Wire Armored Type P-OS

Type ITC/PLTC Armored Thermocouple Extension Cable

Single Pair - Overall Shield — 105°C Rating

For Cable Tray Use

A Solid Thermocouple Alloy Conductor
B Okoseal Insulation
C Twisted Pair
D Tinned Stranded Copper Drain
E Double Faced Aluminum/Synthetic Polymer Backed Tape
F Rip Cord
G Inner Okoseal Jacket
H Galvanized Steel Served Wire Armor
J Outer Okoseal Jacket

Specifications

Conductors: Solid alloys per ANSI MC 96.1.

Insulation: Flame-retardant Okoseal® (PVC) per UL 13 and UL 2250, 15 mils nominal thickness, 105°C temperature rating.

Conductor Identification: Pigmented insulation on individual conductors

Assembly: Pair assembled with left-hand lay.

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: Flame-retardant Okoseal per UL 13 and UL 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.

Wire Armor: A serving of soft annealed galvanized steel wires, SWA, applied with a left-hand lay and 90% coverage.

Outer Jacket: Flame-retardant, low temperature Okoseal per UL 13 and UL 2250.

Classifications: UL Listed as Type ITC/PLTC — Instrumentation Tray Cable/Power Limited Tray Cable for use in accordance with Articles 722 and 335 of the 2023 National Electrical Code.

These cables comply with UL 2250 and UL 13 for CL2 and CL3.

Applications

Okonite SWA Type P-OS (Pair-Overall Shield) Thermocouple Extension cables are designed for use as instrumentation and process control cables in ITC non-classified or labeled circuit up to 150 volts and 5 amps (750VA) and in Class 2 or 3 Power-Limited circuits where shielding against external interference is 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. Suitable Class I, Divisions 2, Class II, Division 2, or Class III, Division 1 hazardous locations. Also for use as Power-Limited fire protective signaling cable (FPL) per NEC Article 760.

Product Features

- Passes the UL 1581 & IEEE 383-1974 vertical tray flame tests.
- Sunlight & oil resistant.
- Individual pairs are color coded for simplified hook-up.
- Good noise rejection.
- Excellent weathering characteristics.
- Flexible, easy to handle and terminate.
- Twisted with 100% shield coverage to reduce electromagnetic noise.
- Suitable for low temperature installation of -40°C.

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Single Pair - Overall Shield — 105°C Rating

For Cable Tray Use

Conductors: 16 AWG
Okoseal Insulation: 15 mils

ASA/ISA Type	Catalog Number	Size AWG	Number of Pairs	Inner Jacket Thickness - mils	Inner Jacket Nominal O.D. - Inches	Armor Wires - No. x SWG	Nominal Armor O.D. - Inches	Outer Jacket - mils	Nominal Cable O.D. - (In.)	Cross-Sectional Area † (sq in)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')
EX	284-20-8181	16	1	35	.25	31 x 24	.30	35	.37	.11	114	125
JX	284-20-8281	16	1	35	.25	31 x 24	.30	35	.37	.11	114	125
KX	284-20-8381	16	1	35	.25	31 x 24	.30	35	.37	.11	114	125
TX	284-20-8481	16	1	35	.25	31 x 24	.30	35	.37	.11	114	125

ASA/ISA COLOR CODE AND LIMITS OF ERROR

ASA/ISA Type	Positive Wire		Negative Wire		Outer Jacket Color	Temperature Range°C	Limits of Error		Nom. Loop Resistance Per 100' @ 20°C
	Alloy	Color	Alloy	Color			Standard	Special (1)	
EX	Chromel	Purple	Constantan	Red	Purple	0 to 200°C	± 1.7°C	—	27.8 ohms
JX	Iron	White	Constantan	Red	Black	0 to 200°C	± 2.2°C	± 1.1°C	13.9 ohms
KX	Chromel	Yellow	Alumel	Red	Yellow	0 to 200°C	± 2.2°C	—	23.6 ohms
TX	Copper	Blue	Constantan	Red	Blue	-60 to 100°C	± 1.0°C	± 0.5°C	12.0 ohms

SX available upon request.

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

Minimum Manufacturing Quantity: is 1000 ft.

† **Cross-sectional** area for calculation of cable tray fill in accordance with NEC Section 392.22.

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

ELECTRICAL SPECIFICATIONS
Per UL Standard 13 and 2250

Insulation Test Voltage (spark test) .....5000 Volts ac

Dielectric Test Voltage .....1500 Volts ac for 15 sec.

Shield Isolation Test
Pair to Cable Shield.....exceeds 100 Megohms/1000 ft.

Insulation Resistance Constant @60°F, minimum
(natural material typical value).....2000 Ohms-1000 ft.

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