3/C AL 600V PVC THHN PVC Power Cable With Ground

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

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
2. **Insulation:** Polyvinyl Chloride (PVC) with nylon layer Type THHN/THWN
3. **Grounding Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
4. **Filler:** Paper filler (cable size 8 & 6 uses Polypropylene filler)
5. **Binder:** Polyester flat thread binder tape for cable sizes larger than 2 AWG
6. **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 B800 8000 Series Aluminum Alloy Wire
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 1277 Electrical Power and Control Tray Cables
- 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-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} XXX AWG AL 3 CDRS TYPE TC-ER THHN OR THWN-2 CDRS AL GW 1 X 3 AWG 90{D}C JACKET SUNLIGHT RESISTANT DIRECT BURIAL 600 VOLTS {YYYY}

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Insul. Thickness	Diameter Over Insulation	Ground	Jacket Thickness	Approx. OD	Aluminum Weight	Approx. Weight
	AWG/ Kcmil	inch	mil	inch	No. x AWG	mil	inch	lb/1000ft	lb/1000ft
TBA	8	0.134	35	0.194	1 x 8	45	0.531	63	146
TBA	6	0.169	35	0.229	1 x 8	60	0.636	90	208
TBA	4	0.213	46	0.293	1 x 6	60	0.779	144	313
675613	2	0.268	46	0.348	1 x 6	80	0.938	214	454
588023	1	0.299	57	0.399	1 x 4	80	1.052	278	578
675618^	1	0.299	57	0.399	1 x 4	80	1.052	278	578
675620	1/0	0.336	57	0.436	1 x 4	80	1.132	341	673
675622	2/0	0.376	57	0.476	1 x 3	80	1.218	418	877
675624	3/0	0.423	57	0.523	1 x 4	80	1.320	518	929
578218	4/0	0.475	57	0.575	1 x 2	80	1.432	666	1126
673253^	4/0	0.475	57	0.575	1 x 2	80	1.432	666	1126
583386	250	0.520	68	0.640	1 x 2	80	1.577	775	1332
675626^	250	0.520	68	0.640	1 x 2	80	1.577	775	1332
TBA	300	0.570	68	0.690	1 x 2	80	1.685	918	1528
TBA	350	0.616	68	0.736	1 x 2	110	1.844	1060	1821
678099	500	0.736	68	0.856	1 x 1	110	2.104	1507	2420
599317	600	0.805	79	0.963	1 x 600	110	2.498	1792	4205
673497^	600	0.805	79	0.963	1 x 600	110	2.498	1792	4205
677400	750	0.908	79	1.048	1 x 3/0	110	2.523	2291	3521

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
^ M4 identification

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	Shield Short Circuit Current 6 Cycles	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	Amp
TBA	8	2.1	297	1.070	1.345	0.030	3785	35	40	45
TBA	6	2.5	472	0.675	0.848	0.029	6016	40	50	55
TBA	4	3.1	751	0.424	0.533	0.029	9569	55	65	75
675613	2	3.8	1194	0.266	0.334	0.028	15213	75	90	100
588023	1	5.3	1506	0.211	0.265	0.028	19186	85	100	115
675618^	1	5.3	1506	0.211	0.265	0.028	19186	85	100	115
675620	1/0	5.7	1901	0.168	0.211	0.028	24209	100	120	135
675622	2/0	6.1	2396	0.133	0.167	0.027	30513	115	135	150
675624	3/0	6.6	3020	0.105	0.132	0.027	38468	130	155	175
578218	4/0	7.2	3809	0.084	0.105	0.026	48509	150	180	205
673253^	4/0	7.2	3809	0.084	0.105	0.026	48509	150	180	205
583386	250	7.9	4500	0.071	0.089	0.026	57313	170	205	230
675626^	250	7.9	4500	0.071	0.089	0.026	57313	170	205	230
TBA	300	8.4	5400	0.059	0.075	0.026	68775	195	230	260
TBA	350	9.2	6300	0.051	0.064	0.026	80238	210	250	280
678099	500	12.6	9000	0.035	0.045	0.025	114625	260	310	350
599317	600	15.0	10800	0.030	0.038	0.025	137550	285	340	385
673497^	600	15.0	10800	0.030	0.038	0.025	137550	285	340	385
677400	750	15.1	13500	0.024	0.031	0.025	171938	320	385	435

† Ampacities are based on Table 310.15 (B)(16) of the NEC, 2017 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts, based on ambient temperature of 30°C (86°F)