

# N2XRH Cu/XLPE/LSZH/SWA/LSZH BASEC 0.6/1kV Cable



Eland Product Group: **A9L**

## APPLICATION

European reference for a low voltage multi-core LSZH power cable with steel wire armour (SWA). Same construction as the British Standard BS6724 cable. Power and auxiliary control cables for use in power networks, underground, outdoor and indoor applications and for use in cable ducting. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

## CONSTRUCTION

### Conductor

Class 2 stranded copper conductor according to BS EN 60228 (previously BS 6360)

### Insulation

XLPE (Cross-Linked Polyethylene) Type GP8 according to BS 7655

### Bedding

LSZH (Low Smoke Zero Halogen) Type LTS1 according to BS 7655

### Armour

SWA (Steel Wire Armour)

### Sheath

LSZH (Low Smoke Zero Halogen) Type LTS1 according to BS 7655

## CABLE STANDARDS

BS 6724, BS EN/IEC 60502-1, BS EN/IEC 60754-1 and 2  
BS EN 50267-2-1 and 2, BS EN/IEC 61034-1,  
BS EN/IEC 60332-1-2, BS EN/IEC 60332-3-24 Cat C



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 (U<sub>o</sub>/U)

600/1000V

### Temperature Rating

Fixed installation: -20°C to +90°C

### Minimum Bending Radius

1.5mm<sup>2</sup> to 16mm<sup>2</sup> - Fixed: 6 x overall diameter  
25mm<sup>2</sup> and above - Fixed: 8 x overall diameter

### Core Identification

2 core: ● Brown ● Blue

3 core: ● Brown ● Black ● Grey

4 core: ● Brown ● Blue ● Black ● Grey

5 core: ● Green/Yellow ● Brown ● Blue ● Black ● Grey

### Alternative Core Identification:

○ White cores with ● Black numbers

### Sheath Colour

● Black

## DIMENSIONS

## BS6724 XLPE/LSZH/SWA/LSZH (Copper)

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	NOMINAL THICKNESS OF INSULATION mm	NOMINAL DIAMETER mm		NOMINAL WEIGHT kg/km	BW / CW GLAND	WRAPAROUND CLEATS
				Under Armour	Overall			
A9SWA2015LSZH	2	1.5	0.6	7.3	12.1	302	20S	CC5
A9SWA2025LSZH	2	2.5	0.7	8.5	13.6	346	20S	CC6
A9SWA2040LSZH	2	4	0.7	9.4	14.7	410	20S	CC6
A9SWA2060LSZH	2	6	0.7	10.5	15.9	499	20	CC7
A9SWA210LSZH	2	10	0.7	12.3	18	648	20	CC8
A9SWA216LSZH	2	16	0.7	14.3	20.4	978	20	CC9
A9SWA225LSZH	2	25	0.9	14.7	20.4	1290	25	CC9
A9SWA235LSZH	2	35	0.9	16.8	23.3	1500	32	CC10
A9SWA250LSZH	2	50	1	19	25.8	1890	32	CC12
A9SWA270LSZH	2	70	1.1	22	29	2450	32	CC12
A9SWA295LSZH	2	95	1.1	25.1	33.1	3300	32	CC14
A9SWA2120LSZH	2	120	1.2	31.1	39.3	4020	40	CC16
A9SWA2150LSZH	2	150	1.4	30.9	39.3	4750	40	CC18
A9SWA3015LSZH	3	1.5	0.6	7.8	12.6	330	20S	CC5
A9SWA3025LSZH	3	2.5	0.7	9.2	14.1	390	20S	CC6
A9SWA3040LSZH	3	4	0.7	10	15.3	464	20	CC7
A9SWA3060LSZH	3	6	0.7	11.2	16.6	568	20	CC7
A9SWA310LSZH	3	10	0.7	13.1	19.5	866	20	CC8
A9SWA316LSZH	3	16	0.7	15.3	21.6	1152	25	CC9
A9SWA325LSZH	3	25	0.9	18.9	23.6	1800	25	CC11
A9SWA335LSZH	3	35	0.9	21.3	25.7	2230	32	CC12
A9SWA350LSZH	3	50	1	21.7	28.5	2490	32	CC12
A9SWA370LSZH	3	70	1.1	25.2	32.2	3290	32	CC14
A9SWA395LSZH	3	95	1.1	28.8	37	4440	40	CC16
A9SWA3120LSZH	3	120	1.2	32	40.4	5470	40	CC16
A9SWA3150LSZH	3	150	1.4	35.9	45.5	6930	50S	CC18
A9SWA4015LSZH	4	1.5	0.6	8.5	13.5	365	20S	CC6
A9SWA4025LSZH	4	2.5	0.7	9.9	15	438	20	CC6
A9SWA4040LSZH	4	4	0.7	11	16.4	532	20	CC7
A9SWA4060LSZH	4	6	0.7	12.3	18.7	764	20	CC8
A9SWA410LSZH	4	10	0.7	14.5	21.1	1013	25	CC9
A9SWA416LSZH	4	16	0.7	17	23.4	1360	25	CC10
A9SWA425LSZH	4	25	0.9	21	26.1	2160	32	CC11
A9SWA435LSZH	4	35	0.9	23.6	28.6	2690	32	CC12
A9SWA450LSZH	4	50	1	25	32	3130	32	CC14
A9SWA470LSZH	4	70	1.1	29.5	37.7	4500	40	CC16
A9SWA495LSZH	4	95	1.1	33.3	41.7	5600	50S	CC18
A9SWA4120LSZH	4	120	1.2	37.5	47.1	7400	50	CC20
A9SWA4150LSZH	4	150	1.4	41.6	51.4	8780	50	-
A9SWA4185LSZH	4	185	1.6	46.4	56.6	10630	63S	-
A9SWA4240LSZH	4	240	1.7	52.6	63	13390	63	-
A9SWA4300LSZH	4	300	1.8	56.3	63.6	14998	75S	-
A9SWA5015LSZH	5	1.5	0.6	9.7	14.3	410	20S	CC6
A9SWA5025LSZH	5	2.5	0.7	11.7	16.3	470	20	CC7
A9SWA5040LSZH	5	4	0.7	13	17.8	710	20	CC7
A9SWA5060LSZH	5	6	0.7	14.5	20	876	25	CC8

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	NOMINAL THICKNESS OF INSULATION mm	NOMINAL DIAMETER mm		NOMINAL WEIGHT kg/km	BW / CW GLAND	WRAPAROUND CLEATS
				Under Armour	Overall			
A9SWA510LSZH	5	10	0.7	17.2	22.9	1165	25	CC10
A9SWA516LSZH	5	16	0.7	20	26.6	1742	32	CC11
A9SWA525LSZH	5	25	0.9	24.7	31.5	2323	32	CC14
A9SWA535LSZH	5	35	0.9	27.8	34.8	2932	40	CC14
A9SWA550LSZH	5	50	1	32.4	40.4	4192	50S	CC16
A9SWA7015LSZH	7	1.5	0.6	10.2	15.2	470	20S	CC6
A9SWA7025LSZH	7	2.5	0.7	12.3	17.1	600	20	CC7
A9SWA1215LSZH	12	1.5	0.6	13.7	19.4	780	20	CC8
A9SWA1225LSZH	12	2.5	0.7	16.3	22.4	1000	25	CC9
A9SWA1915LSZH	19	1.5	0.6	16.2	22.2	1000	25	CC9
A9SWA1925LSZH	19	2.5	0.7	19.9	26.6	1540	25	CC11
A9SWA2715LSZH	27	1.5	0.6	20	26.7	1500	32	CC11
A9SWA2725LSZH	27	2.5	0.7	24	30.7	1950	32	CC14
A9SWA3715LSZH	37	1.5	0.6	22.3	29	1800	32	CC12
A9SWA3725LSZH	37	2.5	0.7	26.9	33.8	2350	40	CC14

## CONDUCTORS

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

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	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
1.5	7	-	6	-	-	-	12.1
2.5	7	-	6	-	-	-	7.41
4	7	-	6	-	-	-	4.61
6	7	-	6	-	-	-	3.08
10	7	7	6	6	-	-	1.83
16	7	7	6	6	-	-	1.15
25	7	7	6	6	6	6	0.727
35	7	7	6	6	6	6	0.524
50	19	19	6	6	6	6	0.387
70	19	19	12	12	12	12	0.268
95	19	19	15	15	15	15	0.193
120	37	37	18	15	18	15	0.153
150	37	37	18	15	18	15	0.124
185	37	37	30	30	30	30	0.0991
240	37	37	34	30	34	30	0.0754

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

## ELECTRICAL CHARACTERISTICS XLPE/PVC/SWA/LSZH

## Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	REFERENCE METHOD C (CLIPPED DIRECT) Amps		REFERENCE METHOD E (IN FREE AIR OR ON A PERFORATED CABLE TRAY, HORIZONTAL OR VERTICAL) Amps		REFERENCE METHOD D (DIRECT IN GROUND OR IN DUCTING IN GROUND, IN OR AROUND BUILDINGS) Amps	
	1 Two Core Cable Single-Phase AC or DC	1 Three or 1 Four Core Cable Three-Phase AC	1 Two Core Cable Single-Phase AC or DC	1 Three or 1 Four Core Cable Three-Phase AC	1 Two Core Cable Single-Phase AC or DC	1 Three or 1 Four Core Cable Three-Phase AC
1.5	27	23	29	25	25	21
2.5	36	31	39	33	33	28
4	49	42	52	44	43	36
6	62	53	66	56	53	44
10	85	73	90	78	71	58
16	110	94	115	99	91	75
25	146	124	152	131	116	96
35	180	154	188	162	139	115
50	219	187	228	197	164	135
70	279	238	291	251	203	167
95	338	289	354	304	239	197
120	392	335	410	353	271	223
150	451	386	472	406	306	251
185	515	441	539	463	343	281
240	607	520	636	546	395	324
300	698	599	732	628	446	365
400	787	673	847	728	-	-

Air ambient temperature: 30°C

Ground ambient temperature: 20°C

Conductor operating temperature: 90°C

## Notes

- 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 of the 17th Edition of IEE Wiring Regulations).
- Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D4A) must be used (see also Regulation 523.1 of the 17th Edition of IEE Wiring Regulations).

The above table is in accordance with Table 4E4A of the 17th Edition of IEE Wiring Regulations.

## Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	TWO CORE CABLE DC	TWO CORE CABLE SINGLE-PHASE AC			THREE OR FOUR CORE CABLE THREE-PHASE AC		
		mV/A/m			mV/A/m		
1.5	31	31			27		
2.5	19	19			16		
4	12	12			10		
6	7.9	7.9			6.8		
10	4.7	4.7			4		
16	2.9	2.9			2.5		
		r	x	z	r	x	z
25	1.85	1.85	0.160	1.900	1.600	0.140	1.650
35	1.35	1.35	0.155	1.350	1.150	0.135	1.150
50	0.98	0.99	0.155	1.000	0.860	0.135	0.870
70	0.67	0.67	0.150	0.690	0.590	0.130	0.600
95	0.49	0.50	0.150	0.520	0.430	0.130	0.450
120	0.39	0.40	0.145	0.420	0.340	0.130	0.370
150	0.31	0.32	0.145	0.350	0.280	0.125	0.300
185	0.25	0.26	0.145	0.290	0.220	0.125	0.260
240	0.195	0.20	0.140	0.240	0.175	0.125	0.210
300	0.155	0.16	0.140	0.210	0.140	0.120	0.185
400	0.12	0.13	0.140	0.190	0.115	0.120	0.165

Conductor operating temperature: 90°C

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

The above table is in accordance with Table 4E4B 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.