



# Industrial In-Stock

**FIREX<sup>®</sup> TECK90 (CSA)**

**FIREX<sup>®</sup> 15 kV Armored Medium Voltage (CSA)**

**CORFLEX<sup>®</sup> MC-HL Armored Instrumentation (UL)**

**CORFLEX<sup>®</sup> MC-HL & VFD (UL)**

November 2020

# About Nexans

Nexans is a key driver for the world's transition to a more connected and sustainable energy future. For over 120 years, the Group has brought energy to life by providing customers with advanced cable technologies for power and data transmission. Today, Nexans goes beyond cables to offer customers a complete service that leverages digital technology to maximize the performance and efficiency of their critical assets. The Group designs solutions and services along the entire value chain in four main business areas:



**Building & Territories**  
(including utilities & emobility)



**High Voltage & Projects**  
(covering offshore wind farms, subsea interconnections, land high voltage)



**Telecom & Data**  
(covering data transmission, telecom networks, hyperscale data centers, LAN)



**Industry & Solutions**  
(including renewables, transportation, oil and gas, automation, and others)

Corporate Social Responsibility is a guiding principle of Nexans' business activities and internal practices. In 2013 Nexans was the first cable provider to create a Foundation supporting sustainable initiatives bringing access to energy to disadvantaged communities worldwide. The Group's commitment to developing ethical, sustainable and high-quality cables also drives its active involvement within leading industry associations, including Europacable, the NEMA, ICF and CIGRE.

# A worldwide leading expert in advanced cabling & connectivity solution

Sales in 2019 of 6.5 billion Euros <sup>(1)</sup>

Listed on Euronext Paris, Compartment A

**13%** <sup>(2)</sup>

High Voltage

**38%**

Europe

**23%**

North America

**12%**

Asia, Pacific

**7%**

South America

**7%**

Middle East,  
Russia, Africa

- Serving customers on all continents
- Industrial footprint in 34 countries and commercial activities worldwide
- 26,000 local experts

1. Sales at constant metal prices, 2019 data restated with change in copper standard price in force since January 2020

2. Global Business Group

This catalog has been prepared for the convenience of those using electrical conductors in industrial, commercial and residential applications. The information included in the many tabulations will be of particular value to the architect, engineer, electrician, and layperson alike. For your convenience, we have referenced applicable Articles and Tables from the NEC.



The CORFLEX<sup>®</sup> MC-HL cables are UL listed.

The FIREX<sup>®</sup> TECK90 & 15 kV Armored Medium Voltage cables are CSA certified.

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# FIREX® TECK90 600 V, 1 kV & 5 kV (NS)

## DESCRIPTION

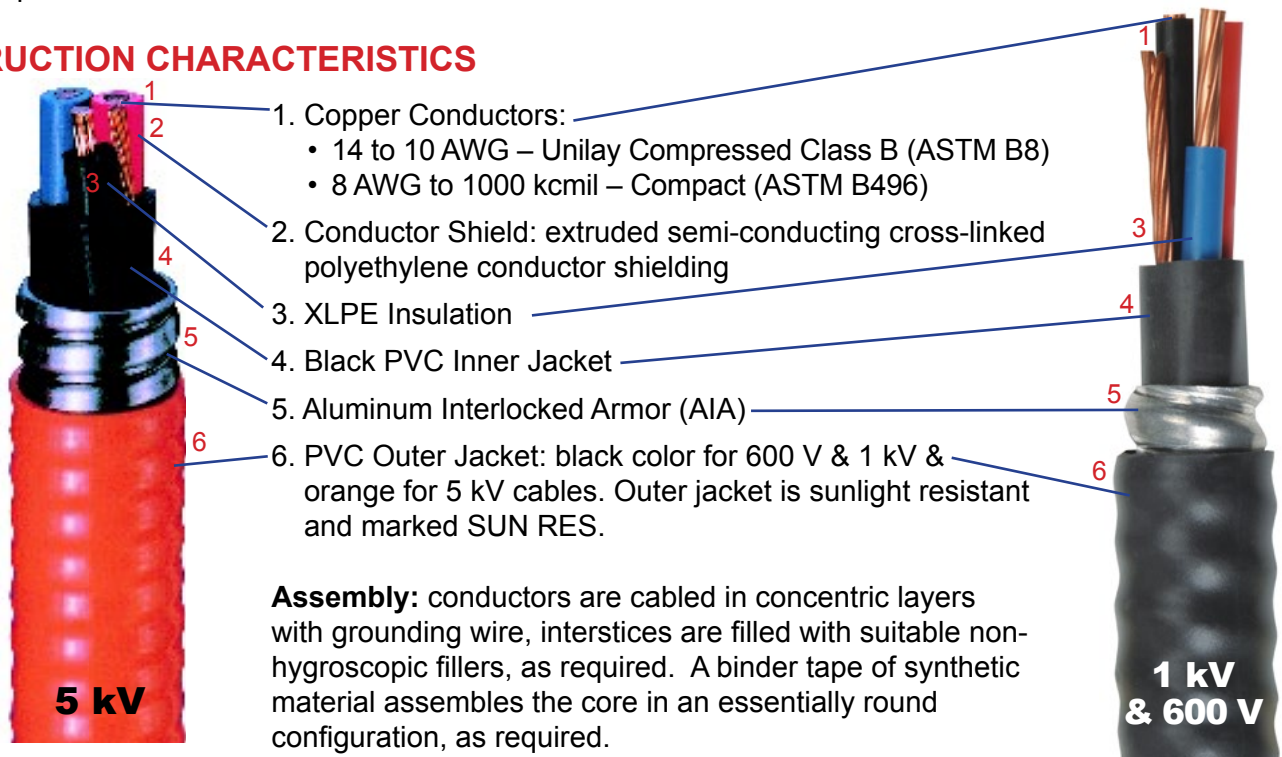
FIREX® TECK90 Cables are versatile, resistant to mechanical abuse, corrosion resistant, compact and reliable. They can be relocated easily because they are rugged and flexible. FIREX® TECK90 Cables utilize low acid gas and low flame spread PVC jacket compounds to ensure maximum safety to personnel and equipment in the event of fire.

## APPLICATIONS

- Exposed and concealed wiring in 90°C dry or 90°C wet locations and where exposed to the weather (-40°C Installation)
- Ventilated, non-ventilated and ladder type cable trays in wet and dry locations
- Commercial applications include apartment buildings and commercial complexes
- Direct earth burial and direct embedding in concrete, masonry or plaster
- Service entrance above or below ground
- Wide range of applications, including ALL hazardous locations - Class I, Division 1 & 2; Class II, Division 1 & 2; and Class III (When installed in Canada under the Canadian Electrical Code)

Even in the most demanding industrial and resource industry applications, FIREX® TECK90 cables have proven to have a superior service and maintenance record.

## CONSTRUCTION CHARACTERISTICS



### Conductor Identification:

- 1 Conductor -- Black
- 2 Conductors -- Black, White
- 3 Conductors -- Red, Black, Blue
- 4 Conductors -- Red, Black, Blue, White
- 5+ Conductors (600 V) -- Black w/Number Coding
- 14 AWG to 2 AWG: Colored Insulation
- 1 AWG to 500 kcmil: Colored Stripes

### Minimum Bending Radius:

- Fixed Position: 7 × overall cable diameter
- During Pull: 14 x overall cable diameter

# **FIREX® TECK90 600 V, 1 kV & 5 kV (NS)**

## **PRODUCT FEATURES**

- Cables are CSA listed as Type TECK90 (for cables up to and including 5 kV unshielded)
- CSA listed insulated conductors
- Cables are flame-retardant and pass CSA FT1
- Cables are fire-retardant and pass CSA FT4
- ICEA T-29-520 Fire Test at 210,000 BTU/hr, IEEE 1202, 383 and UL 1685
- Cables are low-acid-gas-emitting per CSA C22.2 No. 2556 and marked AG14
- Cables exhibit a -40°C low temperature rating with suitable handling precautions
- Temperature rating of 90°C dry and wet
- 130°C emergency rating and 250°C short circuit rating
- Excellent mechanical and physical properties
- Sunlight and oil resistant jacket

## **STANDARDS**

- CSA C22.2 No. 38 – Type RW90 conductors
- CSA C22.2 No. 131 – Type TECK90 Cables
- CSA C22.2 No. 174 – Hazardous Locations

## **MARKING AND IDENTIFICATION**

The inner jackets of FIREX® TECK90 cables are printed: SUN RES.

The outer jackets of FIREX® TECK90 cables are printed: (mon/year) NEXANS FIREX®-II TECK90 XLPE (-40°C) CSA LL19376 F HL FT4 AG14 SUN RES along with conductor size, number of conductors and sequential metre marking.

## **OPTIONS**

The following constructions can be provided on special orders:

- Aluminum conductors
- Steel interlock armor
- Extra ground wires
- Special color or number coding
- Specially colored jackets
- Other constructions and combinations

# FIREX® TECK90 600 V - Dimensions

Part Number	# of Cond.	Insulation Thickness	Inner Jacket Thickness	Nominal Diameters			Approx. Net Cable Weight	Approx. Copper Content
				Inner Jacket	Armor	Outer Jacket		
		inches	inches	inches	inches	inches	lb/kft	lb/kft
<b>14 AWG TECK90 600 V 14 AWG GROUND - 15 A</b>								
12010006	2	0.030	0.045	0.37	0.60	0.69	191	38
12000132	2	0.030	0.045	0.37	0.60	0.69	191	38
12000133	3	0.030	0.045	0.39	0.62	0.71	225	52
12000134	4	0.030	0.045	0.44	0.68	0.76	266	65
12000135	5	0.030	0.045	0.47	0.70	0.79	306	77
12000136	6	0.030	0.045	0.52	0.74	0.83	316	90
12000137	7	0.030	0.045	0.52	0.76	0.84	338	103
12000138	8	0.030	0.060	0.60	0.83	0.91	384	116
12000113	10	0.030	0.060	0.67	0.90	0.98	448	142
12000139	12	0.030	0.060	0.70	0.93	1.01	489	168
12000103	15	0.030	0.060	0.75	0.99	1.09	583	207
12000129	20	0.030	0.060	0.85	1.11	1.19	766	271
12000128	25	0.030	0.080	0.98	1.24	1.33	852	337
12000088	30	0.030	0.080	1.06	1.31	1.40	995	401
12000106	40	0.030	0.080	1.18	1.43	1.52	1224	531
12000105	50	0.030	0.080	1.28	1.54	1.64	1468	660
<b>12 AWG TECK90 600 V 14 AWG GROUND - 20 A</b>								
12010007	2	0.030	0.045	0.41	0.64	0.72	238	54
12000140	2	0.030	0.045	0.41	0.64	0.72	238	54
12010008	3	0.030	0.045	0.43	0.66	0.75	280	75
12000141	3	0.030	0.045	0.43	0.66	0.75	280	75
12000142	4	0.030	0.045	0.50	0.73	0.82	298	95
12000143	6	0.030	0.060	0.60	0.83	0.91	402	136
12000112	8	0.030	0.060	0.66	0.88	0.97	476	177
12000144	10	0.030	0.060	0.74	0.99	1.08	531	218
12000130	12	0.030	0.060	0.78	1.04	1.13	651	260
12000000	15	0.030	0.060	0.84	1.10	1.19	755	321
12000087	20	0.030	0.080	0.97	1.23	1.32	973	425
<b>10 AWG TECK90 600 V 12 AWG GROUND - 30 A</b>								
12000309	2	0.030	0.045	0.45	0.68	0.77	272	86
12000145	3	0.030	0.045	0.48	0.71	0.80	339	118
12000074	4	0.030	0.045	0.56	0.78	0.87	383	151
12000206	6	0.030	0.060	0.67	0.90	0.99	517	217
12000107	10	0.030	0.060	0.84	1.10	1.19	776	348
12000109	20	0.030	0.080	1.10	1.36	1.45	1291	675

**Notes:**

- Dimensions and weights shown are nominal values, subject to standard manufacturing tolerances.
- Ampacity in accordance with the Canadian Electrical Code, Part 1.
- Derating required for more than 3 conductors.

# FIREX® TECK90 1 kV & 5 kV - Dimensions

Part Number	# of Cond.	Conductor Size		Insulation Thickness inches	Inner Jacket Thickness inches	Approximate Diameters			Approx. Net Cable Weight lb/kft	Approx. Copper Content lb/kft
		Power AWG or kcmil	Bonding AWG			Inner Jacket inches	Armor inches	Outer Jacket inches		
<b>TECK90 1 kV</b>										
12000506	1	350	1	0.090	0.060	1.07	1.34	1.45	1910	1386
12000507	1	500	1/0	0.090	0.060	1.20	1.48	1.59	2515	1925
12000794	1	750	2/0	0.090	0.060	1.41	1.68	1.81	3648	2815
12000213	2	12	14	0.045	0.045	0.46	0.70	0.79	272	54
12000304	2	8	10	0.045	0.060	0.59	0.82	0.93	407	136
12000082	2	6	8	0.060	0.060	0.72	0.95	1.06	545	217
12000302	3	12	14	0.045	0.045	0.50	0.74	0.82	297	75
12000301	3	10	12	0.045	0.060	0.58	0.81	0.89	381	118
12000075	3	8	10	0.045	0.060	0.63	0.86	0.94	491	189
12000076	3	6	8	0.060	0.060	0.77	1.04	1.13	644	300
12000077	3	4	8	0.060	0.080	0.90	1.18	1.27	924	447
12000303	3	3	6	0.060	0.080	0.96	1.24	1.33	1026	582
12000078	3	2	6	0.060	0.080	1.03	1.30	1.39	1274	710
12000079	3	1	6	0.080	0.080	1.18	1.46	1.55	1539	876
12000080	3	1/0	6	0.080	0.080	1.26	1.53	1.65	1852	1081
12000081	3	2/0	6	0.080	0.080	1.35	1.62	1.73	2165	1342
12000098	3	3/0	4	0.080	0.080	1.45	1.73	1.84	2571	1719
12000099	3	4/0	4	0.080	0.080	1.57	1.82	1.93	3196	2132
12000100	3	250	4	0.090	0.110	1.77	2.12	2.25	3830	2497
12000101	3	350	3	0.090	0.110	1.98	2.33	2.46	4990	3475
12000102	3	500	3	0.090	0.110	2.24	2.60	2.76	6674	4891
12000310	4	8	10	0.045	0.060	0.69	0.92	1.03	583	241
12000110	4	6	8	0.060	0.080	0.90	1.17	1.28	838	382
12000502	4	4	8	0.060	0.080	1.00	1.27	1.35	1122	579
12000256	4	3	6	0.060	0.080	1.09	1.36	1.44	1359	749
12000111	4	2	6	0.060	0.080	1.15	1.42	1.50	1580	920
12000104	4	2/0	6	0.080	0.080	1.49	1.76	1.87	2711	1761
12000452	4	3/0	4	0.080	0.080	1.61	1.85	1.96	3395	2248
12000456	4	4/0	4	0.080	0.110	1.79	2.03	2.14	4197	2799
12000453	4	250	4	0.090	0.110	1.95	2.30	2.42	4828	3285
12000217	4	350	3	0.090	0.110	2.19	2.54	2.65	6399	4578
12000454	4	500	3	0.090	0.110	2.48	2.83	3.02	8555	6466
<b>TECK90 5 kV</b>										
12001573	3	6	8	0.090	0.080	1.05	1.33	1.44	872	300
12000216	3	4	8	0.090	0.080	1.15	1.42	1.53	1155	447
12000273	3	2	6	0.090	0.080	1.27	1.54	1.67	1503	710
12000293	3	1	6	0.090	0.080	1.34	1.61	1.74	1732	876
12000274	3	2/0	6	0.090	0.080	1.50	1.78	1.90	2339	1342
12000275	3	4/0	4	0.090	0.080	1.72	2.07	2.21	3544	2132
12000276	3	250	4	0.090	0.110	1.88	2.23	2.37	4032	2497
12000277	3	350	3	0.090	0.110	2.09	2.44	2.58	5242	3475
12000278	3	500	3	0.090	0.110	2.36	2.71	2.84	7053	4891

**Notes:**

- Dimensions and weights shown are nominal values, subject to standard manufacturing tolerances.
- Ampacity in accordance with the Canadian Electrical Code, Part 1.
- Steel armor is not permitted in single conductor cables.
- Ampacity assuming 4<sup>th</sup> conductor is a neutral of a 3 phase, 4 wire system in accordance with the CE Code, Part 1.



# FIREX® 15 kV Armored Medium Voltage

## DESCRIPTION

FIREX® Armored Medium Voltage (MV) Power Cables are rated 5 kV to 15 kV and are available as three conductor cables with 105°C rated tree retardant cross-linked polyethylene (TR-XLPE). They are versatile, resistant to mechanical abuse and corrosion and are “FT1 & FT4” rated. FIREX® MV power cables utilize low flame spread PVC jacket compounds to ensure maximum safety to personnel and equipment in the event of fire.

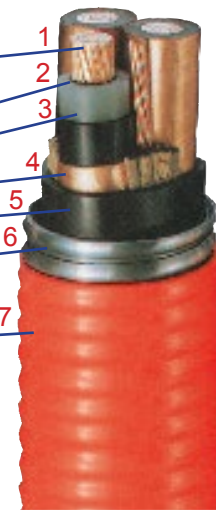
## APPLICATIONS

- Wide range of applications, including ALL hazardous locations (When installed in Canada under the Canadian Electrical Code)
- Services, feeders, branch circuits, indoors or outdoors, and exposed or concealed
- Cable tray, raceway, direct burial or concrete encasement

## CONSTRUCTION CHARACTERISTICS

1. Conductor: bare, annealed copper conforming to ASTM B3 & Class B stranded in accordance with ASTM B8
2. Conductor shield: extruded thermosetting semi-conducting layer
3. TR-XLPE 105°C cross-linked polyethylene insulation
4. Flat copper tape shield (3c only)
5. PVC inner jacket
6. Aluminum Interlocked Armor
7. PVC outer jacket - sunlight resistant

Colors: Orange - 5 kV 100%  
Black - 5 kV 133% / 8 kV 100% and 8 kV 133%  
Red - 15 kV 100% and 15 kV 133%  
Other jacket colors are available on request.



**Assembly:** insulated conductors are cabled with bare copper grounding conductor(s) and interstices are filled with suitable non-hygroscopic fillers, as required. A binder tape of synthetic material assembles the core in an essentially round configuration.

### Conductor Identification:

- 3 Conductors -- Red, Black, Blue

### Minimum Bending Radius:

During Pull: 18 x overall cable diameter  
Final Training: 12 x overall cable diameter

## PRODUCT FEATURES

- Sunlight Resistant “SR” rated
- 105°C to -40°C

## STANDARDS

- UL 1072 – Standard for Medium Voltage Power Cables
- CSA C68.10 – Standard for commercial and industrial shielded power cables rated 5 kV to 46 kV but we are certified to make these cables up to 15 kV
- CSA C22.2 No. 174 – Hazardous Locations

## MARKING AND IDENTIFICATION

The outer jackets of Nexans FIREX® MV power cables are printed: (month/year) NEXANS FIREX®-II number of conductors, conductor size, conductor material, “CPT” TRXLPE (CSA), voltage rating, nominal insulation thickness, LTGG SR FT1 FT4 HL along with lightning bolt symbol, and sequential meter marking.

# FIREX® MV Armored - Dimensions

Part Number	Conductor Size	Approximate Diameters			Ground Wire Size	Approximate Diameters			Approx. Net Cable Weight	Ampacity	
		Conductor	Insulation	Insulation Shield		Inner Jacket	Armor	Outer Jacket		Free Air or Cable Tray	Direct Buried
	AWG or kcmil	inches	inches	inches	AWG	inches	inches	inches	lb/kft	Amps	Amps
<b>3C 15 kV 133%</b>											
12000803	2	0.27	0.74	0.79	6	1.96	2.31	2.44	2639	162	181
12000804	1	0.30	0.77	0.82	6	2.03	2.38	2.51	2885	186	206
12000805	1/0	0.34	0.81	0.86	6	2.11	2.46	2.59	3189	212	234
12000806	2/0	0.38	0.85	0.90	6	2.20	2.55	2.68	3575	243	266
12000807	4/0	0.48	0.95	1.00	4	2.41	2.76	2.89	4627	320	343
12000808	250	0.52	1.00	1.06	4	2.53	2.88	3.01	5150	353	377
12000779	350	0.62	1.10	1.15	3	2.79	3.14	3.29	6614	422	445
12000436	500	0.74	1.22	1.27	3	3.05	3.40	3.55	8377	519	539

**Notes:**

- 1) Where stated, “nominal” and “approximate” values are provided for information purposes only and are subject to standard manufacturing tolerances.
- 2) For free air or cable tray installations, the maximum conductor ampacities are calculated using the following installation parameters:
  - 90°C maximum allowable conductor temperature
  - 40°C ambient air temperature
  - No sun (cables shaded)
  - No wind
  - Non-metallic duct (if installed in duct)
  - 100% load factor
- 3) For direct buried applications, the maximum conductor ampacities are calculated using the following installation parameters:
  - 90°C maximum allowable conductor temperature
  - 20°C earth ambient temperature
  - Earth thermal resistivity (RHO) of 90°C cm / W
  - 915 mm depth of burial
  - 100% load factor

# CORFLEX® MC-HL Armored Instrumentation

## DESCRIPTION

CORFLEX® MC-HL Armored Instrumentation Cables are single or multiple individually shielded pairs or triads and have an overall cable shield. They have a PVC inner and outer jacket with a continuous corrugated aluminum sheath. These cables are suitable for control, signal, and instrumentation circuits with 600 volt rating & 90°C dry and wet installations.

## APPLICATIONS

- Wide range of applications, including ALL hazardous locations
- Chemical, oil and gas, and forestry industries, plus commercial or high-rise buildings
- Services, feeders and branch circuits
- Indoors or outdoors
- Exposed or concealed
- Cable tray & raceway
- Direct burial
- Concrete encasement

## CONSTRUCTION CHARACTERISTICS

1. Conductor: Bare, annealed copper conforming to ASTM B3 & Class B stranded in accordance with ASTM B81
2. Insulation: PVC/Nylon type TFN
3. Individual 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. These shields are electrically isolated from each other.
4. 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.
5. PVC inner Jacket: A rip cord is laid longitudinally under the jacket to facilitate stripping.
6. Continuous corrugated aluminum sheath
7. Black PVC outer jacket

Pairs (SPOS) or Triads (STOS) - 16 AWG

**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.

### Conductor Identification:

**Pairs:** black/white & number coded

**Triads:** black/white/red & number coded

### Minimum Bending Radius:

Fixed Position: 7 × overall cable diameter

During Pull: 14 x overall cable diameter



# CORFLEX<sup>®</sup> MC-HL Armored Instrumentation

## PRODUCT FEATURES

- UL approved cables Type MC, 600 V; File No. E47409
- UL approved insulated conductors
- Cables pass UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, ICEA T-29-520 fire test at 210,000 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
- Continuous, impervious aluminum sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum sheath resistance exceeds requirements of the NEC Article 250.178 for equipment grounding conductor
- Excellent mechanical and physical properties
- Minimal noise and signal interference
- Sunlight resistant jacket

## STANDARDS

- UL 66 – TFN rated 90°C 600 V conductors
- UL 1309 listing and marking
- UL 1569 – Type MC, Metal Clad cables
- UL 2225 – Hazardous Locations
- Designated Type MC as per NEC Article 330

## MARKING AND IDENTIFICATION

- Marked “MC-HL” for installation and use in Class I Division 1 & 2, Class II Division 1 & 2, and Class III Hazardous Locations
- Marked “-40C” and are suitable for handling and installation below -10°C with suitable handling precautions

## 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)

# CORFLEX® MC-HL Armored Instrumentation

## 600 V - Dimensions

Part Number	# of Pairs	Insulation Thickness		Nominal Diameter over Core (inches)	Inner Jacket Thickness (inches)	Nominal Diameter over Inner Jacket (inches)	Nominal Diameter over Sheath (inches)	Outer Jacket Thickness (inches)	Nominal Diameter over Outer Jacket (inches)	Approx. Net Cable Weight (lb/kft)
		PVC (inches)	Nylon (inches)							
<b>MULTI PAIRS, 600 V - 16 AWG (7W) SPOS</b>										
12001282	1	0.015	0.004	0.21	0.040	0.29	0.49	0.050	0.61	157
12000975	2	0.015	0.004	0.42	0.040	0.48	0.64	0.050	0.74	216
12001283	4	0.015	0.004	0.48	0.050	0.53	0.77	0.050	0.87	375
12001409	8	0.015	0.004	0.64	0.050	0.68	0.93	0.050	1.03	604
12001208	12	0.015	0.004	0.80	0.050	0.84	1.14	0.050	1.25	862
12000970	24	0.015	0.004	1.12	0.050	1.13	1.42	0.050	1.53	1432
<b>MULTI TRIADS, 600 V - 16 AWG (7W) STOS</b>										
12000969	1	0.015	0.004	0.23	0.040	0.30	0.51	0.050	0.62	171
12001835	12	0.015	0.004	0.82	0.050	0.93	1.21	0.050	1.32	1007

### 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 DATA

	CORFLEX® MC-HL Instrumentation			CORFLEX® MC-HL and VFD	
	Insulation	Inner Jacket	Outer Jacket	Insulation	Jacket
Polymer Type	PVC	PVC	PVC	XLPE	PVC
Temperature Rating	105°C	90°C	90°C	90°C	90°C
Applicable Standard	UL 13	UL 13	UL 13	UL 44	UL 1569
	ICEA S-73-532	ICEA S-73-532	ICEA S-73-532	ICEA S-95-658	ICEA S-95-658
Tensile Strength psi min	1500	1500	1500	1500	1500
Elongation % min	100	100	100	150	100

# CORFLEX® MC-HL & VFD

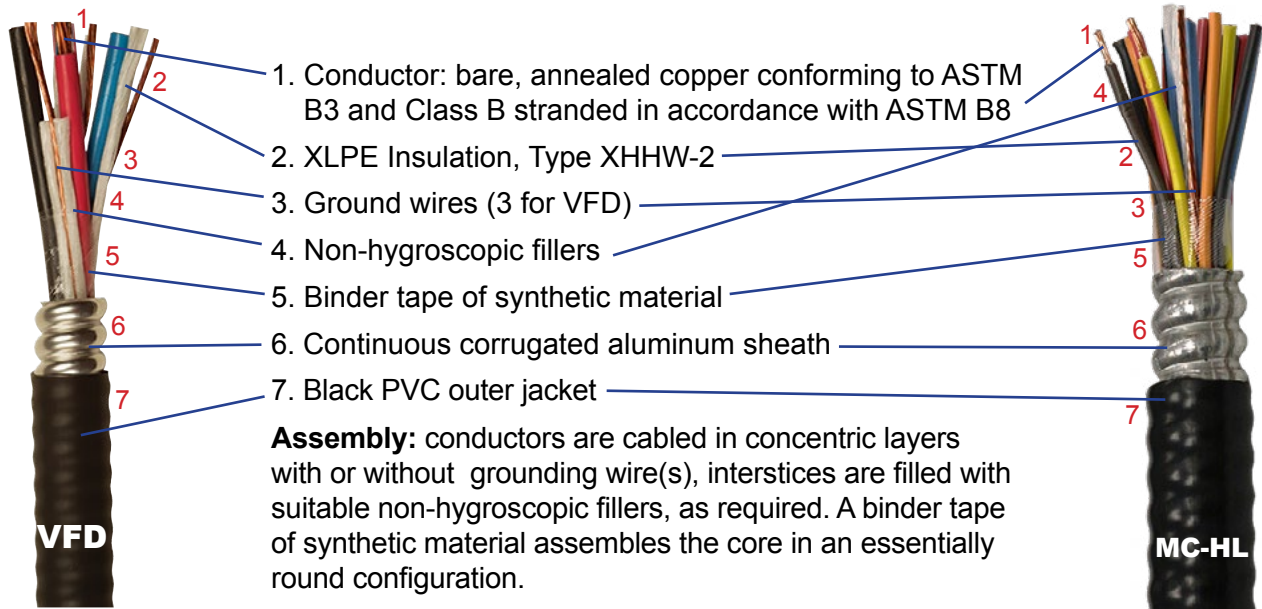
## DESCRIPTION

CORFLEX® MC-HL & VFD are armored power and control cables with exceptional fire ratings (as per appropriate specifications). They are impact-resistance, flexible and a continuously welded and corrugated aluminum sheath armor are key components of this design. They are self supporting, hand trainable, rated 600 V and suitable for 90°C dry/wet locations and in cold weather down to -40°C installations. CORFLEX® VFD has the optimum VFD cable design. It provides excellent shielding from high frequency noise that can interfere with data and control signals. CORFLEX® MC-HL & VFD are the preferred cable for hazardous locations.

## APPLICATIONS

- Wide range of industrial, commercial and utility applications, including ALL hazardous locations
- Chemical, oil and gas, and forestry industries, plus commercial or high-rise buildings
- Services, feeders and branch circuits
- Indoors or outdoors
- Exposed or concealed
- Cable tray & raceway
- Direct burial
- Concrete encasement

## CONSTRUCTION CHARACTERISTICS



### Conductor Identification:

Method #1-E2 per ICEA S-73-532 for all below

Multiple Conductor:

- 2 to 37 Conductors – 14 AWG to 10 AWG

Composite Power and Control:

- 3 Power Conductors – 10 AWG to 2 AWG
- 4 Control Conductors – 12 AWG

CORFLEX® VFD:

- 3 Power Conductors – 14 AWG to 500 kcmil

### Minimum Bending Radius:

Fixed Position: 7 × overall cable diameter

During Pull: 12 x overall cable diameter

# CORFLEX<sup>®</sup> MC-HL & VFD

## PRODUCT FEATURES

- UL approved cables Type MC, 600 V; File No. E47409
- UL approved insulated conductors
- Cables pass UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, ICEA T-29-520 fire test at 210,000 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
- Cables are marked “-40°C” and are suitable for handling and installation below -10°C with suitable handling precautions
- 130°C emergency rating and 250°C short circuit rating
- Continuous, impervious aluminum sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum sheath resistance exceeds requirements of the NEC Article 250.122 for equipment grounding conductor
- Sheath provides good electronic shielding so that CORFLEX<sup>®</sup> can be used in certain instrumentation applications when adequately grounded
- Excellent mechanical & physical properties
- Sunlight resistant jacket

## STANDARDS

- UL 44 – XHHW-2 600 V conductors
- UL 1309 listing and marking
- UL 1569 –Type MC, Metal Clad cables
- UL 2225 – Hazardous Locations
- Designated Type MC as per NEC Article 330
- CSA C22.2 No. 123 – Aluminum Sheathed Cables
- CSA C22.2 No. 174 – Hazardous Locations

## MARKING AND IDENTIFICATION

Marked “MC-HL” for installation and use in Class I Division 1 & 2, Class II Division 1 & 2, and Class III Hazardous Locations

## OPTIONS

The following constructions can be provided on special orders:

- Aluminum conductors
- Extra ground wires
- Special color or number coding
- Specially colored jackets
- Other constructions and combinations (some manufacturing restrictions apply)

# CORFLEX® MC-HL & VFD

## Multi-conductors, Electrical Data

Part Number	# of Cond.	Cond. Size AWG or kcmil	Ground Wire Size AWG	DC Resistance		AC Resistance 90°C, 60 Hz $\Omega/\text{kft}$	Inductive Reactance ( $\Omega/\text{kft}@60\text{Hz}$ )	Voltage Drop $\text{V}/(\text{A}\cdot\text{kft})$	Ampacities Note <sup>1</sup>	
				20°C $\Omega/\text{kft}$	25°C $\Omega/\text{kft}$				75°C	90°C
<b>MULTICONDUCTORS, WITH BARE GROUND(S) ELECTRICAL DATA</b>										
12001844	3	14(7w)	3x18(7w)	2.5553	2.6064	3.2583	0.0376	2.9489	15	15
12000047	4	14(7w)	14(7w)	2.5553	2.6064	3.2583	0.0376	2.9489	15	15
12000056	5	14(7w)	14(7w)	2.5553	2.6064	3.2583	0.0497	2.9542	15	15
12000057	7	14(7w)	14(7w)	2.5553	2.6064	3.2583	0.0545	2.9566	14	15
12000058	9	14(7w)	14(7w)	2.5553	2.6064	3.2583	0.0596	2.9585	14	15
12000059	12	14(7w)	14(7w)	2.5553	2.6064	3.2583	0.0641	2.9604	10	13
12000060	19	14(7w)	14(7w)	2.5553	2.6064	3.2583	0.0694	2.9627	10	13
12001845	3	12(7w)	3x16(7w)	1.6082	1.6404	2.0507	0.0353	1.8610	20	20
12000048	4	12(7w)	12(7w)	1.6082	1.6404	2.0507	0.0353	1.8610	20	20
12000061	7	12(7w)	12(7w)	1.6082	1.6404	2.0507	0.0526	1.8685	18	20
12000062	12	12(7w)	12(7w)	1.6082	1.6404	2.0507	0.0620	1.8726	13	15
12001846	3	10(7w)	3x14(7w)	1.0118	1.2902	1.2902	0.0332	1.1756	30	30
12000049	4	10(7w)	10(7w)	1.0118	1.2902	1.2902	0.0332	1.1756	28	30

**Notes:**

1) Ampacities are in accordance with NEC Table 310.15(B)(16) for conductors in raceway or direct buried at 30°C ambient temperature and 90°C conductor temperature. The overcurrent protection shall not exceed 15 amperes for 14 AWG, 20 amperes for 12 AWG, and 30 amperes for 10 AWG copper conductors after any correction factors for ambient temperature and number of conductors have been applied (NEC Article 240.4(D)). For correction factors for different ambient temperatures and ampacities at different conductor temperatures, see NEC Table 310.15(B)(16). Ampacities for cables having more than three conductors have been derated per NEC Article 310.15(B)(3)(a).

2) Three conductor cables with 3 grounds are also suitable for VFD applications.



# CORFLEX® MC-HL & VFD

## 3 & 4 Conductors, Electrical Data

Part Number	Cond. Size AWG or kcmil	Ground Wire Size AWG	DC Resistance		AC Resistance 90°C, 60 Hz Ω/kft	Inductive Reactance (Ω/kft @60Hz)	Voltage Drop V/(A.Kft)	Ampacities Note <sup>1</sup>	
			20°C Ω/kft	25°C Ω/kft				75°C	90°C
<b>3 CONDUCTORS WITH 3 BARE GROUNDS<sup>2</sup> ELECTRICAL DATA</b>									
12001847	8(7w)	3x14(7w)	0.6361	0.6488	0.8111	0.0348	0.7452	50	55
12001848	6(7w)	3x12(7w)	0.4002	0.4082	0.5104	0.0329	0.4737	65	75
12001849	4(7w)	3x12(7w)	0.2516	0.2566	0.3209	0.0312	0.3025	85	95
12001850	2(7w)	3x10(7w)	0.1574	0.1605	0.2009	0.0299	0.1938	115	130
12001823	1/0(19w)	3x10(7w)	0.0999	0.1019	0.1278	0.0281	0.1272	150	170
12001838	2/0(19w)	3x10(7w)	0.0797	0.0813	0.1021	0.0280	0.1041	175	195
12001839	3/0(19w)	3x8(7w)	0.0629	0.0642	0.0808	0.0275	0.0847	200	225
12001840	4/0(19w)	3x8(7w)	0.0497	0.0507	0.0641	0.0271	0.0695	230	260
12001841	250(37w)	3x8(7w)	0.0424	0.0432	0.0584	0.0263	0.0608	255	290
12001842	350(37w)	3x6(7w)	0.0301	0.0307	0.0395	0.0263	0.0470	310	350
12001843	500(37w)	3x6(7w)	0.0212	0.0216	0.0290	0.0250	0.0367	380	430
<b>4 CONDUCTORS WITH 1 BARE GROUND ELECTRICAL DATA</b>									
12000050	8(7w)	10(7w)	0.6361	0.6488	0.8111	0.0348	0.7472	50	55
12000051	6(7w)	8(7w)	0.4002	0.4082	0.5104	0.0329	0.4737	65	75
12000053	2/0(19w)	6(7w)	0.0791	0.0806	0.1011	0.0281	0.1033	175	195
12000054	4/0(19w)	4(7w)	0.0497	0.0507	0.0641	0.0271	0.0694	230	260
Notes:									
1) Ampacities are based on NEC Table 310.15(B)(16) for not more than three current-carrying conductors in raceway, cable, or earth (direct buried), based on an ambient temperature of 30°C (86°F). Refer to NEC Table 310.15(B)(2) for the ampacity correction factors where the ambient temperature is other than 30°C (86°F).									
2) Three conductor cables with 3 ground wires are also excellent for use with variable frequency drives. In addition to UL, these 3-conductor constructions are also certified to CSA C22.2 No. 123 and CSA C22.2 No. 174.									

# CORFLEX® MC-HL & VFD Physical Data

Part Number	# of Cond.	Cond. Size AWG or kcmil	Insulation Thickness (inches)	Ground Wire Size AWG	Nominal Diameter over Core (in)	Nominal Diameter over Sheath (in)	Jacket Thickness (inches)	Nominal Diameter over Jacket (in)	Approx. Net Cable Weight (lb/kft)
<b>MULTICONDUCTORS, WITH BARE GROUND(S) PHYSICAL DATA</b>									
12001844	3	14(7w)	0.030	3x18(7w)	0.390	0.555	0.050	0.660	200
12000047	4	14(7w)	0.030	14(7w)	0.336	0.503	0.050	0.606	191
12000056	5	14(7w)	0.030	14(7w)	0.366	0.532	0.050	0.635	212
12000057	7	14(7w)	0.030	14(7w)	0.417	0.601	0.050	0.704	263
12000058	9	14(7w)	0.030	14(7w)	0.486	0.645	0.050	0.748	307
12000059	12	14(7w)	0.030	14(7w)	0.560	0.783	0.050	0.887	388
12000060	19	14(7w)	0.030	14(7w)	0.669	0.921	0.050	1.028	572
12001845	3	12(7w)	0.030	3x16(7w)	0.340	0.555	0.050	0.660	226
12000048	4	12(7w)	0.030	12(7w)	0.385	0.550	0.050	0.653	239
12000061	7	12(7w)	0.030	12(7w)	0.478	0.640	0.050	0.744	338
12000062	12	12(7w)	0.030	12(7w)	0.639	0.828	0.050	0.932	502
12001846	3	10(7w)	0.030	3x14(7w)	0.450	0.620	0.050	0.725	312
12000049	4	10(7w)	0.030	10(7w)	0.448	0.621	0.050	0.724	319
<b>3 CONDUCTORS WITH 3 BARE GROUNDS PHYSICAL DATA</b>									
12001847	3	8(7w)	0.045	3x14(7w)	0.520	0.750	0.050	0.838	413
12001848	3	6(7w)	0.045	3x12(7w)	0.600	0.802	0.050	0.905	542
12001849	3	4(7w)	0.045	3x12(7w)	0.700	0.937	0.050	1.039	735
12001850	3	2(7w)	0.045	3x10(7w)	0.830	1.127	0.050	1.232	1097
12001823	3	1/0(19w)	0.055	3x10(7w)	1.040	1.350	0.050	1.473	1592
12001838	3	2/0(19w)	0.055	3x10(7w)	1.126	1.422	0.050	1.510	1882
12001839	3	3/0(19w)	0.055	3x8(7w)	1.250	1.606	0.060	1.739	2400
12001840	3	4/0(19w)	0.055	3x8(7w)	1.360	1.734	0.060	1.867	2910
12001841	3	250(37w)	0.065	3x8(7w)	1.477	1.925	0.060	2.058	3316
12001842	3	350(37w)	0.065	3x6(7w)	1.685	2.028	0.060	2.162	4375
12001843	3	500(37w)	0.065	3x6(7w)	1.954	2.340	0.075	2.504	6026
<b>4 CONDUCTORS WITH 1 BARE GROUND PHYSICAL DATA</b>									
12000050	4	8(7w)	0.045	10(7w)	0.585	0.795	0.050	0.900	465
12000051	4	6(7w)	0.045	8(7w)	0.680	0.930	0.050	1.027	675
12000053	4	2/0(19w)	0.055	6(7w)	1.041	1.361	0.050	1.466	1628
12000054	4	4/0(19w)	0.055	4(7w)	1.134	1.427	0.050	1.525	1922

# Conductor or Phase Identification

## Per ICEA S-73-532-E3.4 Method 4 Number Code

Conductor	Printing Details	Conductor	Printing Details
1 <sup>st</sup>	"1-ONE-1"	4 <sup>th</sup>	"4-FOUR-4"
2 <sup>nd</sup>	"2-TWO-2"	5 <sup>th</sup>	"5-FIVE-5"
3 <sup>rd</sup>	"3-THREE-3"	6 <sup>th</sup>	"6-SIX-6"

## Per ICEA S-73-532-E3.1 Method 1 and Table E2 (formerly K2) Colored Insulation with/without Colored Stripe

Conductor	Insulation	Stripe	Conductor	Insulation	Stripe
1 <sup>st</sup>	BLACK	—	19 <sup>th</sup>	ORANGE	Blue
2 <sup>nd</sup>	RED	—	20 <sup>th</sup>	YELLOW	Blue
3 <sup>rd</sup>	BLUE	—	21 <sup>st</sup>	BROWN	Blue
4 <sup>th</sup>	ORANGE	—	22 <sup>nd</sup>	BLACK	Orange
5 <sup>th</sup>	YELLOW	—	23 <sup>rd</sup>	RED	Orange
6 <sup>th</sup>	BROWN	—	24 <sup>th</sup>	BLUE	Orange
7 <sup>th</sup>	RED	Black	25 <sup>th</sup>	YELLOW	Orange
8 <sup>th</sup>	BLUE	Black	26 <sup>th</sup>	BROWN	Orange
9 <sup>th</sup>	ORANGE	Black	27 <sup>th</sup>	BLACK	Yellow
10 <sup>th</sup>	YELLOW	Black	28 <sup>th</sup>	RED	Yellow
11 <sup>th</sup>	BROWN	Black	29 <sup>th</sup>	BLUE	Yellow
12 <sup>th</sup>	BLACK	Red	30 <sup>th</sup>	ORANGE	Yellow
13 <sup>th</sup>	BLUE	Red	31 <sup>st</sup>	BROWN	Yellow
14 <sup>th</sup>	ORANGE	Red	32 <sup>nd</sup>	BLACK	Brown
15 <sup>th</sup>	YELLOW	Red	33 <sup>rd</sup>	RED	Brown
16 <sup>th</sup>	BROWN	Red	34 <sup>th</sup>	BLUE	Brown
17 <sup>th</sup>	BLACK	Blue	35 <sup>th</sup>	ORANGE	Brown
18 <sup>th</sup>	RED	Blue	36 <sup>th</sup>	YELLOW	Brown