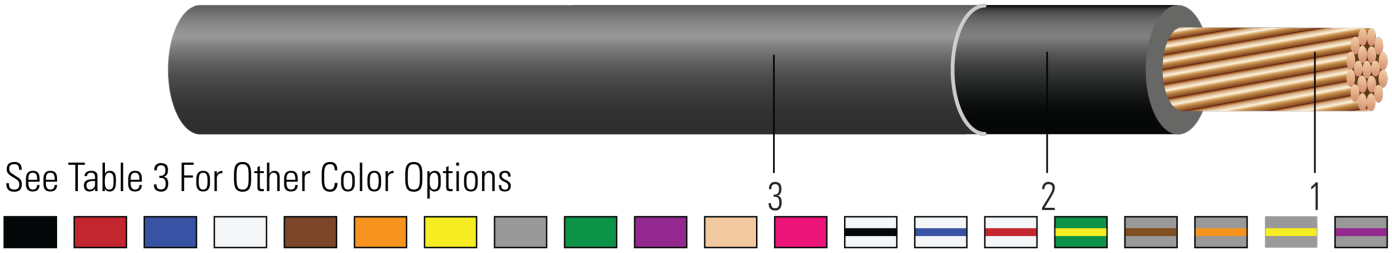
THHN/THWN Copper Silicone-Free

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



See Table 3 For Other Color Options

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Solid sizes 14 - 10 AWG use soft drawn annealed bare copper per ASTM B3. Stranded sizes 14 - 10 AWG use combination-unilay soft drawn annealed bare copper per ASTM B3 and B787.
2. **Insulation:** Heat and moisture resistant Polyvinyl Chloride (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
- NEMA 70901-2-2024 Make It American Compliance with Domestic Preference Requirements Pt. 2 Wire & Cable

SAMPLE PRINT LEGEND:

Solid

SOUTHWIRE E23919 (UL) (XX AWG) X,XXmm2 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,XXmm2 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	Strand Count	Diameter Over Conductor	Insul. Thickness	Insulation Color	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
AWG/Kcmil	No. of Strands	inch	mil		mil	inch	lb/1000ft	lb/1000ft
14	Solid	0.064	15	PK	5	0.106	12	16
12	Solid	0.080	15	TN	5	0.122	19	23
12	19	0.090	15	GN/YW	5	0.132	20	25
10	Solid	0.101	20	WE/BE	5	0.153	31	36
10	19	0.117	20	WE/BK	5	0.165	32	39
14	19	0.073	15	GN/YW	5	0.113	12	18

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

Table 2 – Electrical and Engineering Data

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

***** 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 impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

Table 3 - Stock Code Colors (/ means stripe. Blue/White: Blue with White Stripe)

Size (Strand)	Black	Red	Blue	White	Brown	Orange	Yellow	Gray	Pink	Purple	Tan	Green
14 (Solid)	115790	115816	115824	115808	115865	115857	115840	214668	255331	211243	320150	115832
12 (Solid)	115873	115899	115907	115881	115949	115931	115923	228700	256479	212043	320127	115915
10 (Solid)	115956	115972	115980	115964	116020	116012	116004	229823	258384	253336		115998
14 (19)	229559	229575	229583	229567	229625	229617	229609	229633	244863	239566		229591
12 (19)	229641	229666	229674	229658	229716	229708	229690	229724	242503	232124	320168	229682
10 (19)	229732	229757	229765	229740	229807	229799	229781	229815	260539	256594	320176	229773

Table 3 - Stock Code Colors (/ means stripe. Blue/White: Blue with White Stripe)

Size (Strand)	White/Red	White/Black	Green/Yellow	Gray/Orange	Gray/Yellow	Gray/Purple	Green/Yellow	Green/Orange	Gray/Brown	White/Blue
12 (Solid)	565285	565284	401000	575304	575305				575303	611410
10 (Solid)	551546	551545	611757	575301	575302				575300	551547
14 (19)							566576			
12 (19)	566440	311514			575310		663013	575309	575307	566441
10 (19)	556198	610028	663112	575298	575299	674034			575297	556199

Award Winning Patent Pending Building Wire Selector