

H07ZZ-F Cable

Eland Product Group **A6G and A5G**



Application

For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment. Examples of use include supplying mobile power units, UPS installations, stage lighting and audio visual equipment. This cable will withstand medium mechanical stresses and is suitable for both installation indoors and outdoors.

Standards

CENELEC HD22-13, NFC 032-131, IEC 60332-3

Technical Data

Conductor

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

Insulation

Halogen-free elastomer

Sheath

Halogen-free elastomer

Sheath Colour

Black

Voltage Rating

450/750V

Temperature Rating

Conductor operating temperature
-25°C to +60°C (85°C max)

Minimum Bending Radius

Fixed: 4 x overall diameter
Flexing: 6 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 Overall Diameter mm	Nominal Weight kg/Km	FCGA2 Gland (Brass)	FCGA2PL Gland (Plastic)
H07ZZ-F Cable - 1 Core					
A6G10015HF	1 x 1.5	7.1	63.0	-	-
A6G10025HF	1 x 2.5	7.9	76.0	-	-
A6G1004HF	1 x 4.0	9.0	107.0	-	20
A6G1006HF	1 x 6.0	9.8	140.0	20S	20
A6G1010HF	1 x 10.0	11.9	213.0	20	20
A6G1016HF	1 x 16.0	13.4	291.0	20	25
A6G1025HF	1 x 25.0	15.8	415.0	25	25
A6G1035HF	1 x 35.0	17.9	539.0	25	25
A6G1050HF	1 x 50.0	20.6	740.0	32	32
A6G1070HF	1 x 70.0	23.3	989.0	32	32
A6G1095HF	1 x 95.0	26.0	1290.0	32	40
A6G1120HF	1 x 120.0	28.6	1592.0	40	40
A6G1150HF	1 x 150.0	31.5	1957.0	40	40
A6G1185HF	1 x 185.0	34.4	2350.0	50S	50
A6G1240HF	1 x 240.0	38.3	3099.0	50	63
A6G1300HF	1 x 300.0	41.9	3687.0	50	-
A6G1400HF	1 x 400.0	46.8	4850.0	63S	-
A6G1500HF	1 x 500.0	52.0	5998.0	63	-

Eland Part Number	No. of Cores x Nominal Cross Sectional Area mm ²	Nominal Overall Diameter mm	Nominal Weight kg/Km	FCGA2 Gland (Brass)	FCGA2PL Gland (Plastic)
H07ZZ-F Cable - 2 Cores					
A5G020010HF	2 x 1.0	10.0	112.0	-	-
A5G020015HF	2 x 1.5	11.0	135.0	20S	20
A5G02025HF	2 x 2.5	13.1	190.0	20	25
A5G02004HF	2 x 4.0	15.1	255.0	-	-
A5G02006HF	2 x 6.0	16.8	335.0	-	-
A5G02010HF	2 x 10.0	22.6	590.0	-	-
A5G02016HF	2 x 16.0	25.7	821.0	-	-
A5G02025HF	2 x 25.0	30.7	1172.0	-	-
H07ZZ-F Cable - 3 Cores					
A5G03010HF	3 x 1.0	10.7	125.0	-	-
A5G03015HF	3 x 1.5	11.9	129.0	20	20
A5G03025HF	3 x 2.5	14.0	250.0	25	25
A5G03004HF	3 x 4.0	16.2	330.0	-	-
A5G03006HF	3 x 6.0	18.0	440.0	-	-
A5G03010HF	3 x 10.0	24.2	800.0	-	-
A5G03016HF	3 x 16.0	27.6	1150.0	-	-
A5G03025HF	3 x 25.0	33.0	1680.0	-	-
A5G03035HF	3 x 35.0	52.0	2170.0	-	-
H07ZZ-F Cable - 4 Cores					
A5G04010HF	4 x 1.0	12.5	170.0	-	-
A5G04015HF	4 x 1.5	13.1	196.0	20	25
A5G04025HF	4 x 2.5	15.5	275.0	25	25
A5G04040HF	4 x 4.0	17.9	388.0	25	25
A5G04060HF	4 x 6.0	20.0	515.0	32	32
A5G0410HF	4 x 10.0	26.5	882.0	40	40
A5G0416HF	4 x 16.0	30.1	1234.0	40	40
A5G0425HF	4 x 25.0	36.6	1811.0	50S	50
A5G0435HF	4 x 35.0	41.1	2365.0	50	63
A5G0450HF	4 x 50.0	47.5	3212.0	63S	-
H07ZZ-F Cable - 4 Core					
A5G04070HF	4 x 70.0	54.5	4320.0	-	-
A5G04095HF	4 x 95.0	60.5	5572.0	-	-
A5G04120HF	4 x 120.0	65.5	6930.0	-	-
A5G04150HF	4 x 150.0	74.0	8419.0	-	-
A5G04185HF	4 x 185.0	79.5	10165.0	-	-
A5G04240HF	4 x 240.0	90.0	13420.0	-	-
H07ZZ-F Cable - 5 Cores					
A5G05015HF	5 x 1.0	13.5	205.0	-	-
A5G05015HF	5 x 1.5	14.4	242.0	25	25
A5G05025HF	5 x 2.5	17.0	341.0	25	25
A5G05040HF	5 x 4.0	19.9	495.0	32	32
A5G05060HF	5 x 6.0	22.2	642.0	32	32
A5G0510HF	5 x 10.0	29.1	1090.0	40	40
A5G0516HF	5 x 16.0	33.3	1534.0	50S	50
A5G0525HF	5 x 25.0	40.4	2291.0	50	63
A5G0550HF	5 x 50.0	53.0	3950.0	63S	-
H07ZZ-F Cable - 7 Cores					
A5G07015HF	7 x 1.5	18.5	355.0	25	32
H07ZZ-F Cable - 12 Cores					
A5G12015HF	12 x 1.5	22.4	660.0	32	32
H07ZZ-F Cable - 19 Cores					
A5G19015HF	19 x 1.5	27.5	788.0	40	40
H07ZZ-F Cable - 27 Cores					
A5G27015HF	21 x 1.5	31.5	1077.0	40	40
H07ZZ-F Cable - 37 Cores					
A5G37015HF	37 x 1.5	36.5	1358.0	50S	50

Conductors

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

1 Nominal Cross Sectional Area mm ²	2 Maximum Diameter of Wires in Conductor mm	3 Maximum Resistance of Conductor at 20°C
		Plain Wires ohms/Km
1.00	0.21	19.5000
1.50	0.26	13.3000
2.50	0.26	7.9800
4.00	0.31	4.9500
6.00	0.31	3.3000
10.00	0.41	1.9100
16.00	0.41	1.2100
25.00	0.41	0.7800
35.00	0.41	0.5540
50.00	0.41	0.3860
70.00	0.51	0.2720
95.00	0.51	0.2060
120.00	0.51	0.1610
150.00	0.51	0.1290
185.00	0.51	0.1060
240.00	0.51	0.0801
300.00	0.51	0.0641
400.00	0.51	0.0486
500.00	0.61	0.0384

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

Electrical Characteristics

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	DC or Single Phase AC (1 Two Core Cable with or without protective conductor)	Three Phase AC (1 Three Core, Four Core or Five Core Cable)	Single Phase AC or DC 2 Single Core Cables Touching
	A	A	A
1	2	3	4
4	41	36	-
6	53	47	-
10	73	64	-
16	99	86	-
25	131	114	-
35	-	140	192
50	-	170	240
70	-	216	297
95	-	262	354
120	-	303	414
150	-	348	476
185	-	397	540
240	-	467	645
300	-	537	741
400	-	-	885
500	-	-	1017

Ambient temperature: 30°C

Conductor operating temperature: 85°C

Correction 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
Correction Factor	0.95	0.91	0.86	0.82	0.76	0.70	0.64	0.57	0.50	0.40

180°C thermosetting (rubber) insulated cables:

Ambient Temperature	35 to	90°C	95°C	100°C	105°C	110°C	115°C	120°C	125°C	130°C	135°C	140°C	145°C
Correction Factor	1.0	0.96	0.92	0.88	0.83	0.78	0.73	0.68	0.62	0.55	0.48	0.39	0.28

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 following factors:

a) Radial type drum	b) Ventilated cylindrical type drum
ventilated: 85%	1 layer of cable: 85%
unventilated: 75%	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 accommodated 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).

7. For 180°C cables, the correction factors for ambient temperature allow a conductor operating temperature up to 150°C. Consult the cable manufacturer for further information.

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	1 Two Core or 2 Single Core	Two Core Cable Single Phase AC mV/A/m			1 Three Core, Four Core or Five Core Cable Three Phase AC			Single Phase AC mV/A/m		
		1	2	3	4	5	r	x	z	
4	13.0	13.0	11.0	-						
6	8.4	8.4	7.3	-						
10	5.0	5.0	4.3	-						
16	3.1	3.1	2.7	-						
		r	x	z	r	x	z	r	x	z
25	2.000	2.00	0.175	2.00	1.700	0.150	1.700	-	-	-
35	1.420	-	-	-	1.200	0.150	1.200	1.420	0.210	1.430
50	0.990	-	-	-	0.900	0.145	0.910	0.990	0.210	1.010
70	0.700	-	-	-	0.610	0.140	0.630	0.700	0.200	0.720
95	0.530	-	-	-	0.460	0.135	0.480	0.530	0.195	0.560
120	0.410	-	-	-	0.360	0.135	0.390	0.410	0.190	0.460
150	0.330	-	-	-	0.290	0.130	0.320	0.330	0.190	0.380
185	0.270	-	-	-	0.240	0.130	0.270	0.270	0.190	0.330
240	0.210	-	-	-	0.185	0.130	0.220	0.210	0.185	0.280
300	0.165	-	-	-	0.145	0.125	0.195	0.170	0.180	0.250
400	0.125	-	-	-	-	-	-	0.130	0.175	0.220
500	0.098	-	-	-	-	-	-	0.105	0.170	0.200

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. In the case of the 180°C cables with a conductor temperature of 150°C the above resistive values should be increased by a factor of 1.2.

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.