600V CU PVC TFN PAIRS PVC SPOS Instrumentation

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:

1. **Conductor:** Class B stranded bare copper per ASTM B3 and B8
2. **Insulation:** Premium Grade Polyvinyl Chloride (PVC) plus nylon. Black/White alpha-numeric print alternate and inverted. 1-ONE, 2-TWO
3. **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.
4. **Twisted Shielded Pair:** 100% coverage aluminum/polyester foil shield with an individual drain wire shown in step 3
5. **Binder:** Mylar binder
6. **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.
7. **Overall Shielded:** 100% coverage aluminum/polyester foil shield with a drain wire as shown in step 6
8. **Rip Cord:** Rip cord under jacket for ease of removal
9. **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 B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 66 Fixture Wire Type TFN
- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test

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- EPA 40 CFR, Part 26, Subpart C heavy metals per Table 1, TCLP method

SAMPLE PRINT LEGEND:

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

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Number of Pairs	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25°C
	AWG/ Kcmil	pair	inch	mil	mil	inch	lb/1000ft	inch	Ω/1000ft
563039◊	16	8	0.056	15	60	0.720	315	4.3	4.181

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item

Table 2 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Number of Pairs	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25°C
	AWG/ Kcmil	pair	inch	mm	mm	mm	lb/km	mm	Ω/km
563039◊	16	8	0.056	0.38	1.52	18.29	469	109.22	13.72

Typical Electrical Specifications for Each Pair

Size	Capacitance	Inductance
18	40.66	0.0957
16	48.51	0.0895