

TCU 600V EPR Insulation Thermoplastic CPE-TP Jacket. XHHW-2

Type TC-ER Control Cable 600 Volt Tinned Copper Conductors, Ethylene Propylene Rubber (EPR) Insulation XHHW-2 Thermoplastic Chlorinated Polyethylene (CPE-TP) 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:

- Conductor:** 7 strands class B compressed tinned copper per ASTM B33 and ASTM B8
- Insulation:** Ethylene Propylene Rubber (EPR) XHHW-2, 30 Mils thick for all cable sizes. VW-1 Rated #14 - #10 AWG
- Filler:** Polypropylene filler on cables with 5 or less conductors
- Binder:** Polyester flat thread binder tape applied for cables with more than 5 conductors
- 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. 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} 14 AWG (2.08mm²) 3/C EPR/CPE TYPE TC-ER XHHW-2 CDRS E75755 MASTER-DESIGN (UL) 600V 90{D}C DRY/90{D}C WET OIL RES I SUNLIGHT RESISTANT DIRECT BURIAL FT4/IEEE 1202 -- NOM-ANCE EPR/CPE Tipo XHHW-2 SR FT4 600V 90{D}C USA



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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 @ 90°C	Min Bending Radius	Allowable Ampacity At 60°C *	Allowable Ampacity 75°C *	Allowable Ampacity 90°C *
	AWG	No.	strands	inch	mil	mil	inch	lb /1000ft	lb /1000ft	Ω /1000ft	Ω /1000ft	inch	Amp	Amp	Amp
16 AWG															
591931	16	2	7	0.056	30	45	0.332	16	52	4.181	5.037	1.3	0	0	18
591932	16	3	7	0.056	30	45	0.351	24	66	4.181	5.037	1.4	0	0	18
591933	16	4	7	0.056	30	45	0.382	32	82	4.181	5.037	1.5	0	0	14
591934	16	5	7	0.056	30	45	0.415	40	100	4.181	5.037	1.6	0	0	14
591935	16	7	7	0.056	30	45	0.451	56	128	4.181	5.037	1.8	0	0	12
591936	16	9	7	0.056	30	60	0.555	72	178	4.181	5.037	2.2	0	0	12
591937	16	12	7	0.056	30	60	0.618	96	225	4.181	5.037	2.4	0	0	9
591938	16	15	7	0.056	30	60	0.684	120	273	4.181	5.037	2.7	0	0	9
14 AWG															
591944	14	2	7	0.070	30	45	0.366	25	65	2.631	3.170	1.4	15	20	25
591947	14	3	7	0.070	30	45	0.388	37	86	2.631	3.170	1.5	15	20	25
591948	14	4	7	0.070	30	45	0.423	50	107	2.631	3.170	1.6	12	16	20
591949	14	5	7	0.070	30	45	0.461	62	129	2.631	3.170	1.8	12	16	20
591950	14	7	7	0.070	30	45	0.502	87	170	2.631	3.170	2.0	10	14	17
591953	14	15	7	0.070	30	60	0.560	187	413	2.631	3.170	2.2	7	10	12
591954	14	19	7	0.070	30	60	0.560	237	413	2.631	3.170	2.2	7	10	12
591951	14	9	7	0.070	30	60	0.616	112	232	2.631	3.170	2.4	10	14	17
591952	14	12	7	0.070	30	60	0.692	150	299	2.631	3.170	2.7	7	10	12
591955	14	25	7	0.070	30	80	0.949	313	597	2.631	3.170	3.7	6	9	11
591956	14	30	7	0.070	30	80	0.996	375	665	2.631	3.170	3.9	6	9	11
12 AWG															
591959	12	2	7	0.088	30	45	0.404	40	86	1.662	2.002	1.6	20	25	30
591960	12	3	7	0.088	30	45	0.466	61	116	1.662	2.002	1.8	20	25	30
591966	12	12	7	0.088	30	60	0.466	244	411	1.662	2.002	1.8	10	12	15
591962	12	4	7	0.088	30	45	0.469	81	147	1.662	2.002	1.8	16	20	24
591963	12	5	7	0.088	30	45	0.543	101	198	1.662	2.002	2.1	16	20	24
591964	12	7	7	0.088	30	60	0.589	142	253	1.662	2.002	2.3	14	17	21
591965	12	9	7	0.088	30	60	0.589	183	307	1.662	2.002	2.3	14	17	21
591967	12	15	7	0.088	30	80	0.864	305	538	1.662	2.002	3.4	10	12	15
591968	12	19	7	0.088	30	80	0.934	386	659	1.662	2.002	3.7	10	12	15
10 AWG															
591973	10	2	7	0.113	30	45	0.448	64	116	1.040	1.253	1.7	30	35	40
591974	10	3	7	0.113	30	45	0.476	97	160	1.040	1.253	1.9	30	35	40
591976	10	4	7	0.113	30	45	0.560	129	225	1.040	1.253	2.2	24	28	32
591977	10	5	7	0.113	30	60	0.602	161	267	1.040	1.253	2.4	24	28	32
591978	10	7	7	0.113	30	60	0.655	226	355	1.040	1.253	2.6	21	24	28
591979	10	9	7	0.113	30	60	0.765	291	450	1.040	1.253	3.0	21	24	28
591980	10	12	7	0.113	30	80	0.899	388	619	1.040	1.253	3.5	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.

