

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

Type TC-ER Power Cable 600Volt Four Conductor Aluminum, Polyvinyl Chloride (PVC) with nylon layer insulation THHN  
Polyvinyl Chloride (PVC) Jacket with 1 Bare AL Ground



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

- Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Insulation:** Polyvinyl Chloride (PVC) with nylon layer Type THHN/THWN
- Grounding Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Filler:** Paper filler (cable size 8 & 6 uses Polypropylene filler)
- Binder:** Polyester flat thread binder tape for cable sizes larger than 2 AWG
- Overall Jacket:** Polyvinyl Chloride (PVC) Jacket

## APPLICATIONS AND FEATURES:

Southwire's 600 Volt Type TC-ER power cables 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 75°C in wet locations and 90°C in dry locations, 105°C for emergency overload, and 250°C for short circuit conditions. For uses in Class I, II, and III, Division 2 hazardous locations per NEC Article 501 and 502. Constructions with 3 or more conductors are listed for exposed runs (TC-ER) per NEC 336.10.

## SPECIFICATIONS:

- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 44 Thermoset-Insulated Wires and Cables
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-58-679 Control Cable Conductor Identification Method 3 (1-BLACK, 2-RED, 3-BLUE)
- ICEA S-58-679 Control Cable Conductor Identification Method 4
- ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy

## SAMPLE PRINT LEGEND:

{SQFTG} SOUTHWIRE® {UL} 3/0 AWG AL 4 CDRS TYPE TC-ER THHN OR THWN-2 CDRS AL GW 1 X 4 AWG 90°C JACKET  
SUNLIGHT RESISTANT DIRECT BURIAL 600 VOLTS {YYYY}



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Table 1 – Weights and Measurements

| Stock Number | Cond. Size | Cond. Number | Strand Count   | Diameter Over Conductor | Insul. Thickness | Ground    | Jacket Thickness | Approx. OD | Aluminum Weight | Approx. Weight |
|--------------|------------|--------------|----------------|-------------------------|------------------|-----------|------------------|------------|-----------------|----------------|
|              | AWG/Kcmil  |              | No. of Strands | inch                    | mil              | No. x AWG | mil              | inch       | lb/1000ft       | lb/1000ft      |
| TBA          | 8          | 4            | 7              | 0.134                   | 35               | 1 x 8     | 60               | 0.616      | 77              | 182            |
| TBA          | 6          | 4            | 7              | 0.169                   | 35               | 1 x 8     | 60               | 0.700      | 114             | 237            |
| TBA          | 4          | 4            | 7              | 0.212                   | 50               | 1 x 6     | 80               | 0.917      | 182             | 400            |
| TBA          | 2          | 4            | 7              | 0.268                   | 50               | 1 x 6     | 80               | 1.053      | 276             | 534            |
| TBA          | 1          | 4            | 19             | 0.298                   | 60               | 1 x 4     | 80               | 1.174      | 356             | 670            |
| TBA          | 1/0        | 4            | 19             | 0.336                   | 60               | 1 x 4     | 80               | 1.266      | 439             | 783            |
| 675633       | 2/0        | 4            | 12             | 0.376                   | 50               | 1 x 4     | 80               | 1.342      | 546             | 1064           |
| 675635       | 3/0        | 4            | 15             | 0.422                   | 50               | 1 x 4     | 80               | 1.456      | 678             | 1236           |
| TBA          | 4/0        | 4            | 19             | 0.474                   | 60               | 1 x 2     | 80               | 1.599      | 864             | 1314           |
| TBA          | 250        | 4            | 37             | 0.520                   | 70               | 1 x 2     | 110              | 1.819      | 1009            | 1651           |
| 599228       | 300        | 4            | 21             | 0.569                   | 60               | 1 x 4     | 110              | 1.924      | 1141            | 2113           |
| TBA          | 350        | 4            | 37             | 0.615                   | 70               | 1 x 2     | 110              | 2.049      | 1388            | 2124           |
| 668451       | 500        | 4            | 34             | 0.735                   | 60               | 1 x 1     | 115              | 2.351      | 1982            | 3123           |
| 597539       | 500        | 4            | 35             | 0.735                   | 60               | 1 x 2/0   | 110              | 2.415      | 2029            | 3177           |
| 673261       | 600        | 4            | 35             | 0.813                   | 80               | 1 x 3/0   | 110              | 2.545      | 2029            | 3717           |
| TBA          | 750        | 4            | 61             | 0.908                   | 80               | 1 x 1/0   | 140              | 2.867      | 2946            | 4218           |
| 597540       | 750        | 4            | 58             | 0.908                   | 70               | 1 x 3/0   | 140              | 2.925      | 3014            | 4687           |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Strand count meets minimum number per ASTM



Table 2 – Electrical and Engineering Data

| Stock Number | Cond. Size | Cond. Number | Min Bending Radius | Max Pull Tension | DC Resistance @ 25°C | AC Resistance @ 75°C | Inductive Reactance @ 60Hz | Allowable Ampacity At 60°C | Allowable Ampacity At 75°C | Allowable Ampacity At 90°C |
|--------------|------------|--------------|--------------------|------------------|----------------------|----------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|              | AWG/Kcmil  |              | inch               | lb               | Ω/1000ft             | Ω/1000ft             | Ω/1000ft                   | Amp                        | Amp                        | Amp                        |
| TBA          | 8          | 4            | 2.5                | 316              | 1.072                | 1.290                | 0.052                      | 28                         | 32                         | 36                         |
| TBA          | 6          | 4            | 2.8                | 503              | 0.674                | 0.812                | 0.051                      | 32                         | 40                         | 44                         |
| TBA          | 4          | 4            | 3.7                | 801              | 0.424                | 0.510                | 0.048                      | 44                         | 52                         | 60                         |
| TBA          | 2          | 4            | 5.3                | 1274             | 0.267                | 0.321                | 0.045                      | 60                         | 72                         | 80                         |
| TBA          | 1          | 4            | 5.9                | 1606             | 0.211                | 0.254                | 0.046                      | 68                         | 80                         | 92                         |
| TBA          | 1/0        | 4            | 6.3                | 2027             | 0.168                | 0.201                | 0.044                      | 80                         | 96                         | 108                        |
| 675633       | 2/0        | 4            | 6.7                | 2555             | 0.133                | 0.160                | 0.043                      | 92                         | 108                        | 120                        |
| 675635       | 3/0        | 4            | 7.3                | 3221             | 0.105                | 0.126                | 0.042                      | 104                        | 124                        | 140                        |
| TBA          | 4/0        | 4            | 8.0                | 4062             | 0.084                | 0.100                | 0.041                      | 120                        | 144                        | 164                        |
| TBA          | 250        | 4            | 9.1                | 4800             | 0.071                | 0.086                | 0.041                      | 136                        | 164                        | 184                        |
| 599228       | 300        | 4            | 9.6                | 5760             | 0.059                | 0.071                | 0.041                      | 156                        | 184                        | 208                        |
| TBA          | 350        | 4            | 12.3               | 6720             | 0.050                | 0.062                | 0.040                      | 168                        | 200                        | 224                        |
| 668451       | 500        | 4            | 14.1               | 9600             | 0.035                | 0.044                | 0.039                      | 208                        | 248                        | 280                        |
| 597539       | 500        | 4            | 14.5               | 9600             | 0.035                | 0.044                | 0.039                      | 208                        | 248                        | 280                        |
| 673261       | 600        | 4            | 15.7               | 14400            | 0.029                | 0.037                | 0.039                      | 228                        | 272                        | 308                        |
| TBA          | 750        | 4            | 17.2               | 18000            | 0.024                | 0.031                | 0.038                      | 256                        | 308                        | 348                        |
| 597540       | 750        | 4            | 17.6               | 18000            | 0.024                | 0.031                | 0.038                      | 256                        | 308                        | 348                        |

\* Ampacities based upon 2023 NEC Table 310.16. See NEC sections 310.15 and 110.14(C) for additional requirements.

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

