

AHXAMK-WP 19/33 (36) kV 1-core

Medium voltage cable

19/33 (36) kV



Application

DryRex Nordic Wind cables are designed especially to meet the requirements of 36 kV wind farms. May be buried directly in soil, also by ploughing. Cable is longitudinally and radially watertight and therefore it is suitable where wet soil and / or fresh water permanently occurs. Installations must be in accordance with national regulations and rules of installations. The cable is halogen-free, but without fire protection. The cable is not CPR-classified.

Design

Standards	HD 620 10 F, SFS 5636
Conductor	Watertight, circular, stranded aluminium EN/IEC 60228 class 2
Conductor screen	Semiconducting cross-linked polyethylene XLPE
Insulation	Cross-linked polyethylene XLPE
Insulation screen	Semiconducting cross-linked polyethylene XLPE
Inner covering	Semiconducting waterswellable tape against longitudinal water penetration
Metal screen	Polyethylene laminated aluminium foil, which acts also as a radial water barrier
Oversheath	UV-protected PE-plastic PELLD, Black
Longitudinal watertightness	Semiconducting water swellable tape

Temperature limits

Max. conductor temperature °C	90
Max. cond. temp. short circuit max. 5 s °C	250
Min. cable temperature during operation °C	-50
Min. cable temperature during handling °C	-20
Min. cable temperature during transport °C	-40

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Technical information	1x400	1x500	1x630	1x800	1x1000
Product code	1181881	1181882	1181883	1181884	1181885
Nominal cross-sectional area of conductor mm ²	400	500	630	800	1000
Nominal diameter of conductor mm	22,4	25,7	29,3	33,3	37,8
Nominal thickness of conductor screen mm	0,5	0,5	0,5	0,5	0,5
Nominal thickness of insulation mm	8,0	8,0	8,0	8,0	8,0
Nominal diameter over the insulation without insulation screen mm	38,0	41,3	45,2	49,1	55,0
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5	0,5
Nominal thickness of PE-laminated aluminium foil mm	0,3	0,3	0,3	0,3	0,3
Nominal thickness of oversheath mm	3,0	3,1	3,2	3,3	3,5
(A1-A3) GWP emission kgCO ₂ e/km		18683	22787	26936	32942
Nominal cable diameter mm	46,600	50,100	54,050	58,300	64,600
Nominal cable weight kg/km	2255,536	2743,037	3338,408	4030,355	4811,553
Nominal weight of aluminium kg/m	0,960	1,298	1,718	2,204	2,826
Maximum forces during installation when pulling by					
Max. pulling force by pulling-eye kN	12,0	15,0	18,9	20,0	20,0
Max. pulling force by pulling-stocking kN	6,0	7,5	8,5	8,5	8,5
Minimum bending radii					
During handling and installation, cable cm	70	75	81	87	97
In final installation, cable cm	49	53	57	61	68
Minimum bending radii					
During handling and installation, cable m	0,70	0,75	0,81	0,88	0,97
In final installation, cable m	0,49	0,53	0,57	0,61	0,68
DC resistance					
Max. DC resistance of conductor at 20 °C Ω/km	0,0778	0,0605	0,0469	0,0367	0,0291
Nominal DC resistance of PE-laminated aluminium foil 20 °C Ω/km	0,75	0,68	0,64	0,58	0,52
AC resistance of phase conductor, screen circuit closed					
Conductor temperature 40 °C Ω/km	0,0850	0,0666	0,0522	0,0416	0,0338
Conductor temperature 65 °C Ω/km	0,0927	0,0726	0,0568	0,0451	0,0366
Conductor temperature 70 °C Ω/km	0,0943	0,0738	0,0577	0,0458	0,0371
Conductor temperature 90 °C Ω/km	0,1005	0,0786	0,0614	0,0487	0,0394
Inductance per phase					
In flat formation, free space between cables equal to one cable diam	0,51	0,50	0,49	0,48	0,48
In trefoil formation, cables touching each other mH/km	0,33	0,32	0,31	0,30	0,29

Technical information	1x400	1x500	1x630	1x800	1x1000
Electrical values					
Calculated operation capacitance $\mu\text{F/km}$	0,26	0,29	0,32	0,36	0,41
Calculated charging current with main voltage A/km	1,5	1,7	1,9	2,1	2,4
Calculated earth fault current with main voltage A/km	4,6	5,2	5,8	6,4	7,3
Current ratings					
Cables in air (25 °C)					
Flat, conductor 90 °C, open screen A	790	920	1040	1220	1390
Flat, conductor 90 °C, closed screen A	680	755	840	950	1060
Trefoil, conductor 90 °C, open screen A	695	800	915	1045	1170
Trefoil, conductor 90 °C, closed screen A	680	775	880	1010	1130
Cables in the ground (15 °C and 1,0 K.m/W), Installation depth 0,7 m					
Flat, conductor 65 °C, open screen A	570	645	720	805	900
Flat, conductor 65 °C, closed screen A	500	550	610	650	700
Flat, conductor 90 °C, open screen A	670	760	850	950	1067
Flat, conductor 90 °C, closed screen A	590	650	715	841	922
Trefoil, conductor 65 °C, open screen A	525	590	665	725	800
Trefoil, conductor 65 °C, closed screen A	510	570	635	695	760
Trefoil, conductor 90 °C, open screen A	615	695	780	863	968
Trefoil, conductor 90 °C, closed screen A	600	670	745	845	940
Maximum thermal short circuit current during 1 s					
Phase (initial 90 °C, final 250 °C) kA	37,8	47,2	59,5	75,6	94,5
Metal screen (initial 35 °C, final 250 °C) kA	6,4	7,1	7,6	8,3	9,3
Metal screen (initial 60 °C, final 250 °C) kA	5,9	6,6	7,0	7,7	8,6
Metal screen (initial 85 °C, final 250 °C) kA	5,4	6,0	6,4	7,0	7,8