

Multi-Conductor CU 600V XLPE XHHW-2 CPE-TP Control Cable

Type TC-ER Control Cable 600Volt Copper Cross Linked Polyethylene (XLPE) Insulation XHHW-2 Thermoplastic Chlorinated Polyethylene (CPE-TP) Jacket, Control Cable Conductor Identification Method 1 Table 2



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** 7 strands class B compressed copper per ASTM B3 and ASTM B8
2. **Insulation:** Cross Linked Polyethylene (XLPE) XHHW-2, 30 Mils thick for all cable sizes
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:** Thermoplastic Chlorinated Polyethylene (CPE-TP) 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 90°C for normal operation in wet and dry locations, 130°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 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 44 Thermoset-Insulated Wires and Cables
- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 FT4 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 XX/C TYPE TC-ER XHHW-2 CDRS 90{D}C CPE JACKET SUN RES OIL RES II FT4/IEEE1202 600 VOLTS



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Table 1 – Physical and Electrical Data

Stock Number	Cond. Size	Cond. Number	Diameter Over Cond.	Insul. Thickness	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	DC Resistance @ 25°C	AC Resistance @ 90°C	Min Bending Radius	Allowable Ampacity At 60°C *	Allowable Ampacity 75°C *	Allowable Ampacity 90°C *
	AWG	No.	inch	mil	mil	inch	lb /1000ft	lb /1000ft	Ω /1000ft	Ω /1000ft	inch	Amp	Amp	Amp
14 AWG														
890674	14	2	0.070	30	45	0.349	26	69	2.630	3.288	1.4	15	15	15
890675	14	3	0.070	30	45	0.370	38	88	2.630	3.288	1.5	15	15	15
890676	14	4	0.070	30	45	0.403	51	109	2.630	3.288	1.6	14	15	15
890677	14	5	0.070	30	45	0.440	64	132	2.630	3.288	1.8	14	15	15
890678	14	7	0.070	30	45	0.479	90	171	2.630	3.288	1.9	12	15	15
890679	14	9	0.070	30	60	0.588	115	237	2.630	3.288	2.4	12	15	15
550407	14	12	0.070	30	60	0.659	154	303	2.630	3.288	2.6	9	11	12
TBA	14	15	0.070	30	60	0.730	192	371	2.630	3.288	2.9	9	11	12
890680	14	19	0.070	30	60	0.768	243	444	2.630	3.288	3.1	9	11	12
TBA	14	25	0.070	30	80	0.937	320	619	2.630	3.288	3.7	8	9	11
TBA	14	30	0.070	30	80	0.991	384	718	2.630	3.288	4.0	8	9	11
TBA	14	37	0.070	30	80	1.067	474	859	2.630	3.288	5.3	7	8	10
12 AWG														
550411	12	2	0.087	30	45	0.384	41	91	1.660	2.075	1.5	20	20	20
890681	12	3	0.087	30	45	0.408	61	118	1.660	2.075	1.6	20	20	20
890682	12	4	0.087	30	45	0.445	81	149	1.660	2.075	1.8	16	20	20
890683	12	5	0.087	30	45	0.487	102	181	1.660	2.075	1.9	16	20	20
550412	12	7	0.087	30	45	0.532	143	237	1.660	2.075	2.1	14	17	20
550413	12	9	0.087	30	60	0.651	183	325	1.660	2.075	2.6	14	17	20
890684	12	12	0.087	30	60	0.732	244	419	1.660	2.075	2.9	10	12	15
TBA	12	15	0.087	30	60	0.813	305	516	1.660	2.075	3.3	10	12	15
TBA	12	19	0.087	30	80	0.896	387	657	1.660	2.075	3.6	10	12	15
550416	12	25	0.087	30	80	1.043	509	859	1.660	2.075	5.2	9	11	13
TBA	12	30	0.087	30	80	1.104	611	1002	1.660	2.075	5.5	9	11	13
TBA	12	37	0.087	30	80	1.191	753	1205	1.660	2.075	6.0	8	10	12
10 AWG														
550419	10	2	0.111	30	45	0.431	65	125	1.040	1.300	1.7	30	30	30
890685	10	3	0.111	30	45	0.459	97	166	1.040	1.300	1.8	30	30	30
890686	10	4	0.111	30	45	0.502	130	210	1.040	1.300	2.0	24	28	30
550420	10	5	0.111	30	60	0.581	162	274	1.040	1.300	2.3	24	28	30
550421	10	7	0.111	30	60	0.632	227	359	1.040	1.300	2.5	21	24	28
890687	10	9	0.111	30	60	0.736	291	462	1.040	1.300	2.9	21	24	28
890688	10	12	0.111	30	60	0.830	389	600	1.040	1.300	3.3	15	17	20

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

† Ampacities are based on Table 310.16 of the NEC 2020 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts with not more than three current-carrying conductors in raceway, cable or direct buried based on ambient temperature of 30°C (86°F). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.



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