Multi-Conductor TCU 600V EPR XHHW-2 Thermoplastic CPE-TP Control Cable Color Method 1 Table 1

Type TC-ER Control Cable 600Volt Tinned Copper Conductors, Ethylene Propylene Rubber (EPR) Insulation XHHW-2 Thermoplastic Chlorinated Polyethylene (CPE-TP) Jacket, Control Cable Conductor Identification Method 1 Table 1. VW-1 rated

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
3. **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
- 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 1
- 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} XX AWG (X.XX{mm2}) XX/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

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														
TBA	14	2	0.070	30	45	0.349	26	69	2.630	3.288	1.4	15	15	15
599457	14	3	0.070	30	45	0.370	38	88	2.630	3.288	1.5	15	15	15
599458	14	4	0.070	30	45	0.403	51	109	2.630	3.288	1.6	14	15	15
599459	14	5	0.070	30	45	0.440	64	132	2.630	3.288	1.8	14	15	15
595479	14	7	0.070	30	45	0.479	90	171	2.630	3.288	1.9	12	15	15
599460	14	9	0.070	30	60	0.588	115	237	2.630	3.288	2.4	12	15	15
599461	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
595475	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														
595635	12	2	0.087	30	45	0.384	41	91	1.660	2.075	1.5	20	20	20
595472	12	3	0.087	30	45	0.408	61	118	1.660	2.075	1.6	20	20	20
595636	12	4	0.087	30	45	0.445	81	149	1.660	2.075	1.8	16	20	20
592111	12	5	0.087	30	45	0.487	102	181	1.660	2.075	1.9	16	20	20
TBA	12	7	0.087	30	45	0.532	143	237	1.660	2.075	2.1	14	17	20
596919	12	9	0.087	30	60	0.651	183	325	1.660	2.075	2.6	14	17	20
595477	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
TBA	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														
595632	10	2	0.111	30	45	0.431	65	125	1.040	1.300	1.7	30	30	30
595556	10	3	0.111	30	45	0.459	97	166	1.040	1.300	1.8	30	30	30
595633	10	4	0.111	30	60	0.556	130	223	1.040	1.300	2.0	24	28	30
TBA	10	5	0.111	30	60	0.581	162	274	1.040	1.300	2.3	24	28	30
TBA	10	7	0.111	30	60	0.632	227	359	1.040	1.300	2.5	21	24	28
TBA	10	9	0.111	30	60	0.736	291	462	1.040	1.300	2.9	21	24	28
645726	10	12	0.111	30	60	0.830	389	600	1.040	1.300	3.3	15	17	20
TBA	10	15	0.111	30	80	0.964	486	778	1.040	1.300	3.9	15	17	20
TBA	10	19	0.111	30	80	1.014	615	940	1.040	1.300	5.1	15	17	20
TBA	10	25	0.111	30	80	1.184	810	1233	1.040	1.300	5.9	13	15	18
TBA	10	30	0.111	30	80	1.254	971	1446	1.040	1.300	6.3	13	15	18
TBA	10	37	0.111	30	80	1.355	1198	1747	1.040	1.300	6.8	12	14	16

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.