

AHXAMK-WP 19/33 (36) kV 3-core

Medium voltage cable

19/33 (36) kV



DryRex

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
Cable lay up	Three sheathed cores are laid up together
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	3x70	3x95	3x120	3x150	3x185	3x240	3x300
Product code	1181887	1181888	1181889	1181890	1181891	1181892	1181893
Nominal diameter of a sheathed phase conductor mm	33,7	35	37	38	40	43	45
Nominal cross-sectional area of conductor mm ²	70	95	120	150	185	240	300
Nominal diameter of conductor mm	9,5	11,1	12,6	13,9	15,6	17,8	19,8
Nominal thickness of conductor screen mm	0,5	0,5	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	8,0	8,0
Nominal diameter over the insulation without insulation screen mm	25,1	26,7	28,2	29,5	31,2	33,6	35,4
Nominal thickness of insulation screen mm	0,5	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	0,3
Nominal thickness of oversheath mm	3,0	3,0	3,0	3,1	3,1	3,2	3,3
(A1-A3) GWP emission kgCO ₂ e/km		19126	21679	24076	27374	32265	37213
Nominal cable diameter mm	72,450	75,790	79,120	82,240	86,000	91,590	95,780
Nominal cable weight kg/km	2965,013	3331,791	3731,914	4107,544	4624,510	5390,908	6166,375
Nominal weight of aluminium kg/m	0,545	0,735	0,953	1,149	1,461	1,901	2,428
Maximum forces during installation when pulling by							
Max. pulling force by pulling-eye kN	6,3	8,6	10,8	13,5	16,7	20,0	20,0
Max. pulling force by pulling-stocking kN	3,2	4,3	5,4	6,8	8,3	8,5	8,5
Minimum bending radii							
During handling and installation, phase conductor cm	51	53	56	57	60	65	68
During handling and installation, cable cm	87	91	95	99	103	110	115
In final installation, phase conductor cm	35	37	39	40	42	45	47
In final installation, cable cm	61	64	66	69	72	77	80
Minimum bending radii							
During handling and installation, phase conductor m	0,51	0,53	0,56	0,57	0,60	0,65	0,68
During handling and installation, cable m	0,87	0,91	0,95	0,99	1,03	1,10	1,15
In final installation, phase conductor m	0,35	0,37	0,39	0,40	0,42	0,45	0,47
In final installation, cable m	0,61	0,64	0,67	0,69	0,72	0,77	0,81
DC resistance							
Max. DC resistance of conductor at 20 °C Ω/km	0,443	0,320	0,253	0,206	0,164	0,125	0,100
Nominal DC resistance of PE-laminated aluminium foil 20 °C Ω/km	1,07	1,02	0,97	0,93	0,89	0,81	0,78

Technical information	3x70	3x95	3x120	3x150	3x185	3x240	3x300
AC resistance of phase conductor, screen circuit closed							
Conductor temperature 40 °C Ω/km	0,4788	0,3460	0,2736	0,2229	0,1776	0,1356	0,1088
Conductor temperature 65 °C Ω/km	0,5234	0,3782	0,2991	0,2436	0,1941	0,1482	0,1188
Conductor temperature 70 °C Ω/km	0,5324	0,3846	0,3042	0,2478	0,1974	0,1507	0,1208
Conductor temperature 90 °C Ω/km	0,5681	0,4104	0,3246	0,2644	0,2106	0,1607	0,1288
Inductance per phase							
In flat formation, free space between cables equal to one cable diam	0,62	0,60	0,58	0,57	0,56	0,54	0,53
In trefoil formation, cables touching each other mH/km	0,44	0,41	0,40	0,38	0,37	0,36	0,35
Electrical values							
Calculated operation capacitance µF/km	0,14	0,16	0,17	0,18	0,20	0,22	0,24
Calculated charging current with main voltage A/km	0,9	0,9	1,0	1,1	1,2	1,3	1,4
Calculated earth fault current with main voltage A/km	2,6	2,8	3,1	3,3	3,6	4,0	4,2
Current ratings							
Cables in air (25 °C)							
Flat, conductor 90 °C, open screen A	265	320	370	425	485	570	650
Flat, conductor 90 °C, closed screen A	255	310	350	395	440	515	580
Trefoil, conductor 90 °C, open screen A	235	285	330	380	430	505	580
Trefoil, conductor 90 °C, closed screen A	235	280	325	370	425	490	565
Cables in the ground (15 °C and 1,0 K.m/W), Installation depth 0,7 m							
Trefoil, conductor 65 °C, open screen A	205	240	270	305	345	395	445
Trefoil, conductor 65 °C, closed screen A	200	235	265	300	330	385	435
Trefoil, conductor 90 °C, open screen A	240	280	320	360	405	465	525
Trefoil, conductor 90 °C, closed screen A	235	275	310	355	390	455	510
Maximum thermal short circuit current during 1 s							
Phase (initial 90 °C, final 250 °C) kA	6,6	8,9	11,3	14,1	17,4	22,6	28,3
Metal screen (initial 35 °C, final 250 °C) kA	4,5	4,8	5,0	5,2	5,5	6,0	6,2
Metal screen (initial 60 °C, final 250 °C) kA	4,2	4,4	4,6	4,8	5,0	5,5	5,7
Metal screen (initial 85 °C, final 250 °C) kA	3,8	4,0	4,2	4,4	4,6	5,0	5,2