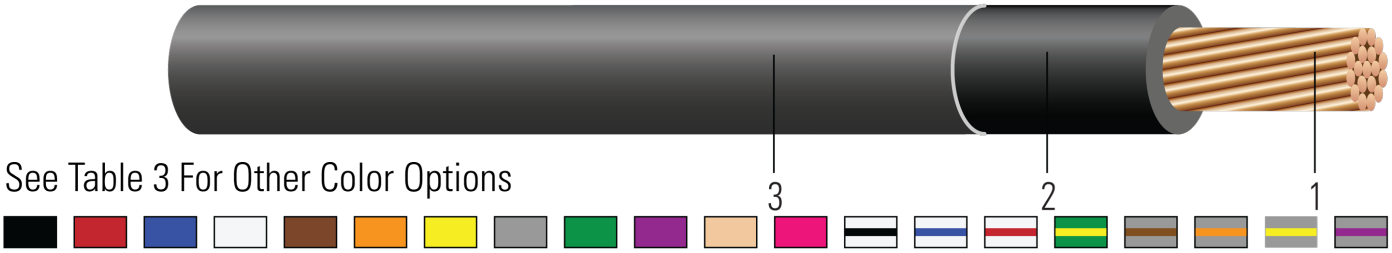
SIMpull® THHN/THWN-2 Copper

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/PE	0.83	9	0.827	1235	1325

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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