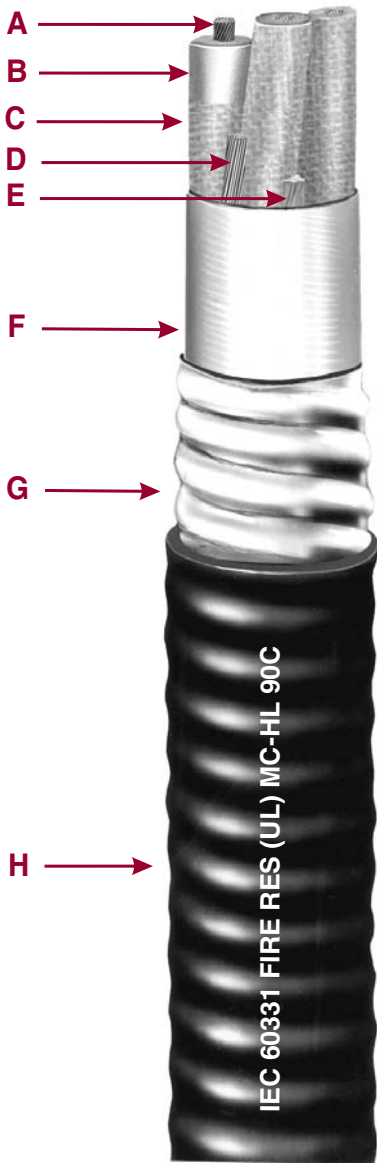




Okotherm® CIC P-OS Fire Resistant



600V Instrumentation Cable Type MC-HL C-L-X®, Aluminum Sheath
 Single & Multiple Pair or Triad Nickel or Tin Coated Copper Conductors
90°C Wet or Dry Rating - 600/1000V Marine Shipboard Cable
 For Cable Tray Use, Sunlight Resistant



- A** Nickel or Tin Coated Copper Conductors
- B** Okotherm (Silicone) Thermoset Insulation
- C** Fiberglass Braid - Coded per ICEA
- D** Nickel or Tin Coated Copper Drain Wire
- E** Glass Fillers, as needed
- F** Aluminum - Mylar Shield Tape
- G** Impervious, Continuous, Corrugated, Aluminum C-L-X Sheath
- H** Black Okoseal Jacket

Cable Description

Nickel or tin coated copper conductors, Okotherm® CIC fire resistant thermoset silicone insulation, with FR tape if required, color or number coded fiber glass braid, cabled conductors, nickel or tin coated drain wire, aluminum-mylar shield tape, aluminum C-L-X® sheath, Okoseal® (PVC) jacket.

Conductors: Nickel or tin coated copper

Insulation: Okotherm Thermoset Silicone, with FR tape if required

Braid: Fiber Glass Braid

Color Code: ICEA S-73-532, Method 7

Assembly: Pairs or triads assembled with left hand lay. Fiberglass fillers included where required to provide a round cable.

Cable Shield: Aluminum/mylar tape overlapped to provide 100% coverage and a 7-strand nickel or tin coated copper drain wire, same size as conductors.

Armor-C-L-X: Continuously Welded and Corrugated Aluminum

Outer Jacket: Black PVC

Applicable Industry Standards:

UL 1569, 1309 & 2225, ICEA S-73-532 (NEMA WC 57), ICEA S-95-658 (NEMA WC 70) ASTM B33 & B355.

Flame Tests:

IEC 60331, ICEA T-29-520, IEEE 1202

Applications

Okotherm CIC 600 volt instrumentation cables are used in systems where, in the event of a fire, circuit integrity is required in order to maintain a process or to safely shut down the process. Fire resistance is determined by compliance to the IEC 60331 circuit integrity fire test. Okotherm CIC cables maintain circuit integrity based on qualification to IEC standard 60331, for all temperatures and times up to and including 2000°F for three hours. When exposed to a fire, the Okotherm CIC insulation becomes an electrically insulating ceramic-like ash that is capable of maintaining the operating voltage.

Okotherm CIC C-L-X Type MC-HL cables with the impervious, continuous aluminum corrugated sheath are recommended as an alternative to a wire conduit system. These cables may be installed indoors or outdoors, in wet or dry locations, as open runs of cable secured to supports not more than six feet apart, in cable tray, as an aerial cable on a messenger, in any approved raceway, direct burial, or encased in concrete. They are also approved for use in Class I & II, Division 1 and 2, Class III, Division 1 and 2 and Zones 1 & 2 hazardous locations per NEC Articles 501, 502, 503, and 505.

The overall shield eliminates most of the static interference from the electric field radiated by power cables and other electrical equipment.

Okotherm CIC 600 volt instrumentation cables should be considered on circuits designed for fire detection and suppression, alarms, communication, circuits requiring redundancy and personnel egress.

Product Features

- UL Listed as Type MC-HL cable E38916 and Marine Shipboard Cable E137931.
- UL Listed for cable tray use, direct burial (2/C 14 AWG and larger) and sunlight resistant.
- Passes the IEEE 383-1974 and IEEE 1202-1991 vertical tray flame tests.
- Passes the 210,000 BTU ICEA T-29-520 Vertical Tray Flame Test.
- Complete pre-packaged, factory-tested wiring system.
- Individual pairs or triads are numbered and color coded for simplified hook-up.
- C-L-X cables are quality control inspected to meet or exceed applicable UL standards.
- 90°C continuous operating temperature in all types of installations.
- 130°C emergency rating.
- 250°C short circuit rating.
- Good EMI shielding characteristics.
- Impervious, continuous metallic sheath excludes moisture, gases and liquids.
- Lower installed system cost than conduit or EMT systems.
- Provides excellent grounding safety.
- Excellent compression and impact resistance.
- Continuous long lengths.
- Minimum installation temperature of -40°C or °F.
- American Bureau of Shipping (ABS) listed as CWCMC Type MC-HL.
- Optional LSZH jacket available.
- Fire Resistant - Qualified to meet IEC 60331, -11 & -21, including temperature and time up to 2000°F for 3 hours, respectively.
- Fire Resistant - Qualified to meet the Hydrocarbon Pool Circuit Integrity Fire Test, utilizing the UL 1709 time-temperature curve, with minimum requirements of 65,000 BTU/h-ft² heat flux, 2000°F flame temperature, 30 minute test duration, and 15A load.

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600V Instrumentation Cable Type MC-HL, C-L-X[®] Aluminum Sheath
 Single & Multiple Pair or Triad Nickel or Tin Coated Copper Conductors
90°C Wet or Dry Rating - 600/100V Marine Shipboard Cable
 For Cable Tray Use - Sunlight Resistant

Product Data Section 5: Sheet 45

Catalog Number	Conductor Size (AWG)	Number of Pairs	Number of Triads	C-L-X O.D. - inches	C-L-X O.D. - mm	Jacket Thickness-mils	Nominal Cable O.D. - inches	Nominal Cable O.D. - mm	Cross-Sectional Area † (sq in)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')	
#16 Tin Coated Copper Conductors, IEC Rating: 750°C for 90 minutes												
567-16-3401	16(7X)	1	0.58	14.7	50	0.69	17.5	0.37	173	212		
567-16-3402		2	0.93	23.6	50	1.04	26.4	0.85	291	371		
567-16-3404		4	0.93	23.6	50	1.04	26.4	0.85	375	455		
567-16-3408		8	1.15	29.2	50	1.26	32.0	1.25	605	695		
567-16-3412		12	1.42	36.1	50	1.53	38.9	1.84	835	978		
567-16-3416		16	1.64	41.7	60	1.78	45.2	2.49	1091	1255		
567-16-3424		24	1.96	49.8	60	2.09	53.1	3.43	1562	1847		
567-16-3436		36	2.58	65.5	75	2.74	69.6	5.90	2396	2867		
567-16-3801		16(7X)	1	0.58	14.7	50	0.69	17.5	0.37	195	234	
567-16-3802			2	0.97	24.6	50	1.08	27.5	0.92	352	559	
567-16-3804			4	1.12	28.4	50	1.22	31.0	1.17	510	600	
567-16-3808			8	1.47	37.3	50	1.58	40.1	1.96	844	987	
567-16-3812			12	1.78	45.2	60	1.91	48.5	2.87	1256	1443	
567-16-3816			16	1.96	49.8	60	2.09	53.1	3.43	1560	1845	
567-16-3824			24	2.45	62.2	60	2.61	66.3	5.35	2351	2736	
567-16-3824			24	2.45	62.2	60	2.61	66.3	5.35	2351	2736	
#14 Tin Coated Copper Conductors, IEC Rating: 750°C for 90 minutes												
567-16-3501	14(7X)	1	0.58	14.7	50	0.69	17.5	0.37	195	224		
567-16-3502		2	0.97	24.6	50	1.08	27.5	0.91	343	423		
567-16-3504		4	1.02	25.9	50	1.13	28.7	1.00	463	543		
567-16-3508		8	1.29	32.7	50	1.29	32.7	1.30	751	857		
567-16-3512		12	1.60	40.7	60	1.73	44.0	2.36	1084	1271		
567-16-3516		16	1.83	46.4	60	1.96	49.7	3.01	1418	1605		
567-16-3524		24	2.23	56.7	60	2.36	60.0	4.39	2046	2381		
567-16-3536		36	2.71	68.8	75	2.87	72.9	6.47	3042	3513		
567-15-3501		14(7X)	1	0.62	15.8	50	0.73	18.6	0.42	224	253	
567-15-3502			2	1.06	27.0	50	1.17	29.7	1.08	422	502	
567-15-3504			4	1.11	28.1	50	1.22	30.9	1.16	596	702	
567-15-3508			8	1.37	34.9	50	1.48	37.7	1.73	999	1142	
567-15-3512			12	1.74	44.2	60	1.87	47.5	2.75	1460	1647	
567-15-3516			16	1.96	49.7	60	2.09	53.0	3.42	1913	2198	
567-15-3524			24	2.40	61.0	75	2.56	65.1	5.16	2873	3258	
567-15-3524			24	2.40	61.0	75	2.56	65.1	5.16	2873	3258	

ELECTRICAL SPECIFICATIONS	
Per UL Standard 44 and 2250	
Conductor Resistance, nominal (1 Pr) ..ohms/1000 ft. @25°C	
..... T.Cu. . . . Ni. Cu	
16 AWG	4.44 . . . 5.89
14 AWG	2.77 . . . 3.69
Insulation Test Voltage (spark test).....	7500 Volts ac
Dielectric Test Voltage.....	3000 V ac for 5 min.
Insulation Resistance Constant @60°F minimum	
(natural material typical value)	4000 Megohms-1000 ft.
Loop Resistance, nominal (1 Pr).....ohms-1000 ft @25°C	
..... T.Cu. . . . Ni. Cu	
16 AWG	8.9 . . . 11.8
14 AWG	5.5 . . . 7.4

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

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600V Instrumentation Cable Type MC-HL, C-L-X[®] Aluminum Sheath

Single & Multiple Pair or Triad Nickel or Tin Copper Conductors

90°C Wet or Dry Rating - 600/1000V Marine Shipboard Cable

For Cable Tray Use - Sunlight Resistant

Okotherm Insulation: 45 mils

Product Data Section 5: Sheet 45

Catalog Number	Conductor Size (AWG)	Number of Pairs	Number of Triads	C-L-X O.D. - inches	C-L-X O.D. - mm	Jacket Thickness-mils	Nominal Cable O.D. - inches	Nominal Cable O.D. - mm	Cross-Sectional Area † (sq in)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')	
#16 Nickel Coated Copper Conductors, IEC Rating: 2000°F for 3 hours												
567-17-3401	16(7X)	1	0.62	15.7	50	0.73	18.5	0.42	198	278		
567-17-3402		2	1.06	26.9	50	1.17	29.7	1.08	367	447		
567-17-3404		4	1.06	26.9	50	1.17	29.7	1.08	498	578		
567-17-3408		8	1.29	32.8	50	1.40	35.6	1.54	809	915		
567-17-3412		12	1.60	40.6	60	1.73	43.9	2.35	1174	1361		
567-17-3416		16	1.87	47.5	60	2.00	50.8	3.14	1552	1844		
567-17-3424		24	2.28	57.9	75	2.44	62.0	4.68	2324	2659		
567-17-3436		36	2.75	69.9	75	2.92	74.2	6.70	3340	3811		
567-17-3801		16(7X)	1	0.62	15.7	50	0.73	18.5	0.42	230	310	
567-17-3802			2	1.11	28.1	50	1.22	30.9	1.17	453	638	
567-17-3804	4		1.34	34.0	50	1.45	36.8	1.65	685	828		
567-17-3808	8		1.74	44.2	60	1.87	47.5	2.75	1202	1389		
567-17-3812	12		2.10	53.3	60	2.23	56.6	3.91	1795	2087		
567-17-3816	16		2.40	61.0	60	2.56	65.0	5.15	2362	2747		
567-17-3824	24		2.93	74.4	75	3.10	78.7	7.55	3399	4038		
567-17-3824	24		2.93	74.4	75	3.10	78.7	7.55	3399	4038		
#14 Nickel Coated Copper Conductor, IEC Rating: 2000°F for 3 hours												
567-17-3501	14(7X)	1	0.62	15.5	50	0.73	18.6	0.42	212	241		
567-17-3502		2	1.06	26.9	50	1.17	29.7	1.08	376	456		
567-17-3504		4	1.11	28.1	50	1.22	30.9	1.16	516	622		
567-17-3508		8	1.37	34.9	50	1.48	37.7	1.73	836	979		
567-17-3512		12	1.74	44.2	60	1.87	47.5	2.75	1216	1403		
567-17-3516		16	1.96	49.7	60	2.09	53.0	3.42	1586	1871		
567-17-3524		24	2.45	62.1	75	2.61	66.2	5.34	2396	2781		
567-17-3536		36	2.93	74.5	75	3.10	78.6	7.52	3419	4058		
567-17-3911		14(7X)	1	0.67	16.9	50	0.78	19.7	0.47	253	282	
567-17-3912			2	1.11	28.2	50	1.22	30.9	1.17	451	557	
567-17-3914	4		1.19	30.3	50	1.30	33.1	1.33	664	824		
567-17-3918	8		1.47	37.2	50	1.58	40.0	1.95	1117	1329		
567-17-3922	12		1.87	47.4	60	2.00	50.8	3.14	1691	2065		
567-17-3926	16		2.15	54.5	60	2.28	57.9	4.08	2216	2728		
567-17-3934	24		2.62	66.6	75	2.79	70.7	6.09	3243	3929		

ELECTRICAL SPECIFICATIONS	
Per UL Standard 44 and 2250	
Conductor Resistance, nominal(1 Pr) ..ohms/1000 ft. @25°C	
..... T.Cu..... Ni. Cu	
16 AWG	4.44 5.89
14 AWG	2.77 3.69
Insulation Test Voltage (spark test).....	7500 Volts ac
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16 AWG	8.9 11.8
14 AWG	5.5 7.4

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