H07RN-F Cable

Eland Product Group **A6G and A5G**

Application

These cables are designed to provide high flexibility and have the capacity to withstand weather, oils/greases, mechanical and thermal stresses. Applications include handling equipment, mobile power supplies, worksites, stage and audio visual equipment, port areas and dams. Also for use in drainage and water treatment, cold environments and severe industrial environments.

Standards

BS7919, CENELEC HD22.4 S4

Technical Data

Conductor
Class 5 flexible plain copper
to BS EN 60228:2005 (previously BS6360)

Insulation
EPR (Ethylene Propylene Rubber) Type EI4 to BS7655

Sheath
PCP (Polychloroprene) Type EM2
to BS7655

Sheath Colour
Black

Voltage Rating
450/750V

Temperature Rating
Conductor operating temperature
-30°C to +60°C (85°C max)

Minimum Bending Radius
Up to 25mm^2: 6 x overall diameter
Above 25mm^2: 8 x overall diameter

Core Identification
2 Cores: Blue, Brown
3 Cores: Green/Yellow, Blue, Brown
4 Cores: Green/Yellow, Brown, Black, Grey
5 Cores: Green/Yellow, Blue, Brown, Black, Grey
6 Cores and above: Black with White numerals, Green/Yellow

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	FCGA2 Gland (Brass)	FCGA2PL Gland (Plastic)
H07RN-F Cable - 1 Core						
A6G10015	1 x 1.5	0.8	5.9	50	20/16	20S
A6G10025	1 x 2.5	0.9	6.5	65	20/16	20S
A6G1004	1 x 4.0	1.0	7.4	89	20/16	20
A6G1006	1 x 6.0	1.0	8.1	115	20S	20
A6G1010	1 x 10.0	1.2	10.4	190	20S	20
A6G1016	1 x 16.0	1.2	11.6	259	20	20L
A6G1025	1 x 25.0	1.4	13.7	375	25	25
A6G1035	1 x 35.0	1.4	15.4	492	25	25
A6G1050	1 x 50.0	1.6	17.7	675	25	32
A6G1070	1 x 70.0	1.6	20.0	908	32	32
A6G1095	1 x 95.0	1.8	22.1	1171	32	32
A6G1120	1 x 120.0	1.8	24.5	1445	32	40
A6G1150	1 x 150.0	2.0	26.9	1783	40	40
A6G1185	1 x 185.0	2.2	28.9	2125	40	40
A6G1240	1 x 240.0	2.4	32.6	2733	50S	50
A6G1300	1 x 300.0	2.6	36.5	3348	50	50S
A6G1400	1 x 400.0	2.8	40.4	4293	50	50
A6G1500	1 x 500.0	3.0	42.6	5262	50	50
A6G1630	1 x 630.0	3.0	47.2	6790	63S	63S

ISSUE 03.0609

Eland Part Number	No. of Cores x Nominal Cross Sectional Area mm²	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Weight kg/Km	FCGA2 Gland (Brass)	FCGA2PL Gland (Plastic)
H07RN-F Cable - 2 Cores						
A5G02010	2 x 1.0	0.8	8.4	90	20S	20
A5G02015	2 x 1.5	0.8	9.1	109	20S	20
A5G02025	2 x 2.5	0.9	10.8	158	20S	20
A5G02040	2 x 4.0	1.0	12.4	217	20	20L
A5G02060	2 x 6.0	1.0	13.8	282	25	25
A5G0210	2 x 10.0	1.2	19.4	539	32	32
A5G0216	2 x 16.0	1.2	21.8	722	32	32
A5G0225	2 x 25.0	1.4	25.9	1043	40	40
H07RN-F Cable - 3 Cores						
A5G03010	3 x 1.0	0.8	9.1	110	20S	20
A5G03015	3 x 1.5	0.8	9.8	134	20S	20
A5G03025	3 x 2.5	0.9	11.6	196	20	20
A5G03040	3 x 4.0	1.0	13.3	271	25	25
A5G03060	3 x 6.0	1.0	14.8	355	25	25
A5G0310	3 x 10.0	1.2	20.7	674	32	32
A5G0316	3 x 16.0	1.2	23.3	913	32	32
A5G0325	3 x 25.0	1.4	27.7	1324	40	40
A5G0335	3 x 35.0	1.4	30.9	1754	50S	50
A5G0350	3 x 50.0	1.6	35.8	2409	50	-
A5G0370	3 x 70.0	1.6	40.5	3211	50	-
A5G0395	3 x 95.0	1.8	45.1	4210	63S	-
H07RN-F Cable - 4 Cores						
A5G04010	4 x 1.0	0.8	10.0	136	20S	20
A5G04015	4 x 1.5	0.8	10.8	166	20S	20
A5G04025	4 x 2.5	0.9	12.7	241	20	20L
A5G04040	4 x 4.0	1.0	14.6	336	25	25
A5G04060	4 x 6.0	1.0	16.4	449	25	32
A5G0410	4 x 10.0	1.2	22.6	833	32	32
A5G0416	4 x 16.0	1.2	25.4	1138	40	40
A5G0425	4 x 25.0	1.4	30.7	1714	50S	50
A5G0435	4 x 35.0	1.4	34.2	2204	50S	50
A5G0450	4 x 50.0	1.6	39.6	3029	50	-
A5G0470	4 x 70.0	1.6	44.9	4121	63	-
A5G0495	4 x 95.0	1.8	50.4	5361	63	-
H07RN-F Cable - 5 Cores						
A5G05015	5 x 1.5	0.8	11.8	206	20	20L
A5G05025	5 x 2.5	0.9	14.0	297	25	25
A5G05040	5 x 4.0	1.0	16.3	422	25	25
A5G05060	5 x 6.0	1.0	18.0	567	32	32
A5G0510	5 x 10.0	1.2	24.8	1010	40	40
A5G0516	5 x 16.0	1.2	28.0	1400	40	40
A5G0525	5 x 25.0	1.4	33.6	2096	50S	50
A5G0535*	5 x 35.0	1.4	39.5	2700	50	50
A5G0550*	5 x 50.0	1.6	44.2	3730	63S	63S
H07RN-F Cable - 7 Cores						
A5G07015*	7 x 1.5	0.8	14.7	315	25	25
A5G07025*	7 x 2.5	0.9	17.1	445	25	32
H07RN-F Cable - 12 Cores						
A5G1215	12 x 1.5	0.8	18.9	493	25	32
A5G1225	12 x 2.5	0.9	22.0	702	32	32
H07RN-F Cable - 19 Cores						
A5G1915	19 x 1.5	0.8	22.1	710	32	32-

* Generally to BS7919

Conductors

Class 5 flexible Copper Conductors for Single Core and Multi-Core Cables

1	2	3
Nominal Cross Sectional Area mm²	**Maximum Diameter of Wires in Conductor** mm	**Maximum Resistance of Conductor at 20°c Plain Wires** ohms/Km
1.00	0.21	19.5
1.50	0.26	13.3
2.50	0.26	7.98
4.00	0.31	4.95
6.00	0.31	3.30
10.00	0.41	1.91
16.00	0.41	1.21
25.00	0.41	0.780
35.00	0.41	0.554
50.00	0.41	0.386
70.00	0.51	0.272
95.00	0.51	0.206
120.00	0.51	0.161
150.00	0.51	0.129
185.00	0.51	0.106
240.00	0.51	0.0801
300.00	0.51	0.0641
400.00	0.51	0.0486
500.00	0.61	0.0384
630.00	0.61	0.0287

Table in accordance with BS EN 60228:2005 (previously BS6360)

Electrical Characteristics

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm²	DC or Single Phase AC (1 Two Core Cable with or without protective conductor) A	Three Phase AC (1 Three Core, Four Core or Five Core Cable) A	Single Phase AC or DC 2 Single Core Cables Touching A
1	**2**	**3**	**4**
1.0	11	9.0	
1.5	17	15.0	
2.5	27	24.0	
4.0	41	36.0	-
6.0	53	47.0	-
10.0	73	64.0	-
16.0	99	86.0	-
25.0	131	114.0	-
35.0	-	140.0	192
50.0	-	170.0	240
70.0	-	216.0	297
95.0	-	262.0	354
120.0	-	303.0	414
150.0	-	348.0	476
185.0	-	397.0	540
240.0	-	467.0	645
300.0	-	537.0	741
400.0	-	-	885
630.0	-	-	1190

Ambient temperature: 30°C
Conductor operating temperature: 85°C

De-rating factor for ambient temperature

85°C thermosetting (rubber) insulated cables:

Ambient Temperature	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C
De-rating Factor	0.95	0.91	0.86	0.82	0.76	0.70	0.64	0.57	0.50	0.40

1. The current ratings tabulated are for cables in free air but may also be used for cables resting on a surface. If the cable is to be wound on a drum on load the ratings should be reduced in accordance with NOTE 3 below and for cables which may be covered, NOTE 4 below.

2. Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 6.2 of the preface to this appendix.

3. Flexible cables wound on reeling drums
The current ratings of cables used on reeling drums are to be reduced by the fallowing factors:

a) Radial type drum
ventilated: 85%
unventilated: 75%

b) Ventilated cylindrical type drum
1 layer of cable: 85%
2 layers of cable: 65%
3 layers of cable: 45%
4 layers of cable: 35%

A radial type drum is one where spiral layers of cable are accommodated between closely spaced flanges; if fitted with solid flanges the ratings given above should be reduced and the drum is described as non-ventilated and if the flanges have suitable apertures as ventilated. A ventilated cylindrical cable drum is one where layers of cable are accommondated between widely spaced flanges and the drum and end flanges have suitable ventilating apertures.

4. Where cable may be covered or coiled up whilst on load, or the air movement over the cable restricted, the current rating should be reduced. It is not possible to specify the amount of reduction but the table of rating factors for reeling drums can be used as a guide.

5. The temperature limits given in Table 52B should be taken into account when it is intended to operate these cables at maximum permissible temperature.

6. Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512-02).

The above table is in accordance with Table 4H2A of the 16th Edition of IEE Wiring Regulations.

The Current Carrying Capacities in this appendix are based upon the following reference ambient temperatures:
For non-sheathed and sheathed cables in air, irrespective of the Installation Method: 30°C
For buried cables, either directly in the soil or in ducts in the ground: 20°C

The current ratings stated are based on conservative assumptions, and therefore, in some instances, may be adjusted according to the ambient installation and operating conditions.

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm²	1 Two Core or 2 Single Core Cables DC mV/A/m	Two Core Cable Single Phase AC mV/A/m			1 Three Core, Four Core or Five Core Cable Three Phase AC mV/A/m			2 Single Core Cables Touching Single Phase AC* mV/A/m		
1	2	3			4			5		
1.00	-	-			-			-		
1.50	30.6	30.6			26.5			26.50		
2.50	19.0	19.0			16.4			16.40		
4.00	13.0	13.0			11.0			10.20		
6.00	8.4	8.4			7.3			6.75		
10.00	5.0	5.0			4.3			4.00		
16.00	3.1	3.1			2.7			2.52		
		r	x	z	r	x	z	r	x	z
25.00	2.000	2.00	0.175	2.00	1.700	0.150	1.700	-	-	-
35.00	1.420	-	-	-	1.200	0.150	1.200	1.420	0.210	1.430
50.00	0.990	-	-	-	0.900	0.145	0.910	0.990	0.210	1.010
70.00	0.700	-	-	-	0.610	0.140	0.630	0.700	0.200	0.720
95.00	0.530	-	-	-	0.460	0.135	0.480	0.530	0.195	0.560
120.00	0.410	-	-	-	0.360	0.135	0.390	0.410	0.190	0.460
150.00	0.330	-	-	-	0.290	0.130	0.320	0.330	0.190	0.380
185.00	0.270	-	-	-	0.240	0.130	0.270	0.270	0.190	0.330
240.00	0.210	-	-	-	0.185	0.130	0.220	0.210	0.185	0.280
300.00	0.165	-	-	-	0.145	0.125	0.195	0.170	0.180	0.250
400.00	0.125	-	-	-	-	-	-	0.130	0.175	0.220
630.00	0.073	-	-	-	-	-	-	0.084	0.170	0.190

Conductor operating temperature: 85°C

1. The voltage drop figures given above are based on a conductor operating temperature of 85°C and are therefore not accurate when the operating temperature is in excess of 85°C.

2. * A larger voltage drop will result if the cables are spaced.

The above table is in accordance with Table 4H2B of the 16th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area their inductances can be ignored and $(mV/A/m)_r$ values only are tabulated. For cables having conductors greater than 16mm², cross-sectional area the impedance values are given as $(mV/A/m)_Z$, together with the resistive component $(mV/A/m)_r$ and the reactive component $(mV/A/m)_X$.

The above paragraph is extracted from Appendix 4 of the 16th Edition of IEE Wiring Regulations.

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.