



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.

Gland Reference: [Glands](#)

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/ 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

TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.





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/ Kcmil | | inch | lb | Ω/1000ft | Amp | Amp |
| 580672◇ | 14 | 3 | 6.9 | 98 | 2.631 | 20 | 25 |
| 580685◇ | 12 | 3 | 7.3 | 156 | 1.662 | 25 | 30 |
| 580693◇ | 10 | 3 | 7.9 | 249 | 1.040 | 35 | 40 |
| 569388◇ | 8 | 3 | 9.3 | 396 | 0.653 | 50 | 55 |
| 580701◇ | 6 | 3 | 10.6 | 629 | 0.411 | 65 | 75 |
| 569389◇ | 4 | 3 | 11.8 | 1001 | 0.258 | 85 | 95 |
| 569387◇ | 2 | 3 | 13.3 | 1592 | 0.162 | 115 | 130 |
| 677367 | 1 | 3 | 15.3 | 2009 | 0.129 | 130 | 145 |
| 644333◇ | 1/0 | 3 | 16.6 | 2534 | 0.102 | 150 | 170 |
| 644334◇ | 2/0 | 3 | 17.7 | 3194 | 0.081 | 175 | 195 |
| 644337◇ | 3/0 | 3 | 18.9 | 4027 | 0.064 | 200 | 225 |
| 644338◇ | 4/0 | 3 | 20.8 | 5078 | 0.051 | 230 | 260 |
| 644339◇ | 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 |
| 644340◇ | 350 | 3 | 25.3 | 8400 | 0.031 | 310 | 350 |
| TBA | 400 | 3 | 26.5 | 9600 | 0.027 | 335 | 380 |
| 644341◇ | 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.

