

# H01N2-D/E Welding cable



## Application and Description

These cables are used as a connection between the welding generator, the hand-electrode and the work piece. For use in the automobile industry, ship building, transport and conveyor systems, tool making machinery, welding robots etc. These cables retain their high flexibility even under influence of ozone, light, oxygen, protective gases, oil and petrol. Robust cable structure of these cables makes them resistant to low and high temperature, fire, ozone and radiation, oils, acids, fats and petrols. These cables are also ideal for outside installation in dry, moist and wet areas.

## Standard

GB/T5013.6-2008, <HAR> HD22.6 S2, VDE-0282 Part-6, IEC 60332.3, IEC 60754.1, UNEL 35368, CEI 20-22 II, CEI 20-38, CE low voltage directive 73/23/EEC & 93/68/EEC., ROHS compliant

## Cable Construction

- Extra fine bare copper strands
- Strands to DIN VDE 0295, BS 6360, IEC 60228 and HD 383
- Strands to VDE-0295 as listed below
- Synthetic or paper separator over core
- Polychloroprene rubber (neoprene) jacket EM5

## Technical Characteristics

- Working voltage: 100V (If used in an environment where they are not liable to sustain mechanical damage these Cables may be used at 450/700V in the control panels, switch-gears etc.)
- Test voltage: 1000 volts
- Flexing bending radius: 12.0 x Ø
- Fixed bending radius: 7.5 x Ø
- Flexing Temperature: -25° C to +80° C
- Fixed Temperature: -40° C to +80° C
- Flame retardant: IEC 60332.1

No. of Cores x Nominal Cross Sectional Area		Structure of conductor	Nominal Thickness of Insulation	Nominal Overall Diameter	Nominal Copper Weight	Nominal Weight	Max resistance by 20°C
AWG	mm <sup>2</sup>	No./mm	mm	mm	kg/Km	kg/Km	(Ω/km)
8	1 x 10	320/0.20	2.0	7.7-9.7	96	135	1.91
6	1 x 16	512/0.20	2.0	8.8-11.0	154	205	1.16
4	1 x 25	800/0.20	2.0	10.1-12.7	240	302	0.758
2	1 x 35	1120/0.20	2.0	11.4-14.2	336	420	0.536
1	1 x 50	1600/0.20	2.2	13.2-16.5	480	586	0.379
2/0	1 x 70	2240/0.20	2.4	15.3-19.2	672	798	0.268
3/0	1 x 95	3024/0.20	2.6	17.1-21.4	912	1015	0.198
4/0	1 x 120	614/0.51	2.8	19.2-24.0	1152	1310	0.157
300MCM	1 x 150	765/0.51	3.0	21.2-26.4	1440	1620	0.125
500MCM	1 x 185	944/0.51	3.2	23.1-28.9	1776	1916	0.102

### H01N2-E Cables with extreme high flexibility

No. of Cores x Nominal Cross Sectional Area		Structure of conductor	Nominal Thickness of Insulation	Nominal Overall Diameter	Nominal Copper Weight	Nominal Weight	Max resistance by 20°C
AWG	mm <sup>2</sup>	No./mm	mm	mm	kg/Km	kg/Km	(Ω/km)
8	1 x 10	566/0.15	1.2	6.2-7.8	96	119	1.91
6	1 x 16	903/0.15	1.2	7.3-9.1	154	181	1.16
4	1 x 25	1407/0.15	1.2	8.6-10.8	240	270	0.758
2	1 x 35	1974/0.15	1.2	9.8-12.3	336	363	0.536
1	1 x 50	2830/0.15	1.5	11.9-14.8	480	528	0.379
2/0	1 x 70	3952/0.15	1.8	13.6-17.0	672	716	0.268
3/0	1 x 95	5370/0.15	1.8	15.6-19.5	912	1012	0.198
4/0	1 x 120	3819/0.20	1.8	17.2-21.6	1152	1190	0.157
300MCM	1 x 150	4788/0.20	1.8	18.8-23.5	1440	1305	0.125
500MCM	1 x 185	5887/0.20	1.8	20.4-25.5	1776	1511	0.102

## Electrical Characteristics

### RATING FACTORS :

Where total cable lengths in excess of 15m are involved, it may be necessary to use cable of larger cross section to ensure that the voltage drop is not excessive and welding currents are maintained at adequate levels.

### DUTY CYCLE :

The duty cycle is defined as the time for which the current flows expressed as a percentage of the complete cycle, which is taken as 5 minutes. Since the length of time for which current flows during a welding operation varies, occasional to continuous, the duty cycle can vary from as little as 20% to a maximum of 100% on automatic operation.

Automatic Welding up to 100%.

Semi Automatic Welding 30-85%.

Manual Welding 30-60%.

Intermittent or Occasional Welding up to 20%.

### Loading Current Values (amperes)

Nominal Cross Sectional Area mm <sup>2</sup>	Loading Current in Amps for the Following Duty Cycles			
	100%	85%	60%	30%
mm <sup>2</sup>				
16	135	145	175	245
25	180	195	230	330
35	225	245	290	410
50	285	310	370	520
70	355	385	460	650
95	430	470	560	790
120	500	540	650	910
185	660	715	850	1200

### Correction Factors

Cable operating temperature also varies according to the prevailing ambient temperature. These cables are designed to give optimum performance up to an operating temperature of 85°C at an ambient temperature of 25°C. The reduction factors for increased ambient temperature are:

Ambient Temperature	30°C	35°C	40°C	45°C	50°C	55°C
Correction Factor	0.96	0.91	0.87	0.82	0.76	0.79