AHXAMK-WP Cable

Eland Product Group: C9O

APPLICATION

Medium-voltage cable for fixed installations outdoors. May be buried directly in soil, also by ploughing. Installations must be in accordance with national regulations and rules of installations. Cable is longitudinally and radially watertight and therefore it is suitable where wet soil and / or fresh water permanently occurs. The cable is halogen-free, but without fire protection. 12/20kV supplied as a 3x1 core (triplex) whilst 19/33kV is a single core.

CHARACTERISTICS

Voltage
12/20 (24)kV
19/33 (36)kV

Temperature Rating
-50°C to 90°C
Max. conductor temperature during short circuit max. 5s: 250°C
Min. cable temperature during handling: -20°C
Min. cable temperature during transport: -40°C

CONSTRUCTION

Conductor
Class 2 watertight, circular, stranded aluminium

Conductor Screen
Semi conducting XLPE (Cross-Linked Polyethylene)

Insulation
XLPE (Cross-Linked Polyethylene)

Insulation Screen
Semi conducting XLPE (Cross-Linked Polyethylene)

Metallic Screen
Aluminium/plastic laminate (Acts as a radial water barrier)

Outer Sheath
PE (Polyethylene)

Outer Sheath Colour
● Black

STANDARDS

HD 620 10 F, SFS 5636, EN/IEC 60228

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 12/20 (24)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL CONDUCTOR DIAMETER mm	NOMINAL DIAMETER OVER INSULATION WITHOUT SCREEN mm	NOMINAL INSULATION THICKNESS mm	NOMINAL THICKNESS OF ALUMINIUM LAMINATED FOIL mm	NOMINAL SHEATH THICKNESS mm	NOMINAL OUTER DIAMETER OF COMPLETE CABLE mm	NOMINAL WEIGHT kg/km
C9O20KV103050BK	3x1	50	8.0	19.3	5.5	0.2	2.8	59	1939
C9O20KV103070BK	3x1	70	9.6	20.7	5.5	0.2	2.8	62	2226
C9O20KV103095BK	3x1	95	11.1	22.4	5.5	0.2	2.9	66	2598
C9O20KV103120BK	3x1	120	12.6	23.4	5.5	0.2	2.9	68	2898
C9O20KV103150BK	3x1	150	13.9	25.1	5.5	0.2	2.9	71	3268
C9O20KV103185BK	3x1	185	15.6	27.0	5.5	0.2	3.0	76	3784
C9O20KV103240BK	3x1	240	18.0	29.2	5.5	0.3	3.1	82	4563
C9O20KV103300BK	3x1	300	19.8	31.0	5.5	0.3	3.2	86	5301

MECHANICAL CHARACTERISTICS 12/20 (24)KV

NOMINAL CROSS SECTIONAL AREA mm²	MAX. PULLING FORCE BY PULLING-EYE kN	MAX. PULLING FORCE BY PULLING-STOCKING kN	MINIMUM BENDING RADIUS m			
			During handling and installation. phase conductor	During handling and installation. cable	In final installation. phase conductor	In final installation. cable
50	7.5	2.3	0.44	0.71	0.30	0.50
70	10.5	3.2	0.45	0.74	0.32	0.52
95	14.3	4.3	0.48	0.79	0.34	0.55
120	18.0	5.4	0.50	0.82	0.35	0.57
150	20.0	6.8	0.53	0.85	0.37	0.60
185	20.0	8.3	0.56	0.91	0.39	0.64
240	20.0	8.5	0.59	0.98	0.41	0.69
300	20.0	8.5	0.62	1.03	0.43	0.72

ELECTRICAL CHARACTERISTICS 12/20 (24)kV

NOMINAL CROSS SECTIONAL AREA mm²	MAX. DC RESISTANCE OF CONDUCTOR AT 20°C Ω/km	NOMINAL DC RESISTANCE OF ALUMINIUM LAMINATED FOIL AT 20°C Ω/km	INDUCTANCE PER PHASE. IN TREFOIL FORMATION, CABLES TOUCHING EACH OTHER mH/km
50	0.641	2.0	0.43
70	0.443	1.9	0.41
95	0.320	1.8	0.39
120	0.253	1.7	0.37
150	0.206	1.6	0.36
185	0.164	1.5	0.35
240	0.125	0.9	0.34
300	0.100	0.9	0.33

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CURRENT RATING 12/20 (24)kV

NOMINAL CROSS SECTIONAL AREA mm²	CABLES IN AIR (25 °C) A				CABLES IN THE GROUND (15°C AND 1,0 K.M/W), INSTALLATION DEPTH 0.7M A				MAXIMUM THERMAL SHORT CIRCUIT CURRENT DURING 1S kA			
	In flat formation, conductor temperature 90°C		In trefoil formation, conductor temperature 90°C		In trefoil formation, conductor temperature 65°C		In trefoil formation, conductor temperature 90°C		Phase (initial 90°C, final 250°C)	Metal screen		
	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A		Initial 35°C, final 250°C	Initial 60°C, final 250°C	Initial 85°C, final 250°C
50	210	205	195	195	155	155	185	185	4.7	2.9	2.7	2.7
70	265	255	235	235	205	200	240	235	6.6	3.0	2.8	2.8
95	320	310	285	280	240	235	280	275	8.9	3.2	2.9	2.9
120	370	350	330	325	270	265	320	310	11.3	3.4	3.1	3.1
150	425	395	380	370	305	300	360	355	14.1	3.6	3.3	3.3
185	485	440	430	425	345	330	405	390	17.4	3.8	3.5	3.5
240	570	515	505	490	395	385	465	455	22.6	5.3	4.9	4.9
300	650	580	580	565	445	435	525	510	28.3	5.7	5.3	5.3

DIMENSIONS 19/33 (36)KV SINGLE CORE

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL CONDUCTOR DIAMETER mm	NOMINAL DIAMETER OVER INSULATION WITHOUT SCREEN mm	NOMINAL INSULATION THICKNESS mm	NOMINAL THICKNESS OF ALUMINIUM LAMINATED FOIL mm	NOMINAL SHEATH THICKNESS mm	NOMINAL OUTER DIAMETER OF COMPLETE CABLE mm	NOMINAL WEIGHT kg/km
C9O33KV101400BK	1	400	22.4	38.0	8.0	0.3	2.5	46	2193
C9O33KV101500BK	1	500	25.7	41.3	8.0	0.3	2.6	49	2671
C9O33KV101630BK	1	630	29.3	45.2	8.0	0.3	2.7	53	3266
C9O33KV101800BK	1	800	33.3	49.1	8.0	0.3	2.8	57	3946
C9O33KV1011000B	1	1000	39.2	55.0	8.0	0.3	3.0	64	4722

MECHANICAL CHARACTERISTICS 19/33 (36)KV SINGLE CORE

NOMINAL CROSS SECTIONAL AREA mm²	MAX. PULLING FORCE BY PULLING-EYE kN	MAX. PULLING FORCE BY PULLING-STOCKING kN	MINIMUM BENDING RADIUS m	
			During handling and installation	In final installation
400	20.0	6.0	0.69	0.48
500	20.0	7.5	0.74	0.52
630	20.0	8.5	0.80	0.56
800	20.0	8.5	0.86	0.60
1000	20.0	8.5	0.96	0.67

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ELECTRICAL CHARACTERISTICS 19/33 (36)KV SINGLE CORE

NOMINAL CROSS SECTIONAL AREA mm²	MAX. DC RESISTANCE OF CONDUCTOR AT 20°C Ω/km	NOMINAL DC RESISTANCE OF ALUMINIUM LAMINATED FOIL AT 20°C Ω/km	AC RESISTANCE OF PHASE CONDUCTOR, SCREEN CIRCUIT CLOSED Ω/km			CALCULATED OPERATION CAPACITANCE µF/km	CALCULATED CHARGING CURRENT WITH MAIN VOLTAGE A/km	CALCULATED EARTH FAULT CURRENT WITH MAIN VOLTAGE A/km	INDUCTANCE PER PHASE mH/km	
			40 °C	65 °C	90 °C				In flat formation, free space between cables equal to one cable diameter	In trefoil formation, cables touching each other
400	0.0778	0.73	0.08	0.09	0.10	0.26	1.5	4.6	0.52	0.33
500	0.0605	0.68	0.06	0.07	0.07	0.29	1.7	5.2	0.50	0.32
630	0.0469	0.64	0.05	0.05	0.06	0.32	1.9	5.8	0.49	0.31
800	0.0367	0.58	0.04	0.04	0.05	0.36	2.1	6.4	0.48	0.30
1000	0.0291	0.52	0.03	0.03	0.04	0.41	2.4	7.3	0.47	0.29

CURRENT RATING 19/33 (36)KV SINGLE CORE

NOMINAL CROSS SECTIONAL AREA mm²	CABLES IN AIR (25 °C) A				CABLES IN THE GROUND (15°C AND 1,0 K.M/W), INSTALLATION DEPTH 0.7M A								MAXIMUM THERMAL SHORT CIRCUIT CURRENT DURING 1S kA			
	In flat formation, conductor temperature 90°C		In trefoil formation, conductor temperature 90°C		In flat formation, conductor temperature 65°C		In flat formation, conductor temperature 90°C		In trefoil formation, conductor temperature 65°C		In trefoil formation, conductor temperature 90°C		Phase (initial 90°C, final 250°C)	Metal screen		
	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A		Initial 35°C, final 250°C	Initial 60°C, final 250°C	Initial 85°C, final 250°C
400	790	680	695	680	570	500	670	590	525	510	615	600	37.8	6.4	5.9	5.4
500	920	755	800	775	645	550	760	650	590	570	695	670	47.2	7.1	6.6	6.0
630	1040	840	915	880	720	610	850	715	665	635	780	745	59.5	7.6	7.0	6.4
800	1220	950	1045	1010	805	650	950	841	725	695	863	845	75.6	8.3	7.7	7.0
1000	1390	1060	1170	1130	900	700	1067	922	800	760	968	940	94.5	9.3	8.6	7.8

DIMENSIONS 19/33 (36)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL CONDUCTOR DIAMETER mm	NOMINAL CONDUCTOR SCREEN THICKNESS mm	NOMINAL DIAMETER OVER INSULATION WITHOUT SCREEN mm	NOMINAL INSULATION THICKNESS mm	NOMINAL INSULATION SCREEN THICKNESS mm	NOMINAL THICKNESS OF ALUMINIUM LAMINATED FOIL mm	NOMINAL SHEATH THICKNESS mm	NOMINAL DIAMETER OF A SHEATHED PHASE CONDUCTOR mm	NOMINAL OUTER DIAMETER OF COMPLETE CABLE mm	NOMINAL WEIGHT kg/km
	3	95	11.0	0.5	26.7	8.0	0.5	0.3	3.0	35	76	3332
	3	120	12.6	0.5	28.2	8.0	0.5	0.3	3.0	37	79	3732
	3	150	13.9	0.5	29.5	8.0	0.5	0.3	3.1	38	82	4108
	3	185	15.6	0.5	31.2	8.0	0.5	0.3	3.1	40	86	4625
	3	240	18.0	0.5	33.6	8.0	0.5	0.3	3.2	43	92	5391
	3	300	19.8	0.5	35.4	8.0	0.5	0.3	3.3	45	96	6166

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MECHANICAL CHARACTERISTICS 19/33 (36)KV

NOMINAL CROSS SECTIONAL AREA mm²	MAX. PULLING FORCE BY PULLING-EYE kN	MAX. PULLING FORCE BY PULLING-STOCKING kN	MINIMUM BENDING RADIUS mm			
			During handling and installation. phase conductor	During handling and installation. cable	In final installation. phase conductor	In final installation. cable
95	14.3	4.3	0.53	0.91	0.37	0.64
120	18.0	5.4	0.55	0.95	0.39	0.66
150	20.0	6.8	0.57	0.98	0.40	0.69
185	20.0	8.3	0.60	1.03	0.42	0.72
240	20.0	8.5	0.64	1.10	0.45	0.77
300	20.0	8.5	0.67	1.15	0.47	0.81

ELECTRICAL CHARACTERISTICS 19/33 (36)KV

NOMINAL CROSS SECTIONAL AREA mm²	MAX. DC RESISTANCE OF CONDUCTOR AT 20°C Ω/km	NOMINAL DC RESISTANCE OF ALUMINIUM LAMINATED FOIL AT 20°C Ω/km	AC RESISTANCE OF PHASE CONDUCTOR. SCREEN CIRCUIT CLOSED Ω/km			CALCULATED OPERATION CAPACITANCE µF/km	CALCULATED CHARGING CURRENT WITH MAIN VOLTAGE A/km	CALCULATED EARTH FAULT CURRENT WITH MAIN VOLTAGE A/km	INDUCTANCE PER PHASE mH/km
			40 °C	65 °C	90 °C				In trefoil formation. cables touching
95	0.320	1.02	0.35	0.38	0.41	0.16	0.9	2.8	0.42
120	0.253	0.97	0.27	0.30	0.32	0.17	1.0	3.1	0.40
150	0.206	0.93	0.22	0.24	0.26	0.18	1.1	3.3	0.39
185	0.164	0.89	0.18	0.19	0.21	0.20	1.2	3.6	0.37
240	0.125	0.81	0.14	0.15	0.16	0.22	1.3	4.0	0.36
300	0.100	0.78	0.11	0.12	0.13	0.24	1.4	4.2	0.35

CURRENT RATING 19/33 (36)KV

NOMINAL CROSS SECTIONAL AREA mm²	CABLES IN AIR (25 °C) A				CABLES IN THE GROUND (15 °C AND 1,0 K.M/W), INSTALLATION DEPTH 0.7M A				MAXIMUM THERMAL SHORT CIRCUIT CURRENT DURING 1S kA			
	In flat formation. conductor temperature 90°C		In trefoil formation. conductor temperature 90°C		In trefoil formation. conductor temperature 65°C		In trefoil formation. conductor temperature 90°C		Phase (initial 90°C. final 250°C)	Metal screen		
	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A	Open screen A	Closed screen A		Initial 35°C. final 250°C	Initial 60°C. final 250°C	Initial 85°C. final 250°C
95	320	310	285	280	240	235	280	275	8.9	4.8	4.4	4.0
120	370	350	330	325	270	265	320	310	11.3	5.0	4.6	4.2
150	425	395	380	370	305	300	360	355	14.1	5.2	4.8	4.4
185	485	440	430	425	345	330	405	390	17.4	5.5	5.0	4.6
240	570	515	505	490	395	385	465	455	22.6	6.0	5.5	5.0
300	650	580	580	565	445	435	525	510	28.3	6.2	5.7	5.2

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