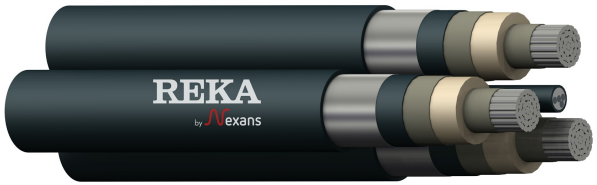
AHXAMK-WM 12/20 (24) kV 3-core

Medium voltage cable

12/20 (24) kV



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
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 around a polyethylene insulated galvanized steel messenger
Inner covering	Semiconducting waterswellable tape against longitudinal water penetration

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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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

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Technical information	3x50+62	3x70+62	3x95+62	3x120+62	3x150+62	3x185+62	3x240+62
Product code	**1187142**	**1187143**	**1187144**	**1187145**	**1187146**	**1187147**	**1187148**
Nominal diameter of a sheathed phase conductor mm	25	27	29	30	32	33	36
Nominal cable diameter mm	65	69	72	75	78	80	86
Nominal cable weight kg/km	2257	2552	2882	3254	3568	4100	4815
Nominal weight of Aluminium kg/km	927	1089	1278	1495	1690	2024	2444
Nominal diameter of conductor mm	8,0	9,5	11,1	12,6	13,9	15,6	17,8
Nominal thickness of conductor screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal Insulation thicness mm	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	23,8	25,3	26,8	29,2
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal diameter of messenger mm	13,1	13,1	13,1	13,1	13,1	13,1	13,1
Nominal thickness of PE-laminated aluminium foil mm	0,2	0,2	0,2	0,2	0,2	0,2	0,3
Nominal thickness of oversheath mm	1,8	1,9	1,9	2,0	2,0	2,1	2,2
Maximum forces during installation when pulling by							
Max. pulling force by pulling-eye kN	7,5	10,5	14,3	18,0	20,0	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
Minimum bending radii							
Minimum bending radius, handling mm	784	822	863	901	937	957	1027
Minimum bending radius, final bending mm	549	575	604	631	656	670	719
Minimum bending radii							
During handling and installation, phase conductor cm	38	41	44	45	48	50	54
During handling and installation, cable cm	78	82	86	90	94	96	103
In final installation, phase conductor cm	26	28	30	32	34	35	38
In final installation, cable cm	55	58	60	63	66	67	72
Minimum bending radii							
During handling and installation, phase conductor m	0,38	0,41	0,44	0,45	0,48	0,50	0,54
During handling and installation, cable m	0,78	0,82	0,86	0,90	0,94	0,96	1,03
In final installation, phase conductor m	0,26	0,28	0,30	0,32	0,34	0,35	0,38
In final installation, cable m	0,55	0,57	0,60	0,63	0,66	0,67	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
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

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Technical information	3x50+62	3x70+62	3x95+62	3x120+62	3x150+62	3x185+62	3x240+62
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
Conductor temperature 65 °C Ω/km	0,7573	0,5234	0,3782	0,2991	0,2436	0,1941	0,1482
Conductor temperature 70 °C Ω/km	0,7702	0,5324	0,3846	0,3042	0,2478	0,1974	0,1507
Conductor temperature 90 °C Ω/km	0,8219	0,5681	0,4104	0,3246	0,2644	0,2106	0,1607
Inductance per phase							
In flat formation, free space between cables equal to one cable diameter mH/km	0,60	0,58	0,56	0,54	0,54	0,52	0,51
In trefoil formation, cables touching each other mH/km	0,41	0,39	0,38	0,36	0,35	0,33	0,32
Electrical values							
Calculated operation capacitance µF/km	0,17	0,18	0,20	0,22	0,24	0,26	0,29
Calculated charging current with main voltage A/km	0,6	0,7	0,7	0,8	0,9	0,9	1,1
Calculated earth fault current with main voltage A/km	1,8	2,0	2,2	2,4	2,6	2,8	3,2
Current ratings							
Cables in air (25 °C)							
Flat, conductor 90 °C, open screen A	210	265	320	370	425	485	570
Flat, conductor 90 °C, closed screen A	205	255	310	350	395	440	515
Trefoil, conductor 90 °C, open screen A	195	235	285	330	380	430	505
Trefoil, conductor 90 °C, closed screen A	195	235	280	325	370	425	490
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
Trefoil, conductor 65 °C, closed screen A	155	200	235	265	300	330	385
Trefoil, conductor 90 °C, open screen A	185	240	280	320	360	405	465
Trefoil, conductor 90 °C, closed screen A	185	235	275	310	355	390	455
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
Metal screen (initial 35 °C, final 250 °C) kA	2,9	3,0	3,2	3,4	3,6	3,8	5,3
Metal screen (initial 60 °C, final 250 °C) kA	2,7	2,8	2,9	3,1	3,3	3,5	4,9
Metal screen (initial 85 °C, final 250 °C) kA	2,4	2,5	2,7	2,9	3,0	3,2	4,4

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STANDARD PACKAGES	3x50+62	3x70+62	3x95+62	3x120+62	3x150+62	3x185+62	3x240+62
Product code	1187142	1187143	1187144	1187145	1187146	1187147	1187148
GTIN code	6410006022441	6410006022458	6410006022465	6410006022472	6410006022489	6410006022694	6438176300107
Package	500 K26	500 K26	500 K26	500 K26	500 K28	500 K28	500 K28

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