

Variable Frequency Drive VFD 600/1000 Volt Reduced Diameter Flexible Cable

Reduced Diameter Type TC-ER Variable Frequency Drive Cable 1000 Volt Tinned Copper Conductors, Crosslinked Insulation Type XHHW-2. Thermoplastic Elastomer Jacket. Rated 90C Dry or Wet, -40C Cold Impact, Identification Method 4, 1000 Volt Flexible Motor Supply. CSA CIC/TC FT4 Flame.



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class K, Flexible stranded tinned annealed copper per ASTM B3, B172, and B174
- Insulation:** Cross Linked Insulation XHHW-2 on #14 awg and larger
- Ground:** One Green Ground with Yellow Stripe. Size equal to phase conductor
- Drain Wire:** Tinned copper. See Table 1 for Size and Strand.
- Shielding:** 100% coverage aluminum/mylar/aluminum foil, overall 85% coverage tinned copper braid
- Jacket:** Black Thermoplastic Polyethylene TPE

APPLICATIONS AND FEATURES:

Power supply cable for VFDs and motors, suitable for cable tray, conduit, raceways, exposed run (UL TC-ER) and conforming to NFPA 79 2018. Suitable for free air and direct burial. It's flexible design is ideal for use on operation processes in accordance with the NEC® Articles 336, 501 and 502 including, but not limited to: fans, pumps, conveyors, compressors, elevators and lifts, extruders, crushers and presses, assembly lines, food and beverage, wind energy and data centers. Cable is rated for -40C Cold Bend and Impact. Multiple approvals for multiple applications

SPECIFICATIONS:

- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors
- ASTM B174 Standard Specification for Bunch-Stranded Copper
- UL 44 Thermoset-Insulated Wires and Cables
- UL 758 AWM Style 2587 Standard for Appliance Wiring Material
- UL 1063 Machine Tool Wiring (MTW)
- UL 1277 Type TC-ER Standard Power and Control Cables (1000V 14AWG and Larger)
- UL 2277 Flexible Motor Supply Cable and Wind Turbine Tray Cable
- CSA C22.2 No. 210 Appliance wiring material products I/II A/B (Sizes 16 - 8AWG)
- CSA C22.2 No.230 Tray Cables - Rated TC
- CSA C22.2 No. 239 Control and instrumentation cables
- **CE/RoHS-2 – The CE Marking has been applied solely to express the conformance to the material restrictions identified in the RoHS-2 (2011/65/EU) Directive**



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SAMPLE PRINT LEGEND:

SOUTHWIRE{R} 12 AWG 4/C VFD XHHW-2 CDRS TYPE TC-ER E75755 MASTER-DESIGN {UL} 1000V 90C DRY 90C WET SUN RES OIL RES I/II DIR BUR -40C OR WTTC 1000V OR {RU} AWM 2587 OR FLEXIBLE MOTOR SUPPLY CABLE 1000V --LL90458 {CSA} CIC/TC 600V FT4 OR AWM I/II A/B 105C 1000V -40C FT4 -- {CE} ROHS-2 MADE IN USA SEQ FEET

Table 1 – Weights and Measurements

Stock Number	Cond. Size AWG/Kcmil	Insul. Thickness mil	Ground No. x AWG	Jacket Thickness mil	Approx. OD inch	Copper Weight lb/1000ft	Approx. Weight lb/1000ft
645824◇	16	31	1 x 16	47	0.408		112
645825◇	14	31	1 x 14	47	0.444		145
645826◇	12	31	1 x 12	47	0.49		195
645827◇	10	31	1 x 10	62	0.591		291
677299◇	8	46	1 x 8	62	0.774		480

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

† Ampacities are based on Table 310.16 of the NEC 2020 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts with not more than three current-carrying conductors in raceway, cable or direct buried based on ambient temperature of 30°C (86°F). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.

Table 2 – Electrical and Engineering Data

Stock Number	Cond. Size AWG/Kcmil	Min Bending Radius inch	Allowable Ampacity At 75°C† Amp	Allowable Ampacity At 90°C† Amp
645824◇	16	4.9	10	10
645825◇	14	5.33	15	15
645826◇	12	5.88	20	20
645827◇	10	7.09	30	30
677299◇	8	9.29	50	55

† Ampacities are based on Table 310.16 of the NEC 2020 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts with not more than three current-carrying conductors in raceway, cable or direct buried based on ambient temperature of 30°C (86°F). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.

