**C-L-X® Type P-OS**

*Type ITC/PLTC Armored Thermocouple Extension Cable*

Multiple Pair - Overall Shield - 105°C Rating

*For Cable Tray Use*

**Specifications**

- **Conductors:** Solid alloys per ANSI MC 96.1.
- **Insulation:** Flame-retardant Okoseal® (PVC) per UL Standards 13 and 2250, 15 mils nominal thickness, 105°C temperature rating.
- **Conductor Identification:** Pigmented insulation on individual conductors negative conductor numerically printed for group identification.
- **Communications Wire:** 22 AWG, solid, bare copper conductor, 12 mils nominal flame-retardant Okoseal insulation, 105°C temperature rating.
- **Assembly:** Pairs 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 the conductor.
- **Inner Jacket:** Color-coded, flame-retardant Okoseal per UL Standards 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:** Color-coded, flame-retardant Okoseal per UL Standards 13 and 2250.

**Classifications:** UL Listed as Type ITC/PLTC - Instrumentation Tray Cable/Power Limited Tray Cable for use in accordance with Article 725 and 727 of the National Electrical Code. The cables comply with UL 2250 and UL 13 for CL2 and CL3.

**Applications**

Okonite Type C-L-X P-OS (Pair/triad - Overall Shield) Thermocouple Extension cables are designed for use as instrumentation and process control 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 shielding against external interference is required, but shielding against interference among groups is not required; 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 and Class I, Zone 2 hazardous locations. Also for use as Power-Limited fire protective signaling cable (FPL) per NEC Code 760. The C-L-X 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.

**Product Features**

- Passes the UL 1581 & IEEE 383-1974 vertical tray flame tests.
- Passes the IEEE 1202-1991 vertical tray flame test (8 pair and larger).
- Passes the 210,000 BTU/hr vertical tray flame test per ICEA T-29-520.
- UL listed as sunlight resistant.
- UL listed for direct burial (2 PR #20 AWG and larger).
- Complete pre-packaged, factory tested wiring system-color coded.
- C-L-X cables are quality control inspected to meet or exceed applicable UL Standards.
- C-L-X enclosure permits installation in cable tray containing light and power cables without a barrier separator.
- Individual pairs are numbered and color coded for simplified hook-up.
- Excellent noise rejection.
- 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.
- Excellent compression and impact resistance.
- Lower installed system cost than conduit or EMT systems.
- OSHA Acceptable.
- Suitable for low temperature installation to -40°C.
- Meets API Standards, 14F and 14FZ.
## C-L-X Type P-OS

### Type ITC/PLTC Armored Thermocouple Extension Cable

Multiple Pair - Overall Shield - 105°C Rating

For Cable Tray Use

<table>
<thead>
<tr>
<th>Conductors: 20 AWG</th>
<th>Okoseal Insulation: 15 mils</th>
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</thead>
<tbody>
<tr>
<td><strong>ASA/ISA Type</strong></td>
<td><strong>Catalog Number</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Number of Pairs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Inner Jacket Thickness - mils</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Outer Jacket Thickness - mils</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Cross-Sectional Area - (sq in)</strong></td>
</tr>
</tbody>
</table>

### Limits of Error

<table>
<thead>
<tr>
<th>Temperature Range°C</th>
<th>Limits of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 200°C</td>
<td>± 1.7°C</td>
</tr>
<tr>
<td>0 to 220°C</td>
<td>± 1.1°C</td>
</tr>
<tr>
<td>0 to 220°C</td>
<td>± 2.2°C</td>
</tr>
<tr>
<td>0 to 100°C</td>
<td>± 1.0°C</td>
</tr>
<tr>
<td>0 to 100°C</td>
<td>± 0.5°C</td>
</tr>
</tbody>
</table>

### ASA/ISA COLOR CODE AND LIMITS OF ERROR

#### Positive Wire

- **EX:** Chromel Purple
- **JX:** Iron White
- **KK:** Chromel Yellow
- **TX:** Copper Blue

#### Negative Wire

- **EX:** Constantan Red
- **JX:** Alumel Red
- **KK:** Constantan Red
- **TX:** Blue

#### Outer Jacket Color

- **EX:** Red
- **JX:** Red
- **KK:** Red
- **TX:** Red

#### Temperature Range°C

- **EX:** 0 to 200°C
- **JX:** 0 to 220°C
- **KK:** 0 to 220°C
- **TX:** -60 to 100°C

#### Limits of Error

- **EX:** ± 1.7°C
- **JX:** ± 1.1°C
- **KK:** ± 2.2°C
- **TX:** ± 1.0°C, ± 0.5°C

#### Wire Size (AWG)

- **EX:** 20
- **JX:** 20
- **KK:** 20
- **TX:** 20

#### Nom. Loop Resistance Per 100' @ 20°C

- **EX:** 70.7 ohms
- **JX:** 35.7 ohms
- **KK:** 59.0 ohms
- **TX:** 29.8 ohms

### Specifications

- **Insulation Test Voltage (spark test):** 5000 Volts ac
- **Dielectric Test Voltage:** 1500 Volts ac
- **Shield Isolation Test:** 100 Megohms/1000 ft.
- **Insulation Resistance Constant @ 60°F:** 2000 Ohms-1000 ft.

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**Note:**

1. Special grade alloy conductors for JX and TX are available on special order.
2. Cross-sectional area for calculation of cable tray fill in accordance with NEC Section 392.22.
4. Copper or bronze C-L-X available on special order.
5. To order C-L-X Type P-OS without the outer Okoseal jacket, change the sixth digit of the catalog number from 1 to 5 for EX, 2 to 6 for JX, 3 to 7 for KK, and 4 to 8 for TX. For example to order 12 pr. 20 AWG Type KK with a bare aluminum C-L-X, the catalog number would be 584-20-7212.
6. 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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