Corflex®

Aluminum Sheathed
PL, MC, MV and VFD Industrial Cables

Nexans

Corflex®

Continuous Corrugated Aluminum Sheathed PL, MC and MV Industrial Cables

Introduction

Nexans is one of the largest wire and cable manufacturers in the world, and in North America. In North America we manufacture in locations across the United States and Canada. We design and produce a wide range of cables used in power, industrial, construction and communication applications.

With more than nine decades of experience as a leader in the industrial and power cable markets, Nexans is contracted by heavy industry and utilities world wide to provide turnkey solutions for the bulk transmission of power – from generating station through the distribution system to commercial and residential areas.

This catalogue has been prepared for the convenience of those using electrical conductors in industrial applications.

It presents the important data pertaining to the various types of wires and cables in readily obtainable form. We believe that the information included in the many tabulations will be of particular value to the architect, engineer, electrician, and layperson alike.

Although we have listed herein the types of wires and cables suitable for most conditions, we are equipped to manufacture other types to suit special needs. We would be pleased to recommend the most suitable construction for any special condition that you may encounter.

The determination of the correct cable size and type, and the selection of methods of installation suitable for the type and location of particular circuits, should be made in accordance with local regulations. Any questions in this respect should be directed primarily to the local Electrical Inspection Authority.

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, flexibility 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 300.22.

The 300 volt Corflex® PL cables can be installed in Class I, II, III & intrinsically safe locations & Division 2 as per NEC (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 (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 Articles 330 & 725 of NEC.

Corflex® MV cables are designed for power circuits with a 5000 volt or higher rating. Cables are a suitable alternative to cable in conduit systems.

Corflex® VFD cables are designed to improve the operating performance of variable frequency drive systems. Corflex® VFD provides 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 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 also ensure a balanced, low resistance path to ground to reduce the chance of motor failure due to bearing currents.

Nexans

Corflex® PL

Armored Instrumentation Cable
UL Type PLTC ITC, 300V, 105°C rated

Single or multiple individually shielded pairs or triads, overall cable shield, 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: polyvinyl chloride in accordance with UL 13 and 2250, flame retardant, 105°C 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.

Communication wire: 22 AWG stranded soft bare copper wire covered with an orange PVC insulation in all, except 1 pair and 1 triad, configurations.

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 with the exception of single pair/triad constructions where the drain wire is two gauge sizes smaller than the circuit conductors.

Inner jacket: polyvinyl chloride jacket, over cabled core as per UL 13 and UL 2250, 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 0.4% trace copper providing complete protection against liquid and gas ingress. It also provides excellent mechanical protection, additional electrostatic shielding, and serves as an easy means for grounding equipment.

Jacket: overall polyvinyl chloride jacket per UL 13 and UL 2250, 90°C temperature rating; low acid gas emission; limited flame spread and excellent corrosion resistance.

Conductor Identification

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

Specifications

- Meets UL 13 and UL 2250, rated 105°C 300V conductor
- Meets UL requirements for Type PLTC, power limited circuit cable and Type ITC, instrumentation tray cable
- Designated Type PLTC, Power Limited Tray Cable, per NEC 725, and ITC, Instrumentation Tray Cable, per NEC 727

Product Features

- UL approved cables Type PLTC, 300V; File No. 75731
- 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 PLTC
- Cables exhibit a low temperature rating of in excess of –25°C impact and –40°C bend with suitable precautions
- Temperature rating 105°C dry
- Continuous, impervious aluminum sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum sheath cross-section exceeds requirements of the NEC Section 250.178 for grounding conductor
- Excellent mechanical & physical properties
- Communication wire included for voice communication or instrument calibration
- Minimal noise and signal interference
- Sunlight and oil resistant jacket
- Suitable for direct burial and use in cable tray

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)
- Oil Resistant I or II jackets
- UL 1309 listing and marking

Armored Instrumentation Cable
UL Type PLTC ITC, 300V, 105°C rated

Multi Pairs, 300V – 18 AWG (7w) • Insulation Thickness: 15 mils / 0.38mm

# of Pairs	Nominal Diameter over Core		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Sheath		Outer Jacket Thickness		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
	inches	mm	mils	mm	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km
2	.306	7.77	50	1.27	.410	10.41	.618	15.70	50	1.27	.724	18.39	225	335
4	.336	8.53	50	1.27	.440	11.18	.618	15.70	50	1.27	.724	18.39	250	372
8	.472	11.99	50	1.27	.577	14.66	.789	20.04	50	1.27	.895	22.73	430	640
12	.590	14.99	60	1.52	.714	18.14	.961	24.41	50	1.27	1.067	27.10	565	841
16	.687	17.45	60	1.52	.811	20.60	1.181	30.00	50	1.27	1.289	32.74	735	1094
20	.788	20.02	70	1.78	.935	23.75	1.181	30.00	50	1.27	1.289	32.74	760	1131
24	.818	20.78	70	1.78	.962	24.43	1.370	34.80	50	1.27	1.478	37.54	1040	1548
36	.982	24.94	70	1.78	1.126	28.60	1.370	34.80	50	1.27	1.478	37.54	1108	1649

Multi Pairs, 300V – 16 AWG (7w) • Insulation Thickness: 15 mils / 0.38mm

# of Pairs	Nominal Diameter over Core		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Sheath		Outer Jacket Thickness		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
	inches	mm	mils	mm	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km
1	.185	4.70	35	.89	.259	6.58	.460	11.68	50	1.27	.566	14.38	125	186
2	.342	8.69	50	1.27	.446	11.33	.618	15.70	50	1.27	.724	18.39	260	387
4	.383	9.73	50	1.27	.487	12.37	.789	20.04	50	1.27	.895	22.73	355	528
8	.542	13.77	60	1.52	.666	16.92	.961	24.41	50	1.27	1.067	27.10	555	826
12	.676	17.17	60	1.52	.800	20.32	1.181	30.00	50	1.27	1.289	32.74	770	1146
16	.786	19.96	70	1.78	.930	23.62	1.370	34.80	50	1.27	1.289	32.74	816	1214
20	.906	23.01	70	1.78	1.053	26.75	1.370	34.80	50	1.27	1.478	37.54	1150	1711
24	.936	23.77	70	1.78	1.080	27.43	1.573	39.95	50	1.27	1.478	37.54	1180	1756
36	1.123	28.52	80	2.03	1.287	32.69	1.734	44.04	60	1.52	1.860	47.24	1850	2753

Multi Triads, 300V – 16 AWG (7w) • Insulation Thickness: 15 mils / 0.38mm

# of Triads	Nominal Diameter over Core		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Sheath		Outer Jacket Thickness		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
	inches	mm	mils	mm	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km
1	.199	5.05	35	.89	.275	6.99	.460	11.68	50	1.27	.567	14.40	140	208
4	.428	10.87	50	1.27	.533	13.54	.789	20.04	50	1.27	.894	22.71	400	595
8	.605	15.37	60	1.52	.730	18.54	.961	24.41	50	1.27	1.284	32.61	617	918
12	.785	19.94	70	1.78	.896	22.76	1.181	30.00	50	1.27	1.348	34.23	905	1347
16	.834	21.18	70	1.78	.981	24.92	1.370	34.80	50	1.27	1.470	37.54	1200	1786
24	1.078	27.39	70	1.78	1.226	31.14	1.590	40.38	90	2.29	1.786	45.36	1632	2430

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

Single or multiple individually shielded pairs or triads, overall cable shield, 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 62, flame retardant, 90°C 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 0.4% trace copper providing complete protection against liquid and gas ingress. It also provides excellent mechanical protection, additional electrostatic shielding, and serves as an easy means for grounding equipment.

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

Conductor Identification

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

Specifications

- Meets UL 62, 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

Product Features

- UL approved cables Type MC, 600V; 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 exhibit a low temperature rating of in excess of –25°C impact and –40°C bend with suitable precautions
- Continuous, impervious aluminum sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum sheath cross-section exceeds requirements of the NEC Section 250.178 for grounding conductor
- Excellent mechanical and physical properties
- Minimal noise and signal interference
- Sunlight and oil resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete

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)
- Oil Resistant I or II jackets
- UL 1309 listing and marking

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

Multi Pairs, 600V – 18 AWG (7w) • Insulation Thickness: 15 mils / 0.38mm PVC and 4 mils / 0.10mm Nylon

# of Pairs	Nominal Diameter over Core		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Sheath		Outer Jacket Thickness		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
	inches	mm	mils	mm	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km
2	.324	8.23	40	1.02	.410	10.41	.578	14.68	50	1.27	.702	17.83	222	330
4	.400	10.16	40	1.02	.485	12.32	.648	16.46	50	1.27	.753	19.13	268	399
8	.502	12.75	50	1.27	.607	15.42	.815	20.70	50	1.27	.920	23.37	420	625
12	.680	17.27	50	1.27	.785	19.94	1.000	25.40	50	1.27	1.105	28.07	560	833
16	.703	17.86	50	1.27	.807	20.50	1.124	28.55	50	1.27	1.226	31.14	706	1051
24	.980	24.89	50	1.27	1.084	27.53	1.392	35.36	50	1.27	1.493	37.92	969	1442

Multi Pairs, 600V – 16 AWG (7w) • Insulation Thickness: 15 mils / 0.38mm PVC and 4 mils / 0.10mm Nylon

# of Pairs	Nominal Diameter over Core		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Sheath		Outer Jacket Thickness		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
	inches	mm	mils	mm	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km
1	.204	5.18	40	1.02	.285	7.24	.482	12.24	50	1.27	.584	14.83	160	238
2	.424	10.77	40	1.02	.506	12.85	.752	19.10	50	1.27	.856	21.74	246	366
4	.482	12.24	50	1.27	.584	14.83	.797	20.24	50	1.27	.901	22.89	315	469
8	.635	16.13	50	1.27	.740	18.80	.968	24.59	50	1.27	1.072	27.23	564	839
12	.797	20.24	50	1.27	.900	22.86	1.190	30.23	50	1.27	1.294	32.87	761	1133
16	.882	22.40	50	1.27	.986	25.04	1.325	33.66	50	1.27	1.433	36.40	958	1426
24	1.124	28.55	50	1.27	1.228	31.19	1.570	39.88	60	1.52	1.693	43.00	1345	2002
36	1.312	33.32	50	1.27	1.416	35.97	1.740	44.20	60	1.52	1.862	47.29	1760	2619

Multi Triads, 600V – 16 AWG (7w) • Insulation Thickness: 15 mils / 0.38mm PVC and 4 mils / 0.10mm Nylon

# of Triads	Nominal Diameter over Core		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Sheath		Outer Jacket Thickness		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
	inches	mm	mils	mm	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km
1	.225	5.72	50	1.27	.325	8.26	.493	12.52	50	1.27	.595	15.11	175	260
4	.500	12.70	50	1.27	.604	15.34	.808	20.52	50	1.27	.910	23.11	426	634
8	.590	14.99	50	1.27	.694	17.63	.940	23.88	50	1.27	1.044	26.52	639	951
12	.865	21.97	50	1.27	.969	24.61	1.315	33.40	50	1.27	1.423	36.14	962	1432

Armored Power and Control Cable UL Type MC HL, 600V, 90°C rated

Multiple conductors and composites, with or without ground wires, 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: cross linked polyethylene type XHHW-2 per UL 44.

Assembly: conductors are cabled in concentric layers with or without grounding wire(s), interstices are filled with suitable non-hygroscopic fillers, as required. A binder tape of synthetic material assembles the core in an essentially round configuration.

Armor: continuous corrugated aluminum sheath with no more than 0.4% 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 polyvinyl chloride jacket per UL 1569, 90°C temperature rating; low gas emission; limited flame spread and excellent corrosion resistance.

Conductor Identification

Power and control:
sizes #14 AWG to #10 AWG:
(for 3 cond.: 14 AWG to 2 AWG)
Method #1-E2 per ICEA S-73-532
sizes #8 AWG to 500 kcmil:
(for 3 cond.: 1 AWG to 500 kcmil)
Method #4 per ICEA S-73-532
See page 11

Composite power and control:
power conductors:
Method #4 per ICEA S-73-532
control conductors:
Method #1-E2 per ICEA S-73-532
See page 11

Bending Radius

Fixed position: 7 x cable overall diameter
During pulling: 12 x cable overall diameter

Specifications

- Meets UL 44, XHHW-2 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

Product Features

- UL approved cables Type MC, 600V; 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 exhibit a low temperature rating in excess of –25°C impact and –40°C bend with suitable precautions
- Temperature rating of 90°C dry and wet
- 130°C emergency rating and 250°C short circuit rating
- Continuous, impervious metallic sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum sheath cross-section exceeds requirements of the NEC Section 250.122 for grounding conductor
- Sheath provides good electronic shielding so that Corflex® can be used in certain instrumentation applications when adequately grounded
- Excellent mechanical & physical properties
- Sunlight and oil resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete

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)
- Oil Resistant I or II jackets
- UL 1309 listing and marking

Armored Power and Control Cable
UL Type MC HL, 600V, 90°C rated

Multiconductors, with Bare Ground(s)

# of Cond.	Cond. Size	Insulation Thickness		Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity
	AWG	mils	mm	AWG	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	amps[1,3]
2	14(7w)	30	.76	14(7w)	.280	7.11	.494	12.55	50	1.27	.596	15.14	160	238	25
3	14(7w)	30	.76	3x18(7w)	.390	9.91	.555	14.10	50	1.27	.660	16.80	200	298	25
4	14(7w)	30	.76	14(7w)	.345	8.76	.522	13.26	50	1.27	.627	15.93	203	302	20/25[2]
5	14(7w)	30	.76	14(7w)	.380	9.65	.532	13.51	50	1.27	.634	16.10	224	333	20
7	14(7w)	30	.76	14(7w)	.430	10.92	.602	15.29	50	1.27	.710	18.03	287	427	17.5
9	14(7w)	30	.76	14(7w)	.510	12.95	.748	19.00	50	1.27	.855	21.72	368	548	17.5
12	14(7w)	30	.76	14(7w)	.560	14.22	.788	20.02	50	1.27	.893	22.68	425	632	12.5
15	14(7w)	30	.76	14(7w)	.630	16.00	.814	20.68	50	1.27	.920	23.37	486	723	12.5
19	14(7w)	30	.76	14(7w)	.670	17.02	.918	23.32	50	1.27	1.022	25.96	594	884	12.5
25	14(7w)	30	.76	14(7w)	.800	20.32	1.000	25.40	50	1.27	1.099	27.91	726	1080	11.5
37	14(7w)	30	.76	14(7w)	.940	23.88	1.216	30.89	50	1.27	1.320	33.53	1030	1533	10
2	12(7W)	30	.76	12(7w)	.320	8.13	.498	12.65	50	1.27	.602	15.29	196	292	30
3	12(7W)	30	.76	3x16(7w)	.340	8.64	.555	14.10	50	1.27	.660	16.80	226	336	30
4	12(7W)	30	.76	12(7w)	.380	9.65	.550	13.97	50	1.27	.654	16.61	246	366	24/30[2]
5	12(7W)	30	.76	12(7w)	.430	10.92	.606	15.39	50	1.27	.706	17.93	302	449	24
7	12(7W)	30	.76	12(7w)	.490	12.45	.642	16.31	50	1.27	.743	18.87	362	539	21
9	12(7W)	30	.76	12(7w)	.580	14.73	.785	19.94	50	1.27	.890	22.61	458	682	21
12	12(7W)	30	.76	12(7w)	.640	16.26	.831	21.11	50	1.27	.935	23.75	545	811	15
15	12(7W)	30	.76	12(7w)	.720	18.29	.950	24.13	50	1.27	1.049	26.64	664	988	15
19	12(7W)	30	.76	12(7w)	.770	19.56	.981	24.92	50	1.27	1.080	27.43	779	1159	15
25	12(7W)	30	.76	12(7w)	.920	23.37	1.196	30.38	50	1.27	1.300	33.02	1040	1548	13.5
37	12(7W)	30	.76	12(7w)	1.070	27.18	1.380	35.05	50	1.27	1.498	38.05	1430	2128	12
2	10(7w)	30	.76	10(7w)	.370	9.40	.556	14.12	50	1.27	.658	16.71	240	357	40
3	10(7w)	30	.76	3x14(7w)	.450	11.43	.620	15.75	50	1.27	.725	18.40	312	464	40
4	10(7w)	30	.76	10(7w)	.457	11.61	.626	15.90	50	1.27	.730	18.54	343	510	32/40[2]
5	10(7w)	30	.76	10(7w)	.490	12.45	.751	19.08	50	1.27	.855	21.72	423	630	32
7	10(7w)	30	.76	10(7w)	.570	14.48	.782	19.86	50	1.27	.882	22.40	509	757	28
9	10(7w)	30	.76	10(7w)	.670	17.02	.915	23.24	50	1.27	1.020	25.91	630	938	28
12	10(7w)	30	.76	10(7w)	.740	18.80	.971	24.66	50	1.27	1.077	27.36	758	1128	20
37	10(7w)	30	.76	10(7w)	1.230	31.24	1.570	39.88	60	1.52	1.715	43.56	2070	3081	16

Composite – 3 Power Conductors with 4 Control Conductors and 1 Bare Ground

Control Size	Insulation Thickness		Power Size	Insulation Thickness		Ground Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Control Ampacity	Power Ampacity
AWG	mils	mm	AWG	mils	mm	AWG	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	amps[1]	amps[1]
12(7w)	30	.76	10(7w)	30	.76	10(7w)	.530	13.46	.765	19.43	50	1.27	.880	22.35	444	661	21	28
12(7w)	30	.76	8(7w)	45	1.14	10(7w)	.680	17.27	.940	23.88	50	1.27	1.050	26.67	519	772	21	38
12(7w)	30	.76	6(7w)	45	1.14	8(7w)	.775	19.69	.991	25.17	50	1.27	1.096	27.84	691	1028	21	52
12(7w)	30	.76	4(7w)	45	1.14	6(7w)	.865	21.97	1.164	29.57	50	1.27	1.270	32.26	967	1439	21	66
12(7w)	30	.76	2(7w)	45	1.14	6(7w)	.872	22.15	1.170	29.72	50	1.27	1.272	32.31	1212	1804	21	91

(1) Ampacities are in accordance with Table 310.16 of NEC 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 Table 310-16 of NEC.
Ampacities for cables having more than three conductors have been derated per Article 310.15(B)(2)(a) of NEC.
(2) Where the 4th conductor is the neutral of a balanced 3 phase system.
(3) With load diversity of 50% (see Table B.310.11 of NEC).

Armored Power and Control Cable
UL Type MC HL, 600V, 90°C rated

3 Conductors with 3 Bare Grounds*

Cond. Size	Insulation Thickness		Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity
AWG/kcmil	mils	mm	AWG	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	amps(1)
14(7w)	30	.76	3x18(7w)	.390	9.91	.555	14.10	50	1.27	.660	16.80	200	298	20
12(7w)	30	.76	3x16(7w)	.340	8.64	.555	14.10	50	1.27	.660	16.80	226	336	30
10(7w)	30	.76	3x14(7w)	.450	11.43	.620	15.75	50	1.27	.725	18.40	312	464	40
8(7w)	45	1.14	3x14(7w)	.520	13.21	.753	19.10	50	1.27	.856	21.70	413	615	55
6(7w)	45	1.14	3x12(7w)	.600	15.24	.802	20.37	50	1.27	.905	22.99	542	807	75
4(7w)	45	1.14	3x12(7w)	.700	17.78	.937	23.80	50	1.27	1.043	26.50	735	1094	95
2(7w)	45	1.14	3x10(7w)	.830	21.08	1.127	28.63	50	1.27	1.232	31.29	1097	1633	130
1(19w)	55	1.40	3x10(7w)	.950	24.13	1.230	31.24	50	1.27	1.320	33.53	1330	1979	150
1/0(19w)	55	1.40	3x10(7w)	1.040	26.42	1.350	34.29	50	1.27	1.456	37.00	1592	2369	170
2/0(19w)	55	1.40	3x10(7w)	1.130	28.70	1.525	38.70	50	1.27	1.653	41.99	1890	2813	195
3/0(19w)	55	1.40	3x8(7w)	1.250	31.75	1.584	40.20	60	1.52	1.710	43.40	2420	3601	225
4/0(19w)	55	1.40	3x8(7w)	1.370	34.80	1.711	43.50	60	1.52	1.810	45.97	2905	4323	260
250(37w)	65	1.65	3x8(7w)	1.510	38.35	1.925	48.90	60	1.52	2.050	52.10	3385	5038	290
350(37w)	65	1.65	3x6(7w)	1.730	43.94	2.220	56.39	60	1.52	2.350	59.69	4560	6786	350
500(37w)	65	1.65	3x6(7w)	2.010	51.05	2.480	62.99	75	1.91	2.640	67.06	6245	9294	430
750(61w)	80	2.03	3x4(7w)	2.477	62.92	3.172	80.57	85	2.16	3.356	85.24	9530	14182	530

* The constructions with three grounds are excellent for use with variable frequency drives.

4 Conductors with 1 Bare Ground

Cond. Size	Insulation Thickness		Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity
AWG/kcmil	mils	mm	AWG	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	amps(1,2)
14(7w)	30	.76	14(7w)	.345	8.76	.522	13.26	50	1.27	.630	16.00	200	298	20
12(7w)	30	.76	12(7w)	.396	10.06	.618	15.70	50	1.27	.730	18.54	245	365	30
10(7w)	30	.76	10(7w)	.458	11.63	.618	15.70	50	1.27	.730	18.54	340	506	40
8(7w)	45	1.14	10(7w)	.607	15.42	.789	20.04	50	1.27	.900	22.86	468	697	55
6(7w)	45	1.14	8(7w)	.709	18.01	.961	24.41	50	1.27	1.070	27.18	685	1019	75
4(7w)	45	1.14	8(7w)	.821	20.85	1.181	30.00	50	1.27	1.290	32.77	980	1458	95
2(7w)	45	1.14	6(7w)	.971	24.66	1.370	34.80	50	1.27	1.490	37.85	1410	2098	130
1(19w)	55	1.40	6(7w)	1.065	27.05	1.370	34.80	50	1.27	1.490	37.85	1670	2485	150
1/0(19w)	55	1.40	6(7w)	1.162	29.51	1.573	39.95	60	1.52	1.710	43.43	2075	3088	170
2/0(19w)	55	1.40	6(7w)	1.268	32.21	1.573	39.95	60	1.52	1.710	43.43	2440	3631	195
3/0(19w)	55	1.40	4(7w)	1.389	35.28	1.734	44.04	60	1.52	1.870	47.50	3010	4479	225
4/0(19w)	55	1.40	4(7w)	1.530	38.86	1.959	49.76	60	1.52	2.090	53.09	3670	5462	260
250(37w)	65	1.65	4(7w)	1.690	42.93	1.959	49.76	60	1.52	2.090	53.09	4215	6273	290
350(37w)	65	1.65	3(7w)	1.938	49.23	2.480	62.99	75	1.91	2.610	66.29	5835	8684	350
500(37w)	65	1.65	2(7w)	2.250	57.15	2.800	71.12	75	1.91	2.930	74.42	8190	12188	430
750(61w)	80	2.03	1(19w)	2.757	70.03	3.400	86.36	85	2.16	3.580	90.93	12028	17900	535

(1) Ampacities are in accordance with Table 310.16 of NEC 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 Table 310.16 of NEC.
Ampacities for cables having more than three conductors have been derated per Article 310.15(B)(2)(a) of NEC.
(2) Where the 4th conductor is the neutral of a balanced 3 phase system, otherwise the ampacity is 80% of the value shown.

Conductor or Phase Identification

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

Conductor	*Printing Details*	*Conductor*	*Printing Details*
1st	"1-ONE-1"	4th	"4-FOUR-4"
2nd	"2-TWO-2"	5th	"5-FIVE-5"
3rd	"3-THREE-3"	6th	"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*
1st	BLACK	—	19th	ORANGE	Blue
2nd	RED	—	20th	YELLOW	Blue
3rd	BLUE	—	21st	BROWN	Blue
4th	ORANGE	—	22nd	BLACK	Orange
5th	YELLOW	—	23rd	RED	Orange
6th	BROWN	—	24th	BLUE	Orange
7th	RED	Black	25th	YELLOW	Orange
8th	BLUE	Black	26th	BROWN	Orange
9th	ORANGE	Black	27th	BLACK	Yellow
10th	YELLOW	Black	28th	RED	Yellow
11th	BROWN	Black	29th	BLUE	Yellow
12th	BLACK	Red	30th	ORANGE	Yellow
13th	BLUE	Red	31st	BROWN	Yellow
14th	ORANGE	Red	32nd	BLACK	Brown
15th	YELLOW	Red	33rd	RED	Brown
16th	BROWN	Red	34th	BLUE	Brown
17th	BLACK	Blue	35th	ORANGE	Brown
18th	RED	Blue	36th	YELLOW	Brown

Note: The color code repeats at #1 "BLACK" as the 37th conductor (for cables with more than 36 conductors)

Armored Variable Frequency Drive Cable UL Type MC HL, 600V, 90°C rated

3 conductor with 3 ground wires, continuous corrugated aluminum sheath, PVC jacket

Corflex® VFD cables are designed to improve the operating performance of variable frequency drive systems. Cables provide excellent shielding from high frequency noise that can interfere with data and control signals. Nexans Corflex sheath provides a long term low resistance path to ground to protect the drive system. 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 life span. Cable grounds also ensure a balanced, low resistance path to ground to reduce the chance of motor failure due to bearing currents. The Corflex VFD cable design has been shown to be the best of eight cable constructions studied for use between a VFD and the motor. This information can be found in an IEEE paper called "Evaluation of Motor Power Cables for PWM AC Drives" published in 1996.

Construction

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

Insulation: cross linked polyethylene type XHHW-2 per UL 44.

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

Armor: continuous corrugated aluminum sheath with no more than 0.4% trace copper providing complete protection against liquid and gas ingress. It also provides excellent mechanical protection, additional electrostatic shielding, and serves as an easy means for grounding equipment.

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

Conductor Identification

Sizes #14 AWG to #2 AWG:
Method #1-E2 per ICEA S-73-532
Sizes #1 AWG to 500 kcmil:
Method #4 per ICEA S-73-532
See page 11

Bending Radius

Fixed position: 7 x cable overall diameter
During pulling: 12 x cable overall diameter

Specifications

- Meets UL 44, XHHW-2 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
- Meets CSA C22.2 No. 123-96 for Aluminum Sheathed Cables
- Meets CSA C22.2 No. 174-M1984 for Hazardous Locations

Product Features

- UL approved cables Type MC, 600V; 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 exhibit a low temperature rating in excess of –25°C impact and –40°C bend with suitable precautions
- Temperature rating of 90°C dry and wet
- 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 cross-section exceeds requirements of the NEC Section 250.122 for grounding conductor
- Sheath provides good electronic shielding so that Corflex® can be used in certain instrumentation applications when adequately grounded
- Excellent mechanical and physical properties
- Sunlight and oil resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete

Options

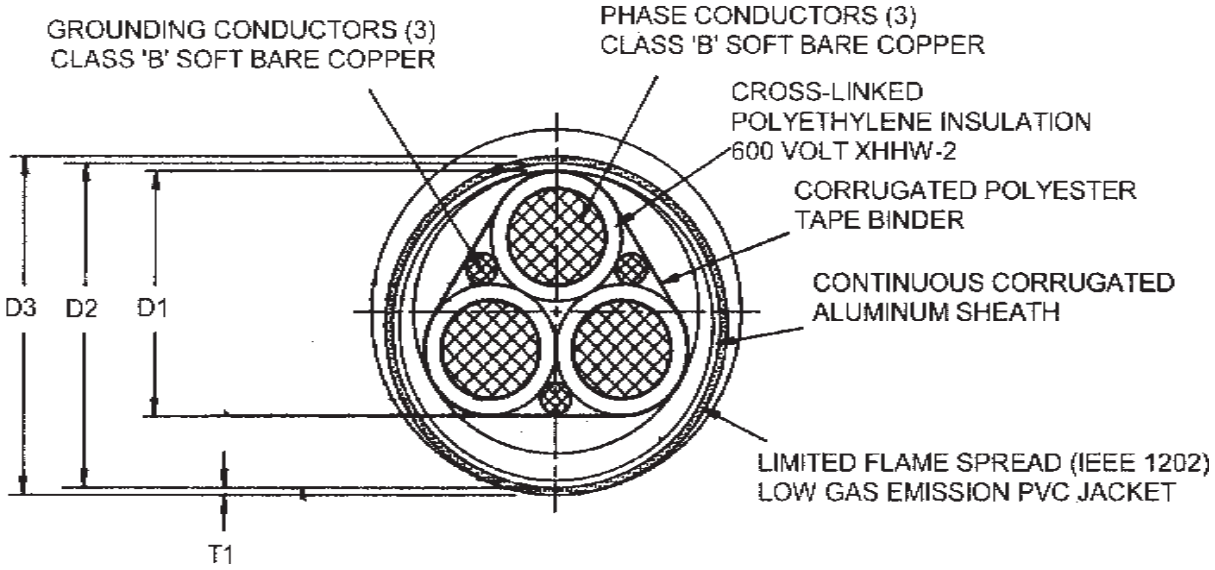
The following constructions can be provided on special orders:
- Special color or number coding
- Specially colored jackets
- Oil Resistant I or II jackets
- UL 1309 listing and marking

Armored Variable Frequency Drive Cable
UL Type MC HL, 600V, 90°C rated

3 Conductors with 3 Bare Grounds

Cond. Size	Insulation Thickness		Ground Wire Size	Nominal Diameter over Core (D1)		Nominal Diameter over Sheath (D2)		Jacket Thickness (T1)		Nominal Diameter over Jacket (D3)		Approximate Net Cable Weight		Ampacity
AWG/kcmil	mils	mm	AWG	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	amps(1)
14(7w)	30	.76	3x18(7w)	.390	9.91	.555	14.10	50	1.27	.660	16.80	200	298	20
12(7w)	30	.76	3x16(7w)	.340	8.64	.555	14.10	50	1.27	.660	16.80	226	336	30
10(7w)	30	.76	3x14(7w)	.450	11.43	.620	15.75	50	1.27	.725	18.40	312	464	40
8(7w)	45	1.14	3x14(7w)	.520	13.21	.753	19.10	50	1.27	.856	21.70	413	615	55
6(7w)	45	1.14	3x12(7w)	.600	15.24	.802	20.37	50	1.27	.905	22.99	542	807	75
4(7w)	45	1.14	3x12(7w)	.700	17.78	.937	23.80	50	1.27	1.043	26.50	735	1094	95
2(7w)	45	1.14	3x10(7w)	.830	21.08	1.127	28.63	50	1.27	1.232	31.29	1097	1633	130
1(19w)	55	1.40	3x10(7w)	.950	24.13	1.230	31.24	50	1.27	1.320	33.53	1330	1979	150
1/0(19w)	55	1.40	3x10(7w)	1.040	26.42	1.350	34.29	50	1.27	1.456	37.00	1592	2369	170
2/0(19w)	55	1.40	3x10(7w)	1.130	28.70	1.525	38.70	50	1.27	1.653	41.99	1890	2813	195
3/0(19w)	55	1.40	3x8(7w)	1.250	31.75	1.584	40.20	60	1.52	1.710	43.40	2420	3601	225
4/0(19w)	55	1.40	3x8(7w)	1.370	34.80	1.711	43.50	60	1.52	1.810	45.97	2905	4323	260
250(37w)	65	1.65	3x8(7w)	1.510	38.35	1.925	48.90	60	1.52	2.050	52.10	3385	5038	290
350(37w)	65	1.65	3x6(7w)	1.730	43.94	2.220	56.39	60	1.52	2.350	59.69	4560	6786	350
500(37w)	65	1.65	3x6(7w)	2.010	51.05	2.480	62.99	75	1.91	2.640	67.06	6245	9294	430
750(61w)	80	2.03	3x4(7w)	2.477	62.92	3.172	80.57	85	2.16	3.356	85.24	9530	14182	530

(1) Ampacities are in accordance with Table 310.16 of NEC 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 Table 310.16 of NEC.



Armored Power Cable
UL Type MV-105 HL

5kV shielded or non-shielded or 15kV shielded, XLPE or EPR insulation, 100% or 133% insulation level, continous corrugated aluminum sheath, PVC jacket

Construction

Conductor: bare, compact, annealed copper conforming to ASTM B-496.

Conductor shield: extruded thermosetting semi-conducting layer

Insulation: XLPE or EPR as per UL 1072; AEIC CS 8-00; and ICEA S-93-639.

Insulation shield: extruded thermosetting semi-conducting layer followed by overlapping copper tapes (as required).

Assembly: insulated conductors are cabled in concentric layers with ground wire(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.

Armor: continuous corrugated aluminum sheath with no more than 0.4% trace copper providing complete protection against liquid and gas ingress. It also provides excellent mechanical protection, additional electrostatic shielding, and serves as an easy means of grounding equipment.

Jacket: overall polyvinyl chloride jacket per UL 1072, 90°C temperature rating; low gas emission; limited flame spread and excellent corrosion resistance.

Conductor Identification

Unshielded cable
number coded

Shielded cable:
colored marker tape between insulation shield and metallic copper tape shield

Bending Radius

Fixed position:
Unshielded: 7 x cable overall diameter
Shielded: 12 x cable overall diameter

During pulling:
Unshielded: 12 x cable overall diameter
Shielded: 18 x cable overall diameter

Specifications

- Meets ICEA S-93-639 and AEIC CS-8-00 (AEIC for shielded cables only)
- Meets UL 1072 for Medium Voltage Cables, Type MV-105
- Meets UL 2225 for Hazardous Locations
- Designated Type MV as per NEC Article 328

Product Features

- UL approved cables Type MV-105, 5kV and 15kV; File No. E66901
- UL, AEIC and ICEA 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 MV/MC
- Cables exhibit a low temperature rating in excess of –25°C impact and –40°C bend with suitable precautions
- Temperature rating of 105°C
- 130°C emergency rating and 250°C short circuit rating
- Continuous, impervious metallic sheath corrugated for flexibility, prevents ingress of moisture, gases and liquids
- Aluminum sheath cross-section exceeds requirements of the NEC Section 250.122 for grounding conductor
- Excellent mechanical & physical properties
- Sunlight and oil resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete

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)
- Oil Resistant I or II jackets
- UL 1309 listing and marking

Armored Power
UL Type MV-105 HL, 5kV and 8kV, 105°C rated

3 Conductors, 5kV, Non-Shielded, XLPE or EPR Insulation, with Bare Grounds
Insulation Thickness: 90 mils / 2.29mm

Cond. Size	Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight XLPE		EPR		Ampacity	
AWG/kcmil	AWG/kcmil	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	lb/kft	kg/km	amps[1,2]	amps[3]
8(7w)	3x12(7w)	.809	20.55	1.181	30.00	50	1.27	1.29	32.77	600	893	630	938	59	85
6(7w)	3x10(7w)	.893	22.68	1.181	30.00	50	1.27	1.29	32.77	800	1191	830	1235	79	105
4(7w)	3x10(7w)	.928	23.57	1.324	33.63	50	1.27	1.43	36.32	1045	1555	1080	1607	105	135
2(7w)	3x10(7w)	1.044	26.52	1.408	35.76	60	1.52	1.52	38.61	1340	1994	1340	1994	140	180
1(18w)	3x8(7w)	1.198	30.43	1.573	39.95	60	1.52	1.71	43.43	1660	2470	1710	2545	160	200
1/0(18w)	3x8(7w)	1.285	32.64	1.573	39.95	60	1.52	1.71	43.43	1890	2813	1940	2887	185	230
2/0(18w)	3x8(7w)	1.288	32.72	1.684	42.77	60	1.52	1.80	45.72	2230	3319	2526	3759	215	260
3/0(18w)	3x8(7w)	1.488	37.80	1.959	49.76	60	1.52	2.09	53.09	2630	3914	2690	4003	250	295
4/0(18w)	3x6(7w)	1.501	38.13	1.956	49.68	60	1.52	2.08	52.83	3170	4718	3188	4744	285	335
250(36w)	3x6(7w)	1.733	44.02	2.220	56.39	60	1.52	2.35	59.69	3640	5417	3720	5536	320	365
350(36w)	3x6(7w)	1.788	45.42	2.220	56.39	75	1.91	2.36	59.94	4900	7292	4732	7042	395	440
500(36w)	3x4(7w)	2.046	51.97	2.480	62.99	75	1.91	2.64	80.47	6810	10135	6558	9760	485	530
750(58w)	3x4(7w)	2.647	67.23	3.150	80.01	85	2.16	3.32	84.33	9700	14435	9830	14629	615	650
1000(58w)	3x4(7w)	2.961	75.21	3.500	88.90	85	2.16	3.68	93.47	12530	18647	12670	18855	705	730

3 Conductors, 8kV 100%, Shielded, XLPE or EPR Insulation, with Bare Grounds
Insulation Thickness: 115 mils / 2.92mm*

Cond. Size	Insulation Shield Thickness		Nominal Diameter over Copper Tape		Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight XLPE		EPR		Ampacity	
AWG/kcmil	mils	mm	inches	mm	AWG/kcmil	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	lb/kft	kg/km	amps[1,2]	amps[3]
8(7w)	30	.76	.515	13.08	3x12(7w)	1.119	28.42	1.573	39.95	60	1.52	1.71	43.43	980	1458	1010	1503	59	85
6(7w)	30	.76	.554	14.07	3x10(7w)	1.204	30.58	1.573	39.95	60	1.52	1.71	43.43	1220	1816	1320	1964	79	105
4(7w)	30	.76	.600	15.24	3x10(7w)	1.303	33.10	1.734	44.04	60	1.52	1.87	47.50	1425	2121	1475	2195	105	135
2(7w)	30	.76	.658	16.71	3x10(7w)	1.341	34.06	1.756	44.60	60	1.52	1.89	48.01	1780	2649	1872	2786	140	180
1(18w)	30	.76	.695	17.65	3x8(7w)	1.509	38.33	1.959	49.76	60	1.52	2.09	53.09	2100	3125	2160	3214	160	200
1/0(18w)	30	.76	.736	18.69	3x8(7w)	1.550	39.37	1.959	49.76	60	1.52	2.09	53.09	2355	3505	2425	3609	185	230
2/0(18w)	30	.76	.780	19.81	3x8(7w)	1.584	40.23	1.997	50.72	60	1.52	2.11	53.59	2670	3973	2768	4119	215	260
3/0(18w)	30	.76	.830	21.08	3x8(7w)	1.750	44.45	2.220	56.39	60	1.52	2.35	59.69	3160	4703	3245	4829	250	295
4/0(18w)	30	.76	.886	22.50	3x6(7w)	1.798	45.67	2.220	56.39	75	1.91	2.35	59.69	3645	5424	3785	5633	285	335
250(36w)	30	.76	.941	23.90	3x6(7w)	2.044	51.92	2.480	62.99	75	1.91	2.61	66.29	4270	6355	4370	6503	320	365
350(36w)	30	.76	1.044	26.52	3x6(7w)	2.101	53.37	2.480	62.99	75	1.91	2.64	67.06	5730	8527	5540	8245	395	440
500(36w)	40	1.02	1.201	30.51	3x4(7w)	2.360	59.94	3.150	80.01	85	2.16	3.34	84.84	7745	11526	7795	11600	485	530
750(58w)	40	1.02	1.393	35.38	3x4(7w)	3.017	76.63	3.710	94.23	85	2.16	3.88	98.55	10800	16072	10960	16311	615	650
1000(58w)	40	1.02	1.542	39.17	3x4(7w)	3.339	84.81	4.030	102.36	85	2.16	4.20	106.68	13920	20716	14095	20976	705	730

* This cable may also be considered 5kV 100% and 133% shielded.
(1) Ampacity for cable in air in accordance with Table 310.71 of NEC, conductor temperature of 90°C and ambient air temperature at 40°C.
(2) Ampacity for cable in ventilated tray in accordance with Article 392.13(A)(2) and Table 310.71 of NEC.
(3) Ampacity for cable direct buried in accordance with Table 310.83 with 90°C conductor temperature, R.H.O. 90, 100% load factor, 20°C earth temperature, one circuit.

Armored Power
UL Type MV-105 HL, 15kV, 105°C rated

3 Conductors, 15 kv 100%, Shielded, XLPE or EPR Insulation, with Bare Ground
Insulation Thickness: 175 mils / 4.45mm

Cond. Size	Insulation Shield Thickness		Nominal Diameter over Copper Tape		Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight XLPE		EPR		Ampacity	
AWG/kcmil	mils	mm	inches	mm	AWG/kcmil	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	lb/kft	kg/km	amps(1,2)	amps(3)
2(7w)	30	.76	.779	19.79	6(7w)	1.694	43.03	2.220	56.39	60	1.52	2.35	59.69	2075	3088	2180	3244	165	185
1(18w)	30	.76	.816	20.73	4(7w)	1.774	45.06	2.220	56.39	60	1.52	2.35	59.69	2410	3587	2515	3743	185	210
1/0(18w)	30	.76	.856	21.74	4(7w)	1.861	47.27	2.480	62.99	75	1.91	2.61	66.29	2735	4070	2850	4241	215	240
2/0(18w)	30	.76	.901	22.89	4(7w)	1.956	49.68	2.480	62.99	75	1.91	2.61	66.29	3190	4747	3220	4792	245	270
3/0(18w)	30	.76	.951	24.16	3(7w)	2.064	52.43	2.480	62.99	75	1.91	2.61	66.29	3620	5387	3760	5596	285	305
4/0(18w)	30	.76	1.007	25.58	3(7w)	2.185	55.5	2.700	68.58	75	1.91	2.83	71.88	4460	6637	4605	6853	325	350
250(36w)	30	.76	1.062	26.97	3(7w)	2.304	58.52	2.800	71.12	75	1.91	2.93	74.42	5020	7471	5180	7709	360	380
350(36w)	40	1.02	1.192	30.28	2(7w)	2.584	65.63	3.150	80.01	85	2.16	3.32	84.33	6430	9569	6610	9837	435	460
500(36w)	40	1.02	1.322	33.58	1(18w)	2.863	72.72	3.500	88.90	85	2.16	3.68	93.47	8235	12255	8440	12560	535	550
750(58w)	40	1.02	1.514	38.46	1/0(18w)	3.277	83.24	4.000	101.60	85	2.16	4.18	106.17	11170	16623	11410	16980	670	665
1000(58w)	55	1.40	1.705	43.31	1/0(18w)	3.688	93.68	4.510	114.55	85	2.16	4.69	119.13	14850	22100	15125	22509	770	750

3 Conductors, 15 kv 133%, Shielded, XLPE or EPR Insulation, with Bare Ground
Insulation Thickness: 220 mils / 5.59mm

Cond. Size	Insulation Shield Thickness		Nominal Diameter over Copper Tape		Ground Wire Size	Nominal Diameter over Core		Nominal Diameter over Sheath		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight XLPE		EPR		Ampacity	
AWG/kcmil	mils	mm	inches	mm	AWG/kcmil	inches	mm	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	lb/kft	kg/km	amps(1,2)	amps(3)
2(7w)	30	.76	.870	22.10	6(7w)	1.793	45.54	1.843	46.81	75	1.91	2.35	59.60	2400	3572	2520	3750	165	185
1(18w)	30	.76	.907	23.04	4(7w)	1.969	50.01	2.480	62.99	75	1.91	2.61	66.29	2790	4152	2940	4375	185	210
1/0(18w)	30	.76	.931	23.65	4(7w)	2.020	51.31	2.480	62.99	75	1.91	2.61	66.29	3015	4487	3175	4725	215	240
2/0(18w)	30	.76	.991	25.17	4(7w)	2.037	51.74	2.480	62.99	75	1.91	2.64	80.47	3690	5491	3632	5405	245	270
3/0(18w)	30	.76	1.041	26.44	3(7w)	2.259	57.38	2.800	71.12	75	1.91	2.93	74.42	4185	6228	4365	6496	285	305
4/0(18w)	30	.76	1.098	27.89	3(7w)	2.250	57.15	2.800	71.12	85	2.16	2.96	75.18	4800	7143	4957	7377	325	350
250(36w)	40	1.02	1.180	29.97	3(7w)	2.559	65.00	3.150	80.01	85	2.16	3.32	84.33	5530	8230	5740	8542	360	380
350(36w)	40	1.02	1.283	32.59	2(7w)	2.588	65.73	3.150	80.01	85	2.16	3.38	85.85	6830	10164	6848	10191	435	460
500(36w)	40	1.02	1.412	35.86	1(18w)	2.847	72.31	3.500	88.90	85	2.16	3.69	93.73	8750	13022	8998	13391	535	550
750(58w)	40	1.02	1.604	40.74	1/0(18w)	3.472	88.19	4.190	106.43	85	2.16	4.38	111.25	11815	17583	12060	17948	670	665

(1) Ampacity for cable in air in accordance with Table 310.71 of NEC, conductor temperature of 90°C and ambient air temperature at 40°C.
(2) Ampacity for cable in ventilated tray in accordance with Article 392.13(A)(2) and Table 310.71 of NEC.
(3) Ampacity for cable direct buried in accordance with Table 310.83 with 90°C conductor temperature, R.H.O. 90, 100% load factor, 20°C earth temperature, one circuit.

Electrical Properties

300V – Shielded Pairs/Triads with an overall Cable Shield

Conductor Size (AWG)	DC Resistance (ohms/kft @ 20°C)	Capacitance			
		Pairs		Triads	
		Conductor–Conductor (pf/ft)	Conductor–Shield (pf/ft)	Conductor– Conductor (pf/ft)	Conductor–Shield (pf/ft)
18	6.64	37	73	39	75
16	4.18	40	78	42	80

600V – Shielded Pairs/Triads with an overall Cable Shield

Conductor Size (AWG)	DC Resistance (ohms/kft @ 20°C)	Capacitance			
		Pairs		Triads	
		Conductor–Conductor (pf/ft)	Conductor–Shield (pf/ft)	Conductor– Conductor (pf/ft)	Conductor–Shield (pf/ft)
18	6.64	30	57	33	60
16	4.18	35	66	38	69

600V – 3 and 4 Conductors

Conductor Size (AWG/kcmil)	AC Resistance @ 90°C, 60 Hz (ohms/kft)	Inductive Reactance @ 60 Hz (ohms/kft)	Capacitance µf/kft
14	3.30	.0367	.0160
12	2.07	.0344	.0177
10	1.31	.0325	.0198
8	.820	.0339	.0182
6	.516	.0320	.0202
4	.324	.0305	.0225
2	.205	.0290	.0251
1	.162	.0291	.0233
1/0	.128	.0284	.0246
2/0	.1022	.0278	.0260
3/0	.0813	.0273	.0275
4/0	.0647	.0268	.0291
250	.0550	.0268	.0303
350	.0398	.0261	.0329
500	.0287	.0255	.0358
750	.0203	.0254	.0344
1000	.0164	.0250	.0369

Electrical Properties

5kV – 3 Conductors

Conductor Size (AWG/kcmil)	AC Resistance @90°C, 60Hz (ohms/kft)	Inductive Reactance @ 60Hz			Capacitance					
					Non-Shielded 100%		Shielded 100%		Shielded 133%"	
		Non-Shielded (ohms/kft)	Shielded 100% (ohms/kft)	Shielded 133% (ohms/kft)	XLPE (µf/kft)	EPR (µf/kft)	XLPE (µf/kft)	EPR (µf/kft)	XLPE (µf/kft)	EPR (µf/kft)
8	.82	.0438	.0567	.0585	.0265	.0323	.0591	.0709	.0459	.0599
6	.516	.0407	.0528	.0544	.0296	.0361	.0681	.0817	.0571	.0685
4	.324	.0379	.0490	.0505	.0331	.0403	.0792	.0951	.0659	.0791
2	.205	.0354	.0454	.0469	.0375	.0456	.0931	.1117	.0769	.0923
1	.162	.0342	.0436	.0450	.0394	.0480	.1024	.1229	.0843	.1011
1/0	.128	.0331	.0420	.0433	.0418	.0509	.1119	.1343	.0917	.1101
2/0	.1021	.0322	.0405	.0418	.0442	.0538	.1224	.1469	.1000	.1200
3/0	.0810	.0313	.0391	.0403	.0468	.0570	.1342	.1597	.1093	.1312
4/0	.0645	.0304	.0378	.0389	.0496	.0603	.1475	.1769	.1198	.1437
250	.0548	.0299	.0368	.0379	.0463	.0564	.1608	.1929	.1302	.1563
350	.0395	.0288	.0351	.0360	.0504	.0613	.1851	.2221	.1494	.1793
500	.0285	.0279	.0334	.0343	.0550	.0669	.2153	.2584	.1731	.2077
750	.0199	.0269	.0317	.0325	.0556	.0676	.2599	.3119	.2081	.2498
1000	.0159	.0264	.0307	.0314	.0596	.0726	.2950	.3539	.2356	.2828

15kV – 3 Conductors

Conductor Size (AWG/kcmil)	AC Resistance @ 90°C, 60 Hz (ohms/kft)	Inductive Reactance @ 60Hz		Capacitance			
				Shielded 100%		Shielded 133%	
		100% (ohms/kft)	133% (ohms/kft)	XLPE (µf/kft)	EPR (µf/kft)	XLPE (µf/kft)	EPR (µf/kft)
2	.205	.0500	.0521	.0564	.0677	.0482	.0579
1	.162	.0480	.0500	.0613	.0736	.0522	.0627
1/0	.128	.0462	.0481	.0663	.0796	.0563	.0675
2/0	.1021	.0445	.0464	.0718	.0862	.0607	.0728
3/0	.0810	.0429	.0447	.0780	.0936	.0657	.0788
4/0	.0644	.0414	.0431	.0849	.1019	.0712	.0855
250	.0547	.0403	.0419	.0919	.1102	.0768	.0922
350	.0393	.0382	.0397	.1045	.1255	.0870	.1044
500	.0281	.0363	.0377	.1202	.1442	.0995	.1194
750	.0196	.0342	.0355	.1433	.1719	.1180	.1415
1000	.0154	.0330	.0341	.1614	.1937	.1324	.1589

Product Data

	Corflex PL			Corflex MC		Corflex MV		
	Insulation	Inner Jacket	Outer Jacket	Insulation	Jacket	Insulation	Insulation	Jacket
Polymer Type	PVC	PVC	PVC	XLPE	PVC	XLPE	EPR	PVC
Temperature Rating	105°C	90°C	90°C	90°C	90°C	90°C	90°C	90°C
Applicable Standard	UL 13 ICEA S-93-639	UL 13 ICEA S-93-639	UL 13 ICEA S-93-639	UL 44 ICEA S-93-639	UL 1569 ICEA S-93-639	UL 1072 ICEA S-93-639	UL 1072 ICEA S-93-639	UL 1072 ICEA S-93-639
Tensile Strength psi min	1500	1500	1500	1500	1500	1800	1200	1500
Elongation % min	100	100	100	150	100	250	150	150

Voltage Drop

The voltage drop table contained in this publication is applicable to aluminum armored Corflex® cables.

The table on this page shows voltage drop factors for 3-conductor Corflex® cables with copper conductors, 3-phase, 60 hertz. The voltage drop for 4-conductor cables, such as in a 3-phase, 4-wire grounded neutral system, may be taken from the same table for a 3-conductor cable, where the fourth conductor carries only unbalance current of a 3-phase system.

The K Factor table was generated using the following formula:

$K = R\cos\varnothing + X\sin\varnothing$ (Volts/1000-amp-feet)

where: R = AC resistance (ohms/kft)
X_L = inductive reactance (ohms/kft)
$\varnothing$ = load power factor angle (N.B.: $100\cos\varnothing$ = 100% load power factor)

To calculate the net voltage drop for a specific application the following formula must be used to account for systems other than 3-phase, circuit length and current:"

$$\text{Net Voltage Drop} = \frac{f \times K \times I \times L}{1000}$$

where: f = system correction factor (see below)
K = voltage drop factor from table (Volts/1000-amp-feet)
I = current carried by one conductor (amps)
L = circuit length (ft)

Since the curves are based on a 3-phase line-to-neutral system, the following system **correction factor (f)** must be used in the voltage drop calculation:

System	Correction Factor (f)
1 phase, 2 wire (120V branch circuits)	2
1 phase, 3 wire (240V residential circuits)	2
1 phase, 3 wire line-to-line	2
3 phase, 3 wire line-to-line	1.73
3 phase, 4 wire line-to-line	1.73
3 phase, 4 wire line-to-neutral	1

The following example is given to illustrate the proper use of the voltage drop formula and factors:

Example:
Find the voltage drop and percent drop give the following:
- 3 phase circuit at 480/277 volts,
- length of circuit 1000 feet,
- cable – 3-conductor Corflex® MC, size 250kcmil, in air
- load – 200amps at 90% load power factor.

Solution:
Find the K factor from the K Factor Table; for 250kcmil conductor at 90% Load Power Factor, the K factor is:

K = .057 volts per 1000 amp-feet

therefore, from the voltage drop formula we calculate the voltage drop as:

$$\text{Voltage Drop} = \frac{1.73 \times .057 \times 200 \times 1000}{1000} = 19.7 \text{ volts}$$

OR

$$\text{Voltage Drop} = \frac{19.7}{480} \times 100\% = 4.10\%$$

K Factor (Volts / 1000-amp-feet)

Size (AWG/kcmil)	*Load Power Factor*		
	80% P.F.	*90% P.F.*	*100% P.F.*
14	2.450	2.748	3.035
12	1.544	1.729	1.904
10	.980	1.095	1.200
8	.624	.694	.754
6	.399	.441	.474
4	.257	.282	.298
2	.169	.183	.189
1	.137	.147	.149
1/0	.112	.119	.118
2/0	.092	.097	.094
3/0	.076	.079	.074
4/0	.063	.065	.059
250	.056	.057	.050
350	.045	.044	.036
500	.036	.034	.025
750	.029	.027	.017
1000	.026	.023	.013

Note: These K Factors are for phase to neutral voltage drop.

Pulling Instructions

Certain installations require the pulling of Corflex® into ducts or trays. These installations require careful planning and execution. The following provides information on how to calculate tensions developed during pulling and what precautions to take to prevent damage to the cable.

Pulling Tension

The maximum tension applied to a cable is limited to prevent damage or distortion of cable components which could reduce the life or reliability of the cable.

The method of pulling is significant in that different methods will result in different stresses on critical cable components for the same overall tension.

Nexans recommends that, Corflex® PL cables are pulled by means of the aluminum sheath and jacket with a grip applied over the jacketed core, sheath and overall jacket. Corflex® MC and MV cables should be pulled by means of the conductors, aided with a grip over the outer aluminum sheath. The conductors and the sheath are to be pulled together.

Maximum allowable pulling tensions for Corflex® cables should never exceed the values shown in pulling tension table).

Calculating Pulling Tensions

The tension developed in any ***Straight Section*** of duct is calculated as:

T = L x W x f lbf where

L = section length (feet)
W = cable weight per unit length (lb/foot)
f = coefficient of dynamic friction

The tension developed in any ***Bend*** is calculated as:

$T = T1 \times e^{fa}$ lbf where

T1 = tension at bend entrance, lbf
e = base of natural logarithms (2.71828)
f = coefficient of dynamic friction
a = angle of bend (radians)

or

e^{fa} is given in the following table for common conditions:

Bend Angle (degrees)	f = 0.15	f = 0.30	f = 0.35	f = 0.40
30	1.08	1.17	1.20	1.23
45	1.13	1.27	1.32	1.37
60	1.17	1.37	1.44	1.52
90	1.27	1.60	1.73	1.88

Coefficients of dynamic friction with lubricant are given in the following table for common duct and cable jacket materials. These coefficients can be used for calculation of tensions.

Duct Type	Cable Jacket	One Cable per Duct
PVC	PVC	0.50
PE	PVC	0.30
FIBRE	PVC	0.40
ASBESTOS CEMENT	PVC	0.70

Considerations must be given to ***Side Wall Bearing Pressure*** (***SWBP***) when pulling Corflex® through a bend. The SWBP is calculated as follows:

$$SWBP = \frac{\text{Pulling Tension Cable at Bend Exit } (LB_{force}\text{foot})}{\text{Radius of Bend}}$$

For Corflex®, Nexans recommends a maximum SWBP of 500 LB_{force}/foot. During installation of the Corflex® cable, it is recommended that the bend radii be as noted in the cable descriptions.

Pulling in Duct

It is extremely important for the success of any pull in duct to use approved lubricants. Lubricants must be compatible with the cable jacket and duct material. Lubricating the pulling rope will decrease the tension on the pulling equipment and more importantly will reduce the risk of damage to the inside of the duct which in turn can damage the cable.

When designing the duct layout, it is suggested that the bends be concentrated near the end from which the cable is to be pulled. This practice will result in lower tensions. In some cases, the tensions resulting from alternative directions should be calculated.

Pulling in Trays and Trenches

For the installation of Corflex® in trays, rollers are normally used. Using well lubricated rollers and long radius sheaves at bends will result in a lower coefficient of friction when compared to duct. A coefficient of friction of 0.15 can be used when calculating pulling tension using rollers. For long pulls with bends it may be necessary to install assist pullers before the bends to reduce the tension on the cable entering a bend and reducing the risk of damage from excessive SWBP.

The recommendations given above are intended to cover a wide variety of pulling conditions. It is possible, under ideal conditions, and with experienced supervision, to exceed these limits. For further guidance, see IEEE Paper 84 T & D 365-3, or contact Nexans.

Pulling Tension Table

Corflex PL Size (AWG)	No. of Pairs/Triads	Max. Pulling Tension (lb.)
18	2 pr	187
	4 pr	234
	8 pr	260
	12 pr	290
	16 pr	332
	20 pr	412
	24 pr	412
	36 pr	461
16	1 pr	159
	2 pr	207
	4 pr	234
	8 pr	290
	12 pr	332
	16 pr	412
	20 pr	412
	24 pr	461
	36 pr	550
16	1 tr	159
	4 tr	234
	8 tr	294
	12 tr	368
	16 tr	412

Corflex MC Size (AWG)	No. of Conductors	Max. Pulling Tension (lb.)
14	2	167
	3	167
	4	191
	5	191
	7	207
	9	234
	12	234
	15	260
	19	260
	25	295
	37	326
12	2	191
	3	191
	4	207
	5	207
	7	234
	9	234
	12	260
	15	260
	19	295
	25	295
	37	326
10	2	191
	3	207
	4	207
	5	234
	7	234
	9	260
	12	260
	15	295
	19	295
	25	326
	37	411
12/10	4/3	191
12/8	4/3	264
12/6	4/3	420
12/4	4/3	668
12/2	4/3	1062

Corflex MC & MV Size (AWG/kcmil)	3 Conductors	4 Conductors
	Max. Pulling Tension (lb.)	
8	265	330
6	420	525
4	670	840
3	840	1050
2	1060	1325
1	1340	1675
1/0	1690	2115
2/0	2130	2665
3/0	2685	3355
4/0	3385	4230
250	4000	5000
350	5600	7000
500	8000	10000
750	12000	15000
1000	16000	20000

Connector Selection

Explosion Proof Fittings for Hazardous Locations

Sheath Diameter		Overall Diameter		Thomas & Betts	Appleton	Adalet / PLM	Crouse Hinds
inches	mm	inches	mm	Spin-on X	MCJXS Series	PSX Series	TMCX Series
.460	11.68	.570	14.48	4-075-010	N/A	N/A	N/A
.522	13.26	.630	16.00	4-075-020	MCJXS-4850	PSX 065-05	TMCX165
.618	15.70	.730	18.54	4-075-030	MCJXS-4850	PSX 075-05	TMCX165
.789	20.04	.900	22.86	4-100-050	MCJXS-7875	PSX 100-07	TMCX285
.961	24.41	1.070	27.18	4-100-080	MCJXS-9075	PSX 115-07	TMCX3112
1.181	30.00	1.290	32.77	4-125-110	MCJXS-103100	PSX 138-10	TMCX4140
1.370	34.80	1.490	37.85	4-150-130	MCJXS-118125	PSX 150-12	TMCX4140
1.573	39.95	1.710	43.43	4-200-160	MCJXS-140150	PSX 183-15	TMCX5161
1.734	44.04	1.870	47.50	4-200-170	MCJXS-165200	PSX 200-15	TMCX6206
1.959	49.76	2.090	53.09	4-250-200	MCJXS-190200	PSX 218-15	TMCX6206
2.220	56.39	2.350	59.69	4-250-220	MCJXS-215250	N/A	TMCX7247
2.480	62.99	2.610	66.29	4-300-240	MCJXS-240250	N/A	TMCX8302
2.700	68.58	2.830	71.88	4-300-260	MCJXS-265300	N/A	TMCX8302
2.800	71.12	2.930	74.42	4-300-270	MCJXS-265300	N/A	TMCX8302
3.150	80.01	3.320	84.33	4-350-290	MCJXS-292300	N/A	TMCX9352
3.400	86.36	3.580	90.93	4-350-310	MCJXS-320350	N/A	TMCX9352
3.500	88.90	3.680	93.47	4-400-320	MCJXS-342350	N/A	TMCX9352
3.710	94.23	3.880	98.55	4-400-330	MCJXS-365400	N/A	TMCX10402
3.750	95.25	3.930	99.82	4-400-340	MCJXS-365400	N/A	TMCX10402
3.970	100.84	4.150	105.41	4-400-350	MCJXS-390400	N/A	TMCX10402
4.000	101.60	4.180	106.17	4-400-350	MCJXS-390400	N/A	TMCX10402
4.030	102.36	4.200	106.68	N/A	MCJXS-390400	N/A	N/A
4.190	106.43	4.380	111.25	N/A	N/A	N/A	N/A
4.510	114.55	4.690	119.13	N/A	N/A	N/A	N/A

Fittings for Wet Locations

Sheath Diameter		Overall Diameter		Thomas & Betts	Appleton	Adalet / PLM	Crouse Hinds
inches	mm	inches	mm	Spin-on X	MCJ Series	JAG Series	TMC Series
0.460	11.68	0.570	14.48	4-075-010	N/A	JAG 65-05	N/A
0.522	13.26	0.630	16.00	4-075-020	MCJ-4850	JAG 65-05	TMC165
0.618	15.70	0.730	18.54	4-075-030	MCJ-4850	JAG 75-05	TMC165
0.789	20.04	0.900	22.86	4-100-050	MCJ-7875	JAG 95-05	TMC285
0.961	24.41	1.070	27.18	4-100-080	MCJ-9075	JAG 113-07	TMC3112
1.181	30.00	1.290	32.77	4-125-110	MCJ-103100	JAG 138-10	TMC4140
1.370	34.80	1.490	37.85	4-150-130	MCJ-118125	JAG 156-12	TMC4140
1.573	39.95	1.710	43.43	4-200-160	MCJ-140150	JAG 174-12	TMC5161
1.734	44.04	1.870	47.50	4-200-170	MCJ-165200	JAG 188-15	TMC6206
1.959	49.76	2.090	53.09	4-250-200	MCJ-190200	JAG 218-15	TMC6206
2.220	56.39	2.350	59.69	4-250-220	MCJ-215250	JAG 236-20	TMC7247
2.480	62.99	2.610	66.29	4-300-240	MCJ-240250	JAG 261-20	TMC8302
2.700	68.58	2.830	71.88	4-300-260	MCJ-265300	JAG 296-25	TMC8302
2.800	71.12	2.930	74.42	4-300-270	MCJ-265300	JAG 296-30	TMC8302
3.150	80.01	3.320	84.33	4-350-290	MCJ-292300	JAG 343-30	TMC9352
3.400	86.36	3.580	90.93	4-350-310	MCJ-320350	JAG 359-30	TMC9352
3.500	88.90	3.680	93.47	4-400-320	MCJ-342350	JAG 375-35	TMC9352
3.710	94.23	3.880	98.55	4-400-330	MCJ-365400	JAG 392-35	TMC10402
3.750	95.25	3.930	99.82	4-400-340	MCJ-365400	JAG 412-35	TMC10402
3.970	100.84	4.150	105.41	4-400-350	MCJ-390400	JAG 423-40	TMC10402
4.000	101.60	4.180	106.17	4-400-350	MCJ-390400	JAG 423-40	TMC10402
4.030	102.36	4.200	106.68	N/A	MCJ-390400	JAG 423-40	N/A
4.190	106.43	4.380	111.25	N/A	N/A	JAG 451-40	N/A
4.510	114.55	4.690	119.13	N/A	N/A	N/A	N/A

Stranded Bare Copper Conductors

Conductors				Wires			Nominal Conductor Diam.		Approximate Net Conductor Weight		Average DC Resistance @ 25°C	
	Area				Diameter		Compressed Round					
Size AWG/kcmil	Circ.mils	mm²	sq.in.	Number	inches	mm	inches	mm	lbs per 1000ft	kg per 1000m	ohms per 1000ft	ohms per 1000m
20	1020	.519	.00080	7	.0121	.31	n/a	n/a	3.15	4.69	10.51	34.61
18	1620	.823	.00128	7	.0152	.39	n/a	n/a	5.02	7.46	6.64	21.81
16	2580	1.31	.00203	7	.0192	.49	n/a	n/a	7.97	11.90	4.18	13.71
14	4110	2.08	.00323	7	.0242	.61	.071	1.78	12.7	18.90	2.63	8.61
12	6530	3.31	.00513	7	.0305	.77	.089	2.25	20.2	30.00	1.65	5.42
10	10380	5.26	.00816	7	.0385	.98	.113	2.86	32.1	47.70	1.04	3.41
8	16510	8.37	.01297	7	.0486	1.23	.142	3.60	51.0	75.90	.653	2.14
6	26240	13.30	.02061	7	.0612	1.55	.179	4.53	81.1	121	.411	1.35
4	41740	21.15	.03278	7	.0772	1.96	.225	5.71	129	192	.258	.848
3	52620	26.66	.04133	7	.0867	2.30	.252	6.40	163	242	.205	.673
2	66360	33.62	.05212	7	.0974	2.47	.282	7.20	205	305	.163	.533
1	83690	42.41	.06573	19	.0664	1.69	.322	8.18	258	385	.129	.423
1/0	105600	53.51	.08291	19	.0745	1.89	.362	9.19	326	485	.102	.335
2/0	133100	67.44	.1045	19	.0837	2.13	.406	10.32	411	611	.0811	.266
3/0	167800	85.02	.1318	19	.0940	2.39	.456	11.58	518	771	.0643	.211
4/0	211600	107.22	.1662	19	.1055	2.68	.512	13.00	653	972	.0510	.167
250	250000	126.68	.1963	37	.0822	2.09	.558	14.16	772	1149	.0432	.142
300	300000	152.01	.2356	37	.0900	2.31	.611	15.52	926	1378	.0360	.118
350	350000	177.34	.2749	37	.0973	2.47	.661	16.78	1081	1609	.0308	.101
400	400000	202.68	.3142	37	.1040	2.64	.706	17.94	1235	1838	.0270	.0885
500	500000	253.36	.3927	37	.1162	2.95	.789	20.03	1544	2298	.0216	.0708
600	600000	304.02	.4712	61	.0992	2.52	.866	22.00	1853	2758	.0180	.0590
750	750000	380.03	.5890	61	.1109	2.82	.968	24.59	2316	3447	.0144	.0472
1000	1000000	506.70	.7854	61	.1280	3.25	1.117	28.38	3088	4595	.0108	.0354
1250	1250000	633.38	.9817	91	.1172	2.98	1.250	31.76	3859	5743	.00863	.0283
1500	1500000	760.05	1.178	91	.1284	3.26	1.370	34.78	4631	6892	.00719	.0236
1750	1750000	866.73	1.374	127	.1174	2.98	1.479	37.60	5403	8041	.00616	.0202
2000	2000000	1013.40	1.571	127	.1255	3.19	1.583	40.21	6175	9190	.00539	.0177

* Approximate weights and average D.C. resistances are considered to apply to all types of strands.

Metric Conversions

Length	mils x 0.0254 = mm (millimeters) inches x 25.4 = mm feet x 0.3048 = m (meters) miles x 1.609344 = km (kilometers)
Area	circular mils x 0.0005067 = mm2 (square millimeters) sq. in. x 645.16 = mm2 sq. ft. x 0.092903 = m2 (square meters) sq. yd. x 0.836127 = m2 sq. mi. x 2.58999 = km2 (square kilometers)
Volume	cu. in. x 16.387 = cm3 (cubic centimeters) cu. ft. x 0.028317 = m3 (cubic meters) gallons x 4.54609 = l (liters)
Mass	pounds x 0.45359 = kg (kilograms) tons (2000 lbs.) x 0.907185 = t (metric tons)
Mass per unit length	lb/1000 ft x 1.48816 = kg/km (kilograms per kilometer) lb/mi x 0.28185 = kg/km mm2 x 8.89 = kg/km (for copper) mm2 x 2.70 = kg/km (for aluminum) mm2 x 7.83 = kg/km (for steel)
Force or Tension	pounds (force) x 4.448 = N (newtons) mass (in kg) x 9.8066 = N (Weight at or near sea level)
Force per unit area (Stress, pressure, tensile strength, etc.)	lbf/in2 = (psi) x 6.895 = kPa (kilopascals) lbf/in2 x 0.006895 = MPa (megapascals) N/mm2 = MPa
Temperature	°F to °C: °C = (°F minus 32) x 5 / 9 °C to °F: °F = (°C x 9 / 5) plus 32

Note: Kilopascals are used generally for fluid pressures. Megapascals are used generally for stress in materials, i.e. for tensile stress, modulus of elasticity, etc.

WARNING

FLAMMABLE
Non-metallic covering of electrical cables will burn and under certain conditions may transmit fire when ignited.

TOXIC
Burning non-metallic coverings may emit acid gases, which are highly toxic, and may generate dense smoke.

CORROSIVE
Emission of acid gases may corrode metal in the vicinity, such as sensitive instruments and reinforcing rod in concrete.

NOTICE

Nexans has endeavoured to ensure the accuracy of the data in this publication, however we cannot be liable for the consequences of errors or omissions. All data is subject to change without notice. The installer and/or user assumes all liability for the consequences of the installation and/or use of any of our products in contravention of any applicable law, regulation or code.