

## AXLJ-F TT 18/30 (36) kV 1-core CAS

Medium voltage cable

### 18/30 (36) 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.



DryRex

### Design

<b>Standards</b>	HD 620 10 M, SS 424 14 16
<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>	Water swellable tape under and over screen
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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 PE-plastic PELLD, 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>	-20
<b>Min. cable temperature during transport °C</b>	-40

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**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	1x70/16 CAS	1x95/16 CAS	1x95/25 CAS	1x120/16 CAS	1x120/25 CAS	1x150/16 CAS	1x150/25 CAS	1x150/35 CAS	1x185/25 CAS	1x185/35 CAS
<b>Product code</b>	<b>1186655</b>	<b>1186374</b>	<b>1186684</b>	<b>1186375</b>	<b>1182192</b>	<b>1182193</b>	<b>1186376</b>	<b>1182194</b>	<b>1186377</b>	<b>1181052</b>
Nominal cross-sectional area of conductor mm <sup>2</sup>	70	95	95	120	120	150	150	150	185	185
Nominal diameter of conductor mm	9,5	11,1	11,1	12,6	12,6	13,9	13,9	13,9	15,6	15,6
Nominal thickness of conductor screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal thickness of insulation mm	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nominal diameter over the insulation without insulation screen mm	25,1	26,7	26,7	28,2	28,2	29,5	29,5	29,5	31,2	31,2
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal size of metal screen mm <sup>2</sup>	16	16	25	16	25	16	25	35	25	35
Nominal thickness of PE-laminated aluminium foil mm	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
Nominal thickness of oversheath mm	2,1	2,1	2,1	2,1	2,1	2,2	2,2	2,2	2,2	2,2
Nominal cable diameter mm	33,840	35,390	35,390	36,940	36,940	38,390	38,390	38,770	40,140	40,520
Nominal cable weight kg/km	988,964	1106,213	1154,643	1232,881	1281,290	1354,024	1402,416	1463,198	1568,974	1629,759
Nominal weight of copper kg/m	0,091	0,091	0,140	0,091	0,140	0,091	0,140	0,198	0,140	0,198
Nominal weight of aluminium kg/m	0,181	0,244	0,244	0,316	0,316	0,381	0,381	0,381	0,485	0,485
<b>Maximum forces during installation when pulling by</b>										
Max. pulling force by pulling-eye kN	2,1	2,9	2,9	3,6	3,6	4,5	4,5	4,5	5,6	5,6
Max. pulling force by pulling-stocking kN	1,1	1,4	1,4	1,8	1,8	2,3	2,3	2,3	2,8	2,8
<b>Minimum bending radii</b>										
During handling and installation, cable cm	51	53	53	55	55	58	58	58	60	61
In final installation, cable cm	36	37	37	39	39	40	40	41	42	43
<b>Minimum bending radii</b>										
During handling and installation, cable m	0,51	0,53	0,53	0,55	0,55	0,58	0,58	0,58	0,60	0,61
In final installation, cable m	0,35	0,37	0,37	0,39	0,39	0,40	0,40	0,41	0,42	0,42
<b>DC resistance</b>										
Max. DC resistance of conductor at 20 °C Ω/km	0,443	0,320	0,320	0,253	0,253	0,206	0,206	0,206	0,164	0,164
Maximum DC resistance at 20 °C, metal screen Ω/km	1,2	1,2	0,8	1,2	0,8	1,2	0,8	0,6	0,8	0,6
<b>AC resistance of phase conductor, screen circuit closed</b>										
Conductor temperature 40 °C Ω/km	0,4788	0,3460	0,3460	0,2736	0,2736	0,2229	0,2229	0,2229	0,1776	0,1776
Conductor temperature 65 °C Ω/km	0,5234	0,3782	0,3782	0,2991	0,2991	0,2436	0,2436	0,2436	0,1941	0,1941
Conductor temperature 70 °C Ω/km	0,5324	0,3846	0,3846	0,3042	0,3042	0,2478	0,2478	0,2478	0,1974	0,1974
Conductor temperature 90 °C Ω/km	0,5681	0,4104	0,4104	0,3246	0,3246	0,2644	0,2644	0,2644	0,2106	0,2106

Technical information	1x70/16 CAS	1x95/16 CAS	1x95/25 CAS	1x120/16 CAS	1x120/25 CAS	1x150/16 CAS	1x150/25 CAS	1x150/35 CAS	1x185/25 CAS	1x185/35 CAS
<b>Inductance per phase</b>										
In flat formation, free space between cables equal to one cable diam	0,62	0,60	0,60	0,58	0,58	0,57	0,57	0,57	0,56	0,56
In trefoil formation, cables touching each other mH/km	0,44	0,42	0,42	0,40	0,40	0,39	0,39	0,39	0,37	0,37
<b>Electrical values</b>										
Calculated operation capacitance $\mu\text{F}/\text{km}$	0,14	0,16	0,16	0,17	0,17	0,18	0,18	0,18	0,20	0,20
Calculated charging current with main voltage A/km	0,8	0,9	0,9	0,9	0,9	1,0	1,0	1,0	1,1	1,1
Calculated earth fault current with main voltage A/km	2,3	2,6	2,6	2,8	2,8	3,0	3,0	3,0	3,2	3,2
<b>Current ratings</b>										
<b>Cables in air (25 °C)</b>										
Flat, conductor 90 °C, open screen A	265	320	320	370	370	425	425	425	485	485
Flat, conductor 90 °C, closed screen A	255	310	310	350	350	395	395	395	440	440
Trefoil, conductor 90 °C, open screen A	235	285	285	330	330	380	380	380	430	430
Trefoil, conductor 90 °C, closed screen A	235	280	280	325	325	370	370	370	425	425
<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	220	255	255	295	295	330	330	330	375	375
Flat, conductor 65 °C, closed screen A	215	250	250	280	280	315	315	315	350	350
Flat, conductor 90 °C, open screen A	260	300	300	345	345	390	390	390	440	440
Flat, conductor 90 °C, closed screen A	250	295	295	330	330	370	370	370	410	410
Trefoil, conductor 65 °C, open screen A	205	240	240	270	270	305	305	305	345	345
Trefoil, conductor 65 °C, closed screen A	200	235	235	265	265	300	300	300	330	330
Trefoil, conductor 90 °C, open screen A	240	280	280	320	320	360	360	360	405	405
Trefoil, conductor 90 °C, closed screen A	235	275	275	310	310	355	355	355	390	390
<b>Maximum thermal short circuit current during 1 s</b>										
Phase (initial 90 °C, final 250 °C) kA	6,6	8,9	8,9	11,3	11,3	14,1	14,1	14,1	17,4	17,4
Metal screen (initial 80 °C, final 250 °C) kA	2,3	2,3	3,4	2,3	3,4	2,3	3,4	4,7	3,4	4,7

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Technical information	1x240/25 CAS	1x240/35 CAS	1x300/25 CAS	1x300/35 CAS	1x400/25 CAS	1x400/35 CAS	1x500/25 CAS	1x500/35 CAS	1x630/35 CAS	1x630/50 CAS
<b>Product code</b>	<b>1186378</b>	<b>1186238</b>	<b>1186379</b>	<b>1186697</b>	<b>1181317</b>	<b>1186380</b>	<b>1186681</b>	<b>1186699</b>	<b>1186672</b>	<b>1181055</b>
Nominal cross-sectional area of conductor mm <sup>2</sup>	240	240	300	300	400	400	500	500	630	630
Nominal diameter of conductor mm	17,8	17,8	19,8	19,8	22,4	22,4	25,7	25,7	29,3	29,3
Nominal thickness of conductor screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal thickness of insulation mm	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nominal diameter over the insulation without insulation screen mm	33,4	33,4	35,4	35,4	38,0	38,0	41,3	41,3	45,1	45,1
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Nominal size of metal screen mm <sup>2</sup>	25	35	25	35	25	35	25	35	35	50
Nominal thickness of PE-laminated aluminium foil mm	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
Nominal thickness of oversheath mm	2,3	2,3	2,4	2,4	2,5	2,5	2,6	2,6	2,7	2,8
Nominal cable diameter mm	42,540	42,540	44,690	45,070	47,540	47,540	51,040	51,040	54,990	55,570
Nominal cable weight kg/km	1806,777	1861,967	2068,526	2129,537	2331,708	2387,291	2808,807	2864,440	3453,545	3555,649
Nominal weight of copper kg/m	0,140	0,195	0,140	0,198	0,140	0,195	0,140	0,195	0,195	0,278
Nominal weight of aluminium kg/m	0,631	0,631	0,806	0,806	0,960	0,960	1,298	1,298	1,718	1,718
<b>Maximum forces during installation when pulling by</b>										
Max. pulling force by pulling-eye kN	7,2	7,2	9,0	9,0	12,0	12,0	15,0	15,0	18,9	18,9
Max. pulling force by pulling-stocking kN	3,6	3,6	4,5	4,5	6,0	6,0	7,5	7,5	8,5	8,5
<b>Minimum bending radii</b>										
During handling and installation, cable cm	64	64	67	68	71	71	77	77	82	83
In final installation, cable cm	45	45	47	47	50	50	54	54	58	58
<b>Minimum bending radii</b>										
During handling and installation, cable m	0,64	0,64	0,67	0,68	0,71	0,71	0,77	0,77	0,82	0,83
In final installation, cable m	0,45	0,45	0,47	0,47	0,50	0,50	0,54	0,54	0,58	0,58
<b>DC resistance</b>										
Max. DC resistance of conductor at 20 °C Ω/km	0,125	0,125	0,100	0,100	0,0778	0,0778	0,0605	0,0605	0,0469	0,0469
Maximum DC resistance at 20 °C, metal screen Ω/km	0,8	0,6	0,8	0,6	0,8	0,6	0,8	0,6	0,6	0,387
<b>AC resistance of phase conductor, screen circuit closed</b>										
Conductor temperature 40 °C Ω/km	0,1356	0,1356	0,1088	0,1088	0,0850	0,0850	0,0666	0,0666	0,0522	0,0522
Conductor temperature 65 °C Ω/km	0,1482	0,1482	0,1188	0,1188	0,0927	0,0927	0,0726	0,0726	0,0568	0,0568
Conductor temperature 70 °C Ω/km	0,1507	0,1507	0,1208	0,1208	0,0943	0,0943	0,0738	0,0738	0,0577	0,0577
Conductor temperature 90 °C Ω/km	0,1607	0,1607	0,1288	0,1288	0,1005	0,1005	0,0786	0,0786	0,0614	0,0614

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Technical information	1x240/25 CAS	1x240/35 CAS	1x300/25 CAS	1x300/35 CAS	1x400/25 CAS	1x400/35 CAS	1x500/25 CAS	1x500/35 CAS	1x630/35 CAS	1x630/50 CAS
<b>Inductance per phase</b>										
In flat formation, free space between cables equal to one cable diam	0,54	0,54	0,53	0,53	0,52	0,52	0,51	0,51	0,49	0,50
In trefoil formation, cables touching each other mH/km	0,36	0,36	0,35	0,35	0,33	0,33	0,32	0,32	0,31	0,31
<b>Electrical values</b>										
Calculated operation capacitance $\mu\text{F}/\text{km}$	0,22	0,22	0,24	0,24	0,26	0,26	0,29	0,29	0,32	0,32
Calculated charging current with main voltage A/km	1,2	1,2	1,3	1,3	1,4	1,4	1,6	1,6	1,7	1,7
Calculated earth fault current with main voltage A/km	3,6	3,6	3,9	3,9	4,2	4,2	4,7	4,7	5,2	5,2
<b>Current ratings</b>										
<b>Cables in air (25 °C)</b>										
Flat, conductor 90 °C, open screen A	570	570	650	650	790	790	920	920	1040	1040
Flat, conductor 90 °C, closed screen A	515	515	580	580	680	680	755	755	840	840
Trefoil, conductor 90 °C, open screen A	505	505	580	580	695	695	800	800	915	915
Trefoil, conductor 90 °C, closed screen A	490	490	565	565	680	680	775	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	435	485	485	570	570	645	645	720	720
Flat, conductor 65 °C, closed screen A	395	395	440	440	500	500	550	550	610	610
Flat, conductor 90 °C, open screen A	510	510	570	570	670	670	760	760	850	850
Flat, conductor 90 °C, closed screen A	465	465	515	515	590	590	650	650	715	715
Trefoil, conductor 65 °C, open screen A	395	395	445	445	525	525	590	590	665	665
Trefoil, conductor 65 °C, closed screen A	385	385	435	435	510	510	570	570	635	635
Trefoil, conductor 90 °C, open screen A	465	465	525	525	615	615	695	695	780	780
Trefoil, conductor 90 °C, closed screen A	455	455	510	510	600	600	670	670	745	745
<b>Maximum thermal short circuit current during 1 s</b>										
Phase (initial 90 °C, final 250 °C) kA	22,6	22,6	28,3	28,3	37,8	37,8	47,2	47,2	59,5	59,5
Metal screen (initial 80 °C, final 250 °C) kA	3,4	4,7	3,4	4,7	3,4	4,7	3,4	4,7	4,7	7,4

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Technical information	1x800/35 CAS	1x800/50 CAS	1x1000/35 CAS	1x1200/35 CAS
<b>Product code</b>	<b>1186700</b>	<b>1181029</b>	<b>1186694</b>	<b>1186695</b>
Nominal cross-sectional area of conductor mm <sup>2</sup>	800	800	1000	1200
Nominal diameter of conductor mm	33,3	33,3	37,8	41,4
Nominal thickness of conductor screen mm	0,5	0,5	0,5	0,5
Nominal thickness of insulation mm	8,0	8,0	8,0	8,0
Nominal diameter over the insulation without insulation screen mm	49,1	49,1	55,0	58,6
Nominal thickness of insulation screen mm	0,5	0,5	0,5	0,5
Nominal size of metal screen mm <sup>2</sup>	35	50	35	35
Nominal thickness of PE-laminated aluminium foil mm	0,2	0,2	0,2	0,2
Nominal thickness of oversheath mm	2,9	2,9	3,0	3,1
Nominal cable diameter mm	59,440	59,440	65,540	69,340
Nominal cable weight kg/km	4155,164	4239,572	4909,136	5551,739
Nominal weight of copper kg/m	0,195	0,279	0,195	0,195
Nominal weight of aluminium kg/m	2,204	2,204	2,826	3,316
<b>Maximum forces during installation when pulling by</b>				
Max. pulling force by pulling-eye kN	20,0	20,0	20,0	20,0
Max. pulling force by pulling-stocking kN	8,5	8,5	8,5	8,5
<b>Minimum bending radii</b>				
During handling and installation, cable cm	89	89	98	104
In final installation, cable cm	62	62	69	73
<b>Minimum bending radii</b>				
During handling and installation, cable m	0,89	0,89	0,98	1,04
In final installation, cable m	0,62	0,62	0,69	0,73
<b>DC resistance</b>				
Max. DC resistance of conductor at 20 °C Ω/km	0,0367	0,0367	0,0291	0,0247
Maximum DC resistance at 20 °C, metal screen Ω/km	0,6	0,387	0,6	0,6
<b>AC resistance of phase conductor, screen circuit closed</b>				
Conductor temperature 40 °C Ω/km	0,0416	0,0416	0,0338	0,0295
Conductor temperature 65 °C Ω/km	0,0451	0,0451	0,0366	0,0317
Conductor temperature 70 °C Ω/km	0,0458	0,0458	0,0371	0,0322
Conductor temperature 90 °C Ω/km	0,0487	0,0487	0,0394	0,0341

Technical information	1x800/35 CAS	1x800/50 CAS	1x1000/35 CAS	1x1200/35 CAS
<b>Inductance per phase</b>				
In flat formation, free space between cables equal to one cable diam	0,48	0,48	0,48	0,47
In trefoil formation, cables touching each other mH/km	0,30	0,30	0,29	0,29
<b>Electrical values</b>				
Calculated operation capacitance $\mu\text{F}/\text{km}$	0,36	0,36	0,41	0,44
Calculated charging current with main voltage A/km	1,9	1,9	2,2	2,4
Calculated earth fault current with main voltage A/km	5,8	5,8	6,7	7,2
<b>Current ratings</b>				
<b>Cables in air (25 °C)</b>				
Flat, conductor 90 °C, open screen A	1220	1220	1390	1596
Flat, conductor 90 °C, closed screen A	950	950	1060	1323
Trefoil, conductor 90 °C, open screen A	1045	1045	1170	1235
Trefoil, conductor 90 °C, closed screen A	1010	1010	1130	1201
<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	805	805	900	979
Flat, conductor 65 °C, closed screen A	650	650	700	803
Flat, conductor 90 °C, open screen A	950	950	1067	1161
Flat, conductor 90 °C, closed screen A	841	822	922	972
Trefoil, conductor 65 °C, open screen A	725	725	800	872
Trefoil, conductor 65 °C, closed screen A	695	695	760	839
Trefoil, conductor 90 °C, open screen A	863	868	968	1037
Trefoil, conductor 90 °C, closed screen A	845	840	940	1003
<b>Maximum thermal short circuit current during 1 s</b>				
Phase (initial 90 °C, final 250 °C) kA	75,6	75,6	94,5	113,0
Metal screen (initial 80 °C, final 250 °C) kA	4,7	7,4	4,7	4,7