



Type P-OS

Type ITC/PLTC Thermocouple Extension Cable

Multiple Pair - Overall Shield - 105°C Rating

For Cable Tray Use



- A** Solid Thermocouple Alloy Conductor
- B** Okoseal Insulation
- C** Twisted Pairs
- D** Communication Wire
- E** Tinned Stranded Copper Drain Wire
- F** Aluminum/Synthetic Polyester Tape
- G** Rip Cord
- H** 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, negative conductor numerically printed for group identification.

Communications Wire: 22 AWG, solid strand, 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 backed tape overlapped to provide 100% coverage, and a 7-strand tinned copper drain wire, same size as the conductor.

Jacket: Color-coded, flame-retardant Okoseal per UL 13 and UL 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.

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

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

Applications

Okonite 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 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. Suitable Class I, Division 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 and IEEE 383-1974 vertical tray flame tests.
- Sunlight resistant and oil resistant.
- Individual pairs are numbered and color-coded for simplified hook-up.
- Good external noise rejection.
- Excellent weathering characteristics.
- Flexible, easy to handle, splice and terminate.
- 100% shield coverage for reduced electromagnetic noise pick-up.
- Communication wire included in each cable for voice communication during installation or instrument calibration.
- Suitable for low temperature installation of -40°C.

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Product Data

Section 5: Sheet 21



Conductors: 20 AWG
Okoseal Insulation: 15 mils

ASA/ISA Type	Catalog Number	Number of Pairs	Jacket - mils	Nominal Cable O.D. - (In.)	Cross-Sectional Area † (sq in)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')
EX	284-20-1204	4	40	.38	.11	76	87
	284-20-1208	8	50	.50	.20	132	155
	284-20-1210	10	50	.60	.28	164	188
	284-20-1212	12	50	.59	.27	182	206
	284-20-1216	16	60	.67	.35	241	280
	284-20-1220	20	60	.72	.41	285	324
	284-20-1224	24	60	.80	.50	334	374
	284-20-1236	36	70	.91	.65	477	541
	284-20-1250	50	70	1.06	.88	632	712
JX	284-20-2204	4	40	.38	.11	75	86
	284-20-2208	8	50	.50	.20	131	154
	284-20-2210	10	50	.60	.28	162	186
	284-20-2212	12	50	.59	.27	179	203
	284-20-2216	16	60	.67	.35	237	276
	284-20-2220	20	60	.72	.41	281	320
	284-20-2224	24	60	.80	.50	329	368
	284-20-2236	36	70	.91	.65	470	534
	284-20-2250	50	70	1.06	.88	622	702
KX	284-20-3204	4	40	.38	.11	76	87
	284-20-3208	8	50	.50	.20	132	155
	284-20-3210	10	50	.60	.28	164	188
	284-20-3212	12	50	.59	.27	182	206
	284-20-3216	16	60	.67	.35	241	280
	284-20-3220	20	60	.72	.41	285	324
	284-20-3224	24	60	.80	.50	334	373
	284-20-3236	36	70	.91	.65	477	541
	284-20-3250	50	70	1.06	.88	632	712
TX	284-20-4204	4	40	.38	.11	77	88
	284-20-4208	8	50	.50	.20	134	157
	284-20-4210	10	50	.60	.28	166	190
	284-20-4212	12	50	.59	.27	182	206
	284-20-4216	16	60	.67	.35	244	283
	284-20-4220	20	60	.72	.41	289	328
	284-20-4224	24	60	.80	.50	339	378
	284-20-4236	36	70	.91	.65	485	549
	284-20-4250	50	70	1.06	.88	642	722

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.

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	—	16 20	27.8 ohms 70.7 ohms
JX	Iron	White	Constantan	Red	Black	0 to 200°C	± 2.2°C	± 1.1°C	16 20	13.9 ohms 35.7 ohms
KX	Chromel	Yellow	Alumel	Red	Yellow	0 to 200°C	± 2.2°C	—	16 20	23.6 ohms 59.0 ohms
TX	Copper	Blue	Constantan	Red	Blue	-60 to 100°C	± 1.0°C	± 0.5°C	16 20	12.0 ohms 29.8 ohms

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 392.22.

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

▲ Authorized Stock Item: Available from our Customer Service Centers.

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