# CU 600V PVC-Nylon Insulation PVC Jacket THHN/THWN-2 Shielded. CT Rated - Sunlight Resistant - For Direct Burial - Silicone Free

Type TC-ER, PLTC, FPL, and NFPL Control Cable 600 Volt Copper Conductors, Polyvinyl Chloride (PVC) with nylon layer Insulation THHN/THWN Polyvinyl Chloride (PVC) Jacket, Shielded Control Cable Conductor Identification Method 1 Table 2




Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** 7 strands class B compressed bare copper per ASTM B3 and ASTM B8
2. **Insulation:** Polyvinyl Chloride (PVC) with nylon layer Type THHN/THWN
3. **Drain Wire:** Tinned copper
4. **Shielding:** 100% coverage aluminum foil
5. **Jacket:** Polyvinyl Chloride (PVC) Jacket

## APPLICATIONS AND FEATURES:

Southwire's Type TC-ER, PLTC, FPL, and NFPL Control Cable 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 in dry locations and 75°C in wet locations, 105°C for emergency overload, and 150°C for short circuit conditions. For uses in Class I, II, and III per NEC Article 725 and 760. Constructions with 3 or more conductors are listed for exposed runs (TC-ER) per NEC 336.10. Oil and sunlight resistant.

## SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 13 Power-Limited Circuit Cables
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 1277 TC-ER
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- 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
- EPA 40 CFR, Part 26, Subpart C heavy metals per Table 1, TCLP method

## SAMPLE PRINT LEGEND:

{SQFTG} SOUTHWIRE® XX AWG (X.XX{mm2}) 4/C SHIELDED PVCN/PVC TYPE TC-ER THHN/THWN E75755 {UL} 600V 90°C DRY/75°C WET OIL RES I SUNLIGHT RESISTANT DIRECT BURIAL -- PLTC SUN RES --- FPL SUN RES --- NPLF SUN RES {NOM}-ANCE



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UPDATED: Jan. 24, 2024, 6:09 p.m.UTC REVISION: 1.000.005

## Table 1 – Physical and Electrical Data

| Stock Number | Cond. Size | Cond. Number | Cond. Strands | Insul. Thickness | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight | DC Resistance @ 25°C | AC Resistance @ 75°C | Inductive Rectance | Min Bending Radius | Allowable Ampacity 75°C | Allowable Ampacity 90°C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AWG | No. | strands | mil | mil | inch | lb / 1000ft | lb / 1000ft | Ω /1000ft | Ω /1000ft | Ω/1000ft | inch | Amp | Amp |
| 14 AWG | | | | | | | | | | | | | | |
| 581276 | 14 | 2 | 7 | 15 | 45 | 0.323 | 33 | 66 | 2.631 | 3.170 | 0.058 | 1.3 | 20 | 25 |
| TBA | 14 | 3 | 7 | 20 | 45 | 0.334 | 51 | 111 | 2.631 | 3.170 | 0.058 | 1.3 | 20 | 25 |
| TBA | 14 | 4 | 7 | 20 | 45 | 0.362 | 64 | 128 | 2.631 | 3.170 | 0.058 | 1.4 | 16 | 20 |
| TBA | 14 | 5 | 7 | 20 | 45 | 0.393 | 76 | 148 | 2.631 | 3.170 | 0.058 | 1.6 | 16 | 20 |
| TBA | 14 | 7 | 7 | 20 | 45 | 0.426 | 102 | 186 | 2.631 | 3.170 | 0.058 | 1.7 | 14 | 17 |
| TBA | 14 | 9 | 7 | 20 | 45 | 0.493 | 128 | 230 | 2.631 | 3.170 | 0.058 | 2.0 | 14 | 17 |
| TBA | 14 | 12 | 7 | 20 | 60 | 0.584 | 166 | 303 | 2.631 | 3.170 | 0.058 | 2.3 | 10 | 12 |
| TBA | 14 | 19 | 7 | 20 | 60 | 0.676 | 256 | 433 | 2.631 | 3.170 | 0.058 | 2.7 | 10 | 12 |
| TBA | 14 | 24 | 7 | 20 | 60 | 0.786 | 320 | 535 | 2.631 | 3.170 | 0.058 | 3.1 | 9 | 11 |
| 12 AWG | | | | | | | | | | | | | | |
| TBA | 12 | 2 | 7 | 20 | 45 | 0.352 | 60 | 122 | 1.662 | 2.002 | 0.054 | 1.4 | 25 | 30 |
| TBA | 12 | 3 | 7 | 20 | 45 | 0.372 | 81 | 150 | 1.662 | 2.002 | 0.054 | 1.5 | 25 | 30 |
| 581600 | 12 | 4 | 7 | 15 | 45 | 0.422 | 93 | 148 | 1.662 | 2.002 | 0.054 | 1.7 | 20 | 24 |
| TBA | 12 | 5 | 7 | 20 | 45 | 0.442 | 121 | 204 | 1.662 | 2.002 | 0.054 | 1.8 | 20 | 24 |
| TBA | 12 | 7 | 7 | 20 | 45 | 0.480 | 162 | 260 | 1.662 | 2.002 | 0.054 | 1.9 | 17 | 21 |
| 581565 | 12 | 12 | 7 | 15 | 60 | 0.686 | 256 | 389 | 1.662 | 2.002 | 0.054 | 2.7 | 12 | 15 |
| 10 AWG | | | | | | | | | | | | | | |
| TBA | 10 | 2 | 7 | 25 | 45 | 0.422 | 96 | 178 | 1.040 | 1.253 | 0.050 | 1.7 | 35 | 40 |
| TBA | 10 | 3 | 7 | 25 | 45 | 0.448 | 129 | 220 | 1.040 | 1.253 | 0.050 | 1.8 | 35 | 40 |
| 646394 | 10 | 4 | 7 | 20 | 45 | 0.504 | 149 | 224 | 1.040 | 1.253 | 0.050 | 2.0 | 28 | 32 |
| 581567 | 10 | 5 | 7 | 20 | 45 | 0.588 | 182 | 288 | 1.040 | 1.253 | 0.050 | 2.4 | 28 | 32 |
| TBA | 10 | 7 | 7 | 25 | 60 | 0.615 | 258 | 407 | 1.040 | 1.253 | 0.050 | 2.5 | 24 | 28 |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

* Ampacities based upon 2023 NEC Table 310.16 and do not take into account the overcurrent protection limitations in NEC 240.4(D) of 15 Amps for 14 AWG CU, 20 Amps for 12 AWG CU, and 30 Amps for 10 AWG CU (independent of the conductor temperature rating and stranding if size is present in table). Also, see NEC sections 310.15 and 110.14(C) for additional requirements.

* Ampacities have been adjusted for more than Three Current-Carrying Conductors.