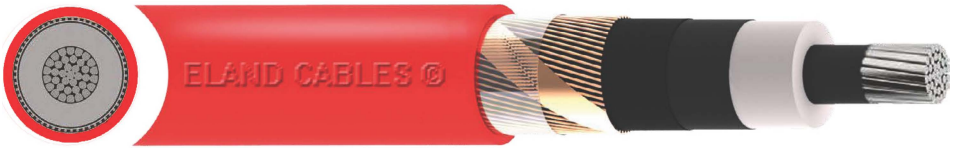
EAXCG Cable



Eland Product Group: B5E

APPLICATION

Medium Voltage Aluminium LSZH power distribution cable with particular application in wind energy installations.

CHARACTERISTICS

Voltage Rating Uo/U
8.7/15 (17.5) kV
12/20 (24)kV
18/30 (36)kV

Temperature Rating
Permissible operating temperature of conductor: +90°C
Permissible short-circuit temperature up to 5 sec: +250°C

Minimum Bending Radius
15 x overall diameter

CONSTRUCTION

Conductor
Class 2 stranded compacted aluminium

Conductor Screen
Semi-conductive extruded XLPE (Cross-linked Polyethylene)

Insulation
XLPE (Cross-linked Polyethylene)

Insulation Screen
Semi-conductive extruded XLPE (Cross-linked Polyethylene)

Wrapping
Non swelling semi conductive tape

Metallic Screen
Copper Wires and Tape

Wrapping
Polyester tape

Sheath
LSZH (Low Smoke Zero Halogen)

Sheath Colour
● Red

STANDARDS

IEC 60502-2, EN 60228

Generally to HD620 10B

Low Smoke Zero Halogen to: IEC 60754-1/2, IEC 61034-2
Flame Retardant: IEC 60332-1-2
UV Resistant: ISO 4892-3
Abrasion and Tear Resistant: EN 60229-4.1
Impact rated to: AG2 EN 60364-5.51

THE CABLE LAB®

AN ISO/IEC 17025 AND IECEE CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.

SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: www.elandcables.com/company/about-us/esg-sustainability

REGULATORY COMPLIANCE

This cable meets the requirements of the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.

DIMENSIONS 8.7/15 (17.5)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL DIAMETER OF CONDUCTOR mm	INSULATION mm		METALLIC SCREEN mm		NOMINAL OUTER DIAMETER OF CABLE mm	NOMINAL WEIGHT kg/km	MAXIMUM PULLING FORCE kN	MINIMUM BENDING RADIUS m
				Nominal thickness	Nominal diameter over	Nominal cross section mm²	Nominal diameter over mm				
B5E15KV01050	1	50	8.25	4.5	18.5	16	22.4	27.1	780	1.5	0.41
B5E15KV01095	1	95	11.3	4.5	21.5	35	25.4	30.2	1160	2.85	0.45
B5E15KV01150	1	150	14.2	4.5	24.4	50	28.3	33.1	1520	4.5	0.50
B5E15KV01240	1	240	17.9	4.5	28.1	50	32.0	36.8	1870	7.2	0.55
B5E15KV01400	1	400	22.9	4.5	33.1	50	37.0	41.8	2390	12	0.63
B5E15KV01630	1	630	29.3	4.5	40.3	50	44.4	49.3	3310	18.9	0.74

ELECTRICAL CHARACTERISTICS 8.7/15 (17.5)KV

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm²	MAXIMUM CONDUCTOR DC RESISTANCE AT 20 °C ohm/km	MAXIMUM CONDUCTOR AC RESISTANCE AT 90 °C ohm/km	MAXIMUM METALLIC SCREEN DC RESISTANCE AT 20 °C ohm/km	MAXIMUM METALLIC SCREEN AC RESISTANCE AT 80 °C ohm/km	ELECTRICAL FIELD STRESS kV/mm		RESISTANCE ohm/km	CAPACITANCE µF/km	CAPACITANCE REACTANCE ohm/km	CHARGING CURRENT ohm/km	REACTANCE ohm/km
					Conductor screen	Insulation					
50/16	0.641	0.822	1.12	1.38	2.72	1.37	2.20	0.19	17.2	0.51	0.075
95/35	0.320	0.411	0.51	0.63	2.53	1.45	1.04	0.23	13.9	0.63	0.064
150/50	0.206	0.265	0.36	0.44	2.42	1.51	0.71	0.27	11.8	0.74	0.057
240/50	0.125	0.161	0.36	0.44	2.32	1.56	0.60	0.32	9.9	0.88	0.050
400/50	0.0778	0.102	0.36	0.44	2.24	1.61	0.54	0.39	8.1	1.07	0.044
630/50	0.0469	0.0634	0.36	0.44	2.14	1.65	0.51	0.49	6.5	1.33	0.040

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm²	INDUCTANCE L mH/km			INDUCTANCE REACTANCE XL ohm/mm			IMPEDANCE ohm/km		
	o o o²	ooo³	ooo⁴	o o o²	ooo³	ooo⁴	o o o²	ooo³	ooo⁴
50/16	0.43	0.73	0.61	0.134	0.229	0.192	0.833	0.853	0.844
95/35	0.39	0.67	0.57	0.121	0.211	0.179	0.428	0.462	0.448
150/50	0.36	0.63	0.54	0.112	0.198	0.171	0.288	0.331	0.315
240/50	0.33	0.59	0.52	0.105	0.186	0.163	0.192	0.246	0.229
400/50	0.31	0.55	0.49	0.097	0.173	0.155	0.141	0.201	0.185
630/50	0.29	0.52	0.48	0.092	0.162	0.150	0.112	0.174	0.163

2 - Cables in trefoil formation, the distance between cables De
3 - Cables in flat formation (in the ground), the distance between cables De + 70 mm
4 - Cables in flat formation (in the air), the distance between cables 2 x De

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CURRENT RATING FOR SINGLE-CORE CABLES-AMPERES 8.7/15 (17.5)KV

NOMINAL CROSS SECTIONAL AREA mm²	MAXIMUM SHORT CIRCUIT CAPACITY CONDUCTOR kA/sec	MAXIMUM SHORT CIRCUIT CAPACITY SCREEN kA/sec	FLAT FORMATION		TREFOIL FORMATION		FLAT FORMATION		TREFOIL FORMATION	
			CONFIGURATIONS							
			SPP;CB	BOTH-ENDS	SPP;CB	BOTH-ENDS	SPP;CB	BOTH-ENDS	SPP;CB	BOTH-ENDS
			CABLES IN EARTH				CABLES IN AIR			
50/16	4.7	3.7	225	224	212	212	231	230	196	196
95/35	9.0	7.1	333	324	312	310	350	343	295	294
150/50	14.2	9.8	428	407	401	397	461	440	387	384
240/50	22.7	9.8	567	520	530	522	627	583	526	518
400/50	37.8	9.8	742	650	692	676	849	758	708	692
630/50	59.5	9.8	979	808	908	876	1161	981	963	931

SPB - Single Point Bonding; CB - Cross-bonding Both-ends; BE - Both-ends bonding
Laying conditions at trefoil formation are as below:
-Soil thermal resistivity: 1 /2.5 k m/W
-Burial depth: 0.7m
-Ground temperature: 20°C I Ambient temperature: 30°C

DIMENSIONS 12/20 (24)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²		NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
		Conductor	Copper Wire Screen		
B5E20KV01050	1	50	16	28	850
B5E20KV01095	1	95	16	32	1100
B5E20KV01150	1	150	25	34	1400
B5E20KV01240	1	240	25	38	1800
B5E20KV01400	1	400	35	43	2500
B5E20KV01630	1	630	35	50	3500

ELECTRICAL CHARACTERISTICS 12/20 (24)KV

NOMINAL CROSS SECTIONAL AREA OF CONDUCTOR mm²	NOMINAL SHORT-CIRCUIT CURRENT FOR 1 SECOND OF CONDUCTOR kA	CONDUCTOR DC RESITANCE AT 20°C Ohm/km	CONDUCTOR AC RESISTANCE BY MAX. TEMPERATURE Ohm/km	CURRENT CARRYING CAPACITY A	
				In Ground at 20°C	In Air at 30°C
50	4.70	0.641	0.825	195	217
95	8.93	0.320	0.412	282	328
150	14.10	0.206	0.268	353	425
240	22.56	0.125	0.163	457	573
400	37.60	0.078	0.103	566	740
630	59.22	0.0469	0.064	701	882

Air ambient temperature: 30°C
Ground ambient temperature: 20°C

DIMENSIONS 18/30 (36)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²		NOMINAL CONDUCTOR DIAMETER	NUMBER WIRES CONDUCTOR	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS	MINIMUM INSULATION THICKNESS	NOMINAL DIAMETER OVER INSULATION
		Conductor	Screen			INNER	OUTER			
				mm	mm	mm	mm	mm	mm	mm
B5E30KV01050	1	50	16	8.20	7 x 2.90	0.50	0.40	8.00	7.10	25.2
B5E30KV01095	1	95	16	11.4	19 x 2.55	0.50	0.40	8.00	7.10	28.4
B5E30KV01150	1	150	25	14.4	19 x 3.16	0.50	0.40	8.00	7.10	31.4
B5E30KV01240	1	240	25	18.2	37 x 2.90	0.50	0.40	8.00	7.10	35.7
B5E30KV01400	1	400	35	23.0	61 x 2.90	0.50	0.40	8.00	7.10	40.5
B5E30KV01630	1	630	35	30.2	61 x 3.65	0.50	0.40	8.00	7.10	47.7

NOMINAL CROSS SECTIONAL AREA	NUMBER WIRES SCREEN	DIAMETER TAPE SCREEN	NOMINAL SHEATH THICKNESS	MINIMUM SHEATH THICKNESS	NOMINAL OVERALL DIAMETER	NOMINAL WEIGHT	MAXIMUM SIDEWALL PRESSURE	MAXIMUM PULLING TENSION
mm²	mm	mm	mm	mm	mm	kg/km	N/cm²	N
50	44 x 0.66	1x0.1x10	2.00	1.40	32	900	255	1500
95	44 x 0.66	1x0.1x10	2.10	1.48	35	1200	409	2850
150	71 x 0.66	1x0.1x10	2.20	1.56	38	1500	573	4500
240	71 x 0.66	1x0.1x10	2.30	1.64	43	1900	784	7200
400	60 x 0.85	1x0.1x15	2.50	1.80	48	2750	1127	12000
630	60 x 0.85	1x0.1x15	2.70	1.96	56	3500	1462	18900

ELECTRICAL CHARACTERISTICS 18/30 (36)KV

NOMINAL CROSS SECTIONAL AREA	CONDUCTOR DC RESISTANCE AT 20°C	CONDUCTOR DC RESISTANCE AT 75°C	CONDUCTOR AC RESISTANCE BY MAX TEMP	CURRENT CARRYING CAPACITY (A)		REACTANCE	CHARGING ADMITTANCE	CAPACITANCE	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC	CONDUCTOR LOSSES IN THE GROUND
				In Ground 20°C	In Air 30°C						
mm²	ohms/km	ohms/km	ohms/km			ohms/km	A/km	uF/km		kA	kW/km
50	0.641	1.32	0.825	196	217	0.20	0.43	0.12	4.70	3.2	31.7
95	0.32	0.662	0.412	284	328	0.19	0.39	0.14	8.93	3.2	33.2
150	0.203	0.426	0.268	355	425	0.18	0.36	0.17	14.10	5.0	33.8
240	0.125	0.258	0.160	461	572	0.17	0.33	0.20	22.56	5.0	34.6
400	0.0778	0.161	0.103	572	737	0.16	0.32	0.24	37.60	7.1	33.7
630	0.0469	0.0972	0.0640	860	1080	0.15	0.29	0.29	59.22	7.1	47.3

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)
Derating factor (air): 1 (Flat formation - touching)

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