Okotherm® CIC SP-OS Fire Resistant

600V Instrumentation Cable - Type TC-ER

Shielded Multiple Pair or Triad Nickel Coated Copper Conductors
90°C Dry Rating
For Cable Tray Use, Sunlight Resistant

A Nickel Coated Copper
B Okotherm (Silicone) Thermoset Insulation
C Fiberglass Braid - Coded per ICEA
D Twisted, Shielded Pairs/Triads
E Nickel Coated Copper Drain Wire
F Glass Fillers, as needed
G Aluminum-Mylar Shield Tape
H Black Okoclear TP (TPPO)

Cable Description

Nickel 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 coated drain wire, aluminum-mylar shield tape, Okoclear®-TP (TPPO) jacket.

Conductors: Class B stranded nickel coated copper.

Insulation: Okotherm Thermoset Silicone, with FR tape if required.

Braid: Fiberglass Braid

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

Group Shield: Aluminum-mylar tape overlapped to provide 100% coverage, and a 7-strand nickel coated copper drain wire, two sizes smaller than the conductor. All group shields are completely isolated from each other.

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 coated copper drain wire, same size as conductors.

Jacket: Black Okoclear-TP (TPPO).

Applicable Industry Standards:

UL 44 & 1277, NEMA WC 57 (ICEA S-73-532) & NEMA WC 70 (ICEA S-95-658), ASTM B355.

Flame Tests:

IEC 60331, UL 1277, UL 1685, 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.

The isolated individual shields over each pair or triad, when properly grounded, prevent crosstalk or capacitive coupling between adjacent pairs or triads which occurs with ac signals, particularly the pulse type.

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 Type TC-ER per E60422.
- Sunlight resistant.
- Passes UL 1277 vertical tray flame test.
- Passes IEEE 1202-1991 vertical tray flame test.
- Conforms with “LS” limited smoke requirements of UL 1277 (3 or more Type RHH insulated conductors)for sizes 14 AWG and larger.
- 90°C continuous rating.
- 130°C emergency overload rating.
- 250°C short circuit rating.
- Individual pairs or triads are numbered and color coded for simplified hook-up.
- Good EMI shielding characteristics.
- Individual units are completely isolated for maximum noise rejection.
- Quality control inspected to meet or exceed applicable industry standards.
- Jacket resistant to moisture and most chemical atmospheres.
- Thermal stability at elevated temperatures.
- Easy to install and terminate.
- Mechanically rugged.
- 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 65,000BTU/h-ft2 heat flux, 2000°F flame temperature, 30 minute test duration, and 15A load.

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Catalog Number	Conductor Size AWG/kcmil	Number of Pairs	Number of Triads	Jacket Thickness-mils	Nominal Cable O.D. - Inches	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								
268-15-3502	16(7X)	2		80	0.97	0.74	313	393
268-15-3504		4		80	0.97	0.74	461	541
268-15-3508		8		80	1.26	1.25	813	919
268-15-3512		12		80	1.51	1.78	1157	1300
268-15-3516		16		110	1.83	2.62	1603	1790
268-15-3524		24		110	2.15	3.64	2283	2575
268-15-3536		36		110	2.67	5.61	3307	3681
268-16-3502	16(7X)	2		80	1.04	0.84	391	471
268-16-3504		4		80	1.16	1.06	629	709
268-16-3508		8		80	1.41	1.56	1111	1254
268-16-3512		12		110	1.76	2.44	1695	2069
268-16-3516		16		110	2.19	3.76	2232	2816
268-16-3524		24		110	2.63	5.45	3213	3961
#14 Nickel Coated Copper Conductors, IEC Rating: 2000°F for 3 hours								
268-15-3702	14(7X)	2		80	1.00	0.79	324	404
268-15-3704		4		80	1.09	0.94	491	571
268-15-3708		8		80	1.47	1.69	862	1005
268-15-3712		12		110	1.85	2.68	1323	1510
268-15-3716		16		110	2.10	3.45	1688	1980
268-15-3724		24		110	2.43	4.65	2377	2712
268-15-3736		36		140	2.89	6.57	3538	4009
268-16-3702	14(7X)	2		80	0.99	0.77	388	468
268-16-3704		4		80	1.23	1.19	646	752
268-16-3708		8		80	1.61	2.02	1150	1436
268-16-3712		12		110	2.04	3.28	1765	2349
268-16-3716		16		110	2.38	4.44	2282	2866
268-16-3724		24		110	2.72	5.80	3238	3986

ELECTRICAL SPECIFICATIONS
Per UL Standard 44 and 2250

Conductor Resistance, nominal(1 Pr)..ohms/1000 ft.....@25°C
.....Ni. Cu
16 AWG 5.89
14 AWG 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
.....Ni.Cu
16 AWG 11.8
14 AWG.....7.4

† **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%.

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