

## 29510 Composite - 1000V UL Flexible Motor Supply Composite Cable



### Description:

1 pr.(Signal)-16 AWG stranded (26x30) TC cond., XLPE insul., Beldfoil® shield (100% c.), drain; 3 cond.(VFD) plus 1 ground wire-16 AWG stranded (26x30) TC cond., XLPE insul., Duofoil® and TC braid Shield (100% a 85% c.), drain, PVC jacket.

### Usage (Overall)

**Suitable Applications:** AC Motor Drive, VFD, Variable Frequency Drive

### Twisted Pair

#### Physical Characteristics

##### Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
1	16	26x30	TC - Tinned Copper

##### Insulation

Insulation Material:

Insulation Material	Wall Thickness (in.)
XLPE - Cross Linked Polyethylene	0.030

Twisted Pair Color Code Chart:

Number	Color
1	Black and White

##### Inner Shield

Inner Shield Material:

Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100

Inner Shield Drain Wire AWG:

AWG	Stranding	Conductor Material
18	19x30	TC - Tinned Copper

#### Electrical Characteristics

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
34.000

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
4.000

Nom. Inner Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
4.990

### Multi Conductor

#### Physical Characteristics

##### Conductor

AWG:

# Conductors	AWG	Stranding	Conductor Material
--------------	-----	-----------	--------------------

## 29510 Composite - 1000V UL Flexible Motor Supply Composite Cable

3	16	26x30	TC - Tinned Copper
---	----	-------	--------------------

### Ground Wire

Ground Wire (Y/N): Yes

#### Ground Wire Material:

AWG	Stranding	Conductor Material	Insulation Material
16	26x30	TC - Tinned Copper	PVC - Polyvinyl Chloride

### Insulation

#### Insulation Material:

Insulation Material	Wall Thickness (in.)
XLPE - Cross Linked Polyethylene	0.045

#### Insulation Color Code Chart:

Number	Color
1	Black #1
2	Black #2
3	Black #3
4	Green/Yellow

### Outer Shield

#### Outer Shield Material:

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Duofoil®	Tape	Aluminum Foil-Polyester Tape-Aluminum Foil	100.000
2		Braid	TC - Tinned Copper	85.000

#### Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
16	26x30	TC - Tinned Copper

### Electrical Characteristics

#### Nom. Inductance:

Inductance (µH/ft)
0.230

#### Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)
38.000

#### Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
21.000

#### Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
4.000

### Physical Characteristics (Overall)

#### Conductor

#### Outer Jacket

#### Outer Jacket Material:

Outer Jacket Material	Nom. Wall Thickness (in.)
PVC - Polyvinyl Chloride	0.075

Outer Jacket Ripcord: Yes

#### Overall Cabling

Overall Nominal Diameter: 0.750 in.

### Mechanical Characteristics (Overall)

Max. Recommended Pulling Tension: 272 lbs.

Min. Bend Radius (Install)/Minor Axis: 7.500 in.

## 29510 Composite - 1000V UL Flexible Motor Supply Composite Cable

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

NEC/(UL) Specification:	TC-ER
NEC Articles:	336 - ER
CSA Specification:	1000 V AWM I/II A/B
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	09/21/2006
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes
PMSHA Specification:	P-07-KA070003
Other Specification:	1000V UL Flexible Motor Supply Cable

#### Flame Test

UL Flame Test:	UL1685 UL Loading
CSA Flame Test:	FT4
IEEE Flame Test:	1202,IEEE 383 Vertical Tray Flame Test (70,000 BTU)

#### Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes
Suitability - Burial:	Yes
Sunlight Resistance:	Yes

#### Plenum/Non-Plenum

Plenum (Y/N):	No
---------------	----

### Electrical Characteristics (Overall)

#### Max. Operating Voltage - UL:

##### Voltage

1000 V RMS (Flexible Motor Supply Cable)

#### Max. Operating Voltage - Other:

##### Voltage

1000 V RMS (CSA AWM I/II A/B)

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
29510 010100	100 FT	35.900 LB	BLACK	C	COMPOSITE CABLE SH PVC
29510 0101000	1,000 FT	324.000 LB	BLACK	C	COMPOSITE CABLE SH PVC
29510 010500	500 FT	143.000 LB	BLACK	C	COMPOSITE CABLE SH PVC
29510 0105000	5,000 FT	1,485.000 LB	BLACK	C	COMPOSITE CABLE SH PVC

#### Notes:

C = CRATE REEL PUT-UP.

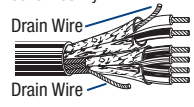


## Variable Frequency Drive Cable – Classic Design with Signal Pair

### 16 to 10 AWG with Foil/Braid Shield Plus Signal Pair for Brake<sup>^</sup>

Description	Part No.	AWG	Cond. Stranding	Standard Lengths		Standard Unit Wt.		Nominal OD		Maximum Pull Tension		Minimum Bend Radius	
				Ft.	m	Lbs.	kg	Inch	mm	Lbs.	N	Inch	mm

**Three Stranded TC Circuit Conductors** + (1) Full-sized PVC Ground\* • Overall Beldfoil + 85% TC Braid Shield • Full Sized TC Drain Wire\* + (1) 16 AWG Shielded Signal Pair for Brake with drain wire. (ICEA Method 4 Color Code: Black and Numbered, Green/Yellow Ground) + Black, White Signal Pair

XLPE Insulated Circuit Conductors • Black Sunlight- and Oil-resistant PVC Jacket													
<b>1000V UL Flexible Motor Supply Cable</b> 600V UL 1277 Type TC-ER per 2005 NEC Article 336 1000V CSA AWM I/II A/B FT4 IEEE 1202/383  UL Direct Burial XHHW-2, RHW-2 rated circuit conductors** 90°C Wet/Dry    MSHA P-07-KA070003	29510	Circuit Cond	26x30	100	30.5	34.5	15.7	.75	19.05	272	1210	7.5	190.5
				500	152.4	136.0	61.7						
	Signal Pair	26x30	1000	304.8	309.0	140.2	5000 <sup>††</sup>	1524.0	1415.0	641.8			
			29511	Circuit Cond	41x30	100		30.5	67.5	30.6	.82	20.83	368
	500	152.4	177.5			80.6							
	Signal Pair	26x30	1000	304.8	340.0	154.2	5000 <sup>††</sup>	1524.0	1565.0	709.9			
			29512	Circuit Cond	65x30	100		30.5	77.3	35.1	.90	22.86	527
	500	152.4	226.5			102.8							
	Signal Pair	26x30	1000	304.8	438.0	198.7	4000 <sup>††</sup>	1219.5	1680.0	762.0			
			29513	Circuit Cond	105x30	100		30.5	89.3	40.5	.99	25.15	718
	500	152.4	286.5			130.1							
	Signal Pair	26x30	1000	304.8	490.0	222.3	3000 <sup>††</sup>	914.6	1452.0	658.6			

See footnotes on page 4.

## Variable Frequency Drive Cable – Symmetrical Design

### 16 to 4/0 AWG with Dual Copper Tape Shield

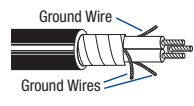
Belden's symmetrical ground design combines the benefits of our classic line of VFD cables with additional features for use on larger, more powerful AC motor drives. Its highly effective shielding provides a low resistance path to

ground, which improves common mode current containment. The spirally applied dual copper tapes provide improved flexibility and highly effective radiated and conducted noise protection. Three symmetrical bare ground wires provide a

balanced ground system. This reduces AC motor shaft voltage, which in turn, reduces the likelihood of premature motor bearing or motor insulation failure.

Description	Part No.	AWG	Cond. Stranding	Standard Lengths		Standard Unit Wt.		Nominal OD		Maximum Pull Tension		Minimum Bend Radius	
				Ft.	m	Lbs.	kg	Inch	mm	Lbs.	N	Inch	mm

**Three Stranded TC Circuit Conductors** + 3 Symmetrical BC Grounds • 2 Spiral Copper Tape Shields (100% Coverage) (ICEA Method 4 Color Code: Black and Numbered)

XLPE Insulation • Black Sunlight- and Oil-resistant PVC Jacket													
<b>1000V UL Flexible Motor Supply Cable</b> 600V UL 1277 Type TC-ER per 2005 NEC Article 336 600V CSA AWM I/II A/B FT4 IEEE 1202/383  UL Direct Burial XHHW-2 rated circuit conductors** 90°C Wet/Dry    MSHA P-07-KA070003	29520	16	7x24	100	30.4	17.0	7.7	0.40	10.11	107	476	4.0	101.6
				500	152.4	68.5	31.1						
	Signal Pair	7x22	1000	304.8	139.0	63.1	5000 <sup>††</sup>	1524.0	710.0	322.3			
			29521	Circuit Cond	7x22	100		30.4	19.2	8.7	0.42	10.74	162
	500	152.4	81.0			36.8							
	Signal Pair	7x20	1000	304.8	161.0	73.1	5000 <sup>††</sup>	1524.0	800.0	363.2			
			29522	Circuit Cond	7x20	100		30.4	24.2	11.0	0.48	12.19	258
	500	152.4	108.5			49.3							
	Signal Pair	7x18	1000	304.8	213.0	96.7	5000 <sup>††</sup>	1524.0	1080.0	490.3			
			29523	Circuit Cond	7x18	100		30.4	25.2	11.4	0.56	14.22	444
	500	152.4	111.5			50.6							
	Signal Pair	7x16	1000	304.8	216.0	98.1	5000 <sup>††</sup>	1524.0	1505.0	683.3			
29524			Circuit Cond	7x16	100	30.4		37.8	17.2	0.66	16.76	576	2562
500	152.4	194.0			88.1								
Signal Pair	7x14	1000	304.8	439.0	199.3	5000 <sup>††</sup>	1524.0	2045.0	928.4				
		29525	Circuit Cond	7x14	100		30.4	55.5	25.2	0.76	19.30	915	4070
500	152.4	339.5			154.1								
Signal Pair	7x14	1000	304.8	645.0	292.8	5000 <sup>††</sup>	1524.0	3000.0	1362.0				