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:

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- 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 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
- ICEA S-138-738 Power Cables Rated 2000 Volts or Less for use Between Variable Frequency Drives and Motors
- 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	Jacket Color
	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	BK
580685◊	12	3	7	0.088	60	3 x 16	0.486	60	0.606	128	244	BK
580693◊	10	3	7	0.113	60	3 x 14	0.537	60	0.657	183	329	BK
569388◊	8	3	7	0.141	70	3 x 14	0.652	60	0.772	270	456	BK
580701◊	6	3	7	0.177	70	3 x 12	0.723	80	0.883	389	624	BK
569389◊	4	3	7	0.225	70	3 x 12	0.825	80	0.985	547	815	BK
569387◊	2	3	7	0.282	70	3 x 10	0.946	80	1.106	827	1121	BK
677367	1	3	19	0.322	95	3 x 8	1.316	80	1.272	1065	1508	BK
644333◊	1/0	3	19	0.361	90	3 x 6	1.22	80	1.38	1373	1858	BK
644334◊	2/0	3	19	0.405	90	3 x 6	1.311	80	1.471	1640	2164	BK
644337◊	3/0	3	19	0.454	90	3 x 4	1.419	80	1.579	2132	2638	BK
644338◊	4/0	3	19	0.512	90	3 x 4	1.506	115	1.736	2542	3202	BK
644339◊	250	3	37	0.558	105	3 x 2	1.665	115	1.895	3150	3995	BK
TBA	300	3	37	0.61	105	3 x 3	1.783	110	2.003	2956	3906	BK
644340◊	350	3	37	0.661	105	3 x 2	1.879	115	2.109	4110	5098	BK
668921	350	3	37	0.661	105	3 x 3	1.879	115	2.109	3981	4969	BK
TBA	400	3	37	0.705	105	3 x 2	1.988	110	2.208	3908	4993	BK
644341◊	500	3	37	0.789	105	3 x 1	2.149	115	2.379	5706	6767	BK
669099	600	3	61	0.865	120	3 x 1	2.409	115	2.639	6673	8025	BK
TBA	750	3	61	0.968	120	3 x 2/0	2.621	140	2.901	7235	9006	BK

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.

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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 75°C	Allowable Ampacity At 90°C
	AWG/ Kcmil		inch	lb	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
580672◊	14	3	4	98	6.659	8.265	0.036	20	25
580685◊	12	3	4.2	156	1.662	2.002	0.054	25	30
580693◊	10	3	4.6	249	1.04	1.253	0.05	35	40
569388◊	8	3	5.4	396	0.653	0.786	0.052	50	55
580701◊	6	3	6.2	629	0.411	0.495	0.051	65	75
569389◊	4	3	6.9	1001	0.258	0.31	0.048	85	95
569387◊	2	3	7.7	1592	0.162	0.195	0.045	115	130
677367	1	3	8.9	2009	0.129	0.167	0.032	130	145
644333◊	1/0	3	9.7	2534	0.102	0.122	0.044	150	170
644334◊	2/0	3	10.3	3194	0.081	0.097	0.043	175	195
644337◊	3/0	3	11.1	4027	0.064	0.078	0.042	200	225
644338◊	4/0	3	12.2	5078	0.051	0.062	0.041	230	260
644339◊	250	3	13.3	6000	0.043	0.053	0.041	255	290
TBA	300	3	14	7200	0.036	0.045	0.041	285	320
644340◊	350	3	14.8	8400	0.031	0.039	0.04	310	350
668921	350	3	14.8	8400	0.031	0.039	0.04	310	350
TBA	400	3	15.5	9600	0.027	0.035	0.04	335	380
644341◊	500	3	16.7	12000	0.022	0.029	0.039	380	430
669099	600	3	18.5	14400	0.018	0.025	0.039	420	475
TBA	750	3	20.3	18000	0.014	0.022	0.038	475	535

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

VFD Sizing Calculator

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