



### Type SP-OS

### Type ITC/PLTC Instrumentation Cable

Multiple Shielded Pairs or Triads - Overall Shield  
300 Volts - 105°C Rating



### For Cable Tray Use



- A Bare Stranded Copper Conductor
- B Okoseal Insulation
- C Tinned Stranded Copper Group Drain Wire
- D Aluminum/Polyester Tape
- E Twisted, Shielded Pairs/Triads
- F Tinned Stranded Copper Drain Wire
- G Aluminum/Polyester Tape
- H Communication Wire
- J Rip Cord
- K Black Okoseal Jacket

### Specifications

**Conductors:** Bare soft annealed copper, Class B, 7-strand concentric per ASTM B-8.

**Insulation:** Flame-retardant Okoseal® (PVC) per UL 13 and 2250, 15 mils nominal thickness, 105°C temperature rating.

**Conductor Identification:** Pigmented black and white in pairs, black, red and white in triads; white conductor numerically printed for group identification.

**Group Shield:** Aluminum/Polyester tape overlapped to provide 100% coverage, and a 7-strand tinned copper drain wire, two sizes smaller than the conductor. All group shields are completely isolated from each other.

**Communications Wire:** 22 AWG, solid, bare copper conductor, 12 mils nominal flame-retardant Okoseal insulation, 105°C rating.

**Assembly:** Pairs or triads assembled with a left-hand lay. Flame-retardant, non-wicking fillers included where required to provide a round cable.

**Cable Shield:** Aluminum/Polyester tape overlapped to provide 100% coverage, and a 7-strand tinned copper drain wire, same size as conductor.

**Jacket:** Black, flame-retardant, low temperature Okoseal per UL Subject 13 and 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.

**Classifications:** UL Listed as ITC/PLTC - Instrument Tray Cable/Power Limited Tray Cable for use in accordance with Article 727 and Article 725 of the National Electrical Code.

Cables comply with UL 2250 and UL 13 for PLTC, CL2 and CL3.

### Applications

Okonite® Type SP-OS (Pair/triad - Individual and Overall Shield) instrumentation cables are designed for use as instrumentation, process control, in ITC non-classified or labeled circuits up to 150 volts and 5 amps (750VA) and in Class 2 or 3 Power-Limited circuits where maximum shielding against external interference is required, as well as shielding among groups, particularly where the cable may be

subject to abnormally high current or voltage interference; indoors or outdoors; in wet or dry locations with conductor operating temperatures up to 105°C; in cable trays; in raceways; supported by a messenger wire; under raised floors. Suitable Class I, Division 2, Class II, Division 2, or Class III, Division 2 hazardous locations. Also for use as Power-Limited fire protective signaling cable (FPL) per NEC Code 760.

The isolated individual shields over each pair, when properly grounded, prevent crosstalk or capacitive coupling between adjacent pairs which occurs with ac signals, particularly the pulse type.

The overall shield eliminates most of the static interference from the electrical field radiated by power cables and other electrical equipment.

For dc service in wet locations, X-Olene® insulation is recommended.

### Product Features

- Passes the UL 13 and IEEE 383-1974 vertical tray flame tests.
- Sunlight & oil resistant.
- Individual pairs or triads are completely isolated.
- 100% shield coverage for reduced electromagnetic noise pick-up.
- Good external noise rejection.
- Excellent weathering characteristics.
- OSHA Acceptable.
- Flexible, easy to handle and terminate.
- Communication wire included in each cable for voice communication during installation or instrument calibration.
- Suitable for low temperature installation of -40°C.

# Type SP-OS Type ITC/PLTC Instrumentation Cable



# Product Data Section 5: Sheet 13

Multiple Shielded Pairs or Triads - Overall Shield 300V - 105°C Rating  
For Cable Tray Use

Okoseal Insulation: 15 mils

Catalog Number	Strand Size (AWG)	Insulation Thickness (mils)	Number of Pairs	Number of Triads	Jacket Thickness-mils	Nominal Cable O.D. - inches	Cross-Sectional Area † (sq in)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')	
261-10-2202	20(7X)	15	2	40	0.35	0.10	63	74		
261-10-2204			4	50	0.42	0.15	103	126		
261-10-2206			6	50	0.51	0.20	138	161		
261-10-2208			8	50	0.53	0.25	169	193		
261-10-2210			10	60	0.66	0.34	219	258		
261-10-2212			12	60	0.66	0.37	248	287		
261-10-2216			16	60	0.76	0.45	311	350		
261-10-2220			20	60	0.82	0.53	374	413		
261-10-2224			24	70	0.90	0.69	457	521		
261-10-2236			36	70	1.06	0.88	632	696		
261-10-2250			50	70	1.23	1.19	845	951		
261-15-2204			4	50	0.48	0.18	126	149		
261-15-2208			8	50	0.62	0.30	212	236		
261-15-2212			12	60	0.77	0.47	314	353		
261-15-2216			16	60	0.79	0.49	397	436		
261-15-2224			24	70	0.99	0.77	587	651		
261-15-2236			36	70	1.11	0.97	825	905		
261-10-3302			18(7X)	15	2	50	0.38	0.11	89	112
▲ 261-10-3304					4	50	0.47	0.19	133	156
261-10-3306					6	50	0.57	0.25	181	205
▲ 261-10-3308	8	50			0.56	0.29	223	247		
261-10-3310	10	60			0.73	0.42	289	328		
▲ 261-10-3312	12	60			0.69	0.44	330	369		
261-10-3316	16	60			0.83	0.54	417	456		
261-10-3320	20	70			0.94	0.69	523	587		
▲ 261-10-3324	24	70			0.98	0.85	614	678		
▲ 261-10-3336	36	70			1.14	1.11	861	941		
261-10-3350	50	80			1.42	1.58	1188	1294		
▲ 261-15-3304	4	50			0.52	0.23	165	188		
▲ 261-15-3308	8	60			0.68	0.41	301	340		
▲ 261-15-3312	12	60			0.83	0.57	425	464		
261-15-3316	16	60			0.89	0.62	543	607		
261-15-3324	24	70			1.10	0.95	804	884		
261-15-3336	36	70			1.24	1.21	1143	1249		
▲ 261-10-4402	16(7X)	15			2	50	0.43	0.17	116	130
▲ 261-10-4404					4	50	0.51	0.23	179	203
261-10-4406					6	60	0.66	0.34	260	299
▲ 261-10-4408			8	60	0.68	0.40	323	362		
261-10-4410			10	60	0.82	0.53	397	436		
▲ 261-10-4412			12	60	0.81	0.57	456	520		
▲ 261-10-4416			16	70	0.94	0.75	600	664		
261-10-4420			20	70	1.06	0.88	729	809		
▲ 261-10-4424			24	70	1.10	1.07	860	940		
261-10-4436			36	80	1.37	1.47	1250	1356		
261-10-4450			50	80	1.57	1.93	1687	1830		
261-15-4404			4	50	0.55	0.26	227	251		
▲ 261-15-4408			8	60	0.74	0.48	418	457		
▲ 261-15-4412			12	70	0.93	0.74	615	679		
261-15-4416			16	70	1.02	0.82	788	852		
261-15-4424			24	80	1.27	1.27	1167	1273		
261-15-4436			36	80	1.43	1.61	1668	1784		

ELECTRICAL SPECIFICATIONS Per UL Subject 13 & 2250	
Conductor Resistance, nominal	ohms/1000 ft. @20°C
20 AWG	10.4
18 AWG	6.5
16 AWG	4.1
Insulation Test Voltage (spark test)	5000 Volts ac
Dielectric Test Voltage	1500 Volts ac for 15 sec.
Insulation Resistance Constant @60°F, minimum (natural material typical value)	2,000 Megohms-1000 ft.
Loop Resistance, nominal (2 conductor)	ohms-1000 ft @20°C
20 AWG	20.8
18 AWG	13.0
16 AWG	8.2
Mutual Capacitance (PF/ft.)*	
20 AWG	59
18 AWG	68
16 AWG	76
*Typical Value	

▲ Authorized Stock Item: Available from our Customer Service Center.

† Cross-sectional area for calculation of cable tray fill in accordance with NEC Section 392.22

Length Tolerance: Cut lengths of 1000 feet or longer are subject to a tolerance of ± 10%; less than 1000 feet ± 15%.