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AHXAMK-WP 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
Product Environmental Profile (PEP/EPD)	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	UV-protected PE-plastic PELLD , Black
Longitudinal watertightness	Semiconducting water swellable tape

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Technical information	3x50	3x70	3x95	3x150	3x185	3x240	3x300
Product code	**1187052**	**1187103**	**1187104**	**1187106**	**1187107**	**1187108**	**1187109**
Nominal diameter of a sheathed phase conductor mm	27	29	31	33	35	38	40
Nominal cable diameter mm	59	62	66	71	76	82	86
Nominal cable weight kg/km	1939	2226	2598	3268	3784	4563	5301
Nominal weight of Aluminium kg/km	383	545	735	1149	1461	1902	2428
Nominal diameter of conductor mm	8,0	9,5	11,1	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 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	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
Nominal thickness of PE-laminated aluminium foil mm	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	3,0	3,1	3,2
Maximum forces during installation when pulling by							
Max. pulling force by pulling-eye kN	4,5	6,3	8,6	13,5	16,7	20,0	20,0
Max. pulling force by pulling-stocking kN	2,3	3,2	4,3	6,8	8,3	8,5	8,5
Minimum bending radii							
Minimum bending radius, handling mm	704	741	789	858	912	980	1031
Minimum bending radius, final bending mm	493	518	553	601	638	686	721
Minimum bending radii							
During handling and installation, phase conductor cm	41	44	47	50	53	57	60
During handling and installation, cable cm	70	74	79	86	91	98	103
In final installation, phase conductor cm	28	30	33	35	37	40	42
In final installation, cable cm	49	52	55	60	64	69	72
Minimum bending radii							
During handling and installation, phase conductor m	0,41	0,44	0,47	0,50	0,53	0,57	0,60
During handling and installation, cable m	0,70	0,74	0,79	0,86	0,91	0,98	1,03
In final installation, phase conductor m	0,28	0,30	0,33	0,35	0,37	0,40	0,42
In final installation, cable m	0,49	0,52	0,55	0,60	0,64	0,69	0,72
DC resistance							
Max. DC resistance of conductor at 20 °C Ω/km	0,641	0,443	0,32	0,206	0,164	0,125	0,1
Nominal DC resistance of PE-laminated aluminium foil 20 °C Ω/km	2,0	1,9	1,8	1,6	1,5	0,9	0,9

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Technical information	3x50	3x70	3x95	3x150	3x185	3x240	3x300
AC resistance of phase conductor, screen circuit closed							
Conductor temperature 40 °C Ω/km	0,6927	0,4788	0,3460	0,2229	0,1776	0,1356	0,1088
Conductor temperature 65 °C Ω/km	0,7573	0,5234	0,3782	0,2436	0,1941	0,1482	0,1188
Conductor temperature 70 °C Ω/km	0,7702	0,5324	0,3846	0,2478	0,1974	0,1507	0,1208
Conductor temperature 90 °C Ω/km	0,8219	0,5681	0,4104	0,2644	0,2106	0,1607	0,1288
Inductance per phase							
In flat formation, free space between cables equal to one cable diameter mH/km	0,61	0,59	0,57	0,54	0,53	0,52	0,51
In trefoil formation, cables touching each other mH/km	0,43	0,41	0,39	0,36	0,35	0,34	0,32
Electrical values							
Calculated operation capacitance µF/km	0,17	0,18	0,20	0,24	0,26	0,29	0,31
Calculated charging current with main voltage A/km	0,6	0,7	0,7	0,9	1,0	1,1	1,1
Calculated earth fault current with main voltage A/km	1,8	2,0	2,2	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	425	485	570	650
Flat, conductor 90 °C, closed screen A	205	255	310	395	440	515	580
Trefoil, conductor 90 °C, open screen A	195	235	285	380	430	505	580
Trefoil, conductor 90 °C, closed screen A	195	235	280	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	305	345	395	445
Trefoil, conductor 65 °C, closed screen A	155	200	235	300	330	385	435
Trefoil, conductor 90 °C, open screen A	185	240	280	360	405	465	525
Trefoil, conductor 90 °C, closed screen A	185	235	275	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	14,1	17,4	22,6	28,3
Metal screen (initial 35 °C, final 250 °C) kA	2,9	3,0	3,2	3,6	3,8	5,3	5,7
Metal screen (initial 60 °C, final 250 °C) kA	2,7	2,8	2,9	3,3	3,5	4,9	5,3
Metal screen (initial 85 °C, final 250 °C) kA	2,4	2,5	2,7	3,0	3,2	4,4	4,8
Environmental information							
(A1-A3) GWP emission kgCO2e/km	10237	12068	14446	18729	22011	26979	31690
GWP emissions calculation standard	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019	EN15804:2012 + A2:2019

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STANDARD PACKAGES	3x50	3x70	3x95	3x150	3x185	3x240	3x300
Product code	1187052	1187103	1187104	1187106	1187107	1187108	1187109
GTIN code	6410006224005	6410006224012	6410006224036	6410006224050	6410006224074	6410006224098	6438176300077
Package	500 K22	500 K24	500 K24	500 K24	500 K26	500 K26	500 K28