



C-L-X[®] 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** Impervious, Continuous, Corrugated Aluminum C-L-X Sheath
- K** Outer Okoseal Jacket

Specifications

Conductors: Solid alloys per ANSI MC 96.1.

Insulation: Flame-retardant Okoseal[®] (PVC) per UL Standards 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 Standards 13 and 2250. A rip cord is laid longitudinally under the jacket to facilitate removal.

C-L-X Sheath: A close-fitting, impervious, continuously welded and corrugated aluminum sheath provides complete protection against moisture, liquids, and gases, has excellent mechanical strength, and provides equipment grounding through the sheath.

Outer Jacket: Color-coded, flame-retardant Okoseal per UL Standards 13 and 2250.

Classifications: 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 Type C-L-X 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 and Class I, Zone 2 hazardous locations. Also for use as Power-Limited fire protective signaling cable (FPL) per NEC Code 760. The C-L-X sheath provides the physical protection against mechanical damage as required in NEC Section 727-3. It may be installed in both exposed and concealed work, secured to supports not greater than 6 feet apart.

Product Features

- Passes the UL 1581 & IEEE 383-1974 vertical tray flame tests.
- Passes the IEEE 1202-1991 vertical tray flame test (8 pair and larger).
- Passes the 210,000 BTU/hr vertical tray flame test per ICEA T-29-520.
- UL listed as sunlight resistant.
- UL listed for direct burial (2 PR #20 AWG and larger)
- Complete pre-packaged, factory-tested wiring system-color coded.
- C-L-X cables are quality control inspected to meet or exceed applicable UL Standards.
- C-L-X enclosure permits installation in cable tray containing light and power cables without a barrier separator.
- Individual pairs are numbered and color coded for simplified hook-up.
- Excellent noise rejection.
- Impervious, continuous sheath excludes moisture, gases and liquids.
- In addition, the aluminum CLX sheath exceeds the equipment grounding requirements of NEC Section 250.118 and 250.122, and can be used as the equipment grounding conductor.
- Excellent compression and impact resistance.
- Lower installed system cost than conduit or EMT systems.
- OSHA Acceptable.
- Suitable for low temperature installation to -40°C.
- Meets API Standards, 14F and 14FZ

C-L-X Type P-OS

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Product Data

Section 5: Sheet 22



Conductors: 20 AWG - Okoseal Insulation: 15 mils

ASA/ISA Type	Catalog Number	Number of Pairs	Inner Jacket Thickness - mils	Inner Jacket Nominal O.D. - (In.)	C-L-X 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	584-20-1204	4	40	0.38	0.58	50	0.69	0.37	191	271
	584-20-1208	8	50	0.48	0.71	50	0.82	0.53	272	352
	584-20-1210	10	50	0.52	0.75	50	0.86	0.58	330	410
	584-20-1212	12	50	0.55	0.80	50	0.91	0.65	347	427
	584-20-1216	16	50	0.63	0.84	50	0.95	0.71	414	494
	584-20-1220	20	60	0.72	0.97	50	1.08	0.92	475	555
	584-20-1224	24	60	0.78	1.02	50	1.13	1.00	541	621
	584-20-1236	36	70	0.93	1.19	50	1.30	1.33	724	814
	584-20-1250	50	70	1.05	1.34	50	1.45	1.65	907	1013
JX	584-20-2204	4	40	0.38	0.58	50	0.69	0.37	190	270
	584-20-2208	8	50	0.48	0.71	50	0.82	0.53	271	351
	584-20-2210	10	50	0.52	0.75	50	0.86	0.58	328	468
	584-20-2212	12	50	0.55	0.80	50	0.91	0.65	345	425
	584-20-2216	16	50	0.63	0.84	50	0.95	0.71	411	491
	584-20-2220	20	60	0.72	0.97	50	1.08	0.92	471	551
	584-20-2224	24	60	0.78	1.02	50	1.13	1.00	536	616
	584-20-2236	36	70	0.93	1.19	50	1.30	1.33	717	807
	584-20-2250	50	70	1.05	1.34	50	1.45	1.65	896	1002
KX	584-20-3204	4	40	0.38	0.58	50	0.69	0.37	191	271
	584-20-3208	8	50	0.48	0.71	50	0.82	0.53	272	352
	584-20-3210	10	50	0.52	0.75	50	0.86	0.58	330	410
	584-20-3212	12	50	0.55	0.80	50	0.91	0.65	347	427
	584-20-3216	16	50	0.63	0.84	50	0.95	0.71	414	494
	584-20-3220	20	60	0.72	0.97	50	1.08	0.92	475	555
	584-20-3224	24	60	0.78	1.02	50	1.13	1.00	541	621
	584-20-3236	36	70	0.93	1.19	50	1.30	1.33	724	814
	584-20-3250	50	70	1.05	1.34	50	1.45	1.65	907	1013
TX	584-20-4204	4	40	0.38	0.58	50	0.69	0.37	192	272
	584-20-4208	8	50	0.48	0.71	50	0.82	0.53	274	354
	584-20-4210	10	50	0.52	0.75	50	0.86	0.58	332	412
	584-20-4212	12	50	0.55	0.80	50	0.91	0.65	347	427
	584-20-4216	16	50	0.63	0.84	50	0.95	0.71	418	498
	584-20-4220	20	60	0.72	0.97	50	1.08	0.92	479	559
	584-20-4224	24	60	0.78	1.02	50	1.13	1.00	546	626
	584-20-4236	36	70	0.93	1.19	50	1.30	1.33	732	822
	584-20-4250	50	70	1.05	1.34	50	1.45	1.65	917	1023

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

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 392.9.

Jackets - Optional jacket types available - consult local sales office.

Copper or bronze C-L-X available on special order.

To order C-L-X Type P-OS without the outer Okoseal jacket, change the sixth digit of the catalog number from 1 to 5 for EX, 2 to 6 for JX, 3 to 7 for KX, and 4 to 8 for TX. For example to order 12 pr. 20 AWG Type KX with a bare aluminum C-L-X, the catalog number would be 584-20-7212.

C-L-X products manufactured in the United States under license granted by Kabelmetal of Hannover, Germany.

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 2250	
Insulation Test Voltage (spark test)	5000 Volts ac
Dielectric Test Voltage.....	1500 Volts ac
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.

