Wire Armored Type SP-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 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.
• Meets IEC/BS Specification.
• Suitable for installation at low temperature
to -40°C.
### Wire Armored Type SP-OS

**Type ITC/PLTC Armored Thermocouple Extension Cable**

**For Cable Tray Use**

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

### Electrical Specifications

- **Nom. Loop Temperature Range:**
  - **EX:** 0 to 200°C
  - **JX:** 0 to 200°C
  - **KX:** -60 to 100°C
  - **TX:** -50 to 100°C

- **Wire Size (AWG):** 20
- **Nom. Loop Resistance Per 100' @ 20°C:** 20.7 ohms

### ASA/ISA Color Code and Limits of Error

<table>
<thead>
<tr>
<th>ASA/ISA 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 Chromel</td>
<td>Purple</td>
<td>Constantan</td>
<td>Red</td>
<td>Purple</td>
<td>0 to 200°C</td>
<td>± 1.7°C</td>
<td>± 1.0°C</td>
</tr>
<tr>
<td>JX Chromel</td>
<td>White</td>
<td>Constantan</td>
<td>Red</td>
<td>Black</td>
<td>0 to 200°C</td>
<td>± 2.2°C</td>
<td>± 1.1°C</td>
</tr>
<tr>
<td>KX Copper</td>
<td>Yellow</td>
<td>Alumel</td>
<td>Red</td>
<td>Yellow</td>
<td>0 to 200°C</td>
<td>± 2.2°C</td>
<td>± 1.0°C</td>
</tr>
<tr>
<td>TX Copper</td>
<td>Blue</td>
<td>Constantan</td>
<td>Red</td>
<td>Blue</td>
<td>-60 to 100°C</td>
<td>± 1.0°C</td>
<td>± 0.5°C</td>
</tr>
</tbody>
</table>

### Positive Wire

- **EX** (Chromel): Purple
- **JX** (Chromel): White
- **KX** (Copper): Yellow
- **TX** (Copper): Blue

### Negative Wire

- **EX** (Constantan): Red
- **JX** (Constantan): Red
- **KX** (Alumel): Red
- **TX** (Alumel): Red

### Outer Jacket Color

- **EX**: Red
- **JX**: Red
- **KX**: Red
- **TX**: Red

### Cross-sectional Area

- **EX** (ksi): 670
- **JX** (ksi): 670
- **KX** (ksi): 670
- **TX** (ksi): 670

- **Section 5: Sheet 28**
- **Product Data**
- **The Okonite Company**
- **Ramsey, New Jersey 07446**