

## 29502 Multi-Conductor - 1000V UL Flexible Motor Supply Cable



### Description:

4-cond. (3) stranded tinned copper circuit conductors plus (1)ground wire with PVC insulation, XLPE insulation, Overall Duofoil® (100% coverage) plus a tinned copper braid shield (85% coverage) , tinned copper drain wire, Sun- & oil-resistant PVC jacket.

### Usage (Overall)

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

### Physical Characteristics (Overall)

#### Conductor

**AWG:**

# Conductors	AWG	Stranding	Conductor Material
3	12	65x30	TC - Tinned Copper

#### Ground Wire

<b>Ground Wire (Y/N):</b>	Y
<b>Ground Wire AWG:</b>	12
<b>Ground Wire Stranding:</b>	65x30
<b>Ground Wire Conductor Material:</b>	TC - Tinned Copper
<b>Ground Wire Insulation Material:</b>	PVC - Polyvinyl Chloride

#### Insulation

**Insulation Material:**

Insulation Material	Wall Thickness (in.)
XLPE - Cross Linked Polyethylene	.045

**Insulation Resistance:** 300 Megaohms/1000 ft.

#### Outer Shield

**Outer Shield Material:**

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Duofoil®	Tape	Aluminum Foil-Polyester Tape	100
2		Braid	TC - Tinned Copper	85

**Outer Shield Drain Wire AWG:**

AWG	Stranding	Drain Wire Conductor Material
12	65x30	TC - Tinned Copper

#### Outer Jacket

**Outer Jacket Material:**

Outer Jacket Material
PVC - Polyvinyl Chloride

#### Overall Cabling

**Overall Nominal Diameter:** 0.650 in.

### Mechanical Characteristics (Overall)

<b>Operating Temperature Range:</b>	-40°C To +90°C Dry, +90°C Wet
<b>UL Temperature Rating:</b>	90°C Wet/Dry

## 29502 Multi-Conductor - 1000V UL Flexible Motor Supply Cable

<b>Bulk Cable Weight:</b>	250 lbs/1000 ft.
<b>Max. Recommended Pulling Tension:</b>	336 lbs.
<b>Min. Bend Radius (Install)/Minor Axis:</b>	5.200 in.

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

<b>NEC Articles:</b>	336 - ER
<b>CSA Specification:</b>	1000 V AWM I/II A/B
<b>EU CE Mark:</b>	Yes
<b>EU Directive 2000/53/EC (ELV):</b>	Yes
<b>EU Directive 2002/95/EC (RoHS):</b>	Yes
<b>EU RoHS Compliance Date (mm/dd/yyyy):</b>	10/13/2005
<b>EU Directive 2002/96/EC (WEEE):</b>	Yes
<b>EU Directive 2003/11/EC (BFR):</b>	Yes
<b>CA Prop 65 (CJ for Wire &amp; Cable):</b>	Yes
<b>MII Order #39 (China RoHS):</b>	Yes
<b>PMSHA Specification:</b>	P-07-KA070003
<b>Other Specification:</b>	1000V UL Flexible Motor Supply Cable

#### Flame Test

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

#### Suitability

<b>Suitability - Indoor:</b>	Yes
<b>Suitability - Outdoor:</b>	Yes
<b>Suitability - Burial:</b>	Yes
<b>Sunlight Resistance:</b>	Yes
<b>Oil Resistance:</b>	Yes

### Electrical Characteristics (Overall)

#### Nom. Characteristic Impedance:

Impedance (Ohm)  
71

#### Nom. Inductance:

Inductance (µH/ft)  
.197

#### Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)  
26

#### Nom. Capacitance Cond. to Other Conductor & Shield:

Capacitance (pF/ft)  
47

#### Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)  
1.6

#### Max. Operating Voltage - UL:

Voltage

## 29502 Multi-Conductor - 1000V UL Flexible Motor Supply Cable

1000 V RMS (Flexible Motor Supply Cable)
600 V RMS (NEC Type TC)

**Max. Recommended Current:**

<b>Current</b>
30 Amps per conductor @ 30°C (per NEC)

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
29502 010100	100 FT	32.000 LB	BLACK		#12/4C XLPE SH PVC
29502 0101000	1,000 FT	298.000 LB	BLACK	C Z	#12/4C XLPE SHPVC
29502 010250	250 FT	75.750 LB	BLACK	C Z	#12/4C XLPE SHPVC
29502 010500	500 FT	147.000 LB	BLACK	C Z	#12/4C XLPE SHPVC
29502 0105000	5,000 FT	1,695.000 LB	BLACK	C Z	#12/4C XLPE SH PVC

**Notes:**

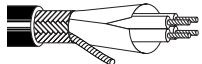
C = CRATE REEL PUT-UP.

Z = FINAL PUT-UP LENGTH MAY VARY (+ OR -) 10% FOR SPOOLS OR REELS AND(+ OR -) 5% FOR UNREEL CARTONS FROM LENGTH SHOWN.

# VFD (Variable Frequency Drive) Cable

## 1000V UL Flexible Motor Supply Cable

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	
<b>4-cond.</b> (3) Stranded TC Circuit Conductors + (1) Ground* • Overall Beldfoil® (100% Coverage) + TC Braid Shield (85% Coverage) • TC Drain Wire*														
<b>XLPE Insulation (Circuit Condrs) • PVC Insulation (Ground) • Black Sunlight- and Oil-resistant PVC Jacket</b>														
<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 90°C Wet/Dry	29500	16	26x30	250†	76.2	46.2	21.0	.53	13.46	128	568	3.9	99.06	
				500†	152.4	93.0	42.2							
				1000†	304.8	182.0	82.6							
				6000†	1828.8	1080.0	490.3							
	All Allen-Bradley Series 160 and 1305 drives.													
	29501	14	41x30	250†	76.2	59.7	27.1	.55	13.97	212	942	4.5	114.30	
				500†	152.4	120.0	54.5							
				1000†	304.8	233.0	105.8							
				5000†	1524.0	1215.0	551.6							
	Allen-Bradley 1336F(S)-BRF05 through BRF100													
29502	12	65x30	250†	76.2	69.8	31.7	.60	15.24	336	1495	4.9	124.46		
			500†	152.4	151.5	68.8								
			1000†	304.8	298.0	135.3								
			5000†	1524.0	1570.0	712.8								
Allen-Bradley 1336F(S)-BRF150, BRF200														
29503	10	105x30	250†	76.2	91.3	41.4	.66	16.76	525	2335	5.4	137.16		
			500†	152.4	194.5	88.3								
			1000†	304.8	375.0	170.3								
			5000†	1524.0	2025.0	919.4								
Allen-Bradley 1336F(S)-B015														
29504	8	7x19x29	250†	76.2	158.5	72.0	.89	22.61	1328	5906	7.3	185.42		
			500†	152.4	332.0	150.7								
			1000†	304.8	660.0	299.6								
			5000†	1524.0	3135.0	1423.3								
Allen-Bradley 1336F(S)-B020														
29505	6	7x19x27	250†	76.2	221.3	100.5	.99	25.15	2048	9109	8.0	203.20		
			1000†	304.8	906.0	411.3								
			3500†	1066.8	3206.0	1455.5								
			5000†	1524.0	4779.0	2169.7								
Allen-Bradley 1336F(S)-B025, B030														
29506	4	7x19x25	250†	76.2	319.5	145.1	1.15	29.21	3152	14021	9.2	233.68		
			1000†	304.8	1231.0	558.9								
			3000†	914.4	3843.0	1744.7								
			5000†	1524.0	4779.0	2169.7								
Allen-Bradley 1336F(S)-BX040, B040														
29507	2	7x19x23	250†	76.2	437.8	198.7	1.29	32.77	4872	21672	10.5	266.70		
			500†	152.4	875.5	397.5								
			1000†	304.8	1711.0	776.8								
			2000†	609.6	3682.0	1671.6								
Allen-Bradley 1336F(S)-B050, BX060, B060														



Color Code: ICEA Method 4 (Black and Numbered); Green/Yellow Ground  
 UL Direct Burial. XHHW-2, RHW-2 rated circuit conductors.

### Three (3) Stranded TC Circuit Conductors + (3) Symmetrical Bare Copper Grounds • (2) Spiral Copper Tape Shields (100% Coverage)

<b>XLPE Insulation (Circuit Condrs) • Black Sunlight- and Oil-resistant PVC Jacket</b>														
<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 90°C Wet/Dry	29528	1	7x19x22	250 ††	76.2	398.8	181.0	1.20	30.48	2650	11788	12.0	304.8	
				1000 ††	304.8	1642.0	746.0							
				3000 †	1524.0	4779.0	2169.7							
	new													
	29529	1/0	7x19x21	250 ††	76.2	525.8	238.7	1.29	32.77	3537	15733	12.9	327.7	
				1000 ††	304.8	2050.0	930.7							
				2000 †	609.6	3954.0	1795.1							
	new													
	29530	2/0	7x19x20	250 ††	76.2	602.0	273.3	1.40	35.56	4200	18682	14.0	355.6	
				1000 ††	304.8	2362.0	1072.4							
2000 †				609.6	4744.0	2153.8								
new														
29531	3/0	7x19x19	250 ††	76.2	699.5	317.6	1.52	38.61	5025	22352	15.2	386.1		
			1000 ††	304.8	2708.0	1229.4								
			3000 †	1524.0	5436.0	2467.9								
new														
29532	4/0	7x19x18	250 ††	76.2	881.0	400.0	1.68	42.67	6670	29670	16.8	426.7		
			500 ††	152.4	1873.0	850.3								
			1500 †	457.2	5619.0	2551.0								
new														



Color Code: ICEA Method 4 (Black and Numbered)  
 UL Direct Burial. XHHW-2 circuit conductors.

TC = Tinned Copper • TC-ER = Tray Cable - Exposed Run per 2005 NEC Article 336 • XLPE = Cross-linked Polyethylene

\*Ground(s) and drain wire(s) are same AWG as circuit conductors.

†Final put-up length may vary ±10% from length shown.

††Final put-up length may vary ±5% from length shown.

### Encoder Cables

Belden also offers the following standard cables for encoder applications. Encoder cables help feed information to the microprocessor regarding both the speed and the position of the rotor.

Part No.	Pairs	AWG
8790 (Power Supply)	1	18
9729	2	24
9730, 89730	3	24
9728	4	24
9892	4	20