

MV Cables	Current ratings for single-core cables with XLPE insulation, rated voltage 3.6/6 to 18/30 kV – aluminum conductor
6 ... 30 kV	

Nom. area of cond.	Buried direct in the ground		In single-way ducts		In air		
	Trefoil	Flat spaced	Trefoil ducts	Flat touching ducts	Trefoil	Flat touching	Flat spaced
							
					≥ 0.5xD	≥ 0.5xD	≥ 0.5xD
mm ²	A	A	A	A	A	A	A
16	84	88	80	81	97	99	116
25	108	112	102	103	127	130	153
35	129	134	122	123	154	157	185
50	152	157	144	146	184	189	222
70	186	192	176	178	230	236	278
95	221	229	210	213	280	287	338
120	252	260	240	242	324	332	391
150	281	288	267	271	368	376	440
185	317	324	303	307	424	432	504
240	367	373	351	356	502	511	593
300	414	419	397	402	577	586	677
400	470	466	451	457	673	676	769
Maximum conductor temperature:			90 ·C				
Ambient air temperature:			30 ·C				
Ground temperature:			20 ·C				
Depth of laying:			0,8 m				
Thermal resistivity of soil:			1,5 K.m/W				
Thermal resistivity of earthenware ducts:			1,2 K.m/W				
Screens:			Bonded at both ends				
* Current rating calculated for cables having a rated voltage of 6/10 kV.							

MV Cables	Current ratings for single-core cables with XLPE insulation, rated voltage 3.6/6 to 18/30 kV - copper conductor
6 ... 30 kV	

Nom. area of cond.	Buried direct in the ground		In single-way ducts		In air		
	Trefoil	Flat spaced	Trefoil ducts	Flat touching ducts	Trefoil	Flat touching	Flat spaced
							
					≥ 0.5xD	≥ 0.5xD	≥ 0.5xD
mm ²	A	A	A	A	A	A	A
16	109	113	103	104	125	128	150
25	140	144	132	133	163	167	196
35	166	172	157	159	198	203	238
50	196	203	186	188	238	243	286
70	239	246	227	229	296	303	356
95	285	293	271	274	361	369	434
120	323	332	308	311	417	426	500
150	361	366	343	347	473	481	559
185	406	410	387	391	543	550	637
240	469	470	447	453	641	647	745
300	526	524	504	510	735	739	846
400	590	572	564	571	845	837	938
Maximum conductor temperature:			90 ·C				
Ambient air temperature:			30 ·C				
Ground temperature:			20 ·C				
Depth of laying:			0,8 m				
Thermal resistivity of soil:			1,5 K.m/W				
Thermal resistivity of earthenware ducts:			1,2 K.m/W				
Screens:			Bonded at both ends				
* Current rating calculated for cables having a rated voltage of 6/10 kV.							

Nom. area of cond.	Un-armored			Armored		
	Buried direct in ground	In a buried duct	In air	Buried direct in ground	In a buried duct	In air
						
			≥ 0.3xD			≥ 0.3xD
mm ²	A	A	A	A	A	A
16	78	67	84	78	68	85
25	100	87	110	100	87	111
35	119	103	132	119	104	133
50	140	122	158	140	123	159
70	171	150	196	171	150	196
95	203	179	236	204	180	238
120	232	205	273	232	206	274
150	260	231	309	259	231	309
185	294	262	355	293	262	354
240	340	305	415	338	304	415
300	384	346	475	380	343	472
400	438	398	552	432	393	545
Maximum conductor temperature:			90 ·C			
Ambient air temperature:			30 ·C			
Ground temperature:			20 ·C			
Depth of laying:			0,8 m			
Thermal resistivity of soil:			1,5 K.m/W			
Thermal resistivity of earthenware ducts:			1,2 K.m/W			
* Current rating calculated for cables having a rated voltage of 6/10 kV.						

Nom. area of cond.	Un-armored			Armored		
	Buried direct in ground	In a buried duct	In air	Buried direct in ground	In a buried duct	In air
						
			≥ 0.3xD			≥ 0.3xD
mm ²	A	A	A	A	A	A
16	101	87	109	101	88	110
25	129	112	142	129	112	143
35	153	133	170	154	134	172
50	181	158	204	181	158	205
70	221	193	253	220	194	253
95	262	231	304	263	232	307
120	298	264	351	298	264	352
150	334	297	398	332	296	397
185	377	336	455	374	335	453
240	434	390	531	431	387	529
300	489	441	606	482	435	599
400	553	501	696	541	492	683
Maximum conductor temperature:			90 ·C			
Ambient air temperature:			30 ·C			
Ground temperature:			20 ·C			
Depth of laying:			0,8 m			
Thermal resistivity of soil:			1,5 K.m/W			
Thermal resistivity of earthenware ducts:			1,2 K.m/W			
* Current rating calculated for cables having a rated voltage of 6/10 kV.						

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Pulling force [N]	2100	2850	3600	4500	5550	7200	9000	12000	15000
d.c. res/unit length at 90 °C [Ω/km]	0.568	0.410	0.324	0.264	0.210	0.160	0.128	0.0997	0.0776
d.c. res/unit length at 20 °C [Ω/km]	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605
Operating capacitance/unit length [μF/km]	0.283	0.315	0.345	0.374	0.406	0.456	0.495	0.558	0.613
Charging current [A/km]	0.510	0.570	0.630	0.680	0.740	0.830	0.900	1.010	1.110
Earth fault current [A/km]	1.530	1.710	1.890	2.040	2.220	2.490	2.700	3.030	3.330
Installation in ground, flat spaced									
Current-carrying capacity [A]	192	229	260	288	324	373	419	466	-
Permissible transmission power [MVA]	4.10	4.87	5.53	6.08	6.82	7.85	8.76	9.70	10.9
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.585	0.426	0.340	0.287	0.232	0.181	0.148	0.126	0.103
Effective a.c. resistance/unit length at 20 °C [Ω/km]	0.460	0.336	0.268	0.229	0.186	0.146	0.120	0.104	0.0855
Ohmic losses per cable [kW/km]	32.9	33.7	34.6	35.3	36.0	37.2	38.0	39.4	40.3
Inductance/unit length per conductor [mH/km]	0.685	0.659	0.638	0.613	0.595	0.572	0.556	0.526	0.511
Resistance/unit length in zero-phase sequential system [Ω/km]	1.262	1.138	1.069	0.833	0.791	0.751	0.725	0.560	0.543
Reactance/unit length in zero-phase sequential system [Ω/km]	0.555	0.551	0.548	0.298	0.296	0.293	0.291	0.179	0.177
Reduction factor [-]	0.606	0.608	0.609	0.459	0.460	0.462	0.463	0.365	0.366

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Installation in free air, flat spaced									
Current-carrying capacity [A]	278	338	391	440	504	593	677	769	-
Permissible transmission power [MVA]	4.78	5.80	6.69	7.53	8.61	10.1	11.6	13.2	15.0
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.581	0.423	0.337	0.284	0.230	0.180	0.148	0.126	0.104
Ohmic losses per cable [kW/km]	44.1	47.2	49.9	53.0	55.8	60.4	64.1	69.6	74.2
Inductance/unit length per conductor [mH/km]	0.570	0.552	0.539	0.523	0.512	0.497	0.489	0.471	0.462
Short-circuit									
Rated short-time current of conductor (1s) [kA]	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
Rated short-time current of screen (1s) [kA]	3.3	3.3	3.3	5.1	5.1	5.1	5.1	7.1	7.1

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Pulling force [N]	2100	2850	3600	4500	5550	7200	9000	12000	15000
d.c. res/unit length at 90 °C [Ω/km]	0.568	0.410	0.324	0.264	0.210	0.160	0.128	0.0997	0.0776
d.c. res/unit length at 20 °C [Ω/km]	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605
Operating capacitance/unit length [μF/km]	0.283	0.315	0.345	0.374	0.406	0.456	0.495	0.558	0.613
Charging current [A/km]	0.510	0.570	0.630	0.680	0.740	0.830	0.900	1.010	1.110
Earth fault current [A/km]	1.530	1.710	1.890	2.040	2.220	2.490	2.700	3.030	3.330
Installation in ground, trefoil									
Current-carrying capacity [A]	186	221	252	281	317	367	414	470	-
Permissible transmission power [MVA]	3.62	4.31	4.90	5.47	6.20	7.19	8.09	9.20	10.40
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.571	0.414	0.328	0.269	0.215	0.166	0.134	0.107	0.0857
Effective a.c. resistance/unit length at 20 °C [Ω/km]	0.446	0.323	0.256	0.211	0.169	0.130	0.106	0.0853	0.0686
Ohmic losses per cable [kW/km]	25.0	25.6	26.3	26.9	27.6	28.5	29.2	30.2	31.2
Inductance/unit length per conductor [mH/km]	0.409	0.391	0.377	0.364	0.353	0.338	0.329	0.315	0.306
Resistance/unit length in zero-phase sequential system [Ω/km]	1.304	1.178	1.109	0.849	0.807	0.766	0.740	0.567	0.549
Reactance/unit length in zero-phase sequential system [Ω/km]	0.539	0.536	0.533	0.285	0.283	0.281	0.279	0.171	0.169
Reduction factor [-]	0.565	0.568	0.571	0.416	0.418	0.421	0.423	0.325	0.327

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Installation in free air, trefoil									
Current-carrying capacity [A]	230	280	324	368	424	502	577	673	-
Permissible transmission power [MVA]	3.97	4.82	5.58	6.32	7.26	8.59	9.84	11.5	13.3
Effective a.c. resistance/unit length at 90 °C [Ω /km]	0.571	0.414	0.328	0.269	0.215	0.166	0.134	0.107	0.0858
Ohmic losses per cable [kW/km]	30.0	32.0	34.0	35.9	37.8	40.8	43.2	47.0	50.3
Inductance/unit length per conductor [mH/km]	0.409	0.391	0.377	0.364	0.353	0.338	0.329	0.315	0.306
Short-circuit									
Rated short-time current of conductor (1s) [kA]	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
Rated short-time current of screen (1s) [kA]	3.3	3.3	3.3	5.1	5.1	5.1	5.1	7.1	7.1

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Pulling force [N]	2100	2850	3600	4500	5550	7200	9000	12000	15000
d.c. res/unit length at 90 °C [Ω/km]	0.568	0.410	0.324	0.264	0.210	0.160	0.128	0.0997	0.0776
d.c. res/unit length at 20 °C [Ω/km]	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605
Operating capacitance/unit length [μF/km]	0.196	0.216	0.235	0.254	0.273	0.304	0.329	0.368	0.402
Charging current [A/km]	0.710	0.780	0.850	0.920	0.990	1.100	1.190	1.330	1.460
Earth fault current [A/km]	2.13	2.34	2.55	2.76	2.97	3.30	3.57	3.99	4.38
Installation in ground, flat-spaced									
Current-carrying capacity [A]	192	229	260	288	324	373	419	466	-
Permissible transmission power [MVA]	8.24	9.77	11.1	12.2	13.8	15.8	17.7	19.6	22.0
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.583	0.425	0.338	0.285	0.230	0.180	0.147	0.124	0.101
Effective a.c. resistance/unit length at 20 °C [Ω/km]	0.458	0.334	0.267	0.227	0.184	0.144	0.119	0.102	0.0840
Ohmic losses per cable [kW/km]	33.0	33.8	34.7	35.5	36.3	37.3	38.2	39.6	40.8
Inductance/unit length per conductor [mH/km]	0.695	0.668	0.647	0.622	0.605	0.581	0.565	0.536	0.519
Resistance/unit length in zero-phase sequential system [Ω/km]	1.258	1.134	1.065	0.832	0.789	0.749	0.724	0.560	0.542
Reactance/unit length in zero-phase sequential system [Ω/km]	0.568	0.563	0.560	0.309	0.306	0.303	0.301	0.186	0.184
Reduction factor [-]	0.604	0.606	0.608	0.457	0.459	0.460	0.461	0.364	0.365

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Installation in free air, flat-spaced									
Current-carrying capacity [A]	278	338	391	440	504	593	677	769	-
Permissible transmission power [MVA]	9.53	11.6	13.3	15.0	17.2	20.2	23.0	26.3	30.1
Effective a.c. resistance/unit length at 90 °C [Ω /km]	0.581	0.423	0.337	0.284	0.230	0.180	0.148	0.126	0.0983
Ohmic losses per cable [kW/km]	43.7	46.9	49.6	52.7	55.5	59.9	63.5	69.2	74.1
Inductance/unit length per conductor [mH/km]	0.599	0.580	0.565	0.548	0.536	0.521	0.510	0.491	0.481
Short-circuit									
Rated short-time current of conductor (1s) [kA]	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
Rated short-time current of screen (1s) [kA]	3.3	3.3	3.3	5.1	5.1	5.1	5.1	7.1	7.1

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Pulling force [N]	2100	2850	3600	4500	5550	7200	9000	12000	15000
d.c. res/unit length at 90 °C [Ω/km]	0.568	0.410	0.324	0.264	0.210	0.160	0.128	0.0997	0.0776
d.c. res/unit length at 20 °C [Ω/km]	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605
Operating capacitance/unit length [μF/km]	0.196	0.216	0.235	0.254	0.273	0.304	0.329	0.368	0.402
Charging current [A/km]	0.710	0.780	0.850	0.920	0.990	1.100	1.190	1.330	1.460
Earth fault current [A/km]	2.13	2.34	2.55	2.76	2.97	3.30	3.57	3.99	4.38
Installation in ground, trefoil									
Current-carrying capacity [A]	186	221	252	281	317	367	414	470	-
Permissible transmission power [MVA]	7.31	8.73	9.91	11.1	12.5	14.5	16.4	18.6	21.1
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.571	0.413	0.328	0.269	0.215	0.165	0.133	0.107	0.0852
Effective a.c. resistance/unit length at 20 °C [Ω/km]	0.446	0.323	0.256	0.211	0.169	0.130	0.105	0.0849	0.0681
Ohmic losses per cable [kW/km]	25.4	26.3	26.8	27.5	28.0	29.0	29.7	30.8	31.7
Inductance/unit length per conductor [mH/km]	0.438	0.419	0.403	0.389	0.377	0.361	0.350	0.335	0.326
Resistance/unit length in zero-phase sequential system [Ω/km]	1.297	1.172	1.103	0.847	0.804	0.764	0.738	0.566	0.548
Reactance/unit length in zero-phase sequential system [Ω/km]	0.554	0.549	0.546	0.297	0.294	0.291	0.289	0.179	0.177
Reduction factor [-]	0.567	0.570	0.572	0.417	0.419	0.422	0.424	0.325	0.327

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Installation in free air, trefoil									
Current-carrying capacity [A]	230	280	324	368	424	502	577	673	-
Permissible transmission power [MVA]	8.00	9.70	11.2	12.7	14.5	17.2	19.7	22.9	26.5
Effective a.c. resistance/unit length at 90 °C [Ω /km]	0.571	0.413	0.328	0.269	0.215	0.165	0.133	0.107	0.0853
Ohmic losses per cable [kW/km]	30.5	32.4	34.4	36.0	38.0	40.9	43.1	46.9	50.1
Inductance/unit length per conductor [mH/km]	0.438	0.419	0.403	0.389	0.377	0.361	0.350	0.335	0.325
Short-circuit									
Rated short-time current of conductor (1s) [kA]	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
Rated short-time current of screen (1s) [kA]	3.3	3.3	3.3	5.1	5.1	5.1	5.1	7.1	7.1

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Pulling force [N]	2100	2850	3600	4500	5550	7200	9000	12000	15000
d.c. res/unit length at 90 °C [Ω/km]	0.568	0.410	0.324	0.264	0.210	0.160	0.128	0.0997	0.0776
d.c. res/unit length at 20 °C [Ω/km]	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605
Operating capacitance/unit length [μF/km]	0.151	0.165	0.178	0.191	0.205	0.227	0.244	0.271	0.295
Charging current [A/km]	0.820	0.900	0.970	1.040	1.120	1.240	1.330	1.470	1.610
Earth fault current [A/km]	2.46	2.70	2.91	3.12	3.36	3.72	3.99	4.41	4.83
Installation in ground, flat-spaced									
Current-carrying capacity [A]	192	229	260	288	324	373	419	466	-
Permissible transmission power [MVA]	12.4	14.7	16.7	18.4	20.7	23.9	26.7	29.7	33.4
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.582	0.423	0.337	0.283	0.229	0.178	0.146	0.122	0.0997
Effective a.c. resistance/unit length at 20 °C [Ω/km]	0.457	0.333	0.266	0.225	0.182	0.143	0.117	0.100	0.0826
Ohmic losses per cable [kW/km]	32.9	33.9	34.7	35.7	36.4	37.7	38.5	40.0	41.2
Inductance/unit length per conductor [mH/km]	0.705	0.678	0.656	0.632	0.615	0.591	0.575	0.545	0.529
Resistance/unit length in zero-phase sequential system [Ω/km]	1.253	1.129	1.061	0.830	0.788	0.748	0.722	0.559	0.541
Reactance/unit length in zero-phase sequential system [Ω/km]	0.581	0.576	0.571	0.320	0.317	0.313	0.310	0.195	0.192
Reduction factor [-]	0.603	0.605	0.606	0.456	0.457	0.459	0.460	0.362	0.364

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Installation in free air, flat-spaced									
Current-carrying capacity [A]	278	338	391	440	504	593	677	769	-
Permissible transmission power [MVA]	14.2	17.3	19.9	22.4	25.6	30.2	34.3	39.2	44.8
Effective a.c. resistance/unit length at 90 °C [Ω /km]	0.581	0.423	0.337	0.284	0.230	0.180	0.148	0.126	0.104
Ohmic losses per cable [kW/km]	43.4	46.6	49.1	51.9	54.8	59.2	62.5	68.5	73.1
Inductance/unit length per conductor [mH/km]	0.630	0.609	0.592	0.574	0.561	0.544	0.533	0.512	0.501
Short-circuit									
Rated short-time current of conductor (1s) [kA]	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
Rated short-time current of screen (1s) [kA]	3.3	3.3	3.3	5.1	5.1	5.1	5.1	7.1	7.1

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Pulling force [N]	2100	2850	3600	4500	5550	7200	9000	12000	15000
d.c. res/unit length at 90 °C [Ω/km]	0.568	0.410	0.324	0.264	0.210	0.160	0.128	0.0997	0.0776
d.c. res/unit length at 20 °C [Ω/km]	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605
Operating capacitance/unit length [μF/km]	0.151	0.165	0.178	0.191	0.205	0.227	0.244	0.271	0.295
Charging current [A/km]	0.820	0.900	0.970	1.040	1.120	1.240	1.330	1.470	1.610
Earth fault current [A/km]	2.46	2.70	2.91	3.12	3.36	3.72	3.99	4.41	4.83
Installation in ground, trefoil									
Current-carrying capacity [A]	186	221	252	281	317	367	414	470	-
Permissible transmission power [MVA]	11.1	13.3	15.0	16.8	19.0	22.0	24.8	28.2	32.1
Effective a.c. resistance/unit length at 90 °C [Ω/km]	0.571	0.413	0.327	0.269	0.215	0.165	0.133	0.106	0.0849
Effective a.c. resistance/unit length at 20 °C [Ω/km]	0.446	0.323	0.256	0.210	0.169	0.130	0.105	0.0846	0.0678
Ohmic losses per cable [kW/km]	26.1	26.9	27.3	28.0	28.6	29.5	30.3	31.4	32.3
Inductance/unit length per conductor [mH/km]	0.468	0.447	0.430	0.415	0.402	0.384	0.373	0.357	0.346
Resistance/unit length in zero-phase sequential system [Ω/km]	1.291	1.166	1.097	0.845	0.802	0.762	0.736	0.565	0.547
Reactance/unit length in zero-phase sequential system [Ω/km]	0.568	0.563	0.559	0.309	0.306	0.302	0.299	0.188	0.185
Reduction factor [-]	0.569	0.572	0.574	0.419	0.420	0.423	0.425	0.326	0.328

Nominal cross-section of conductor [mm ²]	70	95	120	150	185	240	300	400	500
Nominal cross-sectional area of screen [mm ²]	16	16	16	25	25	25	25	35	35
Installation in free air, trefoil									
Current-carrying capacity [A]	230	280	324	368	424	502	577	673	-
Permissible transmission power [MVA]	12.1	14.7	16.9	19.1	21.9	25.8	29.5	34.3	39.7
Effective a.c. resistance/unit length at 90 °C [Ω /km]	0.571	0.413	0.327	0.269	0.215	0.165	0.133	0.107	0.0851
Ohmic losses per cable [kW/km]	31.0	32.9	34.6	36.2	38.1	40.8	43.0	46.6	49.7
Inductance/unit length per conductor [mH/km]	0.468	0.447	0.430	0.415	0.402	0.384	0.373	0.356	0.345
Short-circuit									
Rated short-time current of conductor (1s) [kA]	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
Rated short-time current of screen (1s) [kA]	3.3	3.3	3.3	5.1	5.1	5.1	5.1	7.1	7.1

Power Cables		Admissible short-circuit current rating of aluminum conductors with XLPE insulation															
1 ... 30 kV																	
Area cond [mm ²]	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500
Aluminum conductors, XLPE insulation																	
Time [s]	Short-circuit currents																
0.1	0.76	1.17	1.74	3.00	4.59	7.43	10.4	14.9	20.8	28.2	35.7	44.6	55.0	71.5	89.2	119	149
0.2	0.54	0.83	1.23	2.12	3.24	5.25	7.36	10.5	14.7	20.0	25.3	31.5	38.9	50.5	63.1	84.1	105
0.3	0.44	0.68	1.00	1.73	2.65	4.29	6.01	8.58	12.0	16.3	20.6	25.7	31.8	41.3	51.5	68.7	85.8
0.4	0.38	0.59	0.87	1.50	2.29	3.72	5.20	7.43	10.4	14.1	17.9	22.3	27.5	35.7	44.6	59.5	74.3
0.5	0.34	0.52	0.78	1.34	2.05	3.32	4.65	6.65	9.31	12.6	16.0	19.9	24.6	31.9	40.0	53.2	66.5
1.0	0.24	0.37	0.55	0.95	1.45	2.35	3.29	4.70	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47.0
2.0	0.17	0.26	0.39	0.67	1.03	1.66	2.33	3.32	4.65	6.31	7.99	9.97	12.3	16.0	19.9	26.6	33.2
3.0	0.14	0.21	0.32	0.55	0.84	1.36	1.90	2.71	3.80	5.16	6.52	8.14	10.1	13.1	16.3	21.7	27.1
4.0	0.12	0.19	0.28	0.48	0.73	1.18	1.65	2.35	3.29	4.47	5.65	7.05	8.70	11.3	14.1	18.8	23.5
5.0	0.11	0.17	0.25	0.42	0.65	1.05	1.47	2.10	2.94	3.99	5.05	6.31	7.78	10.1	12.6	16.8	21.0
Conditions: Factor for peak short-circuit = 1.8 (acc to DIN VDE 0102) Conductor temperature at commencement of short-circuit = 90 °C Permissible short-circuit temperature = 250 °C																	

Power Cables		Admissible short-circuit current rating of aluminum conductors with PVC insulation															
1 ... 30 kV																	
Area cond [mm ²]	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500
Aluminum conductors, PVC insulation																	
Time [s]	Short-circuit currents																
0.1	0.57	0.95	1.42	2.37	3.79	5.85	8.22	11.5	16.4	22.1	28.1	35.4	43.9	56.3	69.6	83.8	104
0.2	0.40	0.67	1.01	1.68	2.68	4.14	5.81	8.16	11.6	15.7	19.9	25.0	31.1	39.8	49.2	59.3	73.8
0.3	0.33	0.55	0.82	1.37	2.19	3.38	4.75	6.66	9.49	12.8	16.3	20.5	25.4	32.5	40.2	48.4	60.3
0.4	0.28	0.47	0.71	1.19	1.90	2.93	4.11	5.77	8.22	11.1	14.1	17.7	22.0	28.1	34.8	41.9	52.2
0.5	0.25	0.42	0.64	1.06	1.70	2.62	3.68	5.16	7.35	9.90	12.6	15.8	19.7	25.2	31.1	37.5	46.7
1.0	0.18	0.30	0.45	0.75	1.20	1.85	2.60	3.65	5.20	7.00	8.90	11.2	13.9	17.8	22.0	26.5	33.0
2.0	0.13	0.21	0.32	0.53	0.85	1.31	1.84	2.58	3.68	4.95	6.29	7.92	9.83	12.6	15.6	18.7	23.3
3.0	0.10	0.17	0.26	0.43	0.69	1.07	1.50	2.11	3.00	4.04	5.14	6.47	8.03	10.3	12.7	15.3	19.1
4.0	0.09	0.15	0.23	0.38	0.60	0.93	1.30	1.83	2.60	3.50	4.45	5.60	6.95	8.90	11.0	13.3	16.5
5.0	0.08	0.13	0.20	0.34	0.54	0.83	1.16	1.63	2.33	3.13	3.98	5.01	6.22	7.96	9.84	11.9	14.8
Conditions: Factor for peak short-circuit = 1.8 (acc to DIN VDE 0102) Conductor temperature at commencement of short-circuit = 70 °C Permissible short-circuit temperature = 160 °C																	

Power Cables	Admissible short-circuit current rating of copper conductors with XLPE insulation																
1 ... 30 kV																	

Area cond [mm ²]	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500
Copper conductors, XLPE insulation																	
Time [s]	Short-circuit currents																
0.1	1.14	1.83	2.75	4.59	7.12	11.3	15.8	22.6	31.6	44.0	54.4	67.7	83.8	108	136	181	226
0.2	0.80	1.30	1.95	3.24	5.03	7.98	11.2	16.0	22.4	35.0	38.5	47.9	59.3	76.7	96.0	128	160
0.3	0.66	1.06	1.59	2.65	4.11	6.52	9.13	13.1	18.3	25.0	31.4	39.1	48.4	62.6	78.3	104	131
0.4	0.57	0.92	1.38	2.29	3.56	5.64	7.91	11.3	15.8	22.0	27.2	33.8	41.9	54.2	67.8	90.4	113
0.5	0.51	0.82	1.23	2.05	3.18	5.05	7.07	10.1	14.1	19.0	24.3	30.3	37.5	48.5	60.7	80.9	101
1.0	0.36	0.58	0.87	1.45	2.25	3.57	5.00	7.15	10.0	13.6	17.2	21.4	26.5	34.3	42.9	57.2	71.5
2.0	0.25	0.41	0.62	1.03	1.59	2.52	3.54	5.06	7.07	9.50	12.2	15.1	18.7	24.3	30.3	40.5	50.6
3.0	0.21	0.33	0.50	0.84	1.30	2.06	2.89	4.13	5.77	7.90	9.93	12.4	15.3	19.8	24.8	33.0	41.3
4.0	0.18	0.29	0.44	0.73	1.13	1.79	2.50	3.58	5.00	6.80	8.60	10.7	13.3	17.2	21.5	28.6	35.8
5.0	0.16	0.26	0.39	0.65	1.01	1.60	2.24	3.20	4.47	6.00	7.69	9.57	11.9	15.3	19.2	25.6	32.0

Conditions:

Factor for peak short-circuit = 1.8 (acc to DIN VDE 0102)

Conductor temperature at commencement of short-circuit = 90 °C

Permissible short-circuit temperature = 250 °C

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Power Cables	Admissible short-circuit current rating of copper conductors with PVC insulation																
1 ... 30 kV																	

Area cond [mm ²]	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500
Copper conductors, PVC insulation																	
Time [s]	Short-circuit currents																
0.1	0.92	1.45	2.15	3.54	5.69	9.08	12.7	18.2	25.5	34.5	43.6	54.4	67.4	87.3	109	130	163
0.2	0.65	1.03	1.52	2.50	4.02	6.42	9.00	12.9	18.0	24.4	30.9	38.5	47.6	61.7	77.1	92.1	115
0.3	0.53	0.84	1.24	2.04	3.29	5.24	7.34	10.5	14.7	19.9	25.2	31.4	38.9	50.4	63.0	75.2	94.0
0.4	0.46	0.73	1.08	1.77	2.85	4.54	6.36	9.10	12.7	17.2	21.8	27.2	33.7	43.6	54.6	65.1	81.4
0.5	0.41	0.65	0.96	1.58	2.55	4.06	5.69	8.13	11.4	15.4	19.5	24.3	30.1	39.0	48.8	58.3	72.8
1.0	0.29	0.46	0.68	1.12	1.80	2.87	4.02	5.75	8.05	10.9	13.8	17.2	21.3	27.6	34.5	41.2	51.5
2.0	0.21	0.33	0.48	0.79	1.27	2.03	2.84	4.07	5.69	7.71	9.76	12.2	15.1	19.5	24.4	29.1	36.4
3.0	0.17	0.27	0.39	0.65	1.04	1.66	2.32	3.32	4.65	6.29	7.97	9.93	12.3	15.9	19.9	23.8	29.7
4.0	0.15	0.23	0.34	0.56	0.90	1.44	2.01	2.88	4.03	5.45	6.90	8.60	10.7	13.8	17.3	20.6	25.8
5.0	0.13	0.21	0.30	0.50	0.80	1.28	1.80	2.57	3.60	4.87	6.17	7.69	9.50	12.3	15.4	18.4	23.0
Conditions: Factor for peak short-circuit = 1.8 (acc to DIN VDE 0102) Conductor temperature at commencement of short-circuit = 70 °C Permissible short-circuit temperature = 160 °C																	

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Power Cables	Admissible short-circuit current rating of copper wires screen				
1 ... 30 kV					

Area screen [mm ²]	10	16	25	35	50
Copper wires screen of cables with polymer insulation					
Short-circuit duration [s]	Short-circuit currents				
0.1	7.40	9.40	14.5	20.2	27.9
0.2	7.48	6.71	10.4	14.5	19.9
0.3	4.41	5.60	8.66	12.1	16.6
0.4	3.86	4.90	7.58	10.6	14.6
0.5	3.50	4.43	6.85	9.54	13.2
1.0	2.60	3.30	5.10	7.10	9.80
2.0	1.84	2.34	3.60	5.00	6.93
3.0	1.50	1.90	2.94	4.10	5.66
4.0	1.30	1.65	2.60	3.60	4.90
5.0	1.16	1.48	2.30	3.18	4.38

Temperature of conductor at commencement of short circuit	PVC cables $\leq 300 \text{ mm}^2$		XLPE cables		PE cables	
	Copper conductors	Aluminum conductors	Copper conductors	Aluminum conductors	Copper conductors	Aluminum conductors
[°C]	[A/mm ²]					
90	-	-	143	94	-	-
80	-	-	148	98	-	-
70	115	76	154	102	109	72
65	119	78	157	104	113	75
60	122	81	159	105	117	77
50	129	85	165	109	124	82
40	136	90	170	113	131	87
30	143	95	176	116	138	91
20	150	99	181	120	145	96