

# H07BN4-F Cable (6381TQ)

Eland Product Group **A6Q**

## Application

For connecting equipment such as pumps, generators and lighting to the mains supply and generally for use in arduous industrial environments where good flexibility and resistance to mechanical abrasion is essential.



## Dimensions

### Standards

BS7919 (Superseded BS6007 in 2003)

### Conductor

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

### Separator

Unspecified material

### Insulation

EPR (Ethylene Propylene Rubber) to BS7655

### Sheath

HOFR CSP (Heat and Oil Resistant and Flame Retardant Chlorosulphonated Polyethylene) to BS7655  
Flame Retardant to BS4066 Part 1

Eland Part Number	No. of Cores x Nominal Cross Sectional Area # x mm <sup>2</sup>	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
A6Q1010	1 x 10	1.2	10.6	200
A6Q1016	1 x 16	1.2	11.8	270
A6Q1025	1 x 25	1.4	13.7	380
A6Q1035	1 x 35	1.4	15.6	510
A6Q1050	1 x 50	1.6	17.8	680
A6Q1070	1 x 70	1.6	20.2	930
A6Q1095	1 x 95	1.8	22.4	1200
A6Q1120	1 x 120	1.8	24.3	1460
A6Q1150	1 x 150	2.0	27.1	1800
A6Q1185	1 x 185	2.2	29.6	2200
A6Q1240	1 x 240	2.4	32.3	2800
A6Q1300	1 x 300	2.6	35.3	3350
A6Q1400	1 x 400	2.8	39.8	4400
A6Q1500	1 x 500	3.0	43.5	5400
A6Q1630	1 x 630	3.0	48.3	6900

### Sheath Colour

Black

### Voltage Rating

450/750V

### Temperature Rating

-40°C to +90°C

### Minimum Bending Radius

Up to 25mm<sup>2</sup>:  
6 x overall diameter  
Above 25mm<sup>2</sup>:  
8 x overall diameter



## Conductors

### Class 5 flexible Copper Conductors for Single Core and Multi-Core cables

1 Nominal Cross Sectional Area mm <sup>2</sup>	2 Maximum Diameter of Wires in Conductor mm	4 Maximum Resistance of Conductor at 20°C
		Metal-Coated Wires ohms/Km
6.00	0.31	3.3900
10.00	0.41	1.9500
16.00	0.41	1.2400
25.00	0.41	0.7950
35.00	0.41	0.5650
50.00	0.41	0.3930
70.00	0.51	0.2770
95.00	0.51	0.2100
120.00	0.51	0.1640
150.00	0.51	0.1320
185.00	0.51	0.1080
240.00	0.51	0.0817
300.00	0.51	0.0654
400.00	0.51	0.0495
500.00	0.61	0.0391
630.00	0.61	0.0292

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

## Electrical Characteristics

### Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm <sup>2</sup>	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	Current Carrying Capacity 3 Single Core Cables bunched in trefoil Amps
1	2	3	4	
10	76	66	-	72
16	103	89	-	108
25	136	119	-	154
35	-	146	200	191
50	-	177	250	230
70	-	225	310	302
95	-	273	369	369
120	-	316	432	431
150	-	363	497	498
185	-	414	564	572
240	-	487	673	679
300	-	560	773	785
400	-	798	924	925
500	-	918	1062	1080
630	-	1162	1242	1260

Ambient temperature: 30°C

Conductor operating temperature: 90°C

### Rating factor for ambient temperature

90°C thermosetting insulated cables:

Ambient Temperature	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
Rating Factor	0.95	0.91	0.86	0.82	0.76	0.70	0.64	0.57	0.50	0.40	0.28

180°C thermosetting 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
Rating Factor	1.0	0.96	0.91	0.86	0.81	0.76	0.70	0.64	0.57	0.50	0.40	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 2 below and for cables which may be covered, NOTE 3 below.

#### 2. 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. If the flanges have suitable apertures the drum is described 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.

3. 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.

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

5. The temperature limits given in Table 52.1 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 must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

The above table is in accordance with Table 4F2A of the 17th 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 mm <sup>2</sup>	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		
		r	x	z	r	x	z	r	x	z
1	2	3			4			5		
10	5.10	5.1			4.4			-		
16	3.20	3.2			2.7			-		
25	2.030	2.03	0.175	2.04	1.730	0.150	1.730	-	-	-
35	1.420	-	-	-	1.220	0.150	1.230	1.440	0.210	1.460
50	1.000	-	-	-	0.910	0.145	0.930	1.000	0.210	1.020
70	0.710	-	-	-	0.620	0.140	0.640	0.710	0.200	0.730
95	0.540	-	-	-	0.470	0.135	0.490	0.540	0.195	0.570
120	0.420	-	-	-	0.370	0.135	0.390	0.420	0.190	0.460
150	0.340	-	-	-	0.290	0.130	0.320	0.340	0.190	0.390
185	0.270	-	-	-	0.240	0.130	0.270	0.270	0.190	0.330
240	0.210	-	-	-	0.188	0.130	0.230	0.210	0.185	0.280
300	0.167	-	-	-	0.147	0.125	0.195	0.173	0.180	0.250
400	0.127	-	-	-	-	-	-	0.132	0.175	0.220
500	0.100	-	-	-	-	-	-	0.107	0.170	0.200
630	0.074	-	-	-	-	-	-	0.085	0.170	0.190

Conductor operating temperature: 90°C

1. The voltage drop figures given above are based on a conductor operating temperature of 90°C and are therefore not accurate when the operating temperature is in excess of 90°C. 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 4F2B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm<sup>2</sup> 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 16mm<sup>2</sup>, 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 17th Edition of IEE Wiring Regulations.