# CU 1000V XLPE Insulation Three Symmetrical Grounds Shielded TPE Jacket. XHHW-2 Flexible Variable Frequency Drive (VFD)

Reduced Diameter Type TC-ER Variable Frequency Drive Cable 600 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:

1. **Conductor:** Class K, Flexible stranded tinned annealed copper per ASTM B3, B172, and B174
2. **Insulation:** Cross Linked Insulation XHHW-2 on #14 awg and larger
3. **Ground:** Three bare grounds laid in phase conductor interstices.
4. **Filler:** Filler as needed to make round.
5. **Shielding:** 100% coverage aluminum/mylar/aluminum foil, overall 85% coverage tinned copper braid
6. **Jacket:** Black Thermoplastic Elastomer TPE

## APPLICATIONS AND FEATURES:

Power supply cable for VFDs and motors, suitable for cable tray, conduit, raceways, (TC-ER) and machine tool wiring conforming to NFPA 79 2018. Suitable for free air and direct burial. It's flexible design is ideal or use on operation processes in accordance with he 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 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
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661



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UPDATED: Jan. 24, 2024, 6:18 p.m.UTC REVISION: 1.000.007

## SAMPLE PRINT LEGEND:

SOUTHWIRE® 12 AWG 3/C VFD XHHW-2 CDRS E75755 {UL} 600V 90C DRY 90C WET SUN RES OIL RES I/II DIR BUR -40C OR WTTC 1000V OR FLEXIBLE MOTOR SUPPLY CABLE 1000V --LL90458 {CSA} CIC/TC 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 | Cond. Number | Strand Count | Diameter Over Conductor | Insul. Thickness | Ground | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | AWG/ Kcmil | | No. of Strands | inch | mil | No. x AWG | mil | inch | lb/1000ft | lb/1000ft |
| TBA | 14 | 3 | 41 | 0.073 | 30 | 3 x 18 | 45 | 0.423 | 66 | 122 |
| 670957 | 12 | 3 | 65 | 0.094 | 30 | 3 x 16 | 45 | 0.470 | 112 | 173 |
| TBA | 10 | 3 | 105 | 0.117 | 30 | 3 x 14 | 60 | 0.560 | 133 | 228 |
| TBA | 8 | 3 | 168 | 0.153 | 45 | 3 x 14 | 60 | 0.711 | 202 | 376 |
| TBA | 6 | 3 | 266 | 0.198 | 45 | 3 x 12 | 60 | 0.754 | 323 | 480 |
| TBA | 4 | 3 | 420 | 0.235 | 45 | 3 x 12 | 80 | 0.874 | 454 | 668 |
| TBA | 2 | 3 | 651 | 0.302 | 45 | 3 x 10 | 80 | 1.018 | 708 | 973 |
| TBA | 1 | 3 | 836 | 0.397 | 55 | 3 x 10 | 80 | 1.267 | 899 | 1275 |

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item

## Table 2 – Electrical and Engineering Data

| Stock Number | Cond. Size | Cond. Number | Min Bending Radius | Max Pull Tension | DC Resistance @ 25°C | AC Resistance @ 75°C | Inductive Reactance @ 60Hz | Allowable Ampacity At 60°C | Allowable Ampacity At 75°C | Allowable Ampacity At 90°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | AWG/ Kcmil | | inch | lb | Ω/1000ft | Ω/1000ft | Ω/1000ft | Amp | Amp | Amp |
| TBA | 14 | 3 | 5.1 | 98 | 2.814 | 3.391 | 0.058 | 15 | 20 | 25 |
| 670957 | 12 | 3 | 5.6 | 156 | 1.774 | 2.137 | 0.054 | 20 | 25 | 30 |
| TBA | 10 | 3 | 6.7 | 249 | 1.111 | 1.339 | 0.050 | 30 | 35 | 40 |
| TBA | 8 | 3 | 8.5 | 396 | 0.715 | 0.861 | 0.052 | 40 | 50 | 55 |
| TBA | 6 | 3 | 9.0 | 629 | 0.450 | 0.541 | 0.051 | 55 | 65 | 75 |
| TBA | 4 | 3 | 10.5 | 1001 | 0.282 | 0.340 | 0.048 | 70 | 85 | 95 |
| TBA | 2 | 3 | 12.2 | 1592 | 0.179 | 0.216 | 0.045 | 95 | 115 | 130 |
| TBA | 1 | 3 | 15.2 | 2008 | 0.143 | 0.172 | 0.046 | 110 | 130 | 145 |

* Ampacities based upon 2023 NEC Table 310.16. See NEC sections 310.15 and 110.14(C) for additional requirements.


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## Additional Infromation

| Cable Size | Max Motor Size | | | Dia Over Shield |
|---|---|---|---|---|
| | 230V | 460V | 475V | |
| 16 | - | 5 | 5 | 0.535 |
| 14 | 5 | 7.5 | 10 | 0.567 |
| 12 | 5 | 10 | 10 | 0.608 |
| 10 | 7.5 | 15 | 20 | 0.671 |
| 8 | 7.5 | 30 | 30 | 0.837 |
| 6 | 15 | 40 | 50 | 0.898 |
| 4 | 20 | 50 | 60 | 0.995 |
| 2 | 30 | 60 | 75 | 1.135 |
| 1 | 40 | 75 | 100 | 1.22 |