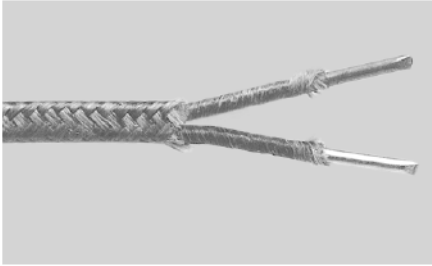


SERV-RITE Wire and Cable

Thermocouple Wire

Fiberglass Wrapped Thermocouple and Extension Wire SERIES 305



SERIES 305 is specifically constructed for light duty applications where size is a critical factor. The single conductors are insulated using a specialized yarn wrapped on the conductors in layers. This yarn is then impregnated to add abrasion resistance and enhance electrical properties. The insulated single conductors are then laid parallel and covered with a layer of braided glass. A final impregnation is applied to the braid.

For higher temperature applications, use SERIES 321 (see page 190).

Continuous Use Temp.	Single Use Temp.
480°C (900°F)	540°C (1000°F)
Resin retained to 204°C (400°F)	

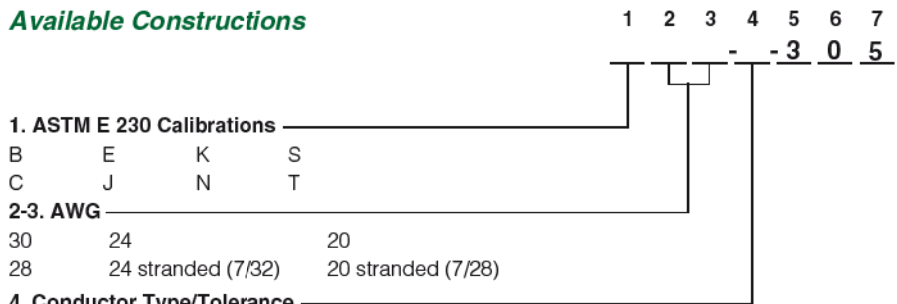
Resistance Properties		
Moisture	Chemical	Abrasion
Good	Good	Fair

Popular Constructions

Grade	AWG	Wire Type	Limits of Error	Type K	Type J
Thermocouple	24	Solid	Standard	K24-1-305	J24-1-305
			Special	K24-2-305	J24-2-305
	28	Solid	Standard	K28-1-305	J28-1-305
			Special	K28-2-305	J28-2-305
	30	Solid	Standard	K30-1-305	J30-1-305
			Special	K30-2-305	J30-2-305

Note: Bolded products are stocked and shipped in 100, 250, 500 and 1000 foot spools.

Available Constructions



1. ASTM E 230 Calibrations

B E K S
C J N T

2-3. AWG

30 24 20
28 24 stranded (7/32) 20 stranded (7/28)

4. Conductor Type/Tolerance

- 1 = Thermocouple grade, solid wire, standard tolerance
- 2 = Thermocouple grade, solid wire, special tolerance
- 3 = Thermocouple grade, stranded wire, standard tolerance
- 4 = Thermocouple grade, stranded wire, special tolerance
- 5 = Extension grade, solid wire, standard tolerance
- 6 = Extension grade, solid wire, special tolerance
- 7 = Extension grade, stranded wire, standard tolerance
- 8 = Extension grade, stranded wire, special tolerance

Note: Minimum order sizes apply for non-stock constructions.

Performance Capabilities

- Continuous temperature rating 482°C (900°F)
- Fiberglass braided yarn insulation
- Yarn wrapped conductors for superior coverage on small gauge wires
- Available with optional metallic overbraid for additional abrasion resistance

Applications

- Heat treating
- Oven
- General use

Wire Specifications

AWG	Nominal Conductor Size in. (mm)	Nominal Insulation Thickness		Nominal Overall Size in. (mm)	Approximate Shipping Weight	
		Conductor in. (mm)	Overall in. (mm)		lbs/1000 ft	(kg/km)
30	0.010 (0.254)	0.005 (0.127)	0.008 (0.203)	0.036 x 0.056 (0.914 x 1.42)	3	(4.5)
28	0.013 (0.320)	0.005 (0.127)	0.008 (0.203)	0.040 x 0.062 (1.02 x 1.57)	3	(4.5)
24	0.020 (0.508)	0.005 (0.127)	0.006 (0.152)	0.042 x 0.072 (1.07 x 1.83)	7	(10.4)
24 S* (7/32)	0.024 (0.610)	0.005 (0.127)	0.006 (0.152)	0.048 x 0.080 (1.22 x 2.03)	8	(11.9)
20	0.032 (0.813)	0.005 (0.127)	0.006 (0.152)	0.054 x 0.096 (1.37 x 2.44)	9	(13.4)
20 S* (7/28)	0.038 (0.965)	0.005 (0.127)	0.006 (0.152)	0.060 x 0.108 (1.52 x 2.74)	10	(14.9)

* "S" denotes stranded wire: e.g., "24 S (7/32)" is seven strands of 32 gauge wire to make a 24 gauge stranded conductor.

SERV-RITE Wire and Cable

Thermocouple Wire High Temperature Fiberglass Twisted Thermocouple Wire SERIES 314



The SERIES 314 is an economical construction for general, high temperature applications. The braided high temperature yarn is applied in a unique manner that allows SERIES 314 to be competitively priced with other fiberglass constructions. It produces a finished wire that performs at temperatures to 870°C (1600°F).

The conductors are insulated with braided high strength fiberglass and impregnated to improve abrasion resistance. The impregnation is tinted to impart color coding to primary insulations. The insulated single conductors are then twisted together to yield a construction flexible enough for most any application.

Continuous Use Temp.	Single Use Temp.
705°C (1300°F)	870°C (1600°F)
Resin retained to 204°C (400°F)	

Resistance Properties		
Moisture	Chemical	Abrasion
Good	Good	Good

Wire Specifications

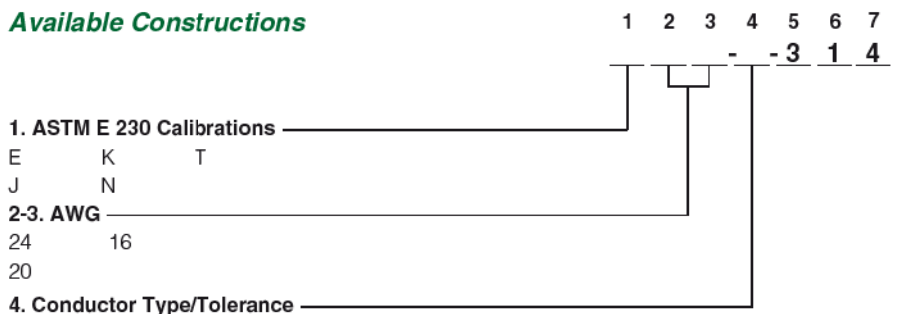
AWG	Nominal Conductor Size in. (mm)	Nominal Conductor Insulation Thickness		Nominal Overall Size		Approximate Shipping Weight	
		in.	(mm)	in.	(mm)	lbs/1000 ft	(kg/km)
24	0.020 (0.508)	0.015	(0.381)	0.100	(2.54)	6	(8.9)
20	0.032 (0.965)	0.015	(0.381)	0.124	(3.15)	10	(14.9)
18	0.040 (1.02)	0.018	(0.457)	0.152	(3.56)	16	(23.8)
16	0.051 (1.29)	0.018	(0.457)	0.174	(4.42)	21	(31.3)
14	0.064 (1.63)	0.018	(0.457)	0.200	(5.08)	32	(47.7)

Popular Constructions

Grade	AWG	Wire Type	Limits of Error	Type K	Type J
Thermocouple	20	Solid	Standard	K20-1-314	J20-1-314
			Special	K20-2-314	J20-2-314
	24	Solid	Standard	K24-1-314	J24-1-314
			Special	K24-2-314	J24-2-314

Note: **Bolded** products are stocked and shipped in 100, 250, 500 and 1000 foot spools.

Available Constructions



- 1 = Thermocouple grade, solid wire, standard tolerance
- 2 = Thermocouple grade, solid wire, special tolerance
- 3 = Thermocouple grade, stranded wire, standard tolerance
- 4 = Thermocouple grade, stranded wire, special tolerance

Note: Minimum order sizes apply for non-stock constructions.

Performance Capabilities

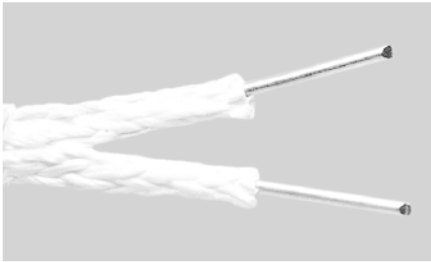
- Continuous temperature rating 705°C (1300°F)
- Fiberglass braided yarn insulation
- Twisted design has no jacket
- Available with optional metallic overbraid for additional abrasion resistance

Applications

- Heat treating
- Aluminum stress relieving
- Steel annealing

SERV-RITE Wire and Cable

Thermocouple Wire High Temperature Ceramic Fiber Thermocouple Wire SERIES 350 and 355



The SERIES 350 uses the ultimate high-temperature flexible insulating system. The ceramic fiber yarn's upper temperature limit often exceeds the melting point of the material it's insulating. When an application requires flexible insulation, while pushing Type K or Type N to their extreme limits, ceramic fiber insulation is the only choice.

Watlow supplies standard SERIES 350 without color coding or impregnations.* This minimizes contaminating the pure ceramic fiber yarn. Laboratory testing indicates the impregnation can decrease the upper use temperature by as much as 540°C (1000°F).

The 355 construction is a cost-effective, medium insulation build of the popular 350 heavy duty construction.

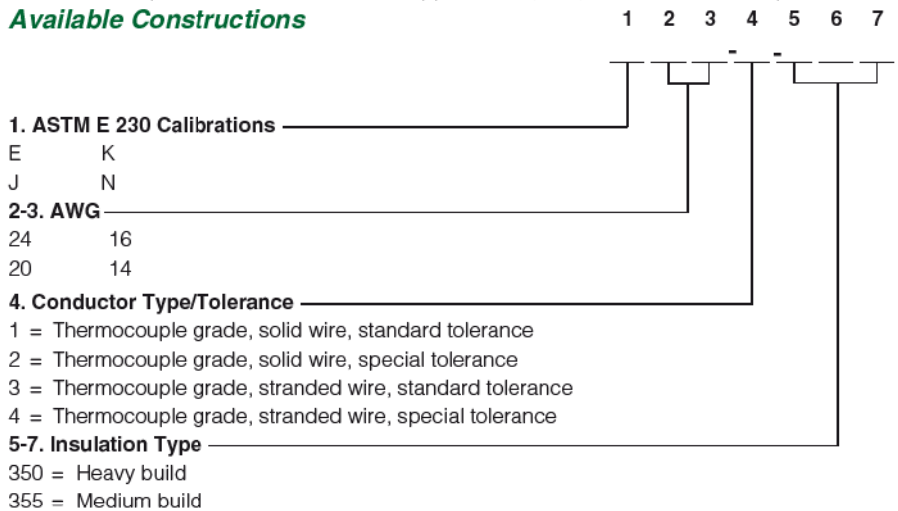
If application temperatures exceed SERIES 350 construction, specify XACTPAK® mineral-insulated, metal-sheathed cable.

Popular Constructions

Grade	AWG	Wire Type	Insulation	Limits of Error	Type K
Thermocouple	20	Solid	Heavy	Standard	K20-1-350
				Special	K20-2-350
			Medium	Standard	K20-1-355
				Special	K20-2-355

Note: Bolded products are stocked and shipped in 100, 250, 500 and 1000 foot spools.

Available Constructions



Note: Minimum order sizes apply for non-stock constructions.

Performance Capabilities

- Continuous temperature rating 1205°C (2200°F)
- Ceramic fiber braided yarn insulation
- Available with optional metallic overbraid for additional abrasion resistance

Applications

- Heat treating
- Oven and furnace survey
- Load thermocouple

Continuous Use Temp.	Single Use Temp.
1205°C (2200°F)	1430°C (2600°F)

Resistance Properties		
Moisture	Chemical	Abrasion
Fair	Good	Good

Wire Specifications - SERIES 350 and SERIES 355

AWG	Nominal Conductor Size in. (mm)		Nominal Insulation Thickness				Nominal Overall Size in. (mm)		Approximate Shipping Weight lbs/1000 ft (kg/km)	
			Conductor in. (mm)		Overall in. (mm)					
24 ^⓪	0.020	(0.508)	0.016	(0.406)	0.016	(0.406)	0.088 x 0.132	(2.24 x 3.35)	13	(19.4)
20 ^⓪	0.032	(0.965)	0.016	(0.406)	0.016	(0.406)	0.100 x 0.154	(2.54 x 3.91)	16	(23.8)
16 ^⓪	0.051	(1.29)	0.016	(0.406)	0.016	(0.406)	0.119 x 0.192	(3.02 x 4.88)	32	(47.7)
14 ^⓪	0.064	(1.63)	0.016	(0.406)	0.016	(0.406)	0.132 x 0.218	(3.35 x 5.54)	44	(65.6)
24 [Ⓢ]	0.020	(0.508)	0.012	(0.305)	0.016	(0.406)	0.078 x 0.116	(1.98 x 2.95)	13	(19.4)
20 [Ⓢ]	0.032	(0.965)	0.012	(0.305)	0.016	(0.406)	0.090 x 0.138	(2.29 x 3.50)	16	(23.8)
16 [Ⓢ]	0.051	(1.29)	0.012	(0.305)	0.016	(0.406)	0.111 x 0.176	(2.82 x 4.47)	32	(47.7)

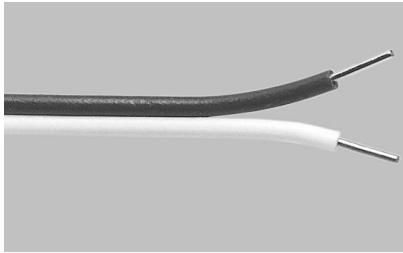
⓪SERIES 350

ⓈSERIES 355

* Because this insulation has no binders or impregnations, it may "flower" when stripped.

SERV-RITE Wire and Cable

Thermocouple Wire PVC Insulated "RIPCORD" SERIES 505



The SERIES 505 is the most economical wire produced. Unlike some competitive "rip cord" type constructions which use only a stripe to establish polarity, SERIES 505 single conductors are fully color coded. The conductors are individually insulated with the proper colored PVC and fused into "rip cord" using a proprietary process.

The insulated conductors can be easily separated by hand once the bond between conductors has been slit. As with other PVC insulated products, SERIES 505 lends itself well to both manual and mechanical stripping methods.

Continuous Use Temp.	Single Use Temp.
105°C (220°F)	105°C (220°F)

Resistance Properties		
Moisture	Chemical	Abrasion
Excellent	Good	Good

Wire Specifications

AWG	Nominal Conductor Size in. (mm)	Nominal Conductor Insulation Thickness in. (mm)	Nominal Overall Size in. (mm)	Approximate Shipping Weight lbs/1000 ft (kg/km)
26	0.016 (0.406)	0.015 (0.381)	0.046 x 0.088 (1.17 x 2.24)	4 (6.0)
24	0.020 (0.508)	0.015 (0.381)	0.050 x 0.096 (1.27 x 2.44)	5 (7.5)
24 S* (7/32)	0.024 (0.610)	0.015 (0.381)	0.054 x 0.104 (1.37 x 2.64)	6 (8.9)
20	0.032 (0.813)	0.015 (0.381)	0.062 x 0.120 (1.57 x 3.05)	10 (14.9)
20 S* (7/28)	0.038 (0.965)	0.015 (0.381)	0.068 x 0.132 (1.73 x 3.35)	11 (16.4)

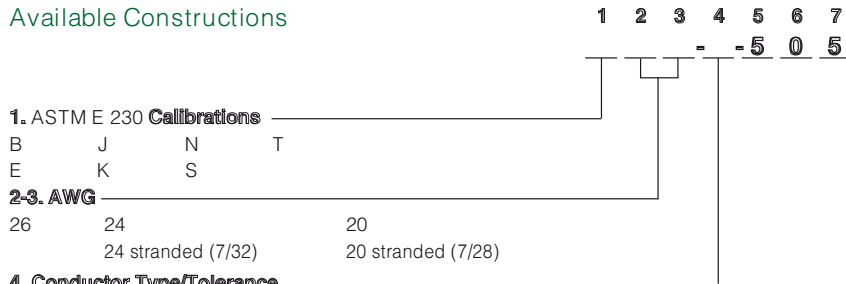
* "S" denotes stranded wire: e.g., "24 S (7/32)" is seven strands of 32 gauge wire to make a 24 gauge stranded conductor.

Popular Constructions

Grade	AWG	Wire Type	Limits of Error	Type K	Type J	Type T
Thermocouple	24	Solid	Standard	K24-1-505	J24-1-505	T24-1-505
			Special	K24-2-505	J24-2-505	T24-2-505

Note: **Bolded** products are stocked and shipped in 100, 250, 500 and 1000 foot spools.

Available Constructions



4. Conductor Type/Tolerance

- 1 = Thermocouple grade, solid wire, standard tolerance
- 2 = Thermocouple grade, solid wire, special tolerance
- 3 = Thermocouple grade, stranded wire, standard tolerance
- 4 = Thermocouple grade, stranded wire, special tolerance

Note: Minimum order sizes apply for non-stock constructions.

Performance Capabilities

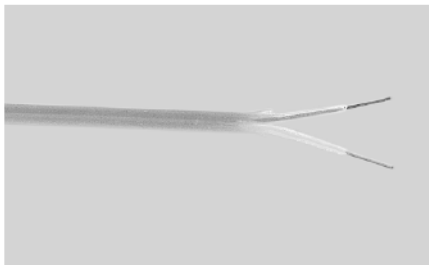
- Continuous temperature rating 105°C (220°F)
- Flexible PVC plastic insulation
- "Ripcord" peelable construction
- Available with optional metallic overbraid for additional abrasion resistance

Applications

- Laboratory
- Test stand
- Automotive

SERV-RITE Wire and Cable

Thermocouple Wire Small Gauge FEP Insulated SERIES 506



The SERIES 506 is the smallest standard insulated wire construction. The thin FEP wall on both primary and duplex insulation yields a construction that can operate safely at temperatures far beyond common PVC and nylon insulations.

The SERIES 506 is fully color coded for ease of installation. Its small size allows use in high density circuits. Response time is minimized by small diameter conductors. SERIES 506 is available only in gauge sizes of #26 and smaller. For gauge sizes larger than #26 specify SERIES 507 (see page 196).

Continuous Use Temp.	Single Use Temp.
204°C (400°F)	260°C (500°F)

Resistance Properties		
Moisture	Chemical	Abrasion
Excellent	Excellent	Excellent

Wire Specifications

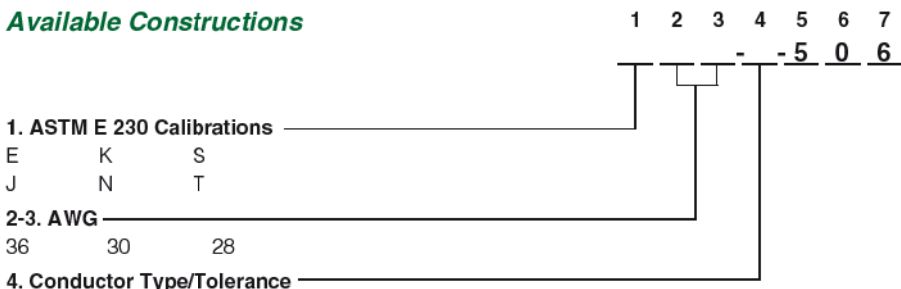
AWG	Nominal Conductor Size in. (mm)	Nominal Insulation Thickness		Nominal Overall Size in. (mm)	Approximate Shipping Weight lbs/1000 ft (kg/km)
		Conductor in. (mm)	Overall in. (mm)		
36	0.005 (0.127)	0.005 (0.127)	0.005 (0.127)	0.025 x 0.040 (0.635 x 1.02)	2 (3.0)
32	0.008 (0.203)	0.005 (0.127)	0.005 (0.127)	0.028 x 0.046 (0.711 x 1.17)	2 (3.0)
30	0.010 (0.254)	0.005 (0.127)	0.005 (0.127)	0.030 x 0.050 (0.762 x 1.27)	3 (4.5)
28	0.013 (0.330)	0.005 (0.127)	0.005 (0.127)	0.033 x 0.056 (0.838 x 1.42)	3 (4.5)

Popular Constructions

Grade	AWG	Wire Type	Limits of Error	Type K	Type J	Type T
Thermocouple	28	Solid	Special	K28-2-506	J28-2-506	T28-2-506
	30	Solid	Special	K30-2-506	J30-2-506	T30-2-506
	36	Solid	Special	K36-2-506	J36-2-506	T36-2-506

Note: Bolded products are stocked and shipped in 100, 250, 500 and 1000 foot spools.

Available Constructions



- 1 = Thermocouple grade, solid wire, standard tolerance
- 2 = Thermocouple grade, solid wire, special tolerance
- 3 = Thermocouple grade, stranded wire, standard tolerance
- 4 = Thermocouple grade, stranded wire, special tolerance

Note: Minimum order sizes apply for non-stock constructions.

Performance Capabilities

- Continuous temperature rating 204°C (400°F)
- Flexible FEP plastic insulation
- Thin insulation wall for a compact construction
- Available with optional metallic overbraid for additional abrasion resistance

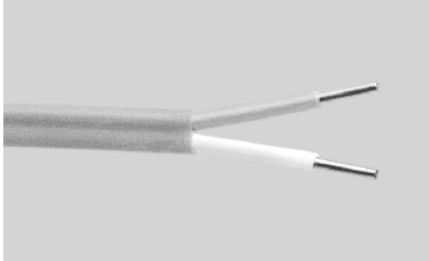
Applications

- Laboratory
- Test stand
- Industrial equipment testing

SERV-RITE Wire and Cable

Thermocouple Wire

FEP Insulated Thermocouple and Extension Wire SERIES 507



The SERIES 507 is the most economical fluoroplastic insulated wire. SERIES 507 is also available as UL® listed PLTC. Individual conductors are coated with a layer of color coded FEP. The insulated conductors are then parallel duplexed with an additional layer of color coded FEP. The finished construction has a temperature rating of 260°C (500°F). Abrasion, moisture and chemical resistance are far in excess of most other insulations.

This construction is widely used when pulling long lengths of wire through conduit. FEP's low friction coefficient and abrasion resistance make it ideally suited for these applications.

For higher abrasion resistance consider Tefzel® insulated constructions, the SERIES 514. For higher temperatures specify SERIES 508 (see page 198).

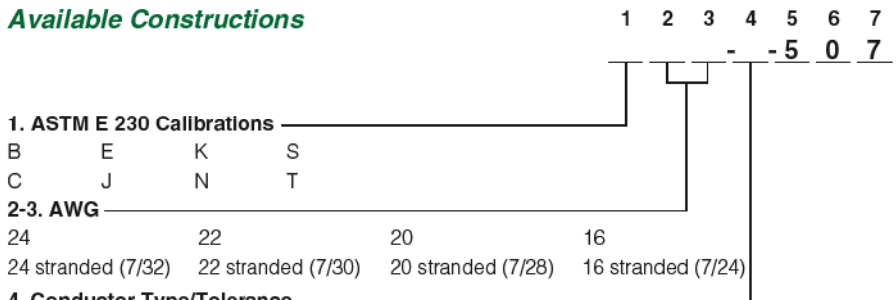
Popular Constructions

Grade	AWG	Wire Type	Limits of Error	Type K	Type J	Type T
Extension	20	Solid	Standard	K20-5-507	J20-5-507	T20-5-507
Thermocouple	20	Solid	Standard	K20-1-507	J20-1-507	T20-1-507
		Stranded	Standard	K20-3-507	J20-3-507	T20-3-507
		Solid	Special	K20-2-507	J20-2-507	T20-2-507
	24	Solid	Standard	K24-1-507	J24-1-507	T24-1-507
Stranded		Standard	K24-3-507	J24-3-507	T24-3-507	
Solid		Special	K24-2-507	J24-2-507	T24-2-507	

Grade	AWG	Wire Type	Limits of Error	Type E	Type S
Extension	20	Solid	Standard	E20-5-507	S20-5-507
Thermocouple	20	Solid	Standard	E20-1-507	
		Stranded	Standard	E20-3-507	
		Solid	Special	E20-2-507	
Extension	24	Solid	Standard		S24-5-507
Thermocouple	24	Solid	Standard	E24-1-507	
		Stranded	Standard	E24-3-507	
		Solid	Special	E24-2-507	

Note: Bolded products are stocked and shipped in 100, 250, 500 and 1000 foot spools.

Available Constructions



1. ASTM E 230 Calibrations

B E K S
C J N T

2-3. AWG

24 22 20 16
24 stranded (7/32) 22 stranded (7/30) 20 stranded (7/28) 16 stranded (7/24)

4. Conductor Type/Tolerance

- 1 = Thermocouple grade, solid wire, standard tolerance
- 2 = Thermocouple grade, solid wire, special tolerance
- 3 = Thermocouple grade, stranded wire, standard tolerance
- 4 = Thermocouple grade, stranded wire, special tolerance
- 5 = Extension grade, solid wire, standard tolerance
- 6 = Extension grade, solid wire, special tolerance
- 7 = Extension grade, stranded wire, standard tolerance
- 8 = Extension grade, stranded wire, special tolerance

Note: Minimum order sizes apply for non-stock constructions.

Performance Capabilities

- Temperature rating
- FEP insulation
- Optional metallic
- Additional abrasion

Applications

- General use extension wire

SERV-RITE Wire and Cable

Thermocouple Wire

FEP Insulated Thermocouple
and Extension Wire
SERIES 507 (con't)

Wire Specifications

AWG	Nominal Conductor Size in. (mm)	Nominal Insulation Thickness		Nominal Overall Size in. (mm)	Approximate Shipping Weight lbs/1000 ft (kg/km)
		Conductor in. (mm)	Overall in. (mm)		
24	0.020 (0.508)	0.008 (0.203)	0.010 (0.254)	0.056 x 0.096 (1.42 x 2.44)	8 (11.9)
24 S* (7/32)	0.024 (0.610)	0.008 (0.203)	0.010 (0.254)	0.060 x 0.104 (1.52 x 2.64)	9 (13.4)
22	0.025 (0.635)	0.008 (0.203)	0.010 (0.254)	0.061 x 0.106 (1.55 x 2.69)	10 (14.9)
22 S* (7/30)	0.030 (0.762)	0.008 (0.203)	0.010 (0.254)	0.066 x 0.116 (1.68 x 2.95)	11 (16.4)
20	0.032 (0.813)	0.008 (0.203)	0.010 (0.254)	0.068 x 0.120 (1.73 x 3.05)	12 (17.9)
20 S* (7/28)	0.038 (0.965)	0.008 (0.203)	0.010 (0.254)	0.074 x 0.132 (1.88 x 3.35)	14 (20.9)
18	0.040 (1.02)	0.008 (0.203)	0.010 (0.254)	0.076 x 0.136 (1.93 x 3.45)	18 (26.8)
18 S* (7/26)	0.048 (1.22)	0.008 (0.203)	0.010 (0.254)	0.084 x 0.152 (2.13 x 3.86)	20 (29.8)
16	0.051 (1.29)	0.008 (0.203)	0.012 (0.305)	0.091 x 0.162 (2.31 x 4.11)	28 (41.7)
16 S* (7/24)	0.060 (1.52)	0.008 (0.203)	0.012 (0.305)	0.100 x 0.186 (2.54 x 4.72)	30 (44.7)

* "S" denotes stranded wire: e.g., "24 S (7/32)" is seven strands of 32 gauge wire to make a 24 gauge stranded conductor.

SARLIN

SARLIN OY AB • PL 750, 00101 Helsinki
Käyntiosoite: Kaivokselantie 3-5, 01610 Vantaa
Vaihde 010 550 4000 • Fax 010 550 4201
info@sarlin.com
www.sarlin.com