Type SP-OS
Type ITC/PLTC Wire Armored Instrumentation Cable
Multiple Shielded Pairs or Triads - Overall Shield
300 Volts - 105°C Rating
For Cable Tray Use

Specifications
Conductors: Bare soft annealed copper, Class B, 7-strand concentric per ASTM B-8.
Insulation: Flame-retardant Okoseal® (PVC) per UL Standard 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/synthetic polymer backed 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 temperature rating.
Assembly: Pairs or triads assembled with left-hand lay. Flame-retardant, non-wicking fillers included where required to provide a round cable.
Cable Shield: Aluminum/Polyester backed tape overlapped to provide 100% coverage, and a 7-strand tinned copper drain wire, same size as conductor.
Inner Jacket: Black, flame-retardant, low temperature Okoseal per UL Standard 13 and 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.
Wire Armor: A single serving of soft annealed galvanized steel wires applied with a left-hand lay and 90% minimum coverage.
Outer Jacket: Black, flame-retardant, low temperature Okoseal per UL Standard 13 and 2250.
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. The cable core complies with UL 2250 and UL 13 for PLTC, CL2 and CL3.

Applications
Okonite single wire armor (SWA) 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; for direct burial. 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 electric field radiated by power cables and other electrical equipment.
The wire armor provides excellent longitudinal strength for use as a messenger cable or for support in vertical drops (NEC Section 300-19) and provides the physical protection against mechanical damage.
For dc service in wet locations X-Olene® insulation is recommended.

Product Features
- Sunlight resistant.
- Excellent electromagnetic shielding.
- Oil resistant.
- Individual pairs or triads are completely isolated.
- Maximum noise rejection.
- Communication wire included in each cable for voice communication during installation or instrument calibration.
- Excellent longitudinal strength.
- Lower installed system cost than conduit or EMT systems.
- Excellent Cut-through resistance.
- Suitable for IEC/BS application.
- OSHA Acceptable.
**Type SP-OS**

**Type ITC/PLTC Wire Armored Instrumentation Cable**

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

For Cable Tray Use

**Okoseal Insulation: 15 mils**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Size AWG (Stranded)</th>
<th>Number of Triads</th>
<th>Inner Jacket &quot;Thicknes, mils&quot;</th>
<th>Nominal O.D. In.</th>
<th>Armor Jacket O.D.</th>
<th>Armor Mile</th>
<th>Outer Jacket O.D. (In.)</th>
<th>Cross-sectional Area (in.2)</th>
<th>Sectional Area (in.2)</th>
<th>Approx. Net Weight (lbs/1000')</th>
<th>Approx. Ship Weight (lbs/1000')</th>
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<td>16</td>
<td>12</td>
<td>.69</td>
<td>32 x 16</td>
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<td>60</td>
<td>1.25</td>
<td>1.22</td>
<td>1103</td>
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**Loop Resistance, nominal (2 conductor) ohms-1000 ft @20°C**

- #16 ................................................. 8.2
- #18 ................................................. 7.6
- #20 ................................................. 5.9

**ELECTRICAL SPECIFICATIONS**

- Per UL Standard 13 & 2290
- Conductor Resistance, nominal ........ ohms/1000 ft. @20°C
  - 20 AWG ........................................ 14.4
  - 18 AWG ........................................ 11.6
  - 16 AWG ........................................ 9.6
- 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) ............ 2000 Megohms-1000 ft.
- Loop Resistance, nominal (2 conductor) ohms-1000 ft @20°C
  - 20 AWG ........................................ 20.8
  - 18 AWG ........................................ 16.0
  - 16 AWG ........................................ 12.2
- Mutual Capacitance (PF/ft) *
  - #20 ........................................... 68
  - #18 ........................................... 68
  - #16 ........................................... 68

*Steel Wire Gage

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

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

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**THE OKONITE COMPANY**

Ramsey, New Jersey 07446

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