Loxarmor® Type SP-OS
Type ITC/PLTC 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/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 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 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 13 and 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.
Loxarmor Sheath: An interlocking, galvanized steel armor provides mechanical protection against cut-through and crushing. All four sides of the steel tape are galvanized to prevent corrosion.
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. Cables comply with UL 2250 ands UL 13 for PLTC, CL2 and CL3.

Applications
Okonite Loxarmor Type SP-OS (Pair/triad - Individual and Overall Shield) instrumentation cables are designed for use as instrumentation, process control, and computer cables 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 Loxarmor (interlocked steel) sheath provides the physical protection against mechanical damage as required in NEC Section 727-3. It may be installed in both exposed and concealed work, secured to supports not greater than 6 feet apart. 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.
For dc service in wet locations X-Olene® insulation is recommended.

Product Features
• Passes the UL 13, 2250 & IEEE 383-1974 vertical tray flame tests.
• Passes the IEEE 1202-1991 vertical tray flame test (2 Pr #18 AWG and larger).
• Passes the 210,000 BTU/hr vertical tray flame test per ICEA T-29-520 and the 210,000 BTU/hr corner configuration test.
• UL listed for direct burial (2 PR #20 and larger)
• Complete pre-packaged, factory-tested wiring system-color coded.
• Loxarmor enclosure permits installation in cable tray containing light and power cables without a barrier separator.
• Individual pairs or triads are numbered and color coded for simplified hook-up.
• Individual pairs or triads are completely isolated.
• Impervious, continuous sheath excludes moisture, gases and liquids.
• Lower installed system cost than conduit or EMT systems.
• Also available in aluminum.
• OSHA Acceptable.
• Suitable for low temperature installation of -40°C.
**Loxarmor Type SP-OS**  
*Type ITC/PLTC Armored Instrumentation Cable*  
Multiple Shielded Pairs or Triads - Overall Shield 300V - 105°C Rating  
For Cable Tray Use  
Okoseal Insulation: 15 mils

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<tr>
<th>Cross-Sectional Area for calculation of cable tray fill in accordance with NEC Section 318-8</th>
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<td>Length Tolerance: Cut lengths of 1000 feet or longer are subject to a tolerance of ±10%; less than 1000 feet ±15.%</td>
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**ELECTRICAL SPECIFICATIONS**

**Per UL Standard 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)......2000 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=1)*
  - 20 AWG........................................ 59
  - 18 AWG........................................ 68
  - 16 AWG........................................ 76

*Typical Value*