H01N2-E 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, DIN VDE0282-6, CENELEC HD22.6

Technical Data

Conductor
Class 6 flexible plain copper conductors

Separator
Polyester foil or tape

Sheath
HOFR (Heat and Oil Resistant and Flame Retardant)

Sheath Colour
Black

Voltage Rating
100V

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 #x mm²	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
A2GE120	1 x 120	1.8	18.5	1195
A2GE150	1 x 150	1.8	21.3	1485

Conductors

Class 6 flexible copper conductors for Single Core and Multi-Core cables

1	2	3
Nominal Cross Sectional Area mm²	Nominal Diameter of Wires in Conductor mm	Maximum Resistance of Conductor at 20°C Plain Wires ohms/Km
120	0.21	0.161
150	0.51	0.129

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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 mm²	Current Rating for repeat cycle operation over a maximum period of 5 minutes				
	100%	85%	60%	35%	20%
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.