

H01N2-D BS EN 50525-2-81

Welding Cable

pro-POWER

RoHS
Compliant


Application:

These cables are used as a connection to welding robots in the automotive industry, shipyards and for manually/automatically operated lines and spot welding. The robust cable structure makes them resistant to low and high temperatures, ozone and radiation, oils, acids, fats and petrols.

Cable Standards:

Made in accordance with the following:

BS EN 50525-2-81 (previously BS 638 Part 4, CENELEC HD22.6, VDE0282-6), BS EN 60332-1-2

Construction:

| | |
|-----------|--|
| Conductor | : Generally to Class 6 flexible copper conductor according to BS EN 60228 (previously BS 6360) |
| Separator | : PET (Polyester Tape) |
| Sheath | : Rubber compound, Type EM5 according to BS EN 50363 |

Characteristics:

| | |
|---------------------|---|
| Voltage Rating | : 100V |
| Temperature Rating | : -40°C to +85°C (Fixed) -20°C to +85°C (Flexed) |
| Min. Bending Radius | : 6 × overall diameter (Flexed) |
| Sheath Colour | : Black & Red |

Electrical Characteristics:

Duty Cycle and Current Carrying Capacity:

The current carrying capacity of a welding cable depends on the length of the duty cycle. The duty cycle is the length of time during which a loaded current passes through the cable over an operation period of 5 minutes, expressed as a percentage of that period. For example, if the current is flowing for the whole 5 minutes the duty cycle is 100%, and if the current is flowing for 1 minute the duty cycle is 20%.

As conductor temperature varies according to the time in use as well as current, ratings shown are given as a guide.

The permissible loading of the cable for duty cycles other than those shown in the table can be calculated using the following formula:

$$I = I_{100} \times \sqrt{100/F}$$

Where:

I : is the maximum permissible loading current for the required duty cycle.

I_{100} : is the maximum permissible loading current for a duty cycle of 100%.

F : is the required duty cycle calculated as a percentage of the 5 minute operation period.

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Typical guidance values for different welding processes are as follows:

Fully automatic welding 100%

Semi-automatic welding 65 - 85%

Manual Welding 30 - 60%

Very infrequent or occasional welding 20%

Current Carrying Capacity:

| Nominal Cross Sectional Area mm ² | Current Rating for Single Cycle Operation over a Maximum Period of 5 Minutes Amps | | | |
|---|--|-----|-----|-----|
| | 100% | 85% | 60% | 35% |
| 10 | 100 | 103 | 108 | 122 |
| 16 | 135 | 145 | 175 | 230 |
| 25 | 180 | 195 | 230 | 300 |
| 35 | 225 | 245 | 290 | 375 |

Ambient Air Temperature : +25°C

Max. Conductor Temperature : +85°C

The above table is from HD 516 S2:1997

De-Rating Factors:

| Ambient Temperature | +25°C | +30°C | +35°C | +40°C | +45°C | +50°C | +55°C |
|---------------------|-------|-------|-------|-------|-------|-------|-------|
| De-Rating Factor | 1.0 | 0.96 | 0.91 | 0.87 | 0.82 | 0.76 | 0.71 |

Conductors:

Flexible Copper Conductors for Single Core Cables

| Nominal Cross Sectional Area mm ² | Max. Diameter of Wires in Conductor mm | Max. Resistance of Conductor at 20°C |
|---|--|---|
| | | Plain Wires Ω/km |
| 10 | 0.21 | 1.91 |
| 16 | 0.21 | 1.21 |
| 25 | 0.21 | 0.78 |
| 35 | 0.21 | 0.554 |

Dimensions:

| Part Number | No. of Cores | Colour Codes | Nominal Cross Sectional Area mm ² | Nominal Thickness of Insulation mm | Nominal Overall Diameter mm | Nominal Weight kg/km |
|-------------|--------------|--------------|---|---------------------------------------|--------------------------------|-------------------------|
| PP000939 | 1 | Black | 10 | 2 | 9 | 146 |
| PP000940 | 1 | | 16 | 2 | 10 | 204 |
| PP000942 | 1 | | 25 | 2 | 11.5 | 290 |
| PP000944 | 1 | | 35 | 2 | 12.5 | 384 |

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| Part Number | No. of Cores | Colour Codes | Nominal Cross Sectional Area mm ² | Nominal Thickness of Insulation mm | Nominal Overall Diameter mm | Nominal Weight kg/km |
|-------------|--------------|--------------|--|------------------------------------|-----------------------------|----------------------|
| PP000955 | 1 | Red | 10 | 2 | 9 | 146 |
| PP000941 | 1 | | 16 | 2 | 10 | 204 |
| PP000943 | 1 | | 25 | 2 | 11.5 | 290 |
| PP000945 | 1 | | 35 | 2 | 12.5 | 384 |

Part Number Table

| Description | Sheath Colour | Reel Length (m) | Part Number |
|---|---------------|-----------------|-------------|
| H01N2-D BS EN 50525-2-81 Welding Cable | Black | 50 | PP000939 |
| | | | PP000940 |
| | | | PP000942 |
| | | | PP000944 |
| | Red | | PP000955 |
| | | | PP000941 |
| | | | PP000943 |
| | | | PP000945 |

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