



## CU 600V XLPE Insulation Shielded TPE jacket. XHHW-2 Reduced Diameter Flexible Variable Frequency Drive (VFD)

Reduced Diameter Type TC-ER Variable Frequency Drive Cable, 600 Volts or 1000 Volts, Tinned Copper Conductors, Cross-linked Insulation Type XHHW-2, Thermoplastic Elastomer Jacket, Rated 90°C Dry or Wet, -40°C Cold Impact, Identification Method 4. 1000 Volts 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 on all conductors (Type XHHW-2 on 14 AWG and larger)
3. **Ground:** One green ground with yellow Stripe cross linked insulation (size equal to phase conductor)
4. **Drain Wire:** Tinned copper drain wire
5. **Shielding:** 100% coverage aluminum/Mylar/aluminum foil, overall 85% coverage tinned copper braid
6. **Jacket:** Black Thermoplastic Elastomer (TPE)

### APPLICATIONS AND FEATURES:

Applications and Features: Power supply cable for VFDs and motors, suitable for cable tray, conduit, raceways, exposed run (TC-ER) and conforming to NFPA 79 2018. Suitable for free air and direct burial. Its flexible design is ideal for use on operation processes in accordance with 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 Standard for Appliance Wiring Material Style 20886
- 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
- Exceeds Ecolab PM-40-1 Material Resistance Test With 30-day Exposure, UL Verified V747862
- **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

**SAMPLE PRINT LEGEND:**

SOUTHWIRE® XX AWG (XX{mm2}) 4/C VFD TYPE TC-ER E75755 {UL} 600V 90C DRY 90C WET SUN RES OIL RES I/II DIR BUR -40C OR WTTTC 1000V OR AWM 20886 105C 1000V OR FLEXIBLE MOTOR SUPPLY CABLE 1000V OR SUBMERSIBLE PUMP CABLE 600V -- LL90458 {CSA} CIC/TC 600V FT4 OR AWM I/II A/B 105C 1000V -40C FT4 -- {CE} ROHS-2 MADE IN USA

**Table 1 – Weights and Measurements**

| Stock Number | Cond. Size    | Cond. Number | Strand Count   | Diameter Over Conductor | Insul. Thickness | Ground    | Drain Wire | Dia. Over Shield | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|--------------|---------------|--------------|----------------|-------------------------|------------------|-----------|------------|------------------|------------------|------------|---------------|----------------|
|              | AWG/<br>Kcmil |              | No. of Strands | inch                    | mil              | No. x AWG | No. x AWG  | inch             | mil              | inch       | lb/1000ft     | lb/1000ft      |
| 645824◇      | 16            | 3            | 26             | 0.059                   | 30               | 1 x 16    | 1x16       | 0.314            | 47               | 0.408      | 58            | 112            |
| 645825◇      | 14            | 3            | 41             | 0.073                   | 30               | 1 x 14    | 1x14       | 0.350            | 47               | 0.444      | 84            | 145            |
| 645826◇      | 12            | 3            | 65             | 0.094                   | 30               | 1 x 12    | 1x12       | 0.396            | 47               | 0.490      | 124           | 195            |
| 645827◇      | 10            | 3            | 105            | 0.117                   | 30               | 1 x 10    | 1x10       | 0.467            | 62               | 0.591      | 189           | 291            |
| 677299◇      | 8             | 3            | 168            | 0.153                   | 45               | 1 x 8     | 4x14       | 0.650            | 62               | 0.774      | 302           | 480            |

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

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

**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 | Capacitive Reactance @ 60Hz | Inductive Reactance @ 60Hz | Allowable Ampacity At 75°C | Allowable Ampacity At 90°C |
|--------------|---------------|--------------|--------------------|------------------|----------------------|----------------------|-----------------------------|----------------------------|----------------------------|----------------------------|
|              | AWG/<br>Kcmil |              | inch               | lb               | Ω/1000ft             | Ω/1000ft             | MΩ*1000ft                   | Ω/1000ft                   | Amp                        | Amp                        |
| 645824◇      | 16            | 3            | 4.9                | 61               | 4.487                | 5.406                | 0.051                       | 0.033                      | -                          | 18                         |
| 645825◇      | 14            | 3            | 5.3                | 98               | 2.814                | 3.391                | 0.043                       | 0.058                      | 20                         | 25                         |
| 645826◇      | 12            | 3            | 5.9                | 156              | 1.774                | 2.137                | 0.036                       | 0.054                      | 25                         | 30                         |
| 645827◇      | 10            | 3            | 7.1                | 249              | 1.111                | 1.339                | 0.030                       | 0.050                      | 35                         | 40                         |
| 677299◇      | 8             | 3            | 9.3                | 396              | 0.715                | 0.861                | 0.033                       | 0.052                      | 50                         | 55                         |

