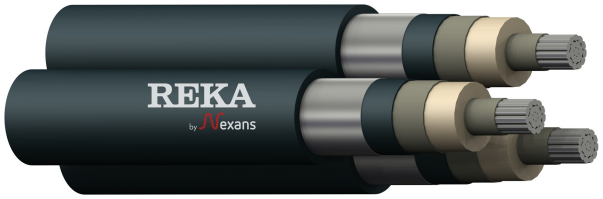
AHXAMK-WP 12/20 (24) kV 3-core

Medium voltage cable

12/20 (24) kV



DryRex

Application

Medium-voltage cable for fixed installations outdoors. 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
Product Environmental Profile	PEP NXNS-00437-V01.01-EN
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
Core Identification	White phase numbering: L1, L2, L3
Cable lay up	Three sheathed cores are laid up together
Inner covering	Semiconducting waterswellable tape against longitudinal water penetration
Metal screen	Polyethylene laminated aluminium foil, which acts also as a radial water barrier

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

Oversheath	PE-plastic PELLD, Black
Longitudinal watertightness	Semiconducting water swellable tape

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Technical information	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300
Product code	**1187052**	**1187103**	**1187104**	**1187105**	**1187106**	**1187107**	**1187108**	**1187109**
Nominal diameter of a sheathed phase conductor mm	27	29	31	32	33	35	38	40
Nominal cross-sectional area of conductor mm²	50	70	95	120	150	185	240	300
Nominal diameter of conductor mm	8,0	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	0,5
Nominal thickness of insulation mm	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
Nominal diameter over the insulation without insulation screen mm	19,3	20,7	22,4	23,4	25,1	27,0	29,2	31,0
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal thickness of PE-laminated aluminium foil mm	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3
Nominal thickness of oversheath mm	2,8	2,8	2,9	2,9	2,9	3,0	3,1	3,2
(A1-A3) GWP figure kgCO2e/km	10237	12068	14446	16357	18729	22011	26979	31690
Nominal cable diameter mm	58,700	61,710	65,790	67,940	71,490	76,000	81,700	85,890
Nominal cable weight kg/km	1938,736	2225,781	2598,400	2897,835	3268,126	3783,966	4562,608	5300,800
Nominal weight of aluminium kg/m	0,383	0,545	0,735	0,953	1,149	1,461	1,902	2,428
Maximum forces during installation when pulling by								
Max. pulling force by pulling-eye kN	4,5	6,3	8,6	10,8	13,5	16,7	20,0	20,0
Max. pulling force by pulling-stocking kN	2,3	3,2	4,3	5,4	6,8	8,3	8,5	8,5
Minimum bending radii								
During handling and installation, phase conductor cm	41	44	47	48	50	53	57	60
During handling and installation, cable cm	70	74	79	82	86	91	98	103
In final installation, phase conductor cm	28	30	33	34	35	37	40	42
In final installation, cable cm	49	52	55	57	60	64	69	72
Minimum bending radii								
During handling and installation, phase conductor m	0,41	0,44	0,47	0,48	0,50	0,53	0,57	0,60
During handling and installation, cable m	0,70	0,74	0,79	0,81	0,86	0,91	0,98	1,03
In final installation, phase conductor m	0,28	0,30	0,33	0,34	0,35	0,37	0,40	0,42
In final installation, cable m	0,49	0,52	0,55	0,57	0,60	0,64	0,69	0,72
DC resistance								
Max. DC resistance of conductor at 20 °C Ω/km	0,641	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	2,0	1,9	1,8	1,7	1,6	1,5	0,9	0,9

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Technical information	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300
AC resistance of phase conductor, screen circuit closed								
Conductor temperature 40 °C Ω/km	0,6927	0,4788	0,3460	0,2736	0,2229	0,1776	0,1356	0,1088
Conductor temperature 65 °C Ω/km	0,7573	0,5234	0,3782	0,2991	0,2436	0,1941	0,1482	0,1188
Conductor temperature 70 °C Ω/km	0,7702	0,5324	0,3846	0,3042	0,2478	0,1974	0,1507	0,1208
Conductor temperature 90 °C Ω/km	0,8219	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	0,61	0,59	0,57	0,55	0,54	0,53	0,52	0,51
In trefoil formation, cables touching each other mH/km	0,43	0,41	0,39	0,37	0,36	0,35	0,34	0,32
Electrical values								
Calculated operation capacitance µF/km	0,17	0,18	0,20	0,23	0,24	0,26	0,29	0,31
Calculated charging current with main voltage A/km	0,6	0,7	0,7	0,8	0,9	1,0	1,1	1,1
Calculated earth fault current with main voltage A/km	1,8	2,0	2,2	2,5	2,6	2,9	3,2	3,4
Current ratings								
Cables in air (25 °C)								
Flat, conductor 90 °C, open screen A	210	265	320	370	425	485	570	650
Flat, conductor 90 °C, closed screen A	205	255	310	350	395	440	515	580
Trefoil, conductor 90 °C, open screen A	195	235	285	330	380	430	505	580
Trefoil, conductor 90 °C, closed screen A	195	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	155	205	240	270	305	345	395	445
Trefoil, conductor 65 °C, closed screen A	155	200	235	265	300	330	385	435
Trefoil, conductor 90 °C, open screen A	185	240	280	320	360	405	465	525
Trefoil, conductor 90 °C, closed screen A	185	235	275	310	355	390	455	510
Maximum thermal short circuit current during 1 s								
Phase (initial 90 °C, final 250 °C) kA	4,7	6,6	8,9	11,3	14,1	17,4	22,6	28,3
Metal screen (initial 35 °C, final 250 °C) kA	2,9	3,0	3,2	3,4	3,6	3,8	5,3	5,7
Metal screen (initial 60 °C, final 250 °C) kA	2,7	2,8	2,9	3,1	3,3	3,5	4,9	5,3
Metal screen (initial 85 °C, final 250 °C) kA	2,4	2,5	2,7	2,9	3,0	3,2	4,4	4,8