

## 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

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

### Temperature limits

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

Technical information	1x300	1x400	1x500	1x630	1x800	1x1000
<b>Product code</b>	<b>1181880</b>	<b>1181881</b>	<b>1181882</b>	<b>1181883</b>	<b>1181884</b>	<b>1181885</b>
Nominal cable diameter mm	45	47	50	54	58	65
Nominal cable weight kg/km	2046	2256	2743	3338	4030	4812
Nominal weight of Aluminium kg/km	806	960	1298	1718	2204	2826
Nominal diameter of conductor mm	19,8	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	0,5
Nominal Insulation thickness mm	8,0	8,0	8,0	8,0	8,0	8,0
Nominal diameter over the insulation without insulation screen mm	35,4	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	0,5
Nominal thickness of PE-laminated aluminium foil mm	0,3	0,3	0,3	0,3	0,3	0,3
Nominal thickness of oversheath mm	3,3	3,0	3,1	3,2	3,3	3,5
<b>Maximum forces during installation when pulling by</b>						
Max. pulling force by pulling-eye kN	9,0	12,0	15,0	18,9	20,0	20,0
Max. pulling force by pulling-stocking kN	4,5	6,0	7,5	8,5	8,5	8,5
<b>Minimum bending radii</b>						
Minimum bending radius, handling mm	668	699	752	811	875	969
Minimum bending radius, final bending mm	468	489	526	568	612	678
<b>Minimum bending radii</b>						
During handling and installation, cable cm	67	70	75	81	87	97
In final installation, cable cm	47	49	53	57	61	68
<b>Minimum bending radii</b>						
During handling and installation, cable m	0,67	0,70	0,75	0,81	0,88	0,97
In final installation, cable m	0,47	0,49	0,53	0,57	0,61	0,68
<b>DC resistance</b>						
Max. DC resistance of conductor at 20 °C Ω/km	0,100	0,0778	0,0605	0,0469	0,0367	0,0291
Nominal DC resistance of PE-laminated aluminium foil 20 °C Ω/km	0,78	0,75	0,68	0,64	0,58	0,52
<b>AC resistance of phase conductor, screen circuit closed</b>						
Conductor temperature 40 °C Ω/km	0,1088	0,0850	0,0666	0,0522	0,0416	0,0338
Conductor temperature 65 °C Ω/km	0,1188	0,0927	0,0726	0,0568	0,0451	0,0366
Conductor temperature 70 °C Ω/km	0,1208	0,0943	0,0738	0,0577	0,0458	0,0371
Conductor temperature 90 °C Ω/km	0,1288	0,1005	0,0786	0,0614	0,0487	0,0394

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<b>Inductance per phase</b>						
In flat formation, free space between cables equal to one cable diameter mH/km	0,53	0,51	0,50	0,49	0,48	0,48
In trefoil formation, cables touching each other mH/km	0,35	0,33	0,32	0,31	0,30	0,29
<b>Electrical values</b>						
Calculated operation capacitance $\mu\text{F}/\text{km}$	0,24	0,26	0,29	0,32	0,36	0,41
Calculated charging current with main voltage A/km	1,4	1,5	1,7	1,9	2,1	2,4
Calculated earth fault current with main voltage A/km	4,2	4,6	5,2	5,8	6,4	7,3
<b>Current ratings</b>						
<b>Cables in air (25 °C)</b>						
Flat, conductor 90 °C, open screen A	650	790	920	1040	1220	1390
Flat, conductor 90 °C, closed screen A	580	680	755	840	950	1060
Trefoil, conductor 90 °C, open screen A	580	695	800	915	1045	1170
Trefoil, conductor 90 °C, closed screen A	565	680	775	880	1010	1130
<b>Cables in the ground (15 °C and 1,0 K.m/W), Installation depth 0,7 m</b>						
Flat, conductor 65 °C, open screen A	485	570	645	720	805	900
Flat, conductor 65 °C, closed screen A	440	500	550	610	650	700
Flat, conductor 90 °C, open screen A	570	670	760	850	950	1067
Flat, conductor 90 °C, closed screen A	515	590	650	715	841	922
Trefoil, conductor 65 °C, open screen A	445	525	590	665	725	800
Trefoil, conductor 65 °C, closed screen A	435	510	570	635	695	760
Trefoil, conductor 90 °C, open screen A	525	615	695	780	863	968
Trefoil, conductor 90 °C, closed screen A	510	600	670	745	845	940
<b>Maximum thermal short circuit current during 1 s</b>						
Phase (initial 90 °C, final 250 °C) kA	28,3	37,8	47,2	59,5	75,6	94,5
Metal screen (initial 35 °C, final 250 °C) kA	6,2	6,4	7,1	7,6	8,3	9,3
Metal screen (initial 60 °C, final 250 °C) kA	5,7	5,9	6,6	7,0	7,7	8,6
Metal screen (initial 85 °C, final 250 °C) kA	5,2	5,4	6,0	6,4	7,0	7,8
<b>Environmental information</b>						
(A1-A3) GWP emission kgCO <sub>2</sub> e/km			18683	22787	26936	32942
GWP emissions calculation standard			EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019

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STANDARD PACKAGES	1x300	1x400	1x500	1x630	1x800	1x1000
Product code		1181881	1181882	1181883	1181884	1181885
GTIN code		6438176306062	6438176306079	6438176306086	6438176306093	6438176306109
Package		1000 K24	1000 K26	1000 K26	1000 K26	1000 K28