Welding Cable

Copper Electrode Holder Conductor

GENERAL INFORMATION

The conductor is made of annealed twisted Class J cords insulated with NBR-PVC premium grade 90°C black polymer.

FEATURES

- The conductor is manufactured from 6 AWG up to 500 kcmil gauges.
- The NBR-PVC insulation is premium performance polymer that operates from -40°C up to 90°C.
- The cable is offered in standard lengths of 100 m, 500ft (152.4 m) and 1000ft (305 m). Other lengths are available under special order.
- The conductor complies with RoHS (Restriction of Hazardous Substances) regulation.

CERTIFICATIONS AND DESIGN STANDARDS

Standards of design: ASTM B3, ASTM B172, ASTM B174, ICEA S-75-381 and Internal Standards of Prysmian

CABLE DESIGN

Conductor material	Copper
Core insulation material	Polyvinyl chloride (PVC)

ELECTRICAL & THERMAL PARAMETERS

Nominal voltage U [V]	600

INSTALLATION DETAILS

Application	Building Installations;Special application
Outdoor installation	Yes
Underground installation	No

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PHYSICAL & CHEMICAL PROPERTIES

Flame retardant	No
Oil resistant	No
Moisture resistance	Yes

SPECIFIC APPLICATIONS

- The welding cable is mainly design to operate in arch welder machines as the secondary voltage high current flexible conductor.
- Due to the conductor high flexibility it is installed in limited space industrial circuits (preventive maintenance is required).
- The flexible welding cables are also used in the temporary emergency generations connections with plug systems.

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 all gauges, the legend to be printed is:

PRYSMIAN (R) PHELPS DODGE (R) WELDING 90°C (GAUGE) AWG ((GAUGE) mm²) 600V ▪(SEQUENTIAL)m (GAUGE) AWG ((GAUGE) mm²)

SUGGESTED AMPACITIES

The operating amperage of the conductors is defined by the installation condition and operating temperatures identified in the NEC. See TABLE 400.5(A)(2) NFPA 70 latest version.

Suggested Ampacities

Ampacities for phase cable, continuous work (Room Temperature 30°C)

AWG/kcmil	Amperes	AWG/kcmil	Amperes
6	75	3/0	265
4	100	4/0	310
2	140	250	402
1/0	190	350	495
2/0	223	500	613

Note: Total circuit length includes both electrode lead and ground wires (based on 4 volt drop) 60% duty cycle. This current carrying capacity values are based on a copper temperature of 60°C (140°F), an ambient temperature of 40°C, and performance load factors of approximately 32% for 2 AWG, 23% for wire 3/0 AWG and larger for smaller runs. The gauges generally used are 2 AWG to 3/0 AWG. In actual service, the load factor can be much higher than stated without overheating the cable, as the ambient temperature will generally be substantially less than 40°C.

PORTABLE ARCH WELDER COPPER CONDUCTOR AMPS

Portable Arch Welder Copper Conductor Amps							
Cable sizes for applications as welding machine conductor							
Amps	Total circuit length, in meters, for secundary voltages only						
	30	**45**	**60**	**76**	**90**	**106**	**120**
100	4	4	2	2	1	1/0	1/0
150	4	2	1	1/0	2/0	3/0	3/0
200	2	1	1/0	2/0	3/0	4/0	4/0
250	1	1/0	2/0	3/0	4/0		
300	1/0	2/0	3/0	4/0			
350	1/0	3/0	4/0				
400	2/0	3/0					
450	2/0	4/0					
500	3/0	4/0					
550	3/0	4/0					
600	4/0						

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

PRODUCT CHARACTERISTICS

AWG size	Conductor strand count	Diameter conductor [mm]	Cable weight [kg/km]
6	159	9.4	175
4	266	11.18	265
2	399	13.34	401
1/0	627	15.62	610
2/0	779	15.75	705
3/0	969	17.53	880
4/0	1258	19.81	1,125
250	1463	21.72	1,330
350	2183	24	1,800
500	3024	27.94	2,580

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