:** There are two grades of constantan. Constantan catalog #51-N-000 is specifically matched for Iron #51-P-000 to form Type J thermocouples. Constantan catalog #53-N-000 may be used with Copper catalog #53-P-000 to form Type T thermocouples or Chromel catalog #52-P-000 to form Type E thermocouples. When ordering fine wire for Type E thermocouples, use the prefix 57 for both positive and negative legs.

BARE WIRE THERMOCOUPLES

Made From Fine or Large Gauge Bare Wire



Any thermocouple wire diameter listed on Pages 8 & 10 may be manufactured to customer required lengths. All junctions are Tig welded to insure mechanical and metallurgical strength and integrity. Negative bare lead is color-coded ¼ in. on cold end for ease of identification. All thermocouples are made from matched pairs of wire and are supplied to fall within the standard limits of error for thermocouples established in the ANSI publication MC96.1—1982. The standard and special tolerances for thermocouple and all extension wire are listed on Page 12 of this catalog. Fine gauge bare wire thermocouples offer faster, more precise temperature measurements than larger diameter thermocouples. In addition to speed and accuracy, the fine gauge thermocouples effect on process flow and temperature in controlled environments is minimal due to its small thermal capacity. Please see additional technical data for bare wires listed on Page 11.

TO ORDER BASE OR PRECIOUS METAL BARE THERMOCOUPLES: Specify positive wire catalog numbers and "-N" for negative leg-length desired in inches. **EXAMPLE:** A Type K .005 diameter thermocouple 12 inches long would be 52-P-005-N-12.

TECHNICAL DATA — FINE WIRE

Base Metals

IRON/CONSTANTAN TYPE "J"

Fine wire Type J thermocouples may be used in oxidizing, reducing, inert, or vacuum environments to 895°F (480°C). Caution should be used at elevated temperature, due to the iron leg's rapid oxidation. Wire sizes smaller than .020 dia. should not be operated above 700°F (370°C). Type J fine wire thermocouples are not recommended for cryogenic use due to the iron leg's embrittlement and rust.

CHROMEL/ALUMEL TYPE "K"

Fine wire Type K thermocouples may be used in oxidizing or inert atmospheres at temperatures up to 1800°F (980°C). Wire sizes smaller than .005 may be used continuously in these atmospheres up to 1200°F (650°C). Type K thermocouples have the best oxidation resistance of all base metal thermocouples. They are also suitable for use in cryogenic applications to -425°F (-250°C). Type K thermocouples are not recommended for use in the following environments without the use of a protection tube: reducing, vacuum, or atmospheres containing sulfur.

COPPER/CONSTANTAN TYPE "T"

Type T fine wire thermocouples resist corrosion in humid atmospheres and are the most suitable for cryogenic applications. The maximum temperature for wire diameters .020 and larger is 700°F (371°C). Wires smaller than .020 diameter may be used to 300°F (150°C). Type T fine wire thermocouples may be used in inert, reducing, or oxidizing atmospheres.

CHROMEL/CONSTANTAN TYPE "E"

Fine wire Type E thermocouples develop the highest EMF (electro-motive-force) per degree of all base metal thermocouples. They may be used in oxidizing, reducing, or inert atmospheres. Type E fine wire thermocouples may be used for cryogenic temperatures and temperatures up to 1000°F (540°C). Smaller wire diameters are restricted to lower temperature limits. (See chart Page 13.)

NICROSIL/NISIL TYPE "N"

Type N thermocouples are an effective, durable alternative to Type K thermocouples. Nicrosil/Nisil produces an EMF value which follows the Chromel/Alumel curve and approaches the durability of Platinum in high temperature cycling, but at a considerably less cost.

Precious Metals

PLATINUM 6% RHODIUM/PLATINUM 30% RHODIUM TYPE "B"
PLATINUM/PLATINUM 10% RHODIUM TYPE "S"
PLATINUM/PLATINUM 13% RHODIUM TYPE "R"

Fine wire Types B, S, and R thermocouples may be used continuously in oxidizing atmospheres up to 2552°F (1400°C) and intermittently up to 3182°F (1750°C). When protected by a non-metallic protection tube such as a high purity alumina, they may be used continuously up to 3182°F (1750°C) in environments containing metallic vapors and reducing atmospheres. Types B, S, and R should not be used directly in metallic protection tubes without first being protected by non-metallic protection tubes.

TUNGSTEN/TUNGSTEN 26% RHENIUM TYPE "W"
TUNGSTEN 5% RHENIUM/TUNGSTEN 26% RHENIUM TYPE "W5"*
TUNGSTEN 3% RHENIUM/TUNGSTEN 25% RHENIUM TYPE "W3"*

Fine wire Types W, W3, and W5 can be used for temperatures up to 5000°F (2760°C) in hydrogen or inert atmospheres in a vacuum. They should not be used in oxidizing or atmospheres containing oxygen.

Platinel Type "P"*

Platinel 11 was developed to approximate the Type K EMF curve. Platinel 11 thermocouples used in air at temperatures up to 1300°C have almost twice the life of Type K thermocouples in the same environment. Like Types "B", "R" & "S" precaution must be taken in metallic environments. Platinel is not recommended for use in vacuum atmospheres.

**Not ANSI symbols.*

TECHNICAL DATA THERMOCOUPLE AND THERMOCOUPLE EXTENSION WIRE

ANSI LETTER DESIGNATIONS — *Thermocouple and extension wires are now generally ordered and specified by ANSI letter designations for calibration. Popular generic and trade name examples are "Chromel/Alumel"—ANSI Type K; "Iron/Constantan"—ANSI Type J; "Copper/Constantan"—ANSI Type T; Chromel/Constantan—ANSI Type E; Platinum/Platinum 10% Rhodium—ANSI Type S; Platinum/Platinum 13% Rhodium—ANSI Type R. Platinum 6% Rhodium/Platinum 30% Rhodium ANSI Type B.*

ANSI Letter Designations	Generic or Trade Names
JP	Iron
JN, EN, or TN	Constantan, Cupron, Advance
TP	Copper
KP or EP	Chromel, Tophel, T[1], Thermokanthal KP
KN	Alumel, Nial, T[2], Thermokanthal KN
RP	Platinum 13% Rhodium
SP	Platinum 10% Rhodium
RN or SN	Pure Platinum
BP	Platinum 30% Rhodium
BN	Platinum 6% Rhodium
NP	Nicrosil
NN	Nisil

Trade names: Cupron, nial and Tophel—Wilbur B. Driver Co. • Advance, T[1] and T[2]—Driver-Harris Co. • Chromel and Alumel—Hoskins Mfg. Co. • Thermokanthal KP and Thermokanthal KN—The Kanthal Corporation.

Color Coding

Standard ANSI color coding is used on all insulated thermocouple wire and extension wire when type of insulation permits. In color coding, the right is reserved to include a tracer to distinguish the calibration.

ANSI Type		Magnetic		ANSI Color Code		
T/C	Single	Yes	No	Single	Overall Extension Wire	Overall T/C Wire
E	EP EN		• •	Purple Red	Purple	Brown
J	JP JN	• 	 •	White Red	Black	Brown
K	KP KN	 •	• 	Yellow Red	Yellow	Brown
R, S	RP, SP RN, SN		• •	Black Red	Green	—
T	TP TN		• •	Blue Red	Blue	Brown
B	BP BN		• •	Grey Red	Gray	—
N	NP NN		• •	Orange Red	Orange	—

Limits of Error of Thermocouples for Standard Wire Sizes

ANSI Type	Temperature Range °F	°C	Limits of Error Standard	Special
K	32 to 2282	0 to 1250	±2.2°C or ±0.75%	±1.1°C or .4%
J	32 to 1382	.0 to 750	±2.2°C or ±0.75%	±1.1°C or .4%
T	32 to 662	0 to 350	±1.0°C or ±0.75%	±0.5°C or .4%
E	32 to 1652	0 to 900	±1.7°C or ±0.5%	±1.0°C or .4%
S, R	32 to 2642	0 to 1450	±1.5°C or ±0.25%	±0.6°C or .1%
B	1598 to 3092	870 to 1700	±0.5%	—
W, W5 W3	797 to 4208	425 to 2320	±1.0%	—

Reference Junction 32°F (0°C)

Limits of Error of Extension Wire for Standard Wire Sizes

ANSI Type Extension Wire	ANSI Type/TC Used With Wire Extension	Temperature Range, °F.	Limits of Error Standard	Special
KX	K	0 to +400	±4°F	±2°F
JX	J	0 to +400	±4°F	±2°F
EX	E	0 to +400	±3°F	—
TX	T	—75 to +200	±1½°F	±¾°F
SX, RX	S, R	+75 to +400	±9°F	—

Reference Junction 32°F (0°C)

Solid and Stranded Conductors

Thermocouple wire and extension wire are usually solid conductors. When greater flexibility is required, a stranded construction is recommended. The accompanying table gives the stranding combinations used in all wire. However, other stranding combinations may be ordered to suit requirements.

Stranding Combinations

Conductor		Stranding	
Gauge	ANSI Type	No. of Strands	Gauge
14	All	7	22
16	All	7	24
18	All	7	26
20	All	7	28
22	All	7	30
24	All	7	32

*TEMPERATURE LIMITS FOR FINE GAUGE BARE WIRE THERMOCOUPLES

	50 GAUGE	44 GAUGE	40 GAUGE	36 GAUGE	30 GAUGE	26 GAUGE	24 GAUGE
Thermocouple Type	.001	.002	.003	.005	.010	.015	.020
J	500°F (260°C)	600°F (316°C)	600°F (316°C)	700°F (371°C)	700°F (371°C)	700°F (371°C)	700°F (371°C)
K or N	1200°F (644°C)	1300°F (704°C)	1400°F (760°C)	1400°F (760°C)	1400°F (760°C)	1600°F (871°C)	1600°F (871°C)
T	300°F (149°C)	360°F (149°C)	350°F (177°C)	350°F (177°C)	400°F (204°C)	400°F (204°C)	400°F (204°C)
E	600°F (316°C)	650°F (345°C)	700°F (371°C)	700°F (371°C)	800°F (427°C)	800°F (427°C)	800°F (427°C)
R	—	—	—	—	—	—	2700°F (1480°C)
S	—	—	—	—	—	—	2700°F (1480°C)
B	—	—	—	—	—	—	3100°F (1700°C)
W, 5% Re-W, 26% Re	—	—	—	—	—	—	4200°F (2310°C)
W, 3% Re-W, 25% Re	—	—	—	—	—	—	4200°F (2310°C)
W-W, 26% Re	—	—	—	—	—	—	4200°F (2310°C)
Platinel II	—	—	—	—	—	—	2300°F (1260°C)

*TEMPERATURE LIMITS FOR STANDARD GAUGE BARE WIRE THERMOCOUPLES

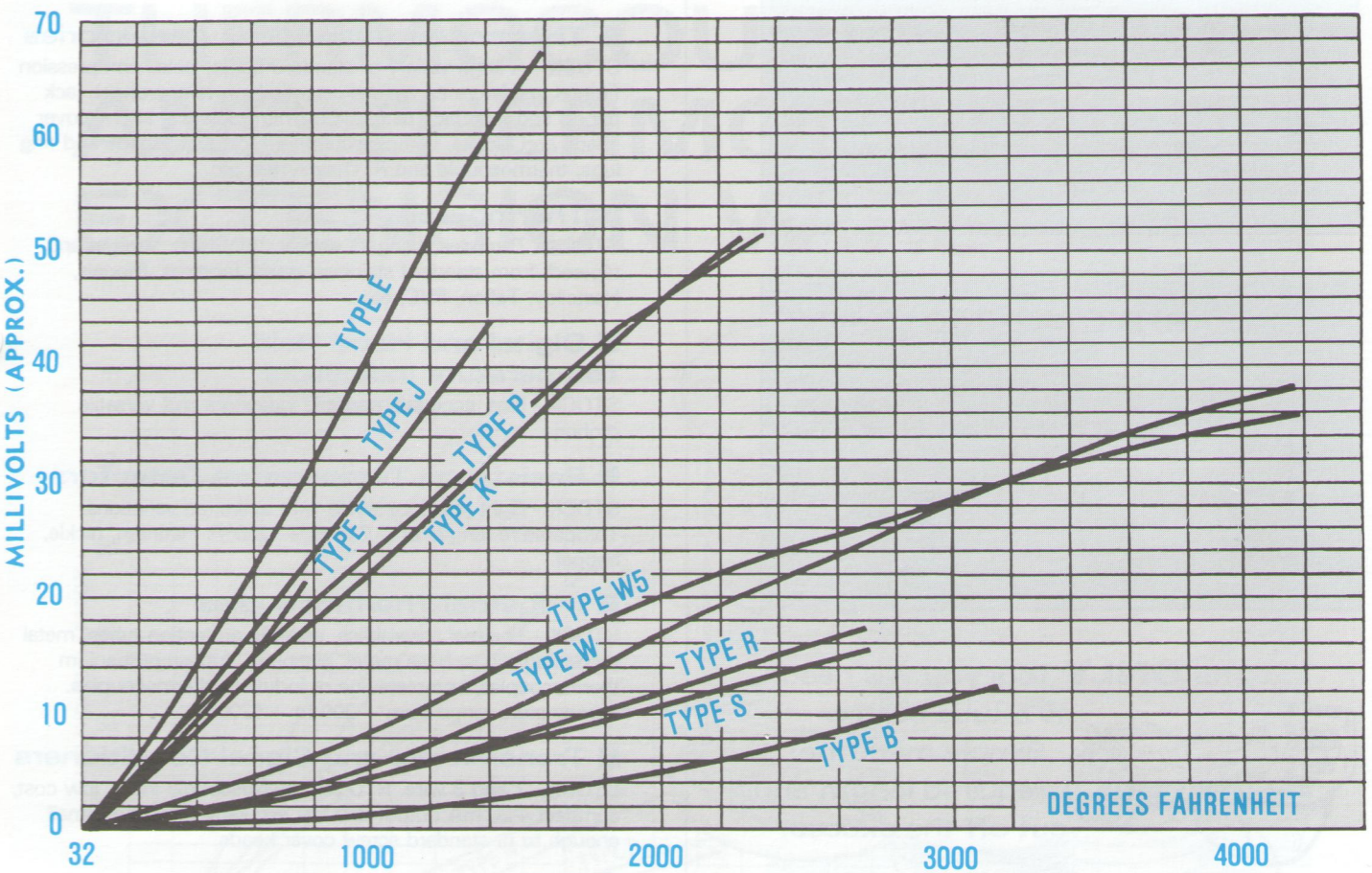
Thermocouple Type	24 Gauge 0.020 in.	20 Gauge 0.032 in.	14 Gauge 0.064 in.	8 Gauge 0.1285 in.
J	700°F (371°C)	900°F (480°C)	1100°F (590°C)	1400°F (760°C)
K or N	1600°F (871°C)	1800°F (980°C)	2000°F (1090°C)	2300°F (1260°C)
T	400°F (204°C)	500°F (260°C)	700°F (370°C)	—
E	800°F (427°C)	1000°F (540°C)	1200°F (650°C)	1600°F (870°C)
R	2700°F (1480°C)		—	—
S	2700°F (1480°C)	—	—	—
B	3100°F (1700°C)	—	—	—
W, 5% Re-W, 26% Re	4200°F (2310°C)	—	—	—
W, 3% Re-W, 25% Re	4200°F (2310°C)	—	—	—
W-W, 26% Re	4200°F (2310°C)	—	—	—
Platinel II	2300°F (1260°C)	—	—	—

*The temperature limits listed above should provide a satisfactory thermocouple life. Because we cannot control the environment in which they are used the above recommendations should be used as a general guide only.

Wire Size vs. Resistance For Thermocouple Wire

Resistance in ohms per single foot at 20°C (68°F)

AWG.	DIAMETER Inches	IRON (JP)	CONSTAN-TAN (EN, JN, TN)	CHROMEL (EP, KP)	ALUMEL (KN)	COPPER (TP)	PLATINUM (RN, SN)	PLATINUM 10% RHODIUM (SP)	PLATINUM 13% RHODIUM (RP)
20	.032	.0732	.2871	.4155	.1729	.100	.063	.113	.115
24	.0201	.1856	.7277	1.052	.4381	.2541	.160	.289	.293
26	.015	.2967	1.162	1.681	.700	.4006	.284	.513	.521
30	.010	.7500	2.940	4.25	1.77	1.026	.640	1.154	1.173
32	.008	1.171	4.594	6.641	2.766	1.0604	1.0	1.803	1.832
36	.005	3.0	11.76	17.0	7.08	4.106	2.56	4.616	4.692
40	.00315	7.56	29.63	42.832	17.838	10.34	6.45	11.633	11.824
44	.002	18.75	73.5	106.25	44.25	25.66	16.0	28.85	29.325
50	.001	75.0	294.0	425.0	177.0	102.67	64.0	115.4	117.3
56	.00049	312.37	1224.5	1770.1	737.193	428.51	266.56	480.63	488.54

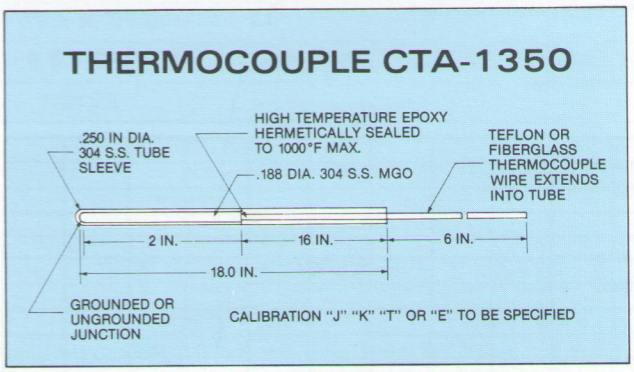


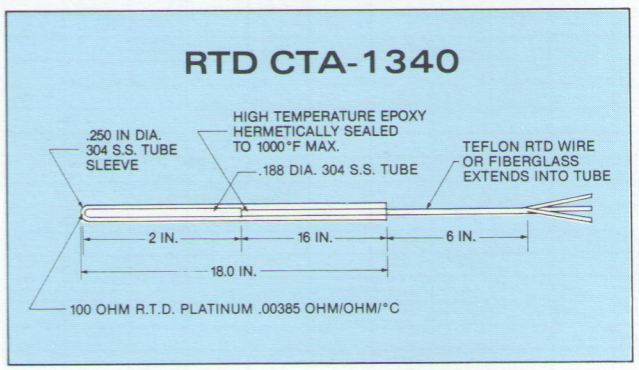
Type "E"	Chromel/Constantan	Type "B"	Platinum 6%/Rhodium/Platinum 30% Rhodium
Type "J"	Iron/Constantan	Type "W"	Tungsten/Tungsten 26% Rhenium
Type "K"	Chromel/Alumel	Type "W3"	Tungsten 3% Rhenium/Tungsten 25% Rhenium
Type "T"	Copper/Constantan	Type "W5"	Tungsten 5% Rhenium/Tungsten 26% Rhenium
Type "R"	Platinum/Platinum 13% Rhodium	Type "N"	Nicrosil/Nisil
Type "S"	Platinum/Platinum 10% Rhodium	Type "P"	Platinel 5355/Platinel 7674

Flexibility Problems?
Here's the solution!

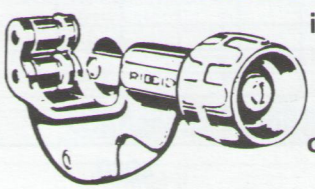
ADJUSTABLE RTD's AND THERMOCOUPLES

Not having the correct length THERMOCOUPLE or RTD is no longer a problem. With C-TEMP's adjustable sensor part numbers CTA-1340 and CTA-1350, you can adjust the length from 18" to 2½". These sensors are ideal for distributors, OEM's and users. Their flexibility allows inventories to be kept to a minimum by stocking one adjustable size. CTA-1340 and CTA-1350 are supplied in a .250 Dia. S.S. to fit most standard thermowells and accessories. Compression fitting and spring loaded process bushings slip on with ease and are also available from stock.





The ONLY tool you will need is a tube cutter. Simply mark the required length and cut off the excess.



Because these sensors are manufactured in large quantities, their cost is considerably less than our already low price for a similar sensor made to order. Specify the complete part number when ordering: Resistance Temperature Detector Part No. CTA-1340 or Thermocouple Part No. CTA-1350 - (ISA Type) - G or U (U = ungrounded, G = grounded).

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■ Plastics Industry Thermocouples
STOCK - Complete thermocouple assemblies available for delivery from stock.

■ Thermocouple Wire
STOCK - Thousands of feet in stock, uncommon alloys as well as the common ones.

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