CU 600V PVC-Nylon Insulation PVC Jacket THHN/THWN. 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 Type THHN/THWN 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 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 cables. Type THHN or THWN for 14, 12, and 10 AWG cables. Types THHN or THWN 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)

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 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 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 Control, Thermocouple Extension, and Instrumentation Cables (applicable to sizes 20-9 AWG conductors)
- 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	Diameter Over Cond.	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	Jacket Color
	AWG	No.	strands	inch	mil	mil	inch	lb / 1000ft	lb / 1000ft	Ω /1000ft	Ω /1000ft	Ω/1000ft	inch	Amp	Amp	
18 AWG																
577879	18	2	7	0.046	15	45	0.268	10	36	6.669	8.277	0.036	1.1	-	14	BK
652188	18	3	7	0.046	15	45	0.28	15	46	6.669	8.277	0.036	1.1	-	14	BK
577878	18	4	7	0.046	15	45	0.306	20	55	6.669	8.277	0.036	1.2	-	11	BK
652191	18	5	7	0.046	15	45	0.336	25	66	6.669	8.277	0.036	1.3	-	11	BK
652194	18	6	7	0.046	15	45	0.361	30	76	6.669	8.277	0.036	1.4	-	11	BK
652197	18	8	7	0.046	15	45	0.388	40	94	6.669	8.277	0.036	1.6	-	10	BK
652200	18	10	7	0.046	15	45	0.441	50	142	6.669	8.277	0.036	1.8	-	7	BK
652203	18	12	7	0.046	15	45	0.458	61	156	6.669	8.277	0.036	1.8	-	7	BK
652215	18	16	7	0.046	15	45	0.512	80	202	6.669	8.277	0.036	2	-	7	BK
652209	18	19	7	0.046	15	65	0.564	96	241	6.669	8.277	0.036	2.3		7	BK
652212	18	24	7	0.046	15	65	0.659	121	322	6.669	8.277	0.036	2.6		6	BK
16 AWG																
604843◊	16	2	26	0.057	15	45	0.292	16	45	4.181	5.189	0.033	1.2	-	18	BK
604850◊	16	3	26	0.057	15	45	0.308	24	58	4.181	5.189	0.033	1.2	-	18	BK
604868◊	16	4	26	0.057	15	45	0.334	32	70	4.181	5.189	0.033	1.3	-	14	BK
604876◊	16	5	26	0.057	15	45	0.363	40	82	4.181	5.189	0.033	1.5	-	14	BK
TBA	16	6	7	0.057	20	45	0.387	56	99	4.181	5.189	0.033	1.5	-	14	BK
679257	16	6	26	0.057	15	45	0.393	48	97	4.181	5.189	0.033	1.6	-	14	BK
604892◊	16	7	26	0.057	15	45	0.393	56	108	4.181	5.189	0.033	1.6	-	13	BK
TBA	16	8	7	0.057	20	45	0.417	72	123	4.181	5.189	0.033	1.7	-	13	BK
604918◊	16	9	26	0.057	15	45	0.455	72	135	4.181	5.189	0.033	1.8	-	13	BK
TBA	16	10	7	0.057	20	45	0.484	88	150	4.181	5.189	0.033	1.9	-	9	BK
604942◊	16	12	26	0.057	15	45	0.51	96	175	4.181	5.189	0.033	2	-	9	BK
604975	16	15	26	0.057	15	60	0.596	120	227	4.181	5.189	0.033	2.4	-	9	BK
605014◊	16	19	26	0.057	15	60	0.625	152	275	4.181	5.189	0.033	2.5	-	9	BK
TBA	16	20	7	0.057	20	60	0.641	169	285	4.181	5.189	0.033	2.6	-	9	BK
605071	16	25	26	0.057	15	60	0.7	202	350	4.181	5.189	0.033	2.8	-	8	BK
605121	16	30	26	0.057	15	60	0.767	242	413	4.181	5.189	0.033	3.1	-	8	BK
605196◊	16	37	26	0.057	15	80	0.867	298	529	4.181	5.189	0.033	3.5	-	7	BK
14 AWG																
408484◊	14	2	7	0.071	15	45	0.318	26	59	2.631	3.265	0.058	1.3	20	25	BK
408518◊	14	3	7	0.071	15	45	0.334	38	77	2.631	3.265	0.058	1.3	20	25	BK
408542◊	14	4	7	0.071	15	45	0.365	51	98	2.631	3.265	0.058	1.5	16	20	BK
408575◊	14	5	7	0.071	15	45	0.395	64	114	2.631	3.265	0.058	1.6	16	20	BK
608836	14	6	7	0.071	15	45	0.433	77	135	2.631	3.265	0.058	1.7	16	20	BK
TBA	14	8	7	0.071	20	45	0.463	118	177	2.631	3.265	0.058	1.9	14	18	BK
408740◊	14	9	7	0.071	15	45	0.49	115	187	2.631	3.265	0.058	2	14	18	BK
605477	14	10	7	0.071	15	60	0.578	128	230	2.631	3.265	0.058	2.3	10	12	BK
408807◊	14	12	7	0.071	15	60	0.596	154	265	2.631	3.265	0.058	2.4	10	12	BK

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Stock Number	Cond. Size	Cond. Number	Cond. Strands	Diameter Over Cond.	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	Jacket Color
	AWG	No.	strands	inch	mil	mil	inch	lb / 1000ft	lb / 1000ft	Ω /1000ft	Ω /1000ft	Ω/1000ft	inch	Amp	Amp	
412874	14	15	7	0.071	15	60	0.658	192	323	2.631	3.265	0.058	2.6	10	12	BK
412908◊	14	19	7	0.071	15	60	0.691	244	396	2.631	3.265	0.058	2.8	10	12	BK
608729	14	20	7	0.071	15	60	0.726	257	417	2.631	3.265	0.058	2.9	10	12	BK
552133◊	14	25	7	0.071	15	60	0.804	320	508	2.631	3.265	0.058	3.2	9	11	BK
557553	14	30	7	0.071	15	80	0.882	384	619	2.631	3.265	0.058	3.5	9	11	BK
552190◊	14	37	7	0.071	15	80	0.959	475	761	2.631	3.265	0.058	3.8	8	10	BK
12 AWG																
408468◊	12	2	7	0.089	15	45	0.352	41	78	1.662	2.063	0.054	1.4	25	30	BK
408526◊	12	3	7	0.089	15	45	0.373	61	109	1.662	2.063	0.054	1.5	25	30	BK
408559◊	12	4	7	0.089	15	45	0.405	81	151	1.662	2.063	0.054	1.6	20	24	BK
408583◊	12	5	7	0.089	15	45	0.444	102	185	1.662	2.063	0.054	1.8	20	24	BK
408641◊	12	7	7	0.089	15	45	0.478	143	236	1.662	2.063	0.054	1.9	18	21	BK
608737	12	6	7	0.089	15	45	0.487	122	191	1.662	2.063	0.054	1.9	20	24	BK
TBA	12	8	7	0.089	20	60	0.553	181	264	1.662	2.063	0.054	2.2	18	21	BK
408757◊	12	9	7	0.089	15	60	0.58	183	329	1.662	2.063	0.054	2.3	18	21	BK
TBA	12	10	7	0.089	20	60	0.642	222	323	1.662	2.063	0.054	2.6	12	15	BK
408815◊	12	12	7	0.089	15	60	0.665	244	429	1.662	2.063	0.054	2.7	12	15	BK
412882	12	15	7	0.089	15	60	0.743	305	459	1.662	2.063	0.054	3	12	15	BK
622420	12	16	7	0.089	15	60	0.747	326	482	1.662	2.063	0.054	3	12	15	BK
412916	12	19	7	0.089	15	60	0.781	388	567	1.662	2.063	0.054	3.1	12	15	BK
TBA	12	20	7	0.089	20	60	0.811	424	581	1.662	2.063	0.054	3.2	12	15	BK
552166	12	25	7	0.089	15	80	0.954	509	768	1.662	2.063	0.054	3.8	11	14	BK
TBA	12	30	7	0.089	20	80	0.993	626	871	1.662	2.063	0.054	4	11	14	BK
552224	12	37	7	0.089	15	85	1.073	755	1092	1.662	2.063	0.054	5.4	10	12	BK
10 AWG																
408492◊	10	2	7	0.113	20	45	0.42	65	115	1.04	1.291	0.05	1.7	35	40	BK
408534◊	10	3	7	0.113	20	45	0.45	97	162	1.04	1.291	0.05	1.8	35	40	BK
408567◊	10	4	7	0.113	20	45	0.505	129	208	1.04	1.291	0.05	2	28	32	BK
408591◊	10	5	7	0.113	20	60	0.566	162	258	1.04	1.291	0.05	2.3	28	32	BK
TBA	10	6	7	0.113	25	60	0.615	225	321	1.04	1.291	0.05	2.5	28	32	BK
408658◊	10	7	7	0.113	20	60	0.615	227	381	1.04	1.291	0.05	2.5	24	28	BK
TBA	10	8	7	0.113	25	60	0.666	290	403	1.04	1.291	0.05	2.7	24	28	BK
408765◊	10	9	7	0.113	20	60	0.716	291	502	1.04	1.291	0.05	2.9	24	28	BK
TBA	10	10	7	0.113	25	60	0.778	355	492	1.04	1.291	0.05	3.1	18	20	BK
408823◊	10	12	7	0.113	20	60	0.806	388	653	1.04	1.291	0.05	3.2	18	20	BK
601666	10	19	7	0.113	20	80	0.993	613	904	1.04	1.291	0.05	4	18	20	BK
TBA	10	20	7	0.113	25	80	1.032	678	935	1.04	1.291	0.05	5.2	18	20	BK
TBA	10	25	7	0.113	25	80	1.144	840	1143	1.04	1.291	0.05	5.7	16	18	BK
TBA	10	30	7	0.113	25	80	1.211	1001	1344	1.04	1.291	0.05	6.1	16	18	BK
TBA	10	37	7	0.113	25	80	1.307	1227	1627	1.04	1.291	0.05	6.5	14	16	BK

All dimensions are nominal and subject to normal manufacturing tolerances

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◊ Cable marked with this symbol is a standard stock item

***** 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.

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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