C-L-X® 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 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.
C-L-X Sheath: A close-fitting, impervious, continuously welded and corrugated, aluminum sheath provides complete protection against moisture, liquids, and gases, has excellent mechanical strength, and provides equipment grounding through the sheath.
Outer Jacket: Black, flame-retardant, low temperature Okoseal per UL 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 and UL 13 for PLTC, CL2 and CL3.

Applications
C-L-X 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 or direct burial. Suitable in Class I & II, Division 2 or Class III, Division 2 and Class I, Zone 2 hazardous locations. Also for use as Power-Limited fire protective signaling cable (FPL) per NEC Code 760. 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. The C-L-X sheath provides physical protection against mechanical damage as well as complete protection against moisture or gases entering the cable.
For dc service in wet locations X-Olene® insulation is recommended.

Product Features
- Passes the UL 13, IEEE 383-1974 vertical tray flame tests.
- Passes the IEEE 1202 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.
- UL listed for direct burial (2 PR #20 AWG and larger)
- Complete pre-packaged, factory-tested wiring system-color coded.
- C-L-X enclosure permits installation in cable tray containing light and power cables without a barrier separator.
- Individual pairs or triads are completely isolated.
- Impervious, continuous sheath excludes moisture, gases and liquids.
- In addition, the aluminum CLX sheath exceeds the equipment grounding requirements of NEC Section 250.118 and 250.122, and can be used as the equipment grounding conductor.
- Lower installed system cost than conduit or EMT systems.
- Meets API Standards 14F & 14FZ.
- Suitable for low temperature installation to -40°C.

A Bare Stranded Copper Conductor
B Okoseal Insulation
C Tinned Stranded Copper Group Drain Wire
D Aluminum/Polyester
E Twisted, Shielded Pairs/Triads
F Communication Wire
G Aluminum/Polyester
H Tinned Stranded Copper Drain Wire
J Rip Cord
K Inner Black Okoseal Jacket
L Impervious, Continuous, Corrugated Aluminum C-L-X Sheath
M Outer Black Okoseal Jacket
## Okoseal Insulation: 15 mils

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

For Cable Tray Use

**Catalog Number**
| 561-10-3202 | 561-10-3204 | 561-10-3206 |
| 561-10-3208 | 561-10-3210 | 561-10-3212 |
| 561-10-3216 | 561-10-3220 | 561-10-3224 |
| 561-10-3236 | 561-10-3250 |

### Strand Size (AWG)
| 18 | 16 | 14 |

### Number of Pairs
| 2 | 4 | 6 |

### Sectional Area (sq in)
| 0.036 | 0.043 | 0.048 |

### Nominal Core OD (in.)
| 0.58 | 0.62 | 0.71 |

### Overall Shielding OD (in.)
| 50 | 50 | 50 |

### Cross-Sectional Area (sq in.)
| 1.04 | 1.34 | 1.53 |

### Approx. Net Weight (lbs/100 ft)
| 907 | 1230 | 1117 |

### Approx. Ship Weight (lbs/100 ft)
| 1013 | 1373 | 1260 |

### ELECTRICAL SPECIFICATIONS

- **Conductor Resistance, nominal**...ohms/1000 ft. @20°C
  - 20 AWG...
  - 18 AWG...
  - 16 AWG...

- **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...
  - 18 AWG...
  - 16 AWG...

- **Mutual Capacitance (PF/ft).**
  - #20...
  - #18...
  - #16...

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

### Copper or bronze C-L-X available on special order.

- To order C-L-X Type SP-OS without the outer Okoseal jacket, change the sixth digit of the catalog number from 3 to 1. For example, to order 12 pr. 20 AWG with a bare aluminum C-L-X, the catalog number would be 561-10-1212.

- **Length Tolerance:** Cut 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**
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