

600V CU EPR PAIRS CPE POS Instrumentation

Type TC-ER Instrumentation Cable 600 Volt Tinned Copper Conductors EPR Insulated Single Pairs with Overall Shield POS. CPE Jacket Heat, Moisture, Oil and Sunlight Resistant. Rated for -30°C to 90°C



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class B stranded tinned copper per ASTM B3 and B33
- Insulation:** Flame-retardant Ethylene Propylene Rubber EPR Black/White alpha-numeric print alternate and inverted. 1-ONE, 2-TWO
- Twisted Pair:** Black/White pairs
- Binder:** Mylar binder
- Overall Drain Wire:** Tinned Copper sized two AWG sizes smaller than pair size. For #18 awg pair: Drain is 20 awg. For #16 awg pair: Drain is 18 awg.
- Overall Shielded:** 100% coverage aluminum/polyester foil shield with a drain wire as shown in step 5
- Rip Cord:** Rip cord under jacket for ease of removal
- Jacket:** Black sunlight, oil and moisture resistant thermoplastic Chlorinated Polyethylene CPE jacket

APPLICATIONS AND FEATURES:

Southwire's Instrumentation Cables Type TC-ER per UL 1277 are suitable for installations as outlined in NEC Article 336 for process control and instrumentation, control circuits for operation and interconnection of protective and signaling devices and for general use in manufacturing, industrial and commercial distribution systems. Cables are constructed with 7-strand tinned copper conductors insulated with Ethylene Propylene Rubber EPR. The paired conductors are colored black, white, and alpha-numeric printed. The overall assembly is covered with an aluminum polyester foil with 100% coverage and a tinned drain wire. The cable is suited for use in cable trays, raceways, conduit, aerial (when supported with a messenger) and direct burial. The cable is rated for -30°C to 90°C wet or dry and rated for Class I Div II hazardous locations, sun and oil resistant. The jacket is black Chlorinated Polyethylene CPE with a rip cord for easy removal. 1 Pair is not TC-ER Rated.

SPECIFICATIONS:

- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- UL 44 Thermoset-Insulated Wires and Cables
- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- ICEA S-73-532 Standard for Control, Thermocouple Extension and Instrumentation Cables
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- EPA 40 CFR, Part 26, Subpart C heavy metals per Table 1, TCLP method



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SAMPLE PRINT LEGEND:

SOUTHWIRE® XX AWG XX PAIRS EPR/CPE TYPE TC-ER E-FILE (UL) 600V 90°C WET/DRY SUN AND OIL RESI DIRECT BURIAL FT4/IEEE 1202 SEQUENTIAL MARKING

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Number of Pairs	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25° C
	AWG/ Kcmil	pair	mil	mil	inch	lb/1000ft	inch	Ω/1000ft
592128	18	1	30	45	0.322	68	2.576	6.66
TBA	18	2	30	45	0.496	83	3.968	6.66
TBA	18	4	30	60	0.606	146	4.848	6.66
677058	18	5	30	60	0.714	178	5.71	6.66
TBA	18	8	30	60	0.765	244	6.12	6.66
TBA	18	12	30	80	0.941	372	7.528	6.66
TBA	18	24	30	80	1.274	685	10.192	6.66
TBA	18	36	30	80	1.465	977	11.72	6.66
592115	16	1	30	45	0.332	58	2.656	4.18
TBA	16	2	30	60	0.474	119	3.792	4.18
TBA	16	4	30	60	0.589	182	4.712	4.18
TBA	16	8	30	80	0.857	347	6.856	4.18
TBA	16	12	30	80	1.004	479	8.032	4.18
TBA	16	16	30	80	1.153	636	9.224	4.18
TBA	16	24	30	80	1.403	944	11.224	4.18
TBA	16	36	30	80	1.587	1311	12.696	4.18

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

† 1 Pair is not TC-ER Rated.



Table 2 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Number of Pairs	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25° C
	AWG/ Kcmil	pair	mm	mm	mm	lb/km	mm	Ω/km
592128	18	1	0.76	1.14	8.18	101	65.43	21.85
TBA	18	2	0.76	1.14	12.60	124	100.79	21.85
TBA	18	4	0.76	1.52	15.39	217	123.14	21.85
677058	18	5	0.76	1.52	18.14	265	145.03	21.85
TBA	18	8	0.76	1.52	19.43	363	155.45	21.85
TBA	18	12	0.76	2.03	23.90	554	191.21	21.85
TBA	18	24	0.76	2.03	32.36	1019	258.88	21.85
TBA	18	36	0.76	2.03	37.21	1454	297.69	21.85
592115	16	1	0.76	1.14	8.43	86	67.46	13.71
TBA	16	2	0.76	1.52	12.04	177	96.32	13.71
TBA	16	4	0.76	1.52	14.96	271	119.68	13.71
TBA	16	8	0.76	2.03	21.77	516	174.14	13.71
TBA	16	12	0.76	2.03	25.50	713	204.01	13.71
TBA	16	16	0.76	2.03	29.29	946	234.29	13.71
TBA	16	24	0.76	2.03	35.64	1405	285.09	13.71
TBA	16	36	0.76	2.03	40.31	1951	322.48	13.71

Typical Electrical Specifications for Each Pair

Size	Capacitance	Inductance
AWG	µF/ft	µH/ft
18	40.66	0.0957
16	48.51	0.0895

