H01N2-E EN 50525-2-81 Welding Cable

Eland Product Group: A2G

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.

CHARACTERISTICS

Voltage Rating
100V

Temperature Rating
Fixed: -40°C to +85°C
Flexed: -20°C to +85°C

Minimum Bending Radius
Flexed: 6 x overall diameter

CONSTRUCTION

Conductor
Extra flexible type Table B.2
Generally to Class 6 flexible copper conductor

Separator
PET (Polyester Tape)

Sheath
Rubber compound

Sheath Colour
● Black

STANDARDS

EN 50525-2-81, HD 22.6, VDE 0282-6, EN 60228

Flame Retardant according to IEC/EN 60332-1-2

THE CABLE LAB®

AN ISO/IEC 17025 AND IECEE CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.

SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: www.elandcables.com/company/about-us/esg-sustainability

REGULATORY COMPLIANCE

This cable meets the requirements of the Low Voltage Directive 2014/35/EU, the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.

DIMENSIONS

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
A2GE120G	1	120	1.8	18.5	1195
A2GE150G	1	150	1.8	21.3	1485

CONDUCTORS

Flexible Copper Conductors for Single Core Cables

NOMINAL CROSS SECTIONAL AREA mm²	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km
		Plain Wires
120	0.21	0.161
150	0.21	0.129

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm²	CURRENT RATING FOR SINGLE CYCLE OPERATION OVER A MAXIMUM PERIOD OF 5 MINUTES Amps			
	100%	85%	60%	35%
120	500	540	650	850
150	580	630	750	980

Ambient Air Temperature: 25°C
Maximum Conductor Temperature: 85°C

The above table is from HD 516 S2:1997

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: $I = I100 \times \sqrt{100/F}$

Where:
I : is the maximum permissible loading current for the required duty cycle.
I100 : 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%
The above table is in accordance with HD 516: 52

DE-RATING FACTORS

AMBIENT TEMPERATURE	25°C	30°C	35°C	40°C	45°C
DE-RATING FACTOR	1.0	0.96	0.91	0.87	0.82

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