



## Copper Silicone-Free THHN/THWN

600 Volts. Copper Conductor. PVC Insulation/Nylon Sheath THHN/THWN. Heat, Moisture, Gasoline and Oil Resistant II. Silicone-Free.

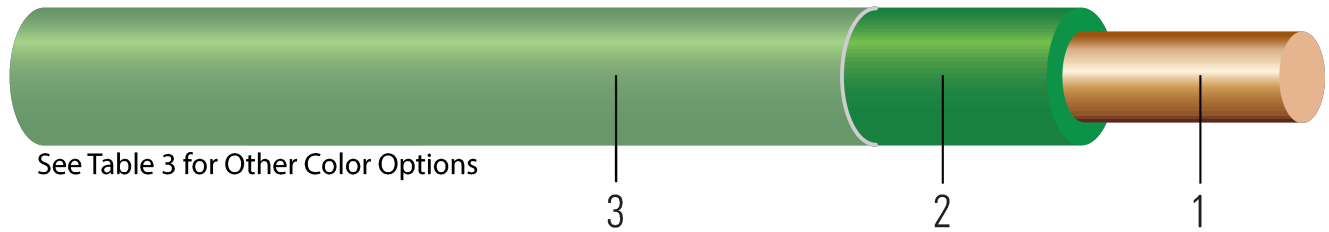


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

1. **Conductor:** Solid sizes #14 AWG - #10 AWG use soft drawn bare copper per ASTM B3. Stranded sizes #14 AWG - #10 AWG use a combination-unilay stranded soft drawn bare copper per ASTM B787.
2. **Insulation:** Heat and moisture resistant PVC
3. **Sheath:** Nylon

### APPLICATIONS AND FEATURES:

#### APPLICATION

Southwire® THHN copper conductors are primarily used in conduit for 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. 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- Wet locations not to exceed 75°C 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

- Gasoline and Oil Resistant II
- VW-1 - Sizes 14 through 10 AWG
- FT1 - All Sizes
- AWM - Sizes 14 through 10 AWG
- MTW - Stranded Constructions Only
- RoHS Compliant

### SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- 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)
- 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:**

Solid  
SOUTHWIRE E23919 (UL) (XX AWG) X,XXmm<sup>2</sup> CU TYPE THHN OR THWN PR II AND GR II 600 VOLTS VW-1 OR AWM --- c(UL) T90 NYLON OR TWN75 600 VOLTS FT1 NOM-ANCE 90C --- RoHS

Stranded  
SOUTHWIRE E51583 (UL) (XX AWG) X,XXmm<sup>2</sup> CU TYPE MTW OR THWN OR THHN PR II AND GR II 600 VOLTS VW-1 OR AWM --- c(UL) T90 NYLON OR TWN75 600 VOLTS FT1 NOM-ANCE 90C --- RoHS

**Table 1 – Weights and Measurements**

Cond. Size AWG/Kcmil	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
14	Solid	0.064	16	5	0.106	12	16
12	Solid	0.080	16	5	0.123	19	23
10	Solid	0.101	21	5	0.152	30	37
14	19	0.073	16	5	0.113	12	18
12	19	0.090	16	5	0.132	20	25
10	19	0.117	21	5	0.165	32	39

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	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
14	0.4	32	2.631	3.170	0.058	20	25
12	0.5	52	1.662	2.002	0.054	25	30
10	0.6	83	1.040	1.253	0.050	35	40
14	0.5	32	2.631	3.170	0.058	20	25
12	0.5	52	1.662	2.002	0.054	25	30
10	0.7	83	1.040	1.253	0.050	35	40

\* 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 and Standard Package**

Size	Package	Black	Red	Blue	White	Brown	Orange	Yellow	Gray	Green	Red/Black	Blue/White
14 (Solid)	Reel: 2500' Spool: 500'	115790	115816	115824	115808	115865	115857	115840	214668	115832		
12 (Solid)	Reel: 2500' Spool: 500'	115873	115899	115907	115881	115949	115931	115923	228700	115915		
10 (Solid)	Reel: 2500' Spool: 500'	115956	115972	115980	115964	116020	116012	116004	229823	115998		
14 (19)	Reel: 2500' Spool: 500'	229559	229575	229583	229567	229625	229617	229609	229633	229591	662817	
12 (19)	Reel: 2500' Spool: 500'	229641	229666	229674	229658	229716	229708	229690	229724	229682		662981
10 (19)	Reel: 2500' Spool: 500'	229732	229757	229765	229740	229807	229799	229781	229815	229773		

**Table 3 - Stock Code Colors and Standard Package (Cont)**

Size	Standard Package	Purple	Tan	Pink	White/Black	White/Blue	White/Red	Green/Yellow	Gray/Brown	Gray/Orange	Gray/Yellow	Gray/Purple
14 (Solid)	Reel: 2500' Spool: 500'	211243	302539	255331								
12 (Solid)	Reel: 2500' Spool: 500'	212043	320127	256479	565284	611410	565285	401000	575303	575304	575305	580201
10 (Solid)	Reel: 2500' Spool: 500'	253336		258384	551545	551547	551546	611757	575300	575301	575302	
14 (19)	Reel: 2500' Spool: 500'	239566	320150	244863								
12 (19)	Reel: 2500' Spool: 500'	232124	320168	242503	311514	566441	566440	663013	575307	575309	575310	
10 (19)	Reel: 2500' Spool: 500'	256594	320176	260539	610028	556199	556198	663112	575297	575298	575299	

