6181Y / BS 6004 Cable

Eland Product Group: **A1Y**

APPLICATION

Fixed installation in dry or damp areas for domestic and light industrial wiring. Also used in connection to (smart)meters.

CONSTRUCTION

Conductor
1mm² to 2.5mm² : Class 1 solid copper conductor according to BS EN 60228 (previously BS 6360)
4mm² to 25mm²: Class 2 stranded copper conductor according to BS EN 60228 (previously BS 6360)

Insulation
PVC (Polyvinyl Chloride) Type TI1 according to BS EN 50363

Sheath
PVC (Polyvinyl Chloride) Type 6 according to BS EN 50363

CABLE STANDARDS

BS 6004, BS EN/IEC 60332-1-2

The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

CHARACTERISTICS

Voltage Rating (Uo/U)
300/500V

Temperature Rating
Fixed: -15°C to +70°C

Minimum Bending Radius
Up to 6mm² - Fixed: 3 x overall diameter
10mm² to 25mm² - Fixed: 4 x overall diameter

Insulation Colour
Blue Brown

Sheath Colour
Grey

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DIMENSIONS

ELAND PART NO.	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL DIAMETER OF CONDUCTOR mm	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
A1YGR/*0010	1	1.13	0.6	4.1	28
A1YGR/*0015	1.5	1.38	0.7	4.6	34
A1YGR/*0025	2.5	1.76	0.8	5.3	49
A1YGR/*004	4	2.5	0.8	6.1	75
A1YGR/*006	6	3	0.8	6.7	99
A1YGR/*010	10	3.85	1	8.1	155
A1YGR/*016	16	4.8	1	9.3	225
A1YGR/*025	25	5.9	1.2	11.1	340

*Eland Part No. shown above designate the insulation colour (*). For each colour substitute * for a colour code as listed below. e.g. A1YGR/BL0010 = 1mm² Blue

Colour Codes

COLOUR	Blue	Brown
CODE	BL	BR

CONDUCTORS

Class 1 Solid Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm²	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C	
	Circular, Annealed Copper Conductors	
	Plain Wires ohms/km	Metal-Coated Wires ohms/km
1	18.1	18.2
1.5	12.1	12.2
2.5	7.41	7.56

The above table is in accordance with BS EN 60228 (previously BS 6360)

Class 2 Stranded Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm²	MINIMUM NO. OF WIRES IN 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	7	-	6	-	-	-	4.61	4.7
6	7	-	6	-	-	-	3.08	3.11
10	7	7	6	6	-	-	1.83	1.84
16	7	7	6	6	-	-	1.15	1.16
25	7	7	6	6	6	6	0.727	0.734

The above table is in accordance with BS EN 60228 (previously BS 6360)

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ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm²	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 HORIZONTAL OR VERTICAL) Amps				
							Touching			Spaced by one diameter	
	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	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	Vertical
1	11	10.5	13.5	12	15.5	14	-	-	-	-	-
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-
2.5	20	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	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

NOMINAL CROSS SECTIONAL AREA mm²	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 and B (enclosed in conduit or trunking)			Reference Methods C and F (clipped direct, on tray or in free air)						Reference Methods A and B (enclosed in conduit or trunking)			Reference Methods C and F (clipped direct, on tray or in free air)								
					Cables Touching			Cables Spaced*						Cables touching, Trefoil			Cables touching, Flat			Cables spaced*, Flat		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
1	44	44			44			44			38			38			38			38		
1.5	29	29			29			29			25			25			25			25		
2.5	18	18			18			18			15			15			15			15		
4	11	11			11			11			9.5			9.5			9.5			9.5		
6	7.3	7.3			7.3			7.3			6.4			6.4			6.4			6.4		
10	4.4	4.4			4.4			4.4			3.8			3.8			3.8			3.8		
16	2.8	2.8			2.8			2.8			2.4			2.4			2.4			2.4		
25	1.75	1.80	0.33	1.80	1.75	0.20	1.75	1.75	0.29	1.80	1.50	0.29	1.55	1.50	0.175	1.50	1.50	0.25	1.55	1.50	0.32	1.55

Conductor operating temperature: 70°C

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

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

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DE-RATING FACTORS

For Ambient Air Temperatures other than 30°C

AMBIENT TEMPERATURE	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
DE-RATING FACTOR	1.03	1.00	0.94	0.87	0.79	0.71	0.61	0.50

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