VFD (Variable-Frequency Drive) / Servo **Cable with Signal Pair**



Overview

AutomationDirect's VFD-SC series VFD / Servo cable is the same high-quality cable as our VFDC series with one additional feature. The VFD-SC cable has a shielded 16AWG signal pair allowing this cable to be used with motors and drives requiring brake control or feedback from devices like temperature or position sensors. Having the integral signal pair allows this cable to be used with our SureServo Drives and Motors up to 3kW.













Features

- Cross-linked Polyethylene (XLPE) conductor insulation
- Class K, flexible stranded tinned annealed copper conductors per ASTM B33, B172 and B174
- Green ground conductor with yellow stripe, cross linked Polyethylene (XLPE) insulation
- 100% coverage aluminum/mylar/aluminum foil shield
- 85% coverage tinned copper braid shield
- Tinned copper drain wire(s)
- 16AWG Shielded Signal Pair for Feedback / Brake Control
- Black Thermoplastic Elastomer (TPE) jacket
- Exceeds Ecolab PM-40-1 Material Resistance Test With 30-day Exposure, UL Verified V747862
- Cut to length in 1 foot increments
- Minimum cut lengths as low as 20 feet
- Made in USA



Please Note: Our prices on VFD Cable are closely tied to the market price for copper. This allows us to offer the best savings possible if conditions are favorable; however, it also means that our prices may increase if market conditions warrant.





Click on the above thumbnail or go to https://www.automationdirect.com/VID-WD-0016 for a short introduction on our cut to length cable

| VFD/Servo Cable 4-Conductor Cable Specifications | | | | | | | | | | |
|--|---|---------------------|---|--|--|--|--|--|--|--|
| Power Conductors Gauge & Stranding | 16AWG (26 Strands) to 10AWG (105 Strands), Class K flexible stranded tinned annealed copper per ASTM B33, B172 and B174 | | ASTM B172 - Rope-Lay-Stranded Copper Conductors ASTM B174 - Bunch-Stranded Copper Conductors ASTM B33 - Tinned soft or annealed Copper | | | | | | | |
| Signal Pair | Foil shielded 16AWG (26 Strands), tinned copper conductor with black and white EPDM insulation | | UL 44 - Thermoset Insulation UL 1277 - Type TC-ER Standard Power and Control Cables UL 2277 - Type WTTC Flexible Motor Supply | | | | | | | |
| Voltage Rating | 600V UL 90°C TC-ER 1000V WTTC 1000V AWM 1000V Flexible Motor Supply Cable | Approvals** | UL 758 - AWM Style 20886 Standard for Appliance Wiring Material Ecolab PM-40-1 Material Resistance Test With 30-day Exposure, UL Verified V747862 C22.2 No. 230 Type TC CSA 22.2 No. 239 TYPE CIC | | | | | | | |
| Outer Jacket Material | Thermoplastic Elastomer (TPE) | | CSA C22.2 No. 210 - CSA AWM I/II A/B | | | | | | | |
| Outer Jacket Color | Black with white print | | ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy | | | | | | | |
| Cold Bend | -40°F (-40°C) | | NFPA 79 - Electrical Standard for Industrial Machinery | | | | | | | |
| Min. Cut Length* | 20 feet | | CE RoHS-2 | | | | | | | |
| Temperature Ratings | -40°F to +194°F (-40°C to +90°C) | | Southwire XXAWG (XXmm2) XX/C VFD RHH/RHW-2 CDRS PLUS 16 AWG 1 PR | | | | | | | |
| Conductor Insulation | Black cross-linked Polyethylene (XLPE) with green/yellow ground | Sample Print Legend | TYPE TC-ER EXXXXX (UL) 600V 90°C DRY 90°C WET SUN RES OIL RES I/II DIR BUR -40°C OR WTTC 1000V OR AWM 20886 105°C 1000V OR Flexible Motor | | | | | | | |
| Conductor Markings | "1-ONE", "2-TWO", "3-THREE", @ 4.5 inch intervals, ICEA Method 4 | | Supply Cable 1000V LLXXXXXX CSA CIC/TC FT4 OR AWM I/II A/B 1000V 105C FT4 -40°C CE RoHS-2 Made in USA | | | | | | | |

See web store for maximum cut lengths

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

VFD / Servo Cable - 4 Conductor

| VFD/Servo Cable 4-Conductor Cable Specifications Continued | | | | | | | | | | | |
|--|--|--|--|---|------------------|--------------------------------|--|--|--|--|--|
| Part Number | Nom. Capacitance Conductor to Shield (pF/ft.) | Nom. Capacitance Conductor to Conductor (pF/ft.) | Nom. Conductor DC Resistance @ 20°C (Ohm/1000 ft.) | Nominal Outer Shield DC Resistance @ 20°C (Ohm/1000 ft.) | Impedance (ohms) | Max. Operating Voltage - UL | | | | | |
| <u>VFD-SC-16-4B-1P-1</u> | 36.34 | 20.19 | 4.49 | 2.40 | 86.6 | 600V / 1000V | | | | | |
| VFD-SC-14-4B-1P-1 | 44.10 | 24.50 | 2.82 | 2.31 | 71.4 | 600V / 1000V | | | | | |
| VFD-SC-12-4B-1P-1 | 46.93 | 26.07 | 1.77 | 2.48 | 67.1 | 600V / 1000V | | | | | |
| <u>VFD-SC-10-4B-1P-1</u> | 52.52 | 29.18 | 1.12 | 2.63 | 60.0 | 600V / 1000V | | | | | |

| VFD/Servo Cable 4-Conductor Cable Selection | | | | | | | | | | | | | | | | |
|---|--|---------------------|---------------------|--------|------------|-------------------------------------|--|--------------------------|----------------------------|-----------------------------|--|------|-----------------------|------------------------|------------------------|----------------|
| Part Number | Number of Conductors (includes ground) | AWG | Conductor OD inches | þı | er tors | Power Conductors Ground (AWG) | Drain Wire (AWG) Insulaton Thickness (mils) | et (mils) | gnal Pair |) inches | *Ampacity NEC 310.15 (B) (16) Amps | | Bend Radius inches | : Weight !) | r foot | |
| | | | | Strand | Powe | | | Insulato Thickness (I | Jacket Thickness (mils) | Shielded Signal Pair AWG | Nominal OD inches | 75°C | 90°C | Min. Bend Re inches | Approximate (Ib/ft) | Price per foot |
| Two 2 Three 3 | | | | | | | | | | | | | | | | |
| VFD-SC-16-4B-1P-1 | 4 | 16AWG (1.31 mm²) | 0.054 | 26 | 3 | 1 x (16) | 1 x (16) | 46 | 62 | 16 | 0.604 | 10 | 10 | 7.25 | 0.20 | \$5.28 |
| <u>VFD-SC-14-4B-1P-1</u> | 4 | 14AWG (2.08 mm²) | 0.074 | 41 | 3 | 1 x (14) | 1 x (14) | 46 | 62 | 16 | 0.689 | 15 | 15 | 8.27 | 0.24 | \$5.93 |
| <u>VFD-SC-12-4B-1P-1</u> | 4 | 12AWG (3.31 mm²) | 0.090 | 65 | 3 | 1 x (12) | 1 x (12) | 46 | 62 | 16 | 0.719 | 20 | 20 | 8.63 | 0.31 | \$6.88 |
| <u>VFD-SC-10-4B-1P-1</u> | 4 | 10AWG (5.26 mm²) | 0.112 | 105 | 3 | 1 x (10) | 1 x (10) | 46 | 62 | 16 | 0.773 | 30 | 30 | 9.28 | 0.37 | \$7.96 |

^{*}Ampacity based on NEC 310.15 (B) (16) up to and including 2000 volts, not more than 3 current-carrying conductors, ambient 86°F (30°C) All dimensions are nominal and subject to normal manufacturing tolerances.





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