

EcoPlus

Copper Conductor THHN/THWN-2



Description

EcoPlus THHN/THWN-2 is an electrical copper conductor solid or twisted Class B or C Cable; insulated with thermoplastic polyvinyl chloride (PVC) with a thermoplastic nylon outer jacket.

Standard Specifications

The EcoPlus THHN/THWN-2 conductors are built based on the following:

- Standards: **ASTM B3, B8, B787.**
- Certifications: **UL 83 y CIDET.**

Features

- The EcoPlus THHN/THWN-2 conductor is manufactured from 14 AWG (2.08 mm²) to 10 AWG (5.26mm²) solid and from 14 AWG (2.08 mm²) to 1000 kcmil (507 mm²) in Class B or C Cable.
- Designed to operate at 90°C maximum temperature in dry, damp and wet locations at 600 V maximum voltage.
- The nylon jacket provides mechanical protection and resistance against petroleum derivatives, chemical agents and oils (GRII).
- Requires low pull tension and provides ease of installation due to the Nylon jacket low friction coefficient.
- Conductors from 14 AWG (2.08mm²) to 2 AWG (33,6 mm²). are manufactured in multiple colors: black, red, white, blue and green.
- Conductors 1/0 AWG (53.5 mm²) and larger are manufactured in black color only, the black insulation is ultraviolet rays resistant (SR) and certified to be installed in cable trays (CT)



- The EcoPlus THHN/THWN-2 conductor is VW-1 certified, (Vertical flame capable) it does not propagate flame due to the PVC insulation.
- The lead-free PVC insulation is ecologically friendly.
- The conductor complies with RoHS (Restriction of Hazardous Substances) regulation.
- The conductor can be marked with a series of legends, according to their features and options, they are identified as follows:

Marking	Interpretation
THHN	For dry and humid locations*
THWN-2	For dry, humid and wet locations*
MTW	Machine tools wiring approved
AWM	Household appliances wiring approved
GRI and GRII	Hydrocarbons and oils resistant
For CT USE	Capable to be installed in cable trays (pans or baskets)
SUN RES	Ultraviolet rays and Sunlight Resistant (SRII)
VW-1	Vertical Flame test compliant (does not propagate flames)
Certifications #	UL E66903 or E103886 / CIDET 02647

* 90°C maximum temperature in the conductor

Applications

- Due to its smaller external diameter, high current capacity and its ease of installation, the EcoPlus THHN/THWN-2 conductor is ideal for fixed electrical installations in residential, commercial and industrial buildings: power, lighting, feeders and wiring of electrical connections and for the circuits' branches.
- Due to the Nylon protective jacket it is capable



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to be installed in petrochemical plants, gas stations and where oil is present. Its high insulation operating temperature (90°C) is ideal for industrial applications connecting motors, control panels, as well as in the internal wiring of machine tools and household appliances.

- The 1/0 AWG (53.5 mm²) gauge and larger sizes are certified to be installed in cable trays (pans or baskets) covered or exposed to sunlight. Also, in the air, with supported messenger.

Technical Information

Dimensions and nominal features

The conductor operating amperage is defined by the installation condition and operating temperatures identified in the NEC. See TABLE 310.15(B)(16) NEC NFPA 70 latest version

Gauge	Area	Wires	Insulation Thickness		Jacket Thickness		External Diameter		Weight	DC Max. @ 20°C Resistance
			in	mm	in	mm	in	mm		
AWG/kcmil	mm ²	#	in	mm	in	mm	in	mm	kg/km	Ω/km
14	2,08	1	0,015	0,38	0,004	0,10	0,102	2,59	22,47	8,45
12	3,31	1	0,015	0,38	0,004	0,10	0,119	3,02	34,16	5,31
10	5,26	1	0,020	0,51	0,004	0,10	0,150	3,81	54,35	3,34
14	2,08	19	0,015	0,38	0,004	0,10	0,111	2,81	23,30	8,62
12	3,31	19	0,015	0,38	0,004	0,10	0,130	3,29	35,29	5,43
10	5,26	19	0,020	0,51	0,004	0,10	0,164	4,17	56,18	3,41
8	8,37	19	0,030	0,76	0,005	0,13	0,216	5,49	92,38	2,14
6	13,3	19	0,030	0,76	0,005	0,13	0,254	6,45	140,66	1,35
4	21,2	19	0,040	1,02	0,006	0,15	0,318	8,08	222,78	0,848
2	33,6	19	0,040	1,02	0,006	0,15	0,378	9,60	341,87	0,534
1/0	53,5	19	0,050	1,27	0,007	0,18	0,474	12,04	542,47	0,335
2/0	67,4	19	0,050	1,27	0,007	0,18	0,518	13,16	674,32	0,266
3/0	85,0	19	0,050	1,27	0,007	0,18	0,568	14,43	839,59	0,211
4/0	107	19	0,050	1,27	0,007	0,18	0,624	15,85	1049,13	0,167
250	127	37	0,060	1,52	0,008	0,20	0,694	17,63	1242,39	0,142
300	152	37	0,060	1,52	0,008	0,20	0,747	18,97	1478,03	0,118
350	177	37	0,060	1,52	0,008	0,20	0,797	20,24	1717,67	0,101
400	203	37	0,060	1,52	0,008	0,20	0,842	21,39	1960,16	0,0885
500	253	37	0,060	1,52	0,008	0,20	0,925	23,50	2421,49	0,0709
600	304	61	0,070	1,78	0,009	0,23	1,024	26,01	2920,09	0,0590
750	380	61	0,070	1,78	0,009	0,23	1,126	28,60	3606,90	0,0472
1000	507	61	0,070	1,78	0,009	0,23	1,275	32,39	4768,78	0,0354

Note: The values given may vary according to the manufacturing tolerances



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