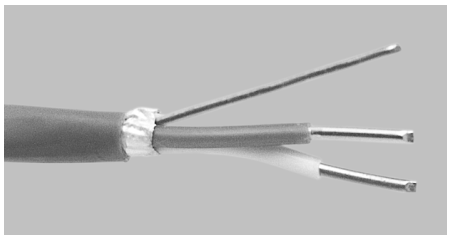
SERV-RITE Wire and Cable

Thermocouple Wire

FEP Insulated and Shielded Thermocouple and Extension Wire SERIES 509



The SERIES 509 was developed especially for use with microprocessor based systems. SERIES 509 (see page 200) is also available as UL® listed PLTC.

The conductors are insulated with color coded FEP. They are then twisted with a copper drain wire. An aluminized polyester tape is wrapped around the conductors and drain wire. Finally, FEP is applied.

The finished construction can withstand temperatures in excess of 204°C (400°F). Twisted conductors minimize EMI and the taped shield eliminates most problems associated with AC "noise."

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

Resistance Properties		
Moisture	Chemical	Abrasion
Excellent	Excellent	Excellent

Popular Constructions

Grade	AWG	Wire Type	Limits of Error	Type K	Type J	Type T
Extension	16	Solid	Standard	**K16-5-509**	**J16-5-509**	
		Stranded	Standard	K16-7-509	J16-7-509	
	20	Solid	Standard	**K20-5-509**	**J20-5-509**	T20-5-509
		Stranded	Standard	K20-7-509	J20-7-509	T20-7-509
Thermocouple	20	Solid	Standard	**K20-1-509**	**J20-1-509**	**T20-1-509**
		Solid	Special	**K20-2-509**	J20-2-509	T20-2-509
	24	Solid	Standard	K24-1-509	J24-1-509	T24-1-509
		Stranded	Standard	K24-3-509	J24-3-509	T24-3-509

Grade	AWG	Wire Type	Limits of Error	Type E	Type S
Extension	20	Solid	Standard	E20-5-509	S20-5-509

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

Available Constructions

1	2	3	4	5	6	7
			-	-5	0	9

1. ASTM E 230 Calibrations

B J N T
E K S

2-3. AWG

24	20	16
24 stranded (7/32)	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

- Continuous temperature rating 204°C (400°F)
- Flexible FEP plastic insulation
- Twisted and shielded construction to reduce electrical noise interference
- Available with optional metallic overbraid for additional abrasion resistance

Applications

- General use extension wire

Wire Specifications

AWG	Nominal Conductor Size		Nominal Insulation Thickness				Nominal Overall Size		Approximate Shipping Weight	
			Conductor		Overall					
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lbs/1000 ft	(kg/km)
24	0.020	(0.508)	0.008	(0.203)	0.012	(0.305)	0.104	(2.64)	12	(17.9)
24 S* (7/32)	0.024	(0.610)	0.008	(0.203)	0.012	(0.305)	0.112	(2.84)	13	(19.4)
20	0.032	(0.813)	0.008	(0.203)	0.012	(0.305)	0.128	(3.25)	18	(26.8)
20 S* (7/28)	0.038	(0.965)	0.008	(0.203)	0.012	(0.305)	0.140	(3.56)	20	(29.8)
18	0.040	(1.02)	0.008	(0.203)	0.015	(0.381)	0.152	(3.86)	25	(37.3)
18 S* (7/26)	0.048	(1.22)	0.008	(0.203)	0.015	(0.381)	0.168	(4.27)	27	(40.2)
16	0.051	(1.29)	0.008	(0.203)	0.015	(0.381)	0.174	(4.42)	33	(49.2)
16 S* (7/24)	0.060	(1.52)	0.008	(0.203)	0.015	(0.381)	0.192	(4.88)	35	(52.2)

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