Wire Armored Type SP-OS
Type ITC/PLTC Armored Thermocouple Extension Cable
For Cable Tray Use

Specifications
Conductors: Solid alloys per ANSI MC 96.1.
Insulation: Flame-retardant Okoseal® (PVC) per UL Standard 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.
Group Shield: Aluminum/Polyester taped overlapped to provide 100% coverage, and a tinned copper drain wire, two sizes smaller than the conductor. All group shields are completely isolated from each other.
Communications Wire: 22 AWG, solid 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 low temperature Okoseal per UL Standard 13 and 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.
Wire Armor: A serving of soft annealed galvanized steel wires applied with a left-hand lay and 90% minimum coverage.
Outer Jacket: Color-coded, flame-retardant Okoseal per UL Standard 13 and 2250.
Classification: 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 SWA Type SP-OS (Pair- Individual and 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 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 a 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.

Product Features
- Passes flame test for use in cable tray.
- Sunlight resistant.
- Oil resistant.
- Excellent electromagnetic shielding.
- Individual pairs are numbered and color-coded for simplified hook-up.
- Maximum noise rejection.
- Communication wire included in each cable for voice communication during installation or instrument calibration.
- Excellent longitudinal strength.
- OSHA Acceptable.
- Excellent cut-through resistance.
- Suitable for installation at low temperature to -40°C.

UL TYPE ITC/PLTC 105°C
## Electrical Specifications

- **Conductors:** 20 AWG; Okoseal Insulation: 15 mils

### AS/AISA Color Code and Limits of Error

<table>
<thead>
<tr>
<th>AS/AISA Type</th>
<th>Positive Wire</th>
<th>Negative Wire</th>
<th>Outer Jacket Color</th>
<th>Temperature Range °C</th>
<th>Limits of Error</th>
<th>Wire Size (AWG)</th>
<th>Nom. Loop Resistance Per 100' @ 20°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>Chromel</td>
<td>Purple</td>
<td>Constantan</td>
<td>Red</td>
<td>Purple</td>
<td>0 to 200°C</td>
<td>± 1.7°C, ± 1°C</td>
</tr>
<tr>
<td>JX</td>
<td>Iron</td>
<td>White</td>
<td>Constantan</td>
<td>Red</td>
<td>Black</td>
<td>0 to 200°C</td>
<td>± 2.2°C, ± 1°C</td>
</tr>
<tr>
<td>KX</td>
<td>Chromel</td>
<td>Yellow</td>
<td>Alumel</td>
<td>Red</td>
<td>Yellow</td>
<td>0 to 200°C</td>
<td>± 2.2°C, ± 1°C</td>
</tr>
<tr>
<td>TX</td>
<td>Copper</td>
<td>Blue</td>
<td>Constantan</td>
<td>Red</td>
<td>Blue</td>
<td>-60 to 100°C</td>
<td>± 1.0°C, ± 0.5°C</td>
</tr>
</tbody>
</table>

### Cross-sectional area for calculation of cable tray fill

- Cross-sectional area for calculation of cable tray fill in accordance with NEC Section 318-8.

### Length Tolerance

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

### KX Chromel Yellow Alumel Red Yellow

- 0 to 200°C

### ELECTRICAL SPECIFICATIONS

- **Per UL Standard 2250**
  - 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 Ohms-1000 ft.

### SX available upon request.

(1) Special grade alloy conductors for JX and TX are available on special order.