

## 600V INSTRUMENTATION TFFN/PVC PAIRS, SPOS, TYPE TC-ER

Type TC-ER Instrumentation Cable 600 Volt Copper Conductors PVC/Nylon Insulated Singles Shielded Pairs with Overall Shield SPOS. PVC Jacket Heat, Moisture, Oil and Sunlight Resistant RoHS rated for -30°C to 90°C

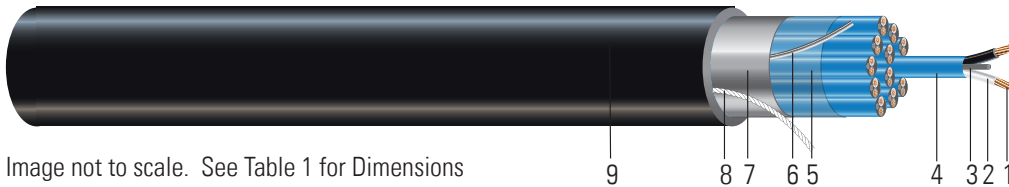


Image not to scale. See Table 1 for Dimensions

### CONSTRUCTION:

- Conductors:** Class B stranded bare copper per ASTM B-3 and B-8
- Insulation:** Premium Grade Polyvinyl Chloride (PVC) plus nylon. Black/White alpha-numeric print alternate and inverted. 1-ONE, 2-TWO
- Drain Wire:** Tinned Copper
- Twisted Shielded Pair:** 100% coverage aluminum/polyester foil shield with an individual drain wire shown in step 3
- Binder:** Mylar binder
- Overall Drain Wire:** Tinned Copper
- Overall Shielded:** 100% coverage aluminum/polyester foil shield with an individual drain wire as shown in step 8
- Rip Cord:** Rip cord under jacket for ease of removal
- Jacket:** Black sunlight, oil and moisture resistant Polyvinyl Chloride (PVC)

### 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 copper conductors insulated with nylon covered PVC. The paired conductors are colored black, white, and alpha-numeric printed. Each pair has an aluminum polyester foil with 100% coverage and a tinned drain wire. 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 and rated for Class I Div II hazardous locations, sun and oil resistant. The jacket is black PVC with a nylon rip cord for easy removal.

### SPECIFICATIONS:

- ASTM B8 - Concentric Lay-Standard Copper
- ASTM B33 - Tinned soft or Annealed Copper
- UL 83 Thermoplastic-Insulated Wires and Cables
- UL 1277 Electrical Power and Control Cable
- UL 66 - Fixture Wire Type TFFN (18 and 16 AWG)
- UL 1685 - Vertical-Tray Fire Propagation and Smoke-Release Test.
- IEEE 1202/FT4 - Flame Test 70,000 Btu/hr Vertical Tray
- EPA 40CFR.Part 261, Subpart C, Heavy Metals Per Table 1, TCLP Method

### SAMPLE PRINT LEGEND:

SOUTHWIRE® XXAWG SHIELDED XXPAIRS PVCN/PVC TYPE TC-ER TFFN E75755 (UL) 600V 90°C DRY OIL RES I SUNLIGHT RESISTANT DIRECT BURIAL -- SEQUENTIAL MARKING



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**Table 1 – Measurements and Electrical**

Stock Code	Cond Size AWG	No. of Pairs	Insulation Thickness		Jacket Thickness		Nominal OD (9)		Nominal Weight		DC Resistance		Min Bend Radius	
			mils	mm	mils	mm	Inches	mm	Lbs/MFT	kg/km	Ω/MFT	Ω/km	Inches	mm
562953	18	2	15	0.38	45	1.14	0.424	10.77	80	119	6.66	21.84	3.392	86.16
563027	18	4	15	0.38	45	1.14	0.488	12.4	126	188	6.66	21.84	3.904	99.16
563029	18	8	15	0.38	60	1.52	0.645	16.38	238	354	6.66	21.84	5.16	131.06
563032	18	12	15	0.38	80	2.03	0.758	19.25	332	494	6.66	21.84	6.064	154.03
559154	18	24	15	0.38	80	2.03	1.038	26.37	638	949	6.66	21.84	8.304	210.92
566952	18	36	15	0.38	80	2.03	1.176	29.87	902	1342	6.66	21.84	9.408	238.96
563035 <sup>o</sup>	16	2	15	0.38	45	1.14	0.466	11.84	115	171	4.18	13.71	3.728	94.69
563037 <sup>o</sup>	16	4	15	0.38	62	1.57	0.569	14.45	196	292	4.18	13.71	4.552	115.62
579042	16	6	15	0.38	62	1.57	0.66	16.76	331	493	4.18	13.71	5.28	134.11
563039 <sup>o</sup>	16	8	15	0.38	62	1.57	0.714	18.14	400	595	4.18	13.71	5.712	145.08
563041 <sup>o</sup>	16	12	15	0.38	82	2.08	0.891	22.63	507	754	4.18	13.71	7.128	181.05
582633 <sup>o</sup>	16	16	15	0.38	82	2.08	1.07	27.18	700	1042	4.18	13.71	8.56	217.42
559145 <sup>o</sup>	16	24	15	0.38	82	2.08	1.166	29.62	901	1341	4.18	13.71	9.328	236.93
566949 <sup>o</sup>	16	36	15	0.38	82	2.08	1.324	33.63	1278	1902	4.18	13.71	10.592	269.04

All dimensions are nominal and subject to normal manufacturing tolerances

Typical Electrical Specifications for Each Pair		
Size	Capacitance	Inductance
18 AWG	40.66 pF/ft.	0.0957 μ Henry/ft.
16 AWG	48.51 pF/ft.	0.0895 μ Henry/ft.

