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

Type TC-ER Control Cable 600Volt 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. 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

SAMPLE PRINT LEGEND:

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

Stock No: 408633

SOUTHWIRE{R} MASTER-DESIGN E75755 {UL} 14 AWG (2.08{mm2}) CU 7 CDRS TYPE TC-ER-JP THHN OR THWN CDRS 90{D}C JACKET SUNLIGHT RESISTANT DIRECT BURIAL 600 VOLTS {NOM}-ANCE

Table 1 – Physical and Electrical Data

Stock Number	Cond. Size	Cond. Number	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	DC Resistance @ 25°C	AC Resistance @ 75°C	Min Bending Radius	Allowable Ampacity At 60°C	Allowable Ampacity 75°C	Allowable Ampacity 90°C
	AWG	No.	mil	mil	inch	lb / 1000ft	Ω /1000ft	Ω /1000ft	inch	Amp	Amp	Amp
18 AWG												
577879	18	2	20	45	0.268	35	6.669	8.035	1.0	-	-	18
652188	18	3	20	45	0.280	45	6.669	8.035	1.1	-	-	18
577878	18	4	20	45	0.304	54	6.669	8.676	1.2	-	-	5
652191	18	5	20	45	0.336	66	6.669	8.035	1.3	-	-	14
652194	18	6	20	45	0.358	74	6.669	8.035	1.4	-	-	14
652197	18	8	20	45	0.385	93	6.669	8.035	1.5	-	-	12
652200	18	10	20	45	0.438	140	6.669	8.035	1.7	-	-	9
652203	18	12	20	45	0.454	155	6.669	8.035	1.8	-	-	9
652215	18	16	20	45	0.508	165	6.669	8.035	2.0	-	-	9
652209	18	19	20	60	0.560	205	6.669	8.035	2.2	-	-	9
652212	18	24	20	60	0.654	256	6.669	8.035	2.6	-	-	8
16 AWG												
604843◊	16	2	20	45	0.292	44	4.181	5.037	1.1	-	-	18
604850◊	16	3	20	45	0.308	58	4.181	5.037	1.2	-	-	18
604868◊	16	4	20	45	0.333	70	4.181	5.037	1.3	-	-	14
604876◊	16	5	20	45	0.362	82	4.181	5.037	1.4	-	-	14
TBA	16	6	20	45	0.390	92	4.181	5.037	1.5	-	-	14
604892◊	16	7	20	45	0.393	108	4.181	5.037	1.5	-	-	12
TBA	16	8	20	45	0.419	116	4.181	5.037	1.6	-	-	12
604918◊	16	9	20	45	0.454	135	4.181	5.037	1.8	-	-	12
TBA	16	10	20	45	0.486	143	4.181	5.037	1.9	-	-	9
604942◊	16	12	20	45	0.510	175	4.181	5.037	2.0	-	-	9
604975	16	15	20	60	0.595	227	4.181	5.037	2.3	-	-	9
605014◊	16	19	20	60	0.625	273	4.181	5.037	2.5	-	-	9
TBA	16	20	20	60	0.641	277	4.181	5.037	2.5	-	-	9
605071	16	25	20	60	0.700	350	4.181	5.037	2.8	-	-	8
605121	16	30	20	60	0.767	415	4.181	5.037	3.0	-	-	8
605196◊	16	37	20	60	0.867	529	4.181	5.037	3.4	-	-	7
14 AWG												
408484◊	14	2	20	45	0.305	56	2.631	3.170	1.2	15	20	25
408518◊	14	3	20	45	0.322	74	2.631	3.170	1.2	15	20	25
408542◊	14	4	20	45	0.351	94	2.631	3.170	1.4	12	16	20
408575◊	14	5	20	45	0.380	109	2.631	3.170	1.5	12	16	20
408633◊	14	7	20	45	0.412	146	2.631	3.170	1.6	10	14	17
608836	14	6	20	45	0.416	130	2.631	3.170	1.6	12	16	20
TBA	14	8	20	45	0.466	162	2.631	3.170	1.8	10	14	17
408740◊	14	9	20	45	0.490	189	2.631	3.170	1.9	10	14	17
605477	14	10	20	60	0.556	222	2.631	3.170	2.2	7	10	12
408807◊	14	12	20	60	0.573	256	2.631	3.170	2.2	7	10	12

Stock Number	Cond. Size	Cond. Number	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	DC Resistance @ 25°C	AC Resistance @ 75°C	Min Bending Radius	Allowable Ampacity At 60°C	Allowable Ampacity 75°C	Allowable Ampacity 90°C
	AWG	No.	mil	mil	inch	lb / 1000ft	Ω /1000ft	Ω /1000ft	inch	Amp	Amp	Amp
412874	14	15	20	60	0.632	312	2.631	3.170	2.5	7	10	12
412908◊	14	19	20	60	0.664	381	2.631	3.170	2.6	7	10	12
608729	14	20	20	60	0.697	401	2.631	3.170	2.7	7	10	12
552133◊	14	25	20	60	0.802	507	2.631	3.170	3.2	6	9	11
557553	14	30	20	80	0.817	597	2.631	3.170	3.2	6	9	11
552190◊	14	37	20	80	0.949	759	2.631	3.170	3.7	6	8	10
12 AWG												
408468◊	12	2	20	45	0.344	77	1.662	2.002	1.3	20	25	30
408526◊	12	3	20	45	0.364	107	1.662	2.002	1.4	20	25	30
408559◊	12	4	20	45	0.406	152	1.662	2.002	1.6	16	20	24
408583◊	12	5	20	45	0.433	178	1.662	2.002	1.7	16	20	24
408641◊	12	7	20	45	0.471	232	1.662	2.002	1.8	14	17	21
608737	12	6	20	45	0.475	187	1.662	2.002	1.9	16	20	24
TBA	12	8	20	45	0.525	232	1.662	2.002	2.1	14	17	21
408757◊	12	9	20	60	0.580	328	1.662	2.002	2.3	14	17	21
TBA	12	10	20	60	0.644	307	1.662	2.002	2.5	10	12	15
408815◊	12	12	20	60	0.649	414	1.662	2.002	2.5	10	12	15
622420	12	16	20	60	0.723	469	1.662	2.002	2.8	10	12	15
412882	12	15	20	60	0.725	454	1.662	2.002	2.9	10	12	15
412916	12	19	20	60	0.762	552	1.662	2.002	3.0	10	12	15
TBA	12	20	20	60	0.811	565	1.662	2.002	3.2	10	12	15
552166	12	25	20	80	0.943	757	1.662	2.002	3.7	9	11	13
TBA	12	30	20	80	0.992	860	1.662	2.002	3.9	9	11	13
552224	12	37	20	80	1.064	1084	1.662	2.002	5.3	8	10	12
10 AWG												
408492◊	10	2	25	45	0.408	113	1.040	1.253	1.6	30	35	40
408534◊	10	3	25	45	0.433	156	1.040	1.253	1.7	30	35	40
408567◊	10	4	25	45	0.505	204	1.040	1.253	2.0	24	28	32
408591◊	10	5	25	60	0.548	251	1.040	1.253	2.1	24	28	32
408658◊	10	7	25	60	0.597	368	1.040	1.253	2.3	21	24	28
TBA	10	6	25	60	0.621	293	1.040	1.253	2.4	24	28	32
TBA	10	8	25	60	0.671	375	1.040	1.253	2.6	21	24	28
408765◊	10	9	25	60	0.694	484	1.040	1.253	2.7	21	24	28
408823◊	10	12	25	60	0.781	629	1.040	1.253	3.1	15	17	20
TBA	10	10	25	60	0.784	464	1.040	1.253	3.1	15	17	20
601658	10	15	25	80	0.939	704	1.040	1.253	3.7	15	17	20
601666	10	19	25	80	0.963	881	1.040	1.253	3.8	15	17	20
TBA	10	20	25	80	1.037	909	1.040	1.253	5.1	15	17	20
TBA	10	25	25	80	1.150	1118	1.040	1.253	5.7	13	15	18
TBA	10	30	25	80	1.216	1318	1.040	1.253	6.0	13	15	18
TBA	10	37	25	80	1.313	1599	1.040	1.253	6.5	12	14	16

All dimensions are nominal and subject to normal manufacturing tolerances
◊ 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.