600V CU PVC TFN TRIADS PVC TOS Instrumentation

Type TC-ER Instrumentation Cable 600 Volt Copper Conductors PVC/Nylon Insulated Singles Overall Shield TOS. PVC Jacket Heat, Moisture, Oil and Sunlight Resistant RoHS rated for -25°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/Red alpha-numeric print alternate and inverted. 1-ONE, 2-TWO.
3. **Overall Drain Wire:** Tinned Copper. Sized two AWG sizes smaller than triad size. For #18 AWG triad: Drain is 20 AWG. For #16 AWG triad: Drain is 18 AWG.
4. **Binder:** Mylar binder
5. **Overall Shielded:** 100% coverage aluminum/polyester foil shield with a drain wire sized two AWG sizes smaller than triad size. For #18 AWG triad: Drain is 20 AWG. For #16 AWG triad: Drain is 18 AWG.
6. **Rip Cord:** Rip cord under jacket for ease of removal
7. **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 triad conductors are colored black, white, red 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 -25°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 ripcord 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
- 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 TRIADS PVC/PVC TYPE TC-ER E75755 (UL) 90°C SUN AND OIL RES SEQUENTIAL MARKING

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Number of Triads	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25°C
	AWG/ Kcmil	triad	inch	mil	mil	inch	lb/1000ft	inch	Ω/1000ft
562952	18	1	0.045	15	45	0.286	48	1.7	6.669

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

Table 2 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Number of Triads	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25°C
	AWG/ Kcmil	triad	inch	mm	mm	mm	lb/km	mm	Ω/km
562952	18	1	0.045	0.38	1.14	7.26	71	43.18	21.88

Typical Electrical Specifications for Each Triad

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

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