

VFD (Variable Frequency Drive) Power Cable

For low voltage VFD systems / 16 AWG to 500 KCMIL / PVC/nylon insulation • PVC jacket / 600 volt



Applications

These are three conductor, 600 volt, Variable Frequency Drive (VFD) cables with polyvinyl chloride (PVC)/nylon insulation, three bare grounding conductors (one in each interstice), a corrugated copper shield and an overall polyvinyl chloride (PVC) jacket.

The VFD Power Cables are designed for use with low voltage (600 volt) AC motors controlled for speed by modern PWM (pulse width modulated) inverters. These PWM inverters require properly designed power cables to prevent RF (radio frequency) electrical signals from causing stray electrical noise or malfunction of the motor.

Specifications and Ratings

- UL Standard 83 and 1277
- ICEA S-95-658 (NEMA WC-70)
- CSA C22.2 No. 75
- TC-ER
- c(UL) T90 NYLON TC FT4
- Type WTTTC 1000V



Special Installation Practices

It is highly recommended that proper cable fittings be used to terminate the cables at junction boxes, control centers, panel boards and enclosures. The recommended fittings are available from Crouse-Hinds with the TERMINATOR trademark.



Design Parameters

CONDUCTORS: Class B, soft drawn, bare copper per ASTM B3 and ASTM B8.

INSULATION: Heat and moisture resistant, polyvinyl chloride meeting the requirements of CSA C22.2 No. 75, ICEA S-95-658 (NEMA WC 70) and UL 83 for Type THHN and THWN wires. Insulation is acceptable for use in locations at 90°C dry and 75°C wet. Insulation thickness is in accordance with Table 10 of UL 83.

CONDUCTOR COVERING: Nylon covering applied directly to the surface of the PVC insulation. Meets the requirements of CSA C22.2 No. 75, ICEA S-95-658 (NEMA WC 70) and UL 83. The thickness is in accordance with Table 13 of UL 83.

GROUNDING CONDUCTORS: Class B stranded, soft drawn, bare copper per ASTM B3 and ASTM B8. The grounding conductor is sectioned into three equal sections.

CIRCUIT IDENTIFICATION: Appendix E, Method 4 of ICEA S-73-532 (NEMA WC 57). Black conductors with number print: 1-ONE, 2-TWO & 3-THREE

ASSEMBLY: The insulated circuit conductors and three bare grounding conductors are cabled together with non-hygroscopic fillers as needed.

SHIELD: Copper tape corrugated and longitudinally applied with a minimum overlap of 15%.

OVERALL JACKET: Heat and moisture resistant, black, specially formulated polyvinyl chloride meeting the requirements of CSA C22.2 No. 75, ICEA S-95-658 (NEMA WC 70) and UL 1277. Thickness in accordance with Table 11.3 of UL 1277.

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Number of Conductors/Size	Number of Grounds/Size	Nominal PVC Insulation Thickness in (mm)	Nominal Nylon Insulation Thickness in (mm)	Diameter Overall Shield in (mm)	Nominal Cable O.D. in (mm)	Approximate Cable Weight Lbs/Mft (Kg/Km)
3 / 16 AWG	3 / 18 AWG	0.015 (0.380)	0.004 (0.100)	0.32 (8.13)	0.43 (10.9)	92 (136)
3 / 14 AWG	3 / 18 AWG	0.015 (0.380)	0.004 (0.100)	0.35 (8.89)	0.46 (11.7)	156 (232)
3 / 12 AWG	3 / 18 AWG	0.015 (0.380)	0.004 (0.100)	0.39 (9.91)	0.51 (13.0)	193 (287)
3 / 10 AWG	3 / 16 AWG	0.020 (0.500)	0.004 (0.100)	0.45 (11.4)	0.59 (15.0)	273 (406)
3 / 8 AWG	3 / 14 AWG	0.030 (0.760)	0.005 (0.130)	0.58 (14.7)	0.73 (18.5)	408 (607)
3 / 6 AWG	3 / 12 AWG	0.030 (0.760)	0.005 (0.130)	0.66 (16.8)	0.78 (19.8)	558 (830)
3 / 4 AWG	3 / 10 AWG	0.040 (1.000)	0.006 (0.150)	0.76 (19.3)	0.93 (23.6)	818 (1217)
3 / 2 AWG	3 / 8 AWG	0.040 (1.000)	0.006 (0.150)	0.89 (22.6)	1.11 (28.2)	1180 (1756)
3 / 1/0 AWG	3 / 6 AWG	0.050 (1.300)	0.007 (0.180)	1.10 (27.9)	1.32 (33.5)	1720 (2559)
3 / 2/0 AWG	3 / 6 AWG	0.050 (1.300)	0.007 (0.180)	1.19 (30.2)	1.43 (36.3)	2085 (3102)
3 / 4/0 AWG	3 / 4 AWG	0.050 (1.300)	0.007 (0.180)	1.43 (36.3)	1.66 (42.2)	3030 (4509)
3 / 250 KCMIL	3 / 4 AWG	0.060 (1.500)	0.008 (0.200)	1.57 (39.9)	1.88 (47.8)	3735 (5557)
3 / 350 KCMIL	3 / 2 AWG	0.060 (1.500)	0.008 (0.200)	1.79 (45.5)	2.00 (50.8)	5060 (7529)
3 / 500 KCMIL	3 / 1/0 AWG	0.060 (1.500)	0.008 (0.200)	2.12 (53.8)	2.90 (73.7)	7100 (10565)

Information is subject to change without notice. Consult factory for a variety of alternate constructions for specific applications.