CORFLEX® MC

Contact
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Continuous Corrugated Aluminum Sheathed PL, MC & MV Industrial Cables

DESCRIPTION

Applications

CORFLEX® cables may be found in a variety of industrial, commercial and utility applications. Chemical, oil and gas, and forestry industries plus commercial or high-rise buildings are areas in which CORFLEX® has gained acceptance.

Exceptional fire ratings (as per appropriate specifications), impact-resistance, flexiblity and an impervious metallic sheath are key components of this design.

CORFLEX® installation may be in wet or dry locations, in trays, troughs, wireways, directly buried or embedded in concrete. As well, it can be used in plenums (with no outer coverings), ducts and other airways per NEC 2008 and NEC 2011 Article 300.22.

The 300 volt CORFLEX® PL cables can be installed in Class I, II, III & intrinsically safe locations & Division 2 as per NEC 2008 and NEC 2011 (PLTC and ITC Rated).

CORFLEX® PL cables are suitable for control, signal, and instrumentation circuits with 300 volt rating. The cable construction minimizes noise and signal interference to enhance performance in instrumentation, dataflow, computer & datalogging applications especially in areas where high voltages or high currents are present.

The 600 volt and higher CORFLEX® cables can be installed in hazardous locations designated Class I, II & III and Divisions 1 & 2 as per NEC 2008 and NEC 2011 (HL Rated).

CORFLEX® MC cables are designed for use on power and control circuits with 600 volt rating. Cables are suitable for use as feeders and branch circuits for power, control, lighting and signalling as per NEC 2008 and NEC 2011 Articles 330, 725 & 727.

CORFLEX® MV-105 or**MC-HL** cables are designed for use on power circuits. Cables are suitable for use as per NEC 2008 and NEC 2011 Article 328 as feeders and branch circuits.

CORFLEX® VFD cables are designed to improve the operating performance of variable frequency drive systems. The 600 volt CORFLEX® VFD cables provide excellent shielding from high frequency noise that can interfere with data and control signals. One of the advantages of the Nexans CORFLEX® sheath compared to other constructions is that the cable sheath provides a long term low resistance path to ground to protect the drive system. The cable grounds provide the best cancellation and lowest net injected ground current into the drive system, protecting against common mode currents which impair the drive unit electronic performance and shorten the drive's life span. Cable grounds, in combination with the aluminum sheath, ensure a balanced, very low resistance path to ground to reduce the chance of motor failure due to bearing currents.

STANDARDS

National UL 1569; UL 2225; UL 44

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Armored Instrumentation Cable

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Part Number: MC

Armored Instrumentation Cable UL Type MC HL 600V, 90°C rated - LEAD FREE

DESCRIPTION

Single or multiple individually shielded pairs or triads, overall cable shield, PVC inner jacket, continuous corrugated aluminum sheath, PVC jacket

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and Class B stranded in accordance with ASTM B8.

Insulation: PVC/Nylon type TFN in accordance with UL 66, flame retardant, 90oC temperature rating.

Insulation shield: Aluminum foil/polyester shield helically wrapped to provide 100% coverage and tinned copper drain wire that is two gauge sizes smaller than the circuit conductors.

Assembly: Pairs/triads are cabled in concentric layers with interstices filled with suitable non-hygroscopic fillers, as required. A binder tape of synthetic material assembles the core in an essentially round configuration.

Overall cable shield: Aluminum foil/polyester shield helically wrapped to provide 100% coverage and tinned copper drain wire that is the same size as the circuit conductors.

Inner jacket: Polyvinyl chloride jacket, over cabled core as per UL 1569, 90°C temperature rating, with additional resistance to fire spread. A rip cord is laid longitudinally under the jacket to facilitate stripping.

Armor: Continuous corrugated aluminum sheath with no more than 0.2% trace copper providing complete protection against liquid & gas ingress. It also provides excellent mechanical protection, additional electrostatic shielding, and serves as an easy means of grounding equipment.

Jacket: Overall black polyvinyl chloride jacket per UL 1569, 90°C temperature rating; low gas emission; limited flame spread and excellent corrosion resistance.

Identification of Conductors

Pairs: black/white & number coded

Triads: black/white/red & number coded

Bending Radius

Fixed position: 7 x cable overall diameter

During pulling: 12 x cable overall diameter

STANDARDS

National
UL 1569;UL 2225;UL 66

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Specifications
* Meets UL 66, TFN rated 90°C 600V conductors
* Meets UL 1569 requirements for Type MC, Metal Clad cables
* Meets UL 2225 for Hazardous Locations
* Designated Type MC as per NEC Article 330

CHARACTERISTICS

Construction characteristics	
Conductor material	Copper
Electrical characteristics	
Maximum operating voltage	600 V
Usage characteristics	
Maximum operating temperature	90 °C

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MULTI PAIRS, 600 V - 18 AWG (7W) SPOS

Part Number	# of Pairs	Insulation Thickness		Nominal Diameter over Core (inches)	Inner Jacket Thickness (mils)	Nominal Diameter over Inner Jacket (inches)	Nominal Diameter over Sheath (inches)	Outer Jacket Thickness (mils)	Nominal Diameter over Outer Jacket (inches)	Approximate Net Cable Weight (lb/kft)
		PVC (mils)	Nylon (mils)							
654988	2	15	4	0.319	40	0.405	0.594	50	0.699	218
654921	4	15	4	0.38	40	0.465	0.633	50	0.735	257
654947	8	15	4	0.517	50	0.621	0.836	50	0.940	373
654962	12	15	4	0.647	50	0.753	0.976	50	1.080	621
665250	16	15	4	0.731	50	0.837	1.142	50	1.247	817
662116	24	15	4	1.016	50	1.124	1.420	50	1.525	969

MULTI PAIRS, 600 V - 16 AWG (7W) SPOS

Part Number	# of Pairs	Insulation Thickness		Nominal Diameter over Core (inches)	Inner Jacket Thickness (mils)	Nominal Diameter over Inner Jacket (inches)	Nominal Diameter over Sheath (inches)	Outer Jacket Thickness (mils)	Nominal Diameter over Outer Jacket (inches)	Approximate Net Cable Weight (lb/kft)
		PVC (mils)	Nylon (mils)							
*645390	1	15	4	0.209	40	0.293	0.492	50	0.605	157
*659052	2	15	4	0.424	40	0.477	0.639	50	0.744	216
*645291	4	15	4	0.482	50	0.533	0.767	50	0.871	375
*659078	8	15	4	0.635	50	0.676	0.926	50	1.030	604
*650796	12	15	4	0.797	50	0.835	1.140	50	1.246	862
654889	16	15	4	0.882	50	0.983	1.320	50	1.431	1151
*654905	24	15	4	1.124	50	1.126	1.422	50	1.526	1432
650788	36	15	4	1.312	50	1.370	1.746	60	1.879	2121
* Stock Items										

MULTI TRIADS, 600 V - 16 AWG (7W) STOS

Part Number	# of Pairs	Insulation Thickness		Nominal Diameter over Core (inches)	Inner Jacket Thickness (mils)	Nominal Diameter over Inner Jacket (inches)	Nominal Diameter over Sheath (inches)	Outer Jacket Thickness (mils)	Nominal Diameter over Outer Jacket (inches)	Approximate Net Cable Weight (lb/kft)
		PVC (mils)	Nylon (mils)							
*654863	1	15	4	0.225	40	0.304	0.507	50	0.619	171
644344	4	15	4	0.484	50	0.587	0.798	50	0.900	300
670083	8	15	4	0.680	50	0.786	0.998	50	1.102	467
*670067	12	15	4	0.820	50	0.925	1.212	50	1.317	1007
* Stock items										

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ELECTRICAL PROPERTIES

600 V Shielded Pairs / Triads with an overall Cable Shield

Conductor Size (AWG)	DC Resistance 20°C Ω/kft	Capacitance			
		Pairs		Triads	
		Conductor -Conductor (pf/ft)	Conductor -Shield (pf/ft)	Conductor -Conductor (pf/ft)	Conductor -Shield (pf/ft)
18	6.64	74	148	63	156
16	4.18	86	172	87	180

PRODUCT FEATURES

- UL listed as Marine Shipboard Cable (File E86139)
- UL listed as Type MV-105 kV and 8 kV (File E66901)
- Cables pass UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, IEC 332-3 category a fire test, IEEE 1202 and CSA FT4
- Cables are American Bureau of Shipping (ABS) listed as CWC MC Type MC Type MV/MC
- Cables are marked "-40°C" and are suitable for handling and installation down to -10°C (based on -40°C impact and bend tests per UL 1569)
- 105°C Temperature Rating
- Continuous, impervious metallic sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum armor resistance exceeds requirements of the NEC 2008 and NEC 2011 Article 250.178 for equipment grounding conductor
- Excellent mechanical & physical properties
- Minimal noise and signal interference
- Sunlight resistant jacket
- Suitable for direct burial and use in cable tray and embedment in concrete
- Suitable for Class I, II and III, Divisions 1 & 2 as per NEC 2008 and NEC 2011 (HL Rated)
- Three symmetrical grounding conductors for PW M/VFD and other modern AC drive/motor applications

SELLING INFORMATION

Options

The following constructions can be provided on special orders:

- Different conductor size
- Different pair or triad configurations
- Specially colored jackets
- Other constructions and combinations (some manufacturing restrictions apply)
  - UL 1309 listing and marking