

## AXQJ-F TT D / AHXCMK-HF D / TSLI D 12/20 (24) kV 1-core CAS

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.



DryRex



### Design

<b>Standards</b>	HD 620 10 M & K & 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 waterswellable tape
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<b>Metal screen</b>	Copper wires and aluminium foil (CAS). Polyethylene laminated aluminium foil acts as a part of the metallic screen and needs to be connected in cable joints and terminations
<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

**Longitudinal watertightness** Water swellable tape applied under and over metal screen

**Transverse watertightness** Polyethylene laminated aluminium foil bonded to the sheath

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Technical information	1x240/35 CAS	1x300/35 CAS	1x400/35 CAS	1x500/35 CAS	1x630/35 CAS	1x630/50 CAS
<b>Product code</b>	<b>1181581</b>	<b>1181582</b>	<b>1181583</b>	<b>1181584</b>	<b>1181585</b>	<b>1181586</b>
Nominal cross-sectional area of conductor mm <sup>2</sup>	240	300	400	500	630	630
Nominal diameter of conductor mm	17,8	19,8	22,4	25,7	29,3	29,3
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	29,2	31,0	33,6	36,9	40,7	40,7
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>	35	35	35	35	35	50
Nominal thickness of PE-laminated aluminium foil mm	0,2	0,2	0,2	0,2	0,2	0,2
Nominal thickness of oversheath mm	2,2	2,3	2,4	2,5	2,6	2,6
Fire load MJ/m	30,839	33,272	36,555	41,014	46,889	46,536
Fire load kWh/m	8,567	9,242	10,154	11,393	13,025	12,927
Nominal cable diameter mm	39,060	41,010	43,320	46,820	50,920	50,770
Nominal cable weight kg/km	1792,643	2046,657	2305,390	2782,016	3379,181	3412,901
Nominal weight of copper kg/m	0,222	0,222	0,225	0,225	0,225	0,267
Nominal weight of aluminium kg/m	0,631	0,806	0,960	1,298	1,718	1,718
<b>Maximum forces during installation when pulling by</b>						
Max. pulling force by pulling-eye kN	7,2	9,0	12,0	15,0	18,9	18,9
Max. pulling force by pulling-stocking kN	3,6	4,5	6,0	7,5	8,5	8,5
<b>Minimum bending radii</b>						
During handling and installation, cable cm	59	62	65	70	76	76
In final installation, cable cm	41	43	45	49	53	53
<b>Minimum bending radii</b>						
During handling and installation, cable m	0,59	0,61	0,65	0,70	0,76	0,76
In final installation, cable m	0,41	0,43	0,46	0,49	0,54	0,53
<b>DC resistance</b>						
Max. DC resistance of conductor at 20 °C Ω/km	0,125	0,100	0,0778	0,0605	0,0469	0,0469
Maximum DC resistance at 20 °C, metal screen Ω/km	0,524	0,524	0,524	0,524	0,524	0,387
<b>AC resistance of phase conductor, screen circuit closed</b>						
Conductor temperature 40 °C Ω/km	0,1356	0,1088	0,0850	0,0666	0,0522	0,0522
Conductor temperature 65 °C Ω/km	0,1482	0,1188	0,0927	0,0726	0,0568	0,0568
Conductor temperature 70 °C Ω/km	0,1507	0,1208	0,0943	0,0738	0,0577	0,0577
Conductor temperature 90 °C Ω/km	0,1607	0,1288	0,1005	0,0786	0,0614	0,0614

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<b>Inductance per phase</b>						
In flat formation, free space between cables equal to one cable diam	0,53	0,51	0,50	0,49	0,48	0,48
In trefoil formation, cables touching each other mH/km	0,34	0,33	0,32	0,30	0,29	0,29
<b>Electrical values</b>						
Calculated operation capacitance $\mu\text{F}/\text{km}$	0,29	0,31	0,34	0,39	0,43	0,43
Calculated charging current with main voltage A/km	1,1	1,1	1,3	1,4	1,6	1,6
Calculated earth fault current with main voltage A/km	3,2	3,4	3,8	4,2	4,7	4,7
<b>Current ratings</b>						
<b>Cables in air (25 °C)</b>						
Flat, conductor 90 °C, open screen A	570	650	790	920	1040	1040
Flat, conductor 90 °C, closed screen A	515	580	680	755	840	840
Trefoil, conductor 90 °C, open screen A	505	580	695	800	915	915
Trefoil, conductor 90 °C, closed screen A	490	565	680	775	880	880
<b>Cables in the ground (15 °C and 1,0 K.m/W), Installation depth 0,7 m</b>						
Flat, conductor 65 °C, open screen A	435	485	570	645	720	720
Flat, conductor 65 °C, closed screen A	395	440	500	550	610	610
Flat, conductor 90 °C, open screen A	510	570	670	760	850	850
Flat, conductor 90 °C, closed screen A	465	515	590	650	715	715
Trefoil, conductor 65 °C, open screen A	395	445	525	590	665	665
Trefoil, conductor 65 °C, closed screen A	385	435	510	570	635	635
Trefoil, conductor 90 °C, open screen A	465	525	615	695	780	780
Trefoil, conductor 90 °C, closed screen A	455	510	600	670	745	745
<b>Maximum thermal short circuit current during 1 s</b>						
Phase (initial 90 °C, final 250 °C) kA	22,6	28,3	37,8	47,2	59,5	59,5
Metal screen (initial 80 °C, final 250 °C) kA	4,7	4,7	4,7	4,7	4,7	7,4