Multi-Conductor CU 600V EPR XHHW-2 CPE Control Cable

Type TC-ER Control Cable 600Volt Copper Conductors, Ethylene Propylene Rubber (EPR) Insulation XHHW-2 Chlorinated Polyethylene (CPE) Jacket, Control Cable Conductor Identification Method 1 Table 2. VW-1 Rated #14 - #10 AWG

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** 7 strands class B compressed tinned copper per ASTM B33 and ASTM B8
2. **Insulation:** Ethylene Propylene Rubber (EPR) XHHW-2, 30 Mils thick for all cable sizes. VW-1 Rated #14 - #10 AWG
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:** Chlorinated Polyethylene (CPE) 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. VW-1 Rated #14 - #10 AWG

SPECIFICATIONS:

- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- UL 44 Thermoset-Insulated Wires and Cables
- UL 44 VW-1 Vertical flame test on individual conductors
- 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:

SOUTHWIRE{R} XX AWG X/C EPR/CPE TYPE TC-ER E75755 MASTER-DESIGN {UL} 600V 90{D}C DRY/90{D}C WET OIL RES I SUNLIGHT RESISTANT DIRECT BURIAL FT4/IEEE 1202 {SEQUENTIAL FOOTAGE MARKS} SEQ FEET

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	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
16 AWG														
591931◊	16	2	0.056	30	45	0.323	16	55	4.180	5.226	1.3	10	10	10
591932	16	3	0.056	30	45	0.341	24	68	4.180	5.226	1.4	10	10	10
591933	16	4	0.056	30	45	0.371	32	84	4.180	5.226	1.5	10	10	10
591934	16	5	0.056	30	45	0.404	40	100	4.180	5.226	1.6	10	10	10
591935	16	7	0.056	30	45	0.439	56	128	4.180	5.226	1.8	9	10	10
591936	16	9	0.056	30	45	0.510	72	164	4.180	5.226	2.0	9	10	10
591937	16	12	0.056	30	60	0.604	97	228	4.180	5.226	2.4	6	7	9
591938	16	15	0.056	30	60	0.668	121	278	4.180	5.226	2.7	6	7	9
591939	16	19	0.056	30	60	0.702	153	329	4.180	5.226	2.8	6	7	9
14 AWG														
591944◊	14	2	0.070	30	45	0.349	26	69	2.630	3.288	1.4	15	15	15
591947◊	14	3	0.070	30	45	0.370	38	88	2.630	3.288	1.5	15	15	15
591948◊	14	4	0.070	30	45	0.403	51	109	2.630	3.288	1.6	14	15	15
591949◊	14	5	0.070	30	45	0.440	64	132	2.630	3.288	1.8	14	15	15
591950◊	14	7	0.070	30	45	0.479	90	171	2.630	3.288	1.9	12	15	15
591951◊	14	9	0.070	30	60	0.588	115	237	2.630	3.288	2.4	12	15	15
591952◊	14	12	0.070	30	60	0.659	154	303	2.630	3.288	2.6	9	11	12
591953◊	14	15	0.070	30	60	0.730	192	371	2.630	3.288	2.9	9	11	12
591954◊	14	19	0.070	30	60	0.768	243	444	2.630	3.288	3.1	9	11	12
591955	14	25	0.070	30	80	0.937	320	619	2.630	3.288	3.7	8	9	11
591956	14	30	0.070	30	80	0.991	384	718	2.630	3.288	4.0	8	9	11
591957	14	37	0.070	30	80	1.067	474	859	2.630	3.288	5.3	7	8	10
12 AWG														
591959	12	2	0.087	30	45	0.384	41	91	1.660	2.075	1.5	20	20	20
591960◊	12	3	0.087	30	45	0.408	61	118	1.660	2.075	1.6	20	20	20
591962◊	12	4	0.087	30	45	0.445	81	149	1.660	2.075	1.8	16	20	20
591963	12	5	0.087	30	45	0.487	102	181	1.660	2.075	1.9	16	20	20
591964◊	12	7	0.087	30	45	0.532	143	237	1.660	2.075	2.1	14	17	20
591965◊	12	9	0.087	30	60	0.651	183	325	1.660	2.075	2.6	14	17	20
591966◊	12	12	0.087	30	60	0.732	244	419	1.660	2.075	2.9	10	12	15
591967	12	15	0.087	30	60	0.813	305	516	1.660	2.075	3.3	10	12	15
591968	12	19	0.087	30	80	0.896	387	657	1.660	2.075	3.6	10	12	15
591969	12	25	0.087	30	80	1.043	509	859	1.660	2.075	5.2	9	11	13
591970	12	30	0.087	30	80	1.104	611	1002	1.660	2.075	5.5	9	11	13
591971	12	37	0.087	30	80	1.191	753	1205	1.660	2.075	6.0	8	10	12
10 AWG														
591973◊	10	2	0.111	30	45	0.431	65	125	1.040	1.300	1.7	30	30	30
591974◊	10	3	0.111	30	45	0.459	97	166	1.040	1.300	1.8	30	30	30
591976◊	10	4	0.111	30	45	0.502	130	210	1.040	1.300	2.0	24	28	30
591977◊	10	5	0.111	30	60	0.581	162	274	1.040	1.300	2.3	24	28	30

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	AWG	No.	inch	mil	mil	inch	lb /1000ft	lb /1000ft	Ω /1000ft	Ω /1000ft	inch	Amp	Amp	Amp
591978	10	7	0.111	30	60	0.632	227	359	1.040	1.300	2.5	21	24	28
591979	10	9	0.111	30	60	0.736	291	462	1.040	1.300	2.9	21	24	28
591980	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 310.15 (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)