

H01N2-D Welding Cable

Eland Product Group **A2G**



Application

For the transmission of high currents from the electric welding machine to the welding tool. Suitable for flexible use under rough conditions, on assembly lines and conveyor systems, in machine tool and motor car manufacturing, ship building, for manually and automatically operated line and spot welding machines.

Standards

BS638 Part 4, VDE0282-6, CENELEC HD22.6

Technical Data

Conductor

Class 5 flexible plain copper conductors

Separator

Polyester foil or tape

Sheath

HOFR (Heat and Oil Resistant and Flame Retardant)

Sheath Colour

Black

Voltage Rating

100V (450V for non-welding applications if suitably protected from mechanical damage)

Temperature Rating

-20°C to +85°C

Minimum Bending Radius

6 x overall diameter

Dimensions

Eland Part Number	No. of Cores x Nominal Cross Sectional Area mm ²	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
A2G010E	1 x 10	2.0	9.0	155
A2G016E	1 x 16	2.0	10.0	250
A2G025E	1 x 25	2.0	11.5	305
A2G035E	1 x 35	2.0	12.5	395
A2G050E	1 x 50	2.2	14.5	550
A2G070E	1 x 70	2.4	16.5	775
A2G095E	1 x 95	2.6	18.5	1030
A2G120E	1 x 120	2.8	20.5	1280
A2G150E	1 x 150	3.0	23.0	1585

Conductors

Class 5 flexible copper conductors for Single Core and Multi-Core cables

1 Nominal Cross Sectional Area mm ²	2 Nominal Diameter of Wires in Conductor mm	3 Maximum Resistance of Conductor at 20°C Plain Wires ohms/Km
10	0.41	1.910
16	0.41	1.210
25	0.41	0.780
35	0.41	0.554
50	0.41	0.386
70	0.51	0.272
95	0.51	0.206
120	0.21	0.161
150	0.51	0.129

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.

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 (amperes)

Nominal Cross Sectional Area mm ²	Current Rating for single cycle operation over a maximum period of 5 minutes				
	100%	85%	60%	35%	20%
6	57	59	63	67	81
10	100	103	108	122	143
16	135	145	175	230	212
25	180	195	230	300	305
35	225	245	290	375	400
50	285	305	365	480	529
70	355	385	460	600	682
95	430	470	560	730	850
120	500	540	650	850	1006
150	580	630	750	980	1184

Ambient air temperature: +25°C

Maximum conductor temperature: +85°C

The above table is in accordance with Table BS 638 Part 4:1996.

Influence of Ambient Temperature

Ambient Temperature	25°C	30°C	35°C	40°C	45°C	50°C	55°C
Reduction Factor	1.0	0.96	0.91	0.87	0.82	0.76	0.71

The information contained within this datasheet is for guidance only. When selecting accessories such as cleats, glands, etc please note that actual cable dimensions may vary due to manufacturing tolerances.