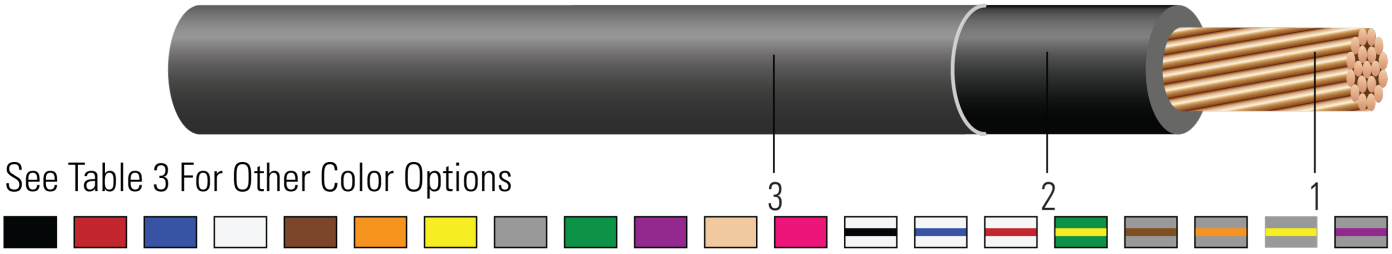
# SIMpull® THHN/THWN-2 Copper

600 Volts Copper Conductor PVC Insulation/Nylon Sheath THHN/THWN-2. Heat, Moisture, Gasoline and Oil Resistant II. SIMpull® Technology for Easier Pulling.




See Table 3 For Other Color Options

Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Sizes 8 - 3/0 AWG use a stranded combination-unilay soft drawn annealed bare copper per ASTM B3 and B787. Sizes 4/0 AWG and larger use a stranded compressed annealed bare copper per ASTM B3 and B8.
2. **Insulation:** Heat and moisture resistant Polyvinyl Chloride (PVC)
3. **Sheath:** Nylon jacket utilizing SIMpull® Technology

## APPLICATIONS AND FEATURES:

Southwire SIMpull® THHN/THWN-2 copper conductors are primarily used in conduit and cable trays for services, feeders, and branch circuits in commercial or industrial applications as specified in the National Electrical Code® and other applicable codes and standards. Voltage for all applications is 600 volts. SIMpull® THHN/THWN-2 copper conductors are designed to be installed without the application of a pulling lubricant. These conductors have multiple ratings depending upon the product application.

### Allowable temperatures are as follows:

- THHN or T90 Nylon- Dry locations not to exceed 90°C
- THWN-2: Wet locations not to exceed 90° C
- TWN75- Wet locations not to exceed 75°C
- MTW- Wet locations or when exposed to oil at temperatures not to exceed 60°C or dry locations not to exceed 90°C (with ampacity limited to that for 75°C conductor temperature per NFPA 79)
- AWM- Dry locations not to exceed 105°C only when rated and used as appliance wiring material

### Features

- Easier pulling with SIMpull NoLube® wire jacket.
- Stationary package design to further reduce pulling tension.
- Designed to help lower potential for lifting/handling/pulling injuries.
- Patented parallel construction to reduce material handling and setup.
- Avoid broken spools and spool over-turn.

## SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors


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- ASTM B787 19 Wire Combination Unilay-Stranded Copper Conductors
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 758 Standard for Appliance Wiring Material
- UL 1063 Machine Tool Wiring (MTW)
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- CSA C22.2 No. 75 Thermoplastic Insulated Wires and Cables
- ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy
- Federal Specification A-A-59544
- NMX-J-010-ANCE Thermoplastic insulated wires and cables
- NOM-063-SCFI Electrical Products – Conductors – Safety Requirements
- NEMA 70901-2-2024 Make It American Compliance with Domestic Preference Requirements Pt. 2 Wire & Cable
- NFPA 70®, National Electrical Code® (NEC®)

## SAMPLE PRINT LEGEND:

SOUTHWIRE SIMpull™ E23919 (UL) (XX AWG OR KCMIL) X,XXmm2 CU TYPE THWN-2 OR THHN 600 VOLTS GR II PR II VW-1 OR AWM --- c(UL) T90 NYLON OR TWN75 600 VOLTS FT1 NOM-ANCE 90°C --- RoHS PAT www.patentSW.com

## Table 1 – Weights and Measurements

| Cond. Size | Cond. Number | Strand Count | Diameter Over Conductor | Insul. Thickness | Insulation Color | Dia. Over Insulation | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| AWG/ Kcmil | | No. of Strands | inch | mil | | inch | mil | inch | lb/1000ft | lb/1000ft |
| 400 | 1 | 37 | 0.706 | 62 | GY | 0.83 | 9 | 0.827 | 1235 | 1341 |

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

## Table 2 – Electrical and Engineering Data

| Cond. Size | Cond. Number | Min Bending Radius | Max Pull Tension | DC Resistance @ 25°C | AC Resistance @ 75°C | Inductive Reactance @ 60Hz | Allowable Ampacity At 75°C | Allowable Ampacity At 90°C |
|---|---|---|---|---|---|---|---|---|
| AWG/ Kcmil | | inch | lb | Ω/1000ft | Ω/1000ft | Ω/1000ft | Amp | Amp |
| 400 | 1 | 3.3 | 3200 | 0.027 | 0.035 | 0.04 | 335 | 380 |

**Notes:**
**1)** 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.
**2)** Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center
**3)** There is no need to look up the minimum bending radius value on this spec sheet if you purchase Southwire's Patent Pending Re3™ Minimum Bend Radius Device: SPEC 11123


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## Table 3 - Stock Code Colors

| Size (Strand) | Black | Red | Blue | White | Brown | Orange | Yellow | Gray | Green | Purple |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 (19) | 204883 | 204909 | 204917 | 204891 | 238477 | 238493 | 238485 | 238501 | 204925 | 256586 |
| 6 (19) | 204933 | 204958 | 204966 | 204941 | 260695 | 260679 | 260687 | 254649 | 204974 | 485607 |
| 4 (19) | 204990 | 204982 | 205633 | 205005 | 411702 | 411710 | 411694 | 611778 | 251728 | 552486 |
| 3 (19) | 243469 | 243485 | 372763 | 243477 | 551078 | 551079 | 551080 | 551081 | 601971 | 552533 |
| 2 (19) | 205021 | 205013 | 315812 | 205039 | 610169 | 610171 | 420653 | 610172 | 295832 | 552534 |
| 1 (19) | 205047 | 344598 | 481945 | 344580 | 550890 | 550888 | 550887 | 550891 | 400192 | 552488 |
| 1/0 (19) | 205054 | 558773 | 558774 | 558771 | 558778 | 558779 | 558777 | 558781 | 556315 | 551539 |
| 2/0 (19) | 205062 | 556113 | 556114 | 556111 | 556119 | 556117 | 556116 | 558784 | 556115 | 552535 |
| 3/0 (19) | 205070 | 556121 | 556122 | 556120 | 556127 | 556125 | 556124 | 556698 | 556123 | 551541 |
| 4/0 (19) | 205088 | 556129 | 556130 | 556128 | 556135 | 556133 | 556132 | 556697 | 556131 | 551540 |
| 250 (37) | 205096 | 556137 | 556138 | 556136 | 556143 | 556141 | 556140 | 556552 | 556139 | 551025 |
| 300 (37) | 205104 | 556145 | 556146 | 556144 | 556150 | 556149 | 556148 | 556551 | 556147 | 551026 |
| 350 (37) | 205112 | 556152 | 556153 | 556151 | 556157 | 556156 | 556155 | 556707 | 556154 | 551027 |
| 400 (37) | 205120 | 556160 | 556161 | 556158 | 556165 | 556164 | 556163 | 556550 | 556162 | 551029 |
| 500 (37) | 205138 | 556168 | 556169 | 556166 | 556173 | 556172 | 556171 | 556549 | 556170 | 551599 |
| 600 (61) | 321471 | 556176 | 556177 | 556174 | 556181 | 556180 | 556179 | 558859 | 556178 | 552485 |
| 750 (61) | 320994 | 564946 | 564944 | 564945 | 550909 | 550908 | 550907 | 550910 | 551700 | 552536 |
| 1000 (61) | 289710 | | | | 552644 | 552645 | 552647 | 564234 | | |

## Table 4 - Stock Code Colors ( / means stripe. Blue/White: Blue with White Stripe)

| Size (Strand) | Pink | Tan | White/Red | Gray/Purple | Gray/Orange | Gray/Yellow | Gray/Brown | Green/Yellow | White/Blue | White/Black |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 (19) | 570785 | 597981 | | | | | | | | |
| 6 (19) | 578288 | 578287 | | | | | | | | |
| 4 (19) | 597980 | 597979 | | | | | | | | |
| 3 (19) | 597978 | 597977 | | | | | | 679383 | | |
| 2 (19) | 458399 | | | | | | | | | |
| 1 (19) | 578284 | 578285 | | | | | | 679438 | | |
| 1/0 (19) | 597975 | 597976 | | 678121 | | | | | | |
| 2/0 (19) | 647637 | 647638 | | 674310 | | | | | | |
| 3/0 (19) | 679272 | 679273 | | 677828 | | | | 679380 | | |
| 4/0 (19) | 551059 | 568845 | | | | | | 679379 | | |
| 250 (37) | 592681 | 592682 | | 678119 | | | | 646952 | | |
| 300 (37) | 578109 | 578110 | | | | | | | | |
| 350 (37) | 586062 | 586063 | | 678120 | | | | 679458 | | |
| 400 (37) | 581797 | 581798 | | 674311 | | | | | | |
| 500 (37) | 581782 | 581783 | | | 671509 | | | | | |
| 600 (61) | 560486 | 560487 | | 664610 | | | | | | |
| 750 (61) | 597954 | 597955 | | | | | | | | |
| 1000 (61) | | | | | | | | | | |

Award Winning Patent Pending Building Wire Selector


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