Submersible Pump Cable

Heavy Duty Copper Multiconductor

GENERAL INFORMATION

The Heavy-Duty (HD) Submergible Pump cable is a flat parallel electrical multiconductor assembled with annealed copper conductors THHN/THWN-2 EcoPlus with a polyvinyl chloride (PVC) outer black jacket.

FEATURES

- The HD Submergible Pump multiconductor THHN/THWN-2 is designed to be installed on dry, damped or wet locations at temperatures not exceeding 90°C at 600 V maximum operating voltage.
- The cable is manufactured in triple and triple plus earth cables from gauge 14 AWG (2,08 mm2) up to 1/0 AWG (53,5 mm2). To allow ease identification the cores are manufactured with different colors (red, black, white and green). The outer multiconductor legend indicates the count and gauges of the inner conductors.
- On triplex with ground formations from 8 AWG (8,37 mm2) or larger, the ground conductor will be reduced gauge as per manufacturing specs and NFPA 70.
- The conductor is RoHS (Restriction of Hazardous Substances) regulation.

CERTIFICATIONS AND DESIGN STANDARDS

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

Certifications: UL E70079

ELECTRICAL & THERMAL PARAMETERS

Nominal voltage U [V]	600

INSTALLATION DETAILS

Application	Building Installations
Outdoor installation	Yes
Underground installation	Yes
Suitable as installation cable	Yes

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PHYSICAL & CHEMICAL PROPERTIES

Flame retardant	No
Oil resistant	No
Moisture resistance	Yes

SPECIFIC APPLICATIONS

- The HD Submergible Pump cable is designed to connect submersible deep well pumps where the cable would be underwater.
- The conductor could be used in any other lower duty power circuit in feeders and branch circuits in dry humid or wet areas either in conduit or exposed (same applications as NM-B/NMC and THWN cables).
- The outer jacket is SUN RES capable allowing the conductor to be directly exposed to the sun.

LEGEND ON THE CABLE

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

For triplex construction, in gauges from 14 AWG to 3/0 AWG, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) SUBMERSIBLE PUMP CABLE THHN OR THWN 3X(GAUGE) AWG (3/(GAUGE) mm²) 600 V (UL) E70079 ▪(SEQUENTIAL) m 3X(GAUGE) AWG (3/(GAUGE) mm²)

For quadruplex construction, in gauges from 14 AWG to 10 AWG, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) SUBMERSIBLE PUMP CABLE THHN OR THWN 4X(GAUGE) AWG (4/(GAUGE) mm²) 600 V (UL) E70079 ▪(SEQUENTIAL) m 4X(GAUGE) AWG (4/(GAUGE) mm²)

For triplex + ground construction, with phase gauges from 8 AWG to 3/0 AWG, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) SUBMERSIBLE PUMP CABLE THHN OR THWN 3X(GAUGE) AWG + 1X(GAUGE) AWG (3/(GAUGE) mm² + 1/(GAUGE) mm²) 600 V (UL) E70079 ▪(SEQUENTIAL) m 3X(GAUGE) AWG + 1X(GAUGE) AWG (3/(GAUGE) mm² + 1/(GAUGE) mm²)

TRIPLEX CABLE PRODUCT CHARACTERISTICS

Nominal cross section conductor AWG [kcmil]	Nominal cross section conductor [mm²]	Conductor strand count	Nominal thickness insulation [mm]	Width [mm]	Height [mm]	Cable weight [kg/km]	Conductor resistance at 20° C [Ohm/km]
3 x 14	2.08	7	0.76	10	4	99.24	8.62
3 x 10	5.26	7	0.76	14	6	214.78	3.409
3 x 8	8.37	7	1.14	19	8	366.01	2.144
3 x 6	13.3	7	1.14	22	9	529.84	1.348
3 x 4	21.2	19	1.14	27	10	811.8	0.8481
3 x 2	33.6	19	1.14	31	12	1,205.14	0.5335
3 x 1/0	53.48	19	1.52	39	15	1,923.42	0.3354
3 x 12	3.31	7	0.76	11	5	140.89	5.43
4 x 12	3.31	7	0.76	15	5	188.79	5.43
4 x 10	5.26	7	0.76	18	6	287.72	3.409
3 x 8 + 1 x 10	8.37	7	1.14	22	7	451.98	2.144
3 x 6 + 1 x 8	13.3	7	1.14	26	8	645.42	1.348
3 x 4 + 1 x 8	21.2	19	1.14	31	10	977.73	0.848
3 x 2 + 1 x 6	33.6	19	1.14	37	11	1,436.04	0.5335

CUADRUPLEX CABLE PRODUCT CHARACTERISTICS

Nominal cross section conductor	Nominal cross section conductor (mm2)		Number of cores	Nominal thickness insulation	Width	Height	Cable weight	Conductor resistance at 20°C
AWG	Phase cond	Ground cond	#	mm	mm	mm	kg/km	Ω/km
4 X 14	2,08	2,08	7	0,762	13	4	131,09	8,62
4 X 12	3,31	3,31	7	0,762	15	5	186,72	5,43
4 X 10	5,26	5,26	7	0,762	18	6	285,54	3,41
3 X 8 + 1 X 10	8,37	5,26	7	1,143	23	8	455,82	2,14
3 X 6 + 1 X 8	13,3	8,37	7	1,143	27	9	662,49	1,35
3 X 4 + 1 X 8	21,2	8,37	19	1,143	32	10	969,97	0,85
3 X 2 + 1 X 6	33,6	13,3	19	1,143	37	12	1433,74	0,53
3 X 1/0 + 1 X 6	53,5	13,3	19	1,524	46	15	2213,39	0,34

The conductor operating amperage is defined by the installation condition and operating temperatures identified in the NEC. See TABLE 310.15(B)(16) NFPA 70 latest version. Note: The values given may vary according to the manufacturing tolerances.

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