



## **CU 2000V XLPE Insulation Three Grounds Cu Tape Shield PVC Jacket. RHH/RHW-2 Variable Frequency Drive (VFD)**

Type TC-ER VFD Power Cable 2000 Volt Three Conductor Copper, Cross Linked Polyethylene (XLPE) insulation RHH/RHW-2 Polyvinyl Chloride (PVC) Jacket with 3 Symmetrical Bare CU Ground 50% Minimum Tape Shield Overlap. Silicone Free



Image not to scale. See Table 1 for dimensions.

### **CONSTRUCTION:**

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
2. **Insulation:** Cross Linked Polyethylene (XLPE) Type RHH/RHW-2
3. **Grounding Conductor:** 3 Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8 (Ground size is 100% for sizes 14 - 10 awg and a minimum of 50% of the phase conductor for larger sizes.)
4. **Filler:** Fillers as needed to make round
5. **Tape Shield:** 5 mil copper tape shield with a minimum of 50% overlap
6. **Overall Jacket:** Polyvinyl Chloride (PVC) Jacket. Available in thermoplastic Chlorinated Polyethylene CPE jacket on #4 AWG and larger upon request

### **APPLICATIONS AND FEATURES:**

Southwire's 2000 Volt Type TC-ER VFD power cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, aerial supported by a messenger, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation in wet and dry locations, 130°C for emergency overload, and 250°C for short circuit conditions. For uses in Class I, II, and III, Division 2 hazardous locations per NEC Article 501 and 502. Type (TC-ER) per NEC 336.10.

### **SPECIFICATIONS:**

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 44 Thermoset-Insulated Wires and Cables
- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-58-679 Control Cable Conductor Identification Method 3 (1-BLACK, 2-RED, 3-BLUE)
- ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- 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® VFD {UL} XX AWG 3/C TYPE TC-ER RHH OR RHW-2 CDRS CU GW 3 X XX AWG CU T/S 50% 90°C PVC JACKET SUN RES DIRECT BURIAL 2000 VOLTS {YYYY} {SEQUENTIAL FOOTAGE MARKS} SEQ FEET FT4/IEEE1202 2000 VOLTS

**Table 1 – Weights and Measurements**

| Stock Number | Cond. Size    | Cond. Number | Strand Count   | Diameter Over Conductor | Insul. Thickness | Ground    | Dia. Over Shield | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|--------------|---------------|--------------|----------------|-------------------------|------------------|-----------|------------------|------------------|------------|---------------|----------------|
|              | AWG/<br>Kcmil |              | No. of Strands | inch                    | mil              | No. x AWG | inch             | mil              | inch       | lb/1000ft     | lb/1000ft      |
| 580672◇      | 14            | 3            | 7              | 0.07                    | 60               | 3 x 18    | 0.451            | 60               | 0.571      | 93            | 202            |
| 580685◇      | 12            | 3            | 7              | 0.088                   | 60               | 3 x 16    | 0.486            | 60               | 0.606      | 128           | 244            |
| 580693◇      | 10            | 3            | 7              | 0.113                   | 60               | 3 x 14    | 0.537            | 60               | 0.657      | 183           | 329            |
| 569388◇      | 8             | 3            | 7              | 0.141                   | 70               | 3 x 14    | 0.652            | 60               | 0.772      | 270           | 456            |
| 580701◇      | 6             | 3            | 7              | 0.177                   | 70               | 3 x 12    | 0.723            | 80               | 0.883      | 389           | 624            |
| 569389◇      | 4             | 3            | 7              | 0.225                   | 70               | 3 x 12    | 0.825            | 80               | 0.985      | 547           | 815            |
| 569387◇      | 2             | 3            | 7              | 0.282                   | 70               | 3 x 10    | 0.946            | 80               | 1.106      | 827           | 1121           |
| 677367       | 1             | 3            | 19             | 0.322                   | 95               | 3 x 8     | 1.316            | 80               | 1.272      | 1065          | 1508           |
| 644333◇      | 1/0           | 3            | 19             | 0.361                   | 90               | 3 x 6     | 1.220            | 80               | 1.380      | 1373          | 1858           |
| 644334◇      | 2/0           | 3            | 19             | 0.405                   | 90               | 3 x 6     | 1.311            | 80               | 1.471      | 1640          | 2164           |
| 644337◇      | 3/0           | 3            | 19             | 0.456                   | 90               | 3 x 5     | 1.419            | 80               | 1.579      | 2041          | 2604           |
| 644338◇      | 4/0           | 3            | 19             | 0.512                   | 90               | 3 x 4     | 1.506            | 115              | 1.736      | 2542          | 3202           |
| 644339◇      | 250           | 3            | 37             | 0.558                   | 105              | 3 x 2     | 1.665            | 115              | 1.895      | 3150          | 3995           |
| TBA          | 300           | 3            | 37             | 0.61                    | 105              | 3 x 3     | 1.783            | 110              | 2.003      | 2956          | 3906           |
| 668921       | 350           | 3            | 37             | 0.661                   | 105              | 3 x 3     | 1.879            | 115              | 2.109      | 3981          | 4969           |
| 644340◇      | 350           | 3            | 37             | 0.661                   | 105              | 3 x 2     | 1.879            | 115              | 2.109      | 4110          | 5098           |
| TBA          | 400           | 3            | 37             | 0.705                   | 105              | 3 x 2     | 1.988            | 110              | 2.208      | 3908          | 4993           |
| 644341◇      | 500           | 3            | 37             | 0.789                   | 105              | 3 x 1     | 2.149            | 115              | 2.379      | 5706          | 6767           |
| 669099       | 600           | 3            | 61             | 0.865                   | 120              | 3 x 1     | 2.409            | 115              | 2.639      | 6673          | 8025           |
| TBA          | 750           | 3            | 61             | 0.968                   | 120              | 3 x 2/0   | 2.621            | 140              | 2.901      | 7235          | 9006           |

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 | Allowable Ampacity At 75°C | Allowable Ampacity At 90°C |
|--------------|---------------|--------------|--------------------|------------------|----------------------|----------------------------|----------------------------|
|              | AWG/<br>Kcmil |              | inch               | lb               | Ω/1000ft             | Amp                        | Amp                        |
| 5806720      | 14            | 3            | 6.9                | 98               | 2.631                | 20                         | 25                         |
| 5806850      | 12            | 3            | 7.3                | 156              | 1.662                | 25                         | 30                         |
| 5806930      | 10            | 3            | 7.9                | 249              | 1.040                | 35                         | 40                         |
| 5693880      | 8             | 3            | 9.3                | 396              | 0.653                | 50                         | 55                         |
| 5807010      | 6             | 3            | 10.6               | 629              | 0.411                | 65                         | 75                         |
| 5693890      | 4             | 3            | 11.8               | 1001             | 0.258                | 85                         | 95                         |
| 5693870      | 2             | 3            | 13.3               | 1592             | 0.162                | 115                        | 130                        |
| 677367       | 1             | 3            | 15.3               | 2009             | 0.129                | 130                        | 145                        |
| 6443330      | 1/0           | 3            | 16.6               | 2534             | 0.102                | 150                        | 170                        |
| 6443340      | 2/0           | 3            | 17.7               | 3194             | 0.081                | 175                        | 195                        |
| 6443370      | 3/0           | 3            | 18.9               | 4027             | 0.064                | 200                        | 225                        |
| 6443380      | 4/0           | 3            | 20.8               | 5078             | 0.051                | 230                        | 260                        |
| 6443390      | 250           | 3            | 22.7               | 6000             | 0.043                | 255                        | 290                        |
| TBA          | 300           | 3            | 24.0               | 7200             | 0.036                | 285                        | 320                        |
| 668921       | 350           | 3            | 25.3               | 8400             | 0.031                | 310                        | 350                        |
| 6443400      | 350           | 3            | 25.3               | 8400             | 0.031                | 310                        | 350                        |
| TBA          | 400           | 3            | 26.5               | 9600             | 0.027                | 335                        | 380                        |
| 6443410      | 500           | 3            | 28.5               | 12000            | 0.022                | 380                        | 430                        |
| 669099       | 600           | 3            | 31.7               | 14400            | 0.018                | 420                        | 475                        |
| TBA          | 750           | 3            | 34.8               | 18000            | 0.014                | 475                        | 535                        |

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

## Gland Reference

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