

# H01N2-D BS EN 50525-2-81 Welding Cable

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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 <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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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