

AL 600V PVC-Nylon Insulation PVC Jacket. THHN/THWN-2 Silicone Free

Type TC-ER Power Cable 600Volt Four Conductor Aluminum, Polyvinyl Chloride (PVC) with nylon layer THHN Polyvinyl Chloride (PVC) Jacket with 1 Bare AL Ground



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Insulation:** Polyvinyl Chloride (PVC) with nylon layer Type THHN/THWN
- Grounding Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Filler:** Paper filler (cable size 8 & 6 uses Polypropylene filler)
- Binder:** Polyester flat thread binder tape for cable sizes larger than 2 AWG
- Overall Jacket:** Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 600 Volt Type TC-ER 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 75°C in wet locations and 90°C in dry locations, 105°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. Constructions with 3 or more conductors are listed for exposed runs (TC-ER) per NEC 336.10.

SPECIFICATIONS:

- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 44 Thermoset-Insulated Wires and Cables
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- UL 1685 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-58-679 Control Cable Conductor Identification Method 4
- ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy

SAMPLE PRINT LEGEND:

{SQFTG} SOUTHWIRE{R} MASTER-DESIGN {UL} 3/0 AWG AL 4 CDRS TYPE TC-ER THHN OR THWN-2 CDRS AL GW 1 X 4 AWG 90{D}C JACKET SUNLIGHT RESISTANT DIRECT BURIAL 600 VOLTS {YYYY}



Table 1 – Weights and Measurements

Stock Number	Cond. Size	Cond. Number	Strand Count	Diameter Over Conductor	Insul. Thickness	Ground	Jacket Thickness	Approx. OD	Aluminum Weight	Approx. Weight
	AWG/ Kcmil		No. of Strands	inch	mil	No. x AWG	mil	inch	lb/1000ft	lb/1000ft
TBA	8	4	7	0.134	35	1 x 8	60	0.625	77	182
TBA	6	4	7	0.169	35	1 x 8	60	0.710	114	237
TBA	4	4	7	0.212	50	1 x 6	80	0.927	182	401
TBA	2	4	7	0.268	50	1 x 6	80	1.062	276	535
TBA	1	4	19	0.298	60	1 x 4	80	1.183	356	670
TBA	1/0	4	19	0.336	60	1 x 4	80	1.275	439	783
675633	2/0	4	12	0.376	50	1 x 4	80	1.342	546	1064
675635	3/0	4	15	0.422	50	1 x 4	80	1.456	678	1236
TBA	4/0	4	19	0.474	60	1 x 2	80	1.609	864	1314
TBA	250	4	37	0.520	70	1 x 2	110	1.829	1009	1652
599228	300	4	21	0.569	60	1 x 4 GG	30	1.924	1141	2104
TBA	350	4	37	0.615	70	1 x 2	110	2.059	1388	2125
TBA	500	4	37	0.735	70	1 x 1	110	2.349	1977	2832
597539	500	4	35	0.735	60	1 x 2/0 GG	110	2.415	2029	3177
TBA	750	4	61	0.908	80	1 x 1/0	140	2.876	2946	4220
597540	750	4	58	0.908	70	1 x 3/0 GG	140	2.925	3014	4687

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

* Strand count meets minimum number per ASTM



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 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
TBA	8	4	2.5	317	1.072	1.290	0.052	28	32	36
TBA	6	4	2.8	504	0.674	0.812	0.051	32	40	44
TBA	4	4	3.7	801	0.424	0.510	0.048	44	52	60
TBA	2	4	5.3	1274	0.267	0.321	0.045	60	72	80
TBA	1	4	5.9	1607	0.211	0.254	0.046	68	80	92
TBA	1/0	4	6.3	2028	0.168	0.201	0.044	80	96	108
675633	2/0	4	6.7	2556	0.133	0.160	0.043	92	108	120
675635	3/0	4	7.2	3222	0.105	0.126	0.042	104	124	140
TBA	4/0	4	8.0	4063	0.084	0.100	0.041	120	144	164
TBA	250	4	9.1	4800	0.071	0.086	0.041	136	164	184
599228	300	4	9.6	5760	0.059	0.071	0.041	156	184	208
TBA	350	4	12.3	6720	0.050	0.062	0.040	168	200	224
TBA	500	4	14.0	9600	0.035	0.044	0.039	208	248	280
597539	500	4	14.4	9600	0.035	0.044	0.039	208	248	280
TBA	750	4	17.2	10000	0.024	0.031	0.038	256	308	348
597540	750	4	17.5	10000	0.024	0.031	0.038	256	308	348

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

* Ampacities have been adjusted for more than Three Current-Carrying Conductors.

