

6181Y Cable to BS6004

Eland Product Group A1Y

Application

Fixed installation in dry or damp areas for domestic and light industrial wiring.



Standards

BS6004

Conductor

1.0 - 2.5mm² : Class 1 solid plain copper conductor to BS EN 60228:2005 (previously BS6360)

4.0 - 25mm²: Class 2 stranded plain copper conductor to BS EN 60228:2005 (previously BS6360)

Insulation

PVC (Polyvinyl Chloride) or XLPE (Cross-Linked Polyethylene) 6181XY

Sheath

PVC (Polyvinyl Chloride)

Sheath Colour

Grey

Insulation Colour

Blue or Brown

Voltage Rating

300/500V

Temperature Rating

0°C to +70°C

Minimum Bending Radius

Up to 10mm²:
3 x overall diameter

10mm² to 25mm²:
4 x overall diameter



Dimensions

Eland Part Number	Nominal Cross Sectional Area mm ²	Nominal Diameter Over Conductor mm	Nominal Thickness of Insulation mm	Nominal Diameter Over Core mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
AIYGR/*0010	1.0	1.13	0.6	2.4	4.1	28
AIYGR/*0015	1.5	1.38	0.7	2.8	4.5	34
AIYGR/*0025	2.5	1.78	0.7	3.4	5.1	49
AIYGR/*004	4.0	2.55	0.8	4.2	6.1	75
AIYGR/*006	6.0	3.12	0.8	4.8	8.7	99
AIYGR/*010	10.0	4.05	1.0	6.1	8.0	155
AIYGR/*016	16.0	5.10	1.0	7.1	9.1	225
AIYGR/*025	25.0	6.42	1.2	8.9	11.2	340

Eland Part Numbers shown above designate the insulation colour (). For each colour either substitute * for BL (blue) or BR (brown)

Conductors

Class 1 solid Conductors for Single Core and Multi-Core cables

1 Nominal Cross Sectional Area mm ²	2 Maximum Resistance of Conductor at 20°C		3
	Circular, Annealed Copper Conductors		
	Plain ohms/Km	Metal-Coated ohms/Km	
1.00	18.1000	18.20	
1.50	12.1000	12.20	
2.50	7.4100	7.56	

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

Class 2 stranded Conductors for Single Core and Multi-Core cables

1 Nominal Cross Sectional Area mm ²	2	3	4	5	6	7	8	9	
	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C		
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor		
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km	Metal-Coated Wires ohms/Km	
4.00	7	-	6	-	-	-	4.6100	4.7000	
6.00	7	-	6	-	-	-	3.0800	3.1100	
10.00	7	7	6	6	-	-	1.8300	1.8400	
16.00	7	7	6	6	-	-	1.1500	1.1600	
25.00	7	7	6	6	6	6	0.7270	0.7340	

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

Electrical Characteristics

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	Reference Method A (enclosed in conduit in thermally insulating wall etc.) Amps		Reference Method B (enclosed in conduit on a wall or in a trunking etc) Amps		Reference Method C (clipped direct) Amps		Reference Method F (in free air or on a perforated cable tray etc horizontal or vertical) Amps				
	2 Cables Single Phase AC or DC	3 or 4 Cables Three Phase AC	2 Cables Single Phase AC or DC	3 or 4 Cables Three Phase AC	2 Cables Single Phase AC or DC flat or touching	3 or 4 Cables Three Phase AC flat and touching or trefoil	Touching			Spaced by one diameter	
							2 Cables Single Phase AC or DC flat	3 Cables Three Phase AC flat	3 Cables Three Phase AC trefoil	2 Cables Single Phase AC or DC or 3 Cables Three Phase AC flat	Horizontal
1	2	3	4	5	6	7	8	9	10	11	12
1.0	11.0	10.5	13.5	12.0	15.5	14.0	-	-	-	-	-
1.5	14.5	13.5	17.5	15.5	20.0	18.0	-	-	-	-	-
2.5	20.0	18.0	24.0	21.0	27.0	25.0	-	-	-	-	-
4.0	26.0	24.0	32.0	28.0	37.0	33.0	-	-	-	-	-
6.0	34.0	31.0	41.0	36.0	47.0	43.0	-	-	-	-	-
10.0	46.0	42.0	57.0	50.0	65.0	59.0	-	-	-	-	-
16.0	61.0	56.0	76.0	68.0	87.0	79.0	-	-	-	-	-
25.0	80.0	73.0	101.0	89.0	114.0	104.0	131	114	110	146	130

Ambient temperature: 30°C
 Conductor operating temperature: 70°C

The above table is in accordance with Table 4D1A of the 17th Edition of IEE Wiring Regulations.

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm ²	2 Cables DC mV/A/m	2 Cables Single Phase AC mV/A/m						3 or 4 Cables Three Phase AC mV/A/m														
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C, F & G (clipped direct, on tray or in free air)			Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C, F & G (clipped direct, on tray or in free air)											
					Cable Touching		Cable Spaced*					Cable Touching Trefoil		Cable Touching Flat		Cable Spaced* Flat						
1	2	3			4		5		6			7		8		9						
1.0	44.000	44.0			44.0		44.0		38.0			38.0		38.0		38.0						
1.5	29.000	29.0			29.0		29.0		25.0			25.0		25.0		25.0						
2.5	18.000	18.0			18.0		18.0		15.0			15.0		15.0		15.0						
4.0	11.000	11.0			11.0		11.0		9.5			9.5		9.5		9.5						
6.0	7.300	7.3			7.3		7.3		6.4			6.4		6.4		6.4						
10.0	4.400	4.4			4.4		4.4		3.8			3.8		3.8		3.8						
16.0	2.800	2.8			2.8		2.8		2.4			2.4		2.4		2.4						
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25.0	1.750	1.800	0.33	1.80	1.750	0.200	1.750	1.750	0.29	1.80	1.500	0.29	1.55	1.500	0.175	1.500	0.150	0.25	1.55	1.500	0.32	1.55

Conductor operating temperature: 70°C

*Spacings larger than one cable diameter will result in a larger voltage drop.

The above table is in accordance with Table 4D1B of the 17th 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.

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area	Cables DC	2 Cables, Single Phase AC									3 or 4 Cables, Three Phase AC											
		Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall).			Reference Methods 1 & 11 (clipped direct or on trays, touching)			Reference Method 12 (spaced*)			Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall).			Reference Methods 1, 11 & 12 (in trefoil)			Reference Methods 1 (flat and touching)			Reference Method 12 (flat spaced *)		
1	2	3			4			5			6			7			8			9		
mm ²	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.0	44.00	44.00			44.00			44.00			38.00			38.00			38.00			38.00		
1.5	29.00	29.00			29.00			29.00			25.00			25.00			25.00			25.00		
2.5	18.00	18.00			18.00			18.00			15.00			15.00			15.00			15.00		
4.0	11.00	11.00			11.00			11.00			9.50			9.50			9.50			9.50		
6.0	7.30	7.30			7.30			7.30			6.40			6.40			6.40			6.40		
10.0	4.40	4.40			4.40			4.40			3.80			3.80			3.80			3.80		
16.0	2.80	2.80			2.80			2.80			2.40			2.40			2.40			2.40		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25.0	1.750	1.800	0.33	1.80	1.750	0.200	1.750	1.75	0.29	1.80	1.50	0.29	1.55	1.500	0.175	1.500	1.500	0.25	1.55	1.500	0.32	1.55
35.0	1.250	1.300	0.31	1.30	1.250	0.195	1.250	1.250	0.28	1.30	1.10	0.27	1.10	1.100	0.170	1.100	1.100	0.24	1.10	1.100	0.32	1.15
50.0	0.930	0.950	0.30	1.00	0.930	0.190	0.950	0.930	0.28	0.97	0.81	0.26	0.85	0.800	0.165	0.820	0.800	0.24	0.84	0.800	0.32	0.86
70.0	0.630	0.650	0.29	0.72	0.630	0.185	0.660	0.630	0.27	0.69	0.56	0.25	0.61	0.550	0.160	0.570	0.550	0.24	0.60	0.550	0.31	0.63
95.0	0.460	0.490	0.28	0.56	0.470	0.180	0.500	0.470	0.27	0.54	0.42	0.24	0.48	0.410	0.155	0.430	0.410	0.23	0.47	0.400	0.31	0.51
120.0	0.360	0.390	0.27	0.47	0.370	0.175	0.410	0.370	0.26	0.45	0.33	0.23	0.41	0.320	0.150	0.360	0.320	0.23	0.40	0.320	0.30	0.44
150.0	0.290	0.310	0.27	0.41	0.300	0.175	0.340	0.290	0.26	0.39	0.27	0.23	0.36	0.260	0.150	0.300	0.260	0.23	0.34	0.260	0.30	0.40
185.0	0.230	0.250	0.27	0.37	0.240	0.170	0.290	0.240	0.26	0.35	0.22	0.23	0.32	0.210	0.145	0.260	0.210	0.22	0.31	0.210	0.30	0.36
240.0	0.180	0.195	0.26	0.33	0.185	0.165	0.250	0.185	0.25	0.31	0.17	0.23	0.29	0.160	0.145	0.220	0.160	0.22	0.27	0.160	0.29	0.34
300.0	0.145	0.160	0.26	0.31	0.150	0.165	0.220	0.150	0.25	0.29	0.14	0.23	0.27	0.130	0.140	0.190	0.130	0.22	0.25	0.130	0.29	0.32
400.0	0.105	0.130	0.26	0.29	0.120	0.160	0.200	0.115	0.25	0.27	0.12	0.22	0.25	0.105	0.140	0.175	0.105	0.21	0.24	0.100	0.29	0.31
500.0	0.086	0.110	0.26	0.28	0.098	0.155	0.185	0.093	0.24	0.26	0.10	0.22	0.25	0.086	0.135	0.160	0.086	0.21	0.23	0.081	0.29	0.30
630.0	0.068	0.094	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25	0.08	0.22	0.24	0.072	0.135	0.150	0.072	0.21	0.22	0.066	0.28	0.29
800.0	0.053		-		0.068	0.150	0.165	0.061	0.24	0.25	-	-	-	0.060	0.130	0.145	0.060	0.21	0.22	0.053	0.28	0.29
1000.0	0.042		-		0.059	0.150	0.160	0.050	0.24	0.24	-	-	-	0.052	0.130	0.140	0.052	0.20	0.21	0.044	0.28	0.28

Conductor Operating Temperature: 70°C

r = Resistive Component
 x = Reactive Component
 z = Impedance Value

- Where the conductor is to be protected by a semi-enclosed fuse to BS3036, refer to the IEE wiring regulations 16th edition.
- The current-carrying capacities in columns 2 to 5 are also applicable to flexible cables to BS6004 table 1(c) and to 90°C heat resisting PVC cables to BS6231 tables 8 and 9 where the cables are used in fixed installations.

* Spacings larger than those specified in Method 12 (see table 4A 16th edition regs) will result in larger volt drop.