

## AXQJ-F D / AHXCMK-HF D 12/20 (24) kV 3-core BK

Medium voltage cable

### 12/20 (24) kV Application

Medium-voltage cable for fixed installations indoors and outdoors. May be buried directly in soil. Installations must be in accordance with national regulations and rules of installations. The cable is halogen-free and flame-retardant according to CPR-class Dca-s2,d2,a2.



### Design

<b>Standards</b>	HD 620 10 M & F, SS 424 14 16, SFS 5636
<b>Reaction to fire</b>	Dca-s2,d2,a2; EN 13501-6, EN 50575:2014+A1:2016
<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 tape
<b>Inner covering</b>	Semiconducting tape
<b>Metal screen</b>	Layer of helically wound copper wires with a counter helix copper tape
<b>Oversheath</b>	UV-protected halogen-free polyolefin compound, Black

### 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>	-15
<b>Min. cable temperature during transport °C</b>	-25

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Technical information	3x50/16 BK	3x95/25 BK	3x150/25 BK	3x185/35 BK	3x240/35 BK	3x300/35 BK
<b>Product code</b>	<b>1181848</b>	<b>1181851</b>	<b>1181853</b>	<b>1181856</b>	<b>1181859</b>	<b>1182074</b>
Nominal cross-sectional area of conductor mm <sup>2</sup>	50	95	150	185	240	300
Nominal diameter of conductor mm	8,0	11,1	13,9	15,6	17,8	19,7
Nominal thickness of conductor screen mm	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
Nominal diameter over the insulation without insulation screen mm	19,2	22,3	25,1	26,8	29,2	30,9
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5	0,5	0,5
Nominal size of metal screen mm <sup>2</sup>	16	25	25	35	35	35
Nominal thickness of oversheath mm	3,0	3,0	3,2	3,3	3,5	3,6
Fire load MJ/m	47,635	57,588	67,619	74,115	83,446	90,009
Fire load kWh/m	13,232	15,997	18,783	20,588	23,180	25,002
Nominal cable diameter mm	51,490	58,410	64,470	68,790	74,490	77,950
Nominal cable weight kg/km	2028,338	2733,698	3456,514	4039,624	4785,663	5513,968
Nominal weight of copper kg/m	0,143	0,213	0,211	0,277	0,277	0,276
Nominal weight of aluminium kg/m	0,383	0,733	1,145	1,456	1,897	2,423
<b>Maximum forces during installation when pulling by</b>						
Max. pulling force by pulling-eye kN	4,5	8,6	13,5	16,7	20,0	20,0
Max. pulling force by pulling-stocking kN	2,3	4,3	6,8	8,3	8,5	8,5
<b>Minimum bending radii</b>						
Minimum bending radius, handling mm	618	701	774	825	894	935
Minimum bending radius, final bending mm	433	491	542	578	626	655
<b>Minimum bending radii</b>						
During handling and installation, phase conductor cm	30	35	39	42	45	48
During handling and installation, cable cm	62	70	77	83	89	94
In final installation, phase conductor cm	21	24	27	29	32	34
In final installation, cable cm	43	49	54	58	63	65
<b>Minimum bending radii</b>						
During handling and installation, cable m	0,62	0,70	0,77	0,82	0,89	0,94
In final installation, cable m	0,43	0,49	0,54	0,58	0,63	0,66
<b>DC resistance</b>						
Max. DC resistance of conductor at 20 °C Ω/km	0,641	0,32	0,206	0,164	0,125	0,100
Maximum DC resistance at 20 °C, metal screen Ω/km	1,2	0,8	0,8	0,6	0,6	0,6

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<b>AC resistance of phase conductor, screen circuit closed</b>						
Conductor temperature 40 °C Ω/km	0,6927	0,3460	0,2229	0,1776	0,1356	0,1088
Conductor temperature 65 °C Ω/km	0,7573	0,3782	0,2436	0,1941	0,1482	0,1188
Conductor temperature 70 °C Ω/km	0,7702	0,3846	0,2478	0,1974	0,1507	0,1208
Conductor temperature 90 °C Ω/km	0,8219	0,4104	0,2644	0,2106	0,1607	0,1288
<b>Inductance per phase</b>						
In trefoil formation, cables touching each other mH/km	0,37	0,33	0,31	0,30	0,29	0,28
<b>Electrical values</b>						
Calculated operation capacitance μF/km	0,16	0,20	0,24	0,26	0,29	0,31
Calculated charging current with main voltage A/km	0,6	0,7	0,9	0,9	1,1	1,1
Calculated earth fault current with main voltage A/km	1,8	2,2	2,6	2,8	3,2	3,4
<b>Current ratings</b>						
<b>Cables in air (25 °C)</b>						
Trefoil, conductor 90 °C, closed screen A	160	230	305	340	400	460
<b>Cables in the ground (15 °C and 1,0 K.m/W), Installation depth 0,7 m</b>						
Trefoil, conductor 65 °C, closed screen A	145	205	260	290	340	380
Trefoil, conductor 90 °C, closed screen A	170	240	310	345	400	450
<b>Maximum thermal short circuit current during 1 s</b>						
Phase (initial 90 °C, final 250 °C) kA	4,7	8,9	14,1	17,4	22,6	28,3
Metal screen (initial 80 °C, final 250 °C) kA	2,3	3,4	3,4	4,7	4,7	4,7