

3/C CU 2000V XLPE RHH/RHW-2 PVC Power Cable With Ground VFD

Type TC-ER VFD Power Cable 2000Volt 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:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
- Insulation:** Cross Linked Polyethylene (XLPE) Type RHH/RHW-2
- 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.)
- Filler:** Fillers as needed to make round
- Tape Shield:** 5 mil copper tape shield with a minimum of 50% overlap
- 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 Standard Specification for 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

SAMPLE PRINT LEGEND:

SOUTHWIRE{R} VFD MASTER-DESIGN {UL} XX AWG 3/C TYPE TC-ER RHH OR RHW-2 CDRS CU GW 3 X XX AWG CU T/S 50% 90{D}C PVC JACKET SUN RES DIRECT BURIAL 2000 VOLTS {YYYY} {SEQUENTIAL FOOTAGE MARKS} SEQ FEET FT4/ IEEE1202 2000 VOLTS



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Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Insul. Thickness	Diameter Over Insulation	Ground	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	inch	mil	inch	No. x AWG	mil	inch	lb/1000ft	lb/1000ft
580672◇	14	0.070	60	0.190	3 x 18	45	0.519	54	175
580685◇	12	0.087	60	0.207	3 x 16	45	0.558	85	220
580693◇	10	0.111	60	0.231	3 x 14	60	0.638	136	307
569388◇	8	0.139	70	0.279	3 x 14	60	0.743	193	427
580701◇	6	0.174	70	0.314	3 x 12	80	0.883	307	650
569389◇	4	0.221	70	0.361	3 x 12	80	0.959	452	789
569387◇	2	0.277	70	0.417	3 x 10	80	1.081	718	1120
644333◇	1/0	0.360	90	0.540	3 x 6	80	1.346	1233	1805
644334◇	2/0	0.404	90	0.584	3 x 6	80	1.441	1491	2121
644337◇	3/0	0.454	90	0.634	3 x 5	80	1.549	1880	2577
644338◇	4/0	0.510	90	0.690	3 x 4	80	1.670	2370	3146
644339◇	250	0.558	105	0.768	3 x 2	110	1.899	2960	3978
TBA	300	0.611	105	0.820	3 x 3	110	2.011	3448	4434
644340◇	350	0.661	105	0.871	3 x 2	110	2.121	3896	5084
TBA	400	0.706	105	0.915	3 x 2	110	2.216	4528	5658
644341◇	500	0.789	105	0.999	3 x 1	110	2.398	5461	6867
TBA	750	0.968	120	1.208	3 x 2/0	140	2.921	7017	10175

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

† Ampacities are based on Table 310.16 of the NEC 2020 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts with not more than three current-carrying conductors in raceway, cable or direct buried based on ambient temperature of 30°C (86°F). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.



Table 2 – Electrical and Engineering Data

Stock Number	Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°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
580672◇	14	6.2	99	2.630	3.288	0.045	15	15	15
580685◇	12	6.7	157	1.660	2.075	0.042	20	20	20
580693◇	10	7.7	249	1.040	1.300	0.039	30	30	30
569388◇	8	8.9	396	0.652	0.815	0.038	40	50	55
580701◇	6	9.8	630	0.411	0.514	0.035	55	65	75
569389◇	4	11.5	1002	0.258	0.323	0.033	70	85	95
569387◇	2	13.0	1593	0.162	0.203	0.031	95	115	130
644333◇	1/0	16.2	2534	0.102	0.128	0.031	125	150	170
644334◇	2/0	17.3	3194	0.081	0.102	0.030	145	175	195
644337◇	3/0	18.6	4027	0.064	0.081	0.029	165	200	225
644338◇	4/0	20.0	5078	0.051	0.064	0.029	195	230	260
644339◇	250	22.8	6000	0.043	0.055	0.029	215	255	290
TBA	300	24.1	7200	0.036	0.0468	0.028	240	285	320
644340◇	350	25.5	8400	0.031	0.040	0.028	260	310	350
TBA	400	26.6	9600	0.027	0.035	0.030	280	335	380
644341◇	500	28.8	12000	0.022	0.028	0.027	320	380	430
TBA	750	35.1	18000	0.014	0.020	0.027	400	475	535

† Ampacities are based on Table 310.16 of the NEC 2020 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts with not more than three current-carrying conductors in raceway, cable or direct buried based on ambient temperature of 30°C (86°F). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.

Gland Reference

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