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elandcables.com EXeCG Cable

ELAND[®]
CABLES

EXeCG Cable



Eland Product Group: B4R

APPLICATION

Medium voltage power cables for distribution networks and generation units. LSZH outer sheathing makes the cable suitable for internal installation as well as directly in ground, outdoors, and in cable ducts. UV Resistant.

CHARACTERISTICS

Voltage Rating U_0/U (Um)

8.7/15 (17.5)kV

12/20 (24)kV

18/30 (36)kV

Test Voltage:

35kV AC 50Hz (5 mins)

42kV AC 50Hz (5 mins)

63kV AC 50Hz (5 mins)

Temperature Rating

-20°C to +60°C

Permissible Conductor Operating Temperature: +90°C

Permissible Short Circuit Temperature up to 5 sec: 250°C

Minimum Bending Radius

15 x overall diameter

STANDARDS

IEC 60502-2, IEC 60228,

Generally to HD620 10B

Low Smoke Zero Halogen to: IEC 60754-1/2, IEC 61034-2

Flame Retardant: IEC 60332-3-24 Cat C, 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 IEC 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



SCIENCE
BASED
TARGETS

**BUSINESS
AMBIITION FOR 1.5°C**



REGULATORY COMPLIANCE

This cable is compliant with European Regulation EN 50575, the Construction Products Regulation.



This cable meets the requirements of the Low Voltage Directive 2014/35/EU, the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab[®].



CONSTRUCTION

Conductor

Class 2 Stranded Copper

Conductor Screen

Semi-conductive material

Insulation

XLPE (Cross-Linked Polyethylene)

Insulation Screen

Semi-conductive material (bonded)

Longitudinal Waterblocking

Semi-conductive swellable tape

Screen

Copper wires and copper tape

Longitudinal Waterblocking

Swellable Tapes

Outer Sheath

LSZH (Low Smoke Zero Halogen)

Sheath Colour

● Red ● Black



DIMENSIONS 8.7/15 (17.5)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm ²	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 mm ²	Nominal diameter over mm				
B4R15KV01050	1	50	8.25	4.5	18.5	16	22.6	28.1	1000	2.5	0.42
B4R15KV01095	1	95	11.5	4.5	21.7	35	25.8	31.4	1670	4.75	0.47
B4R15KV01150	1	150	14.5	4.5	24.7	50	28.8	34.4	2350	7.5	0.52
B4R15KV01240	1	240	18.5	4.5	28.7	50	32.8	38.4	3260	12	0.58
B4R15KV01400	1	400	23.5	4.5	33.7	50	37.8	43.4	4720	20	0.65
B4R15KV01630	1	630	30.3	4.5	41.3	50	45.6	51.3	7160	31.5	0.77

ELECTRICAL CHARACTERISTICS 8.7/15 (17.5)KV

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm ²	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	Insulation					
50/16	0.387	0.494	1.12	1.38	2.72	1.37	1.88	0.19	17.2	0.51	0.076
95/35	0.193	0.247	0.51	0.63	2.52	1.45	0.88	0.23	13.7	0.63	0.064
150/50	0.124	0.159	0.36	0.44	2.41	1.51	0.60	0.27	11.6	0.75	0.056
240/50	0.0754	0.0978	0.36	0.44	2.31	1.57	0.54	0.33	9.6	0.90	0.050
400/50	0.0470	0.0629	0.36	0.44	2.23	1.62	0.51	0.40	7.9	1.10	0.044
630/50	0.0283	0.0410	0.36	0.44	2.13	1.65	0.48	0.50	6.4	1.37	0.040

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm ²	INDUCTANCE L mH/km			INDUCTANCE REACTANCE XL ohm/mm			IMPEDANCE ohm/km		
	0°0°2	000°3	000°4	0°0°2	000°3	000°4	0°0°2	000°3	000°4
50/16	0.43	0.73	0.62	0.136	0.229	0.194	0.512	0.544	0.531
95/35	0.39	0.67	0.57	0.122	0.211	0.180	0.275	0.324	0.306
150/50	0.36	0.63	0.55	0.114	0.198	0.172	0.195	0.254	0.234
240/50	0.33	0.59	0.52	0.105	0.185	0.163	0.144	0.209	0.190
400/50	0.31	0.55	0.50	0.098	0.173	0.156	0.116	0.184	0.168
630/50	0.29	0.51	0.48	0.092	0.161	0.150	0.101	0.166	0.156

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 mm ²	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	7.2	3.7	295	292	277	276	303	301	256	255
95/35	13.6	7.1	436	418	408	405	462	446	388	385
150/50	21.5	9.8	561	512	524	516	609	566	509	501
240/50	34.3	9.8	742	643	692	675	830	740	690	674
400/50	57.2	9.8	964	783	891	858	114	940	918	886
630/50	90.1	9.8	1256	947	1144	1083	1508	1184	1224	1164

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 | Ambient temperature: 30°C

DIMENSIONS 12/20 (24)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm ²		NOMINAL CONDUCTOR DIAMETER mm	NUMBER WIRES CONDUCTOR mm	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS mm	MINIMUM INSULATION THICKNESS mm	NOMINAL DIAMETER OVER INSULATION mm
		Conductor	Screen			INNER mm	OUTER mm			
B4R20KV01050	1	50	16	8.10	10 x 2.62	0.50	0.40	5.50	4.85	20.3
B4R20KV01095	1	95	16	11.4	19 x 2.62	0.50	0.40	5.50	4.85	23.6
B4R20KV01150	1	150	25	14.5	19 x 3.20	0.50	0.40	5.50	4.85	26.7
B4R20KV01240	1	240	25	18.6	48 x 2.62	0.50	0.40	5.50	4.85	30.8
B4R20KV01400	1	400	35	23.5	61 x 2.97	0.50	0.40	5.50	4.85	35.7
B4R20KV01630	1	630	35	30.2	61 x 3.80	0.50	0.40	5.50	4.85	42.9

NOMINAL CROSS SECTIONAL AREA mm ²	NUMBER WIRES SCREEN mm	DIAMETER TAPE SCREEN mm	NOMINAL SHEATH THICKNESS mm	MINIMUM SHEATH THICKNESS mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM SIDEWALL PRESSURE N/cm ²	MAXIMUM PULLING TENSION N
50	44 x 0.66	1x0.1x10	1.80	1.24	26	1000	489	2500
95	44 x 0.66	1x0.1x10	1.90	1.32	30	1500	785	4750
150	71 x 0.66	1x0.1x10	2.00	1.40	33	2250	1053	7500
240	71 x 0.66	1x0.1x10	2.10	1.48	38	3250	1413	12000
400	60 x 0.85	1x0.1x15	2.30	1.64	43	4750	2005	20000
630	60 x 0.85	1x0.1x15	2.50	1.80	51	7000	2586	31500

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ELECTRICAL CHARACTERISTICS 12/20 (24)KV

NOMINAL CROSS SECTIONAL AREA mm ²	CONDUCTOR DC RESISTANCE AT 20°C ohms/km	CONDUCTOR DC RESISTANCE AT 75°C ohms/km	CONDUCTOR AC RESISTANCE BY MAX TEMP ohms/km	CURRENT CARRYING CAPACITY (A)		REACTANCE ohms/km	CHARGING ADMITTANCE A/km	CAPACITANCE uF/km	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC kA	CONDUCTOR LOSSES IN THE GROUND kW/km
				In Ground 20°C	In Air 30°C						
50	0.387	0.801	0.497	250	279	0.19	0.40	0.15	7.15	3.2	31.1
95	0.193	0.399	0.248	361	420	0.18	0.36	0.19	13.59	3.2	32.3
150	0.124	0.160	0.256	445	540	0.17	0.33	0.22	21.45	5.0	31.7
240	0.0754	0.156	0.0980	569	718	0.16	0.31	0.27	34.32	5.0	31.7
400	0.0470	0.0974	0.0640	686	904	0.16	0.29	0.32	57.20	7.1	30.1
630	0.0283	0.0420	0.0586	850	1030	0.15	0.27	0.40	90.09	7.1	30.3

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

Derating factor (air): 1 (Flat formation - touching)

DIMENSIONS 18/30 (36)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA		NOMINAL CONDUCTOR DIAMETER	NUMBER WIRES CONDUCTOR	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS	MINIMUM INSULATION THICKNESS	NOMINAL DIAMETER OVER INSULATION
		mm ²				INNER	OUTER			
		Conductor	Screen							
B4R30KV01050	1	50	16	8.10	10 x 2.62	0.50	0.40	8.00	7.10	25.1
B4R30KV01095	1	95	16	11.4	19 x 2.62	0.50	0.40	8.00	7.10	28.4
B4R30KV01150	1	150	25	14.5	19 x 3.20	0.50	0.40	8.00	7.10	31.5
B4R30KV01240	1	240	25	18.6	48 x 2.62	0.50	0.40	8.00	7.10	35.6
B4R30KV01400	1	400	35	23.5	61 x 2.97	0.50	0.40	8.00	7.10	40.5
B4R30KV01630	1	630	35	30.2	61 x 3.80	0.50	0.40	8.00	7.10	47.7

NOMINAL CROSS SECTIONAL AREA mm ²	NUMBER WIRES SCREEN mm	DIAMETER TAPE SCREEN mm	NOMINAL SHEATH THICKNESS mm	MINIMUM SHEATH THICKNESS mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM SIDEWALL PRESSURE N/cm ²	MAXIMUM PULLING TENSION N
50	44 x 0.66	1x0.1x10	2.00	1.40	32	1200	416	2500
95	44 x 0.66	1x0.1x10	2.10	1.48	35	1800	682	4750
150	71 x 0.66	1x0.1x10	2.20	1.56	38	2500	952	7500
240	71 x 0.66	1x0.1x10	2.30	1.64	43	3500	1299	12000
400	60 x 0.85	1x0.1x15	2.50	1.80	48	5000	1885	20000
630	60 x 0.85	1x0.1x15	2.70	1.96	56	7500	2436	31500

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ELECTRICAL CHARACTERISTICS 18/30 (36)KV

NOMINAL CROSS SECTIONAL AREA mm ²	CONDUCTOR DC RESISTANCE AT 20°C ohms/km	CONDUCTOR DC RESISTANCE AT 75°C ohms/km	CONDUCTOR AC RESISTANCE BY MAX TEMP ohms/km	CURRENT CARRYING CAPACITY (A)		REACTANCE ohms/km	CHARGING ADMITTANCE A/km	CAPACITANCE uF/km	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC kA	CONDUCTOR LOSSES IN THE GROUND kW/km
				In Ground 20°C	In Air 30°C						
50	0.387	0.801	0.497	251	279	0.20	0.43	0.12	7.15	3.2	31.3
95	0.193	0.399	0.248	363	421	0.19	0.39	0.14	13.59	3.2	32.7
150	0.124	0.160	0.256	449	540	0.18	0.36	0.17	21.45	5.0	32.3
240	0.0754	0.156	0.0980	576	718	0.17	0.33	0.20	34.32	5.0	32.5
400	0.0470	0.0974	0.0640	697	904	0.16	0.31	0.24	57.20	7.1	31.1
630	0.0283	0.0420	0.0586	850	1030	0.16	0.29	0.29	90.09	7.1	30.3

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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