

EcoPlus

THHN/THWN-2

PRYSMIAN® | PHELPS DODGE®

GENERAL INFORMATION

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.

FEATURES

- The nylon jacket provides mechanical protection and resistance against petroleum derivatives, chemical agents and oils.
- 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).

CERTIFICATIONS AND DESIGN STANDARDS

Standards of design: UL 83, IEC 60228, ASTM B3, ASTM B8 and ASTM B787

Certifications:

- **UL E66903:** Applies to all available gauges.
- **CIDET 06062:** Applies to all available gauges.
- **UL E103886:** Applies just for gauges bigger than 4 AWG.

Note:

For gauges larger than 4 AWG, the visible mark on the legend and label will be UL E103886, however, the cable also maintains the UL E66903 certification.

CABLE DESIGN

Conductor material

Copper

Core insulation material

Polyvinyl chloride (PVC)

ELECTRICAL & THERMAL PARAMETERS

Nominal voltage U [V]

600

INSTALLATION DETAILS

Application	Building Installations;Residential Installations;Industrial Installations
Outdoor installation	Yes
Underground installation	No
Suitable as installation cable	Yes

PHYSICAL & CHEMICAL PROPERTIES

Flame retardant	Yes
Oil resistant	Yes
UV resistant	Yes
Moisture resistance	Yes

SPECIFIC 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 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.

LEGEND ON THE CABLE

This cable, in some gauges, contains a legend indicating meter-by-meter sequential marking, which allows for easy identification of the required length and cutting point.

For 14 AWG to 6 AWG gauges, solid or 7 wires stranded, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) ECOPLUS (R) THHN OR THWN-2 (GAUGE) AWG ((GAUGE) mm²) AWM GR I AND GR II VW-1 600V – LEAD FREE (UL) E66903 (GAUGE) AWG ((GAUGE) mm²)

For 14 AWG to 6 AWG gauges, 19 wires stranded, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) ECOPLUS (R) THHN OR THWN-2 (GAUGE) AWG ((GAUGE) mm²) AWM OR MTW GR I AND GR II VW-1 600V – LEAD FREE (UL) E103886.

For 4 AWG to 4/0 AWG gauges, in colors different from black, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) ECOPLUS (R) THHN OR THWN-2 (GAUGE) AWG ((GAUGE) mm²) AWM OR MTW GR I AND GR II VW-1 600V – LEAD FREE (UL) E103886. ■(SEQUENTIAL)m (GAUGE) AWG ((GAUGE) mm²)

For 1/0 AWG to 4/0 AWG gauges, in color black, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) ECOPLUS (R) THHN OR THWN-2 (GAUGE) AWG ((GAUGE) mm²) AWM OR MTW GR I AND GR II VW-1 SUN RES FOR CT USE 600V – LEAD FREE (UL) E103886 ■(SEQUENTIAL)m (GAUGE) AWG ((GAUGE) mm²)

For 250 kcmil to 1000 kcmil gauges, in colors different from black, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) ECOPLUS (R) THHN OR THWN-2 (GAUGE) kcmil ((GAUGE) mm²) AWM OR MTW GR I AND GR II VW-1 FOR CT USE 600V – LEAD FREE (UL) E103886 ■(SEQUENTIAL)m (GAUGE) kcmil ((GAUGE) mm²)

For 250 kcmil to 1000 kcmil gauges, in color black, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) ECOPLUS (R) THHN OR THWN-2 (CALIBRE) kcmil ((GAUGE) mm²) AWM OR MTW GR I AND GR II VW-1 SUN RES FOR CT USE 600V – LEAD FREE (UL) E103886 ■(SEQUENTIAL)m (GAUGE) kcmil ((GAUGE) mm²)

PRODUCT DIMENSIONS & CHARACTERISTICS

AWG size	Nominal cross section conductor [mm ²]	Conductor strand count	Nominal thickness insulation [mm]	Diameter conductor [mm]	Cable weight [kg/km]	Conductor resistance at 20° C [Ohm/km]
14	2.08	1	0.38	2.59	22.94	8.62
12	3.31	1	0.38	3.02	34.3	5.43
10	5.26	1	0.51	3.81	54.71	3.41
8	8.37	1	0.76	5.19	91.8	2.14
14	2.08	7	0.38	2.81	23.42	8.62
12	3.31	7	0.38	3.29	34.97	5.43
10	5.26	7	0.51	4.17	55.71	3.41
8	8.37	7	0.76	5.49	91.64	2.14
6	13.3	7	0.76	6.45	139.42	1.35
14	2.08	19	0.38	2.58	23.73	8.62
12	3.31	19	0.38	3.02	35.49	5.43
10	5.26	19	0.51	4.17	56.11	3.41
8	8.37	19	0.76	5.49	93.36	2.14
6	13.3	19	0.76	6.45	141.89	1.35
4	21.2	19	1.02	8.08	220.95	0.848
2	33.6	19	1.02	9.6	337.8	0.534
1/0	53.5	19	1.27	12.04	537.23	0.335
2/0	67.4	19	1.27	13.16	665.79	0.266
3/0	85	19	1.27	14.43	832.65	0.211
4/0	107	19	1.27	15.85	1,032.6	0.167
250	127	37	1.52	17.63	1,219.96	0.142
300	150	37	1.52	18.97	1,463.79	0.118
350	177	37	1.52	20.24	1,695.52	0.101
400	203	37	1.52	21.38	1,926.74	0.088