

## Copper SIMpull THHN/THWN-2®

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:

- Conductor:** Solid sizes #14 AWG - #10 AWG use soft drawn or fully annealed bare copper per ASTM B3. Stranded sizes #14 AWG - 3/0 AWG use a combination-unilay stranded soft drawn bare copper per ASTM B787. Sizes 4/0 AWG and larger use compressed stranded bare copper per ASTM B8
- Insulation:** Heat and moisture resistant PVC
- Sheath:** Nylon jacket utilizing SIMpull® Technology

### APPLICATIONS AND FEATURES:

#### APPLICATION

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 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 or dry locations not to exceed 90° C or locations not to exceed 75°C when exposed to oil
- 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

- Sunlight resistant #8 AWG and larger
- Gasoline and Oil Resistant II
- CT Rated 1/0 AWG and Larger
- VW-1 - All Sizes
- FT1 - All Sizes
- AWM - Sizes 14 through 6 AWG
- MTW - Stranded Constructions Only
- RoHS Compliant
- LEED v4.1 Materials & Resources Credit MRc6; PBT (Lead Content Below 300 ppm Threshold)





**SPECIFICATIONS:**

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

**SAMPLE PRINT LEGEND:**

SOUTHWIRE SIMpull(TM) 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(D)C --- RoHS PAT www.patentSW.com

**Table 1 – Weights and Measurements**

Cond. Size AWG/Kcmil	Cond. Number	Strand Count No. of Strands	Diameter Over Conductor inch	Insul. Thickness mil	Jacket Thickness mil	Approx. OD inch	Copper Weight lb/1000ft	Approx. Weight lb/1000ft
4/0	1	19	0.512	52	8	0.627	653	719

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 AWG/ Kcmil	Cond. Number	Min Bending Radius inch	Max Pull Tension lb	DC Resistance @ 25°C Ω/1000ft	AC Resistance @ 75°C Ω/1000ft	Inductive Reactance @ 60Hz Ω/1000ft	Allowable Ampacity At 75°C Amp	Allowable Ampacity At 90°C Amp
4/0	1	2.5	1692	0.051	0.062	0.041	230	260

\* 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.

\* Inductive Reactance is based on non-ferrous conduit with one diameter spacing.





**Table 3 - Stock Code Colors**

Size (Strand)	Black	Red	Blue	White	Brown	Orange	Yellow	Gray	Green	Purple
14 (Solid)	580285	580293	580287	580294	580288	580292	580295	580289	580291	580286
12 (Solid)	580265	580273	580267	580275	580268	580272	580276	580269	580271	580264
10 (Solid)	580203	580214	580204	580215	580205	580213	580220	580206	580211	580202
14 (19)	580170	580179	580171	580180	580172	580177	580181	580173	580176	580178
12 (19)	580182	580198	580184	580199	585461	580196	580200		580195	
10 (19)	580221	580254	580222	580255	580223	585465	585470	580250	585464	580253
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
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
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 3 - 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
14 (Solid)			580622							
12 (Solid)	581931		580283	580263	580278	580279	580277	584566	580281	580280
10 (Solid)			580219	580201	580208	580210	580226	580212	580218	580216
14 (19)	581933								581899	581898
12 (19)	581932		580194	580188	580189	580190		583863	580193	580192
10 (19)	581930		580262	580227	580257	580259	580207	584567	580261	580260
8 (19)	577515, 570785	597981								
6 (19)	578288	578287								
4 (19)	597980	597979								
3 (19)	597978	597977						679383		
2 (19)										
8 (19)	570785	597981								
6 (19)	578288	578287								
4 (19)	597980	597979								
3 (19)	597978	597977						679383		
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								
600 (61)	560486	560487		664610						
750 (61)	597954	597955								
1000 (61)										

