



## Wire Armored Type P-OS

### Type ITC/PLTC Armored

### Thermocouple Extension Cable

Multiple Pair - Overall Shield - 105°C Rating

For Cable Tray Use



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

#### 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.

**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 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, SWA, 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 Articles 725 and 727 of the National Electrical Code.

The cables comply with UL 2250 and UL Subject 13 for CL2 and CL3.

#### Applications

Okonite SWA Type 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 hazardous locations. Also for use as Power-Limited fire protective signaling cable (FPL) per NEC Code 760.

#### Product Features

- Passes flame tests for use in cable tray.
- Sunlight Resistant.
- Oil Resistant.
- Excellent electromagnetic shielding.
- Individual pairs are numbered and color coded for simplified hook-up.
- Good noise rejection.
- Communication wire included in each cable for voice communication during installation or instrument calibration.
- Excellent longitudinal strength.
- Excellent cut-through resistance.
- OSHA Acceptable.
- Meets IEC/BS Specification.
- Suitable for low temperature installation to -40°C.

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# Product Data

## Section 5: Sheet 24



Conductors: 20 AWG; Okoseal Insulation: 15 mils

ASA/ISA Type	Catalog Number	Number of Pairs	Inner Jacket Thickness - mils	Inner Jacket Nominal O.D. -	Armor Wires - No. x SWG	Nominal Armor O.D. - Inches	Outer Jacket - mils	Nominal Cable O.D. - Inches	Cross-Sectional Area + (sq in)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')
EX	284-20-8104	4	40	.38	32 x 20	.45	40	.54	.23	236	260
	284-20-8108	8	50	.50	31 x 18	.59	50	.70	.38	412	451
	284-20-8110	10	50	.60	29 x 16	.73	50	.84	.55	588	627
	284-20-8112	12	50	.59	36 x 18	.69	50	.80	.50	506	545
	284-20-8116	16	60	.67	32 x 16	.80	60	.93	.68	726	790
	284-20-8120	20	60	.72	34 x 16	.84	60	.98	.75	801	865
	284-20-8124	24	60	.80	30 x 14	.96	60	1.09	.93	1042	1122
	284-20-8136	36	70	.91	34 x 14	1.07	70	1.23	1.19	1300	1406
	284-20-8150	50	70	1.06	30 x 12	1.27	70	1.42	1.58	1831	1947
JX	284-20-8204	4	40	.38	32 x 20	.45	40	.54	.23	235	259
	284-20-8208	8	50	.50	31 x 18	.59	50	.70	.38	410	449
	284-20-8210	10	50	.60	29 x 16	.73	50	.84	.55	586	625
	284-20-8212	12	50	.59	36 x 18	.69	50	.80	.50	504	543
	284-20-8216	16	60	.67	32 x 16	.80	60	.93	.68	723	787
	284-20-8220	20	60	.72	34 x 16	.84	60	.98	.75	797	861
	284-20-8224	24	60	.80	30 x 14	.96	60	1.09	.93	1037	1117
	284-20-8236	36	70	.91	34 x 14	1.07	70	1.23	1.19	1292	1398
	284-20-8250	50	70	1.06	30 x 12	1.27	70	1.42	1.58	1821	1937
KX	284-20-8304	4	40	.38	32 x 20	.45	40	.54	.23	230	260
	284-20-8308	8	50	.50	31 x 18	.59	50	.70	.38	412	451
	284-20-8310	10	50	.60	29 x 16	.73	50	.84	.55	588	627
	284-20-8312	12	50	.59	36 x 18	.69	50	.80	.50	506	545
	284-20-8316	16	60	.67	32 x 16	.80	60	.93	.68	726	790
	284-20-8320	20	60	.72	34 x 16	.84	60	.98	.75	801	865
	284-20-8324	24	60	.80	30 x 14	.96	60	1.09	.93	1042	1122
	284-20-8336	36	70	.91	34 x 14	1.07	70	1.23	1.19	1300	1406
	284-20-8350	50	70	1.06	30 x 12	1.27	70	1.42	1.58	1831	1947
TX	284-20-8404	4	40	.38	32 x 20	.45	40	.54	.23	237	261
	284-20-8408	8	50	.50	31 x 18	.59	50	.70	.38	414	453
	284-20-8410	10	50	.60	29 x 16	.73	50	.84	.55	590	629
	284-20-8412	12	50	.59	32 x 18	.68	50	.79	.49	506	545
	284-20-8416	16	60	.67	32 x 16	.80	60	.93	.68	730	794
	284-20-8420	20	60	.72	34 x 16	.84	60	.98	.75	805	869
	284-20-8424	24	60	.80	30 x 14	.96	70	1.11	.97	1068	1148
	284-20-8436	36	70	.91	34 x 14	1.07	70	1.23	1.19	1307	1413
	284-20-8450	50	70	1.06	30 x 12	1.27	70	1.42	1.58	1841	1957

ASA/ISA COLOR CODE AND LIMITS OF ERROR										
ASA/ISA Type	Positive Wire		Negative Wire		Outer Jacket Color	Temperature Range °C	Limits of Error		Wire Size (AWG)	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	—	20	70.7 ohms
JX	Iron	White	Constantan	Red	Black	0 to 200°C	± 2.2°C	± 1.1°C	20	35.7 ohms
KX	Chromel	Yellow	Alumel	Red	Yellow	0 to 200°C	± 2.2°C	—	20	59.0 ohms
TX	Copper	Blue	Constantan	Red	Blue	-60 to 100°C	± 1.0°C	± 0.5°C	20	29.8 ohms

ELECTRICAL SPECIFICATIONS	
Per UL Standard 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.

SX available upon request.

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

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

Aluminum Loxarmor available on special order.

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

