CU 600V PVC-Nylon Insulation PVC Jacket THHN/THWN-2. CT Rated - Sunlight Resistant - For Direct Burial - Silicone Free

Type TC-ER Control Cable 600 Volt Copper Conductors, Polyvinyl Chloride (PVC) with nylon layer Insulation THHN or TFFN/TFN Polyvinyl Chloride (PVC) Jacket, Control Cable Conductor Identification Method 1 Table 2. CT Rated - Sunlight Resistant - For Direct Burial - Silicone Free - VW-1 Rated.



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** 7 strands class B compressed bare copper per ASTM B3 and ASTM B8 for 14, 12, and 10 AWG cables. Class K bare copper per ASTM B3 and B174 for 16 AWG (26 strands) and 18 AWG (16 strands) cables
2. **Insulation:** Polyvinyl Chloride (PVC) with nylon layer. Type TFFN/TFN for 18 and 16 AWG cable. Type THHN or THWN-2 for 14, 12 , 10 AWG cables. Types THHN or THWN-2 are VW-1 Rated
3. **Filler:** Polypropylene filler on cables with 5 or less conductors
4. **Binder:** Polyester flat thread binder tape applied for cables with more than 5 conductors
5. **Overall Jacket:** Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 600 Volt Type TC-ER control 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 150°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. Sunlight Resistant - For Direct Burial - Silicone Free - VW-1 Rated.

SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 66 Fixture Wire
- 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 1 Table 2
- ICEA S-73-532 Standard for Control, Thermocouple Extension and Instrumentation Cables
- 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

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SAMPLE PRINT LEGEND:

{SQFTG} SOUTHWIRE® {UL} XX AWG (X.XX{mm2}) CU XX CDRS TYPE TC-ER THHN OR THWN CDRS 90°C JACKET SUNLIGHT RESISTANT DIRECT BURIAL 600 VOLTS {NOM}-ANCE

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Table 1 – Physical and Electrical Data

Stock Number	Cond. Size	Cond. Number	Cond. Strands	Insul. Thickness	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	DC Resistance @ 25°C	AC Resistance @ 75°C	Inductive Rectance	Min Bending Radius	Allowable Ampacity 75°C	Allowable Ampacity 90°C
	AWG	No.	strands	mil	mil	inch	lb / 1000ft	lb / 1000ft	Ω /1000ft	Ω /1000ft	Ω/1000ft	inch	Amp	Amp
18 AWG														
577879	18	2	7	20	45	0.174	10	15	6.669	8.035	0.036	0.7	-	14
652188	18	3	7	20	45	0.280	15	45	6.669	8.035	0.036	1.1	-	14
577878	18	4	7	20	45	0.304	20	54	6.669	8.035	0.036	1.2	-	11
652191	18	5	7	20	45	0.336	25	66	6.669	8.035	0.036	1.3	-	11
652194	18	6	7	20	45	0.358	30	74	6.669	8.035	0.036	1.4	-	11
652197	18	8	7	20	45	0.385	40	93	6.669	8.035	0.036	1.5	-	9
652200	18	10	7	20	45	0.438	50	140	6.669	8.035	0.036	1.8	-	7
652203	18	12	7	20	45	0.454	60	155	6.669	8.035	0.036	1.8	-	7
652215	18	16	7	20	45	0.508	80	165	6.669	8.035	0.036	2.0	-	7
652209	18	19	7	20	45	0.560	95	239	6.669	8.035	0.036	2.2	-	7
652212	18	24	7	20	60	0.654	121	319	6.669	8.035	0.036	2.6	-	6
16 AWG														
604843◊	16	2	26	20	45	0.292	16	44	4.181	5.037	0.033	1.2	-	18
604850◊	16	3	26	20	45	0.308	24	58	4.181	5.037	0.033	1.2	-	18
604868◊	16	4	26	20	45	0.333	32	70	4.181	5.037	0.033	1.3	-	14
604876◊	16	5	26	20	45	0.362	40	81	4.181	5.037	0.033	1.4	-	14
TBA	16	6	7	20	45	0.380	56	101	4.181	5.037	0.033	1.5	-	14
604892◊	16	7	26	20	45	0.393	55	107	4.181	5.037	0.033	1.6	-	12
TBA	16	8	7	20	45	0.410	72	124	4.181	5.037	0.033	1.6	-	12
604918◊	16	9	26	20	45	0.454	72	135	4.181	5.037	0.033	1.8	-	12
TBA	16	10	7	20	45	0.476	88	151	4.181	5.037	0.033	1.9	-	9
604942◊	16	12	26	20	45	0.510	95	174	4.181	5.037	0.033	2.0	-	9
604975	16	15	26	20	45	0.595	120	226	4.181	5.037	0.033	2.4	-	9
605014◊	16	19	26	20	60	0.625	152	274	4.181	5.037	0.033	2.5	-	9
TBA	16	20	7	20	60	0.632	168	286	4.181	5.037	0.033	2.5	-	9
605071	16	25	26	20	60	0.700	201	350	4.181	5.037	0.033	2.8	-	8
605121	16	30	26	20	60	0.767	242	412	4.181	5.037	0.033	3.1	-	8
605196◊	16	37	26	20	60	0.867	297	529	4.181	5.037	0.033	3.5	-	7
14 AWG														
408484◊	14	2	7	20	45	0.305	25	56	2.631	3.170	0.058	1.2	20	25
408518◊	14	3	7	20	45	0.322	38	74	2.631	3.170	0.058	1.3	20	25
408542◊	14	4	7	20	45	0.351	51	94	2.631	3.170	0.058	1.4	16	20
408575◊	14	5	7	20	45	0.380	64	109	2.631	3.170	0.058	1.5	16	20
608836	14	6	7	20	45	0.416	76	130	2.631	3.170	0.058	1.7	16	20
TBA	14	8	7	20	45	0.456	115	176	2.631	3.170	0.058	1.8	14	17
408740◊	14	9	7	20	45	0.490	115	189	2.631	3.170	0.058	2.0	14	17
605477	14	10	7	20	45	0.556	128	222	2.631	3.170	0.058	2.2	10	12
408807◊	14	12	7	20	45	0.573	153	256	2.631	3.170	0.058	2.3	10	12
412874	14	15	7	20	60	0.632	192	312	2.631	3.170	0.058	2.5	10	12

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	AWG	No.	strands	mil	mil	inch	lb / 1000ft	lb / 1000ft	Ω /1000ft	Ω /1000ft	Ω/1000ft	inch	Amp	Amp
412908◊	14	19	7	20	60	0.664	243	381	2.631	3.170	0.058	2.7	10	12
608729	14	20	7	20	60	0.697	256	401	2.631	3.170	0.058	2.8	10	12
552133◊	14	25	7	20	60	0.802	320	507	2.631	3.170	0.058	3.2	9	11
557553	14	30	7	20	60	0.875	384	620	2.631	3.170	0.058	3.5	9	11
552190◊	14	37	7	20	80	0.949	475	759	2.631	3.170	0.058	3.8	8	10
12 AWG														
408468◊	12	2	7	20	45	0.348	40	77	1.662	2.002	0.054	1.4	25	30
408526◊	12	3	7	20	45	0.369	61	108	1.662	2.002	0.054	1.5	25	30
408559◊	12	4	7	20	45	0.401	81	149	1.662	2.002	0.054	1.6	20	24
408583◊	12	5	7	20	45	0.438	101	183	1.662	2.002	0.054	1.8	20	24
408641◊	12	7	7	20	45	0.477	142	237	1.662	2.002	0.054	1.9	17	21
608737	12	6	7	20	45	0.481	122	189	1.662	2.002	0.054	1.9	20	24
TBA	12	8	7	20	60	0.546	182	268	1.662	2.002	0.054	2.2	17	21
408757◊	12	9	7	20	60	0.580	183	332	1.662	2.002	0.054	2.3	17	21
TBA	12	10	7	20	60	0.634	223	326	1.662	2.002	0.054	2.5	12	15
408815◊	12	12	7	20	60	0.657	244	425	1.662	2.002	0.054	2.6	12	15
412882	12	15	7	20	60	0.734	305	454	1.662	2.002	0.054	2.9	12	15
622420	12	16	7	20	60	0.738	325	478	1.662	2.002	0.054	3.0	12	15
412916	12	19	7	20	60	0.772	388	562	1.662	2.002	0.054	3.1	12	15
TBA	12	20	7	20	60	0.802	426	585	1.662	2.002	0.054	3.2	12	15
552166	12	25	7	20	80	0.943	509	761	1.662	2.002	0.054	3.8	11	13
TBA	12	30	7	20	80	0.982	630	879	1.662	2.002	0.054	3.9	11	13
552224	12	37	7	20	80	1.064	755	1084	1.662	2.002	0.054	5.3	10	12
10 AWG														
408492◊	10	2	7	25	45	0.420	64	115	1.040	1.253	0.050	1.7	35	40
408534◊	10	3	7	25	45	0.446	97	159	1.040	1.253	0.050	1.8	35	40
408567◊	10	4	7	25	45	0.505	129	207	1.040	1.253	0.050	2.0	28	32
408591◊	10	5	7	25	45	0.565	161	258	1.040	1.253	0.050	2.3	28	32
TBA	10	6	7	25	60	0.611	226	325	1.040	1.253	0.050	2.4	28	32
408658◊	10	7	7	25	60	0.615	226	381	1.040	1.253	0.050	2.5	24	28
TBA	10	8	7	25	60	0.662	290	406	1.040	1.253	0.050	2.6	24	28
408765◊	10	9	7	25	60	0.715	291	501	1.040	1.253	0.050	2.9	24	28
TBA	10	10	7	25	60	0.774	355	496	1.040	1.253	0.050	3.1	17	20
408823◊	10	12	7	25	60	0.806	388	652	1.040	1.253	0.050	3.2	17	20
601666	10	19	7	25	80	0.993	613	903	1.040	1.253	0.050	4.0	17	20
TBA	10	20	7	25	80	1.028	678	941	1.040	1.253	0.050	5.1	17	20
TBA	10	25	7	25	80	1.140	840	1149	1.040	1.253	0.050	5.7	15	18
TBA	10	30	7	25	80	1.207	1002	1349	1.040	1.253	0.050	6.0	15	18
TBA	10	37	7	25	80	1.303	1228	1631	1.040	1.253	0.050	6.5	14	16

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

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* Ampacities based upon 2023 NEC Table 310.16 and do not take into account the overcurrent protection limitations in NEC 240.4(D) of 15 Amps for 14 AWG CU, 20 Amps for 12 AWG CU, and 30 Amps for 10 AWG CU (independent of the conductor temperature rating and stranding if size is present in table). Also, see NEC sections 310.15 and 110.14(C) for additional requirements.
* Ampacities have been adjusted for more than Three Current-Carrying Conductors.