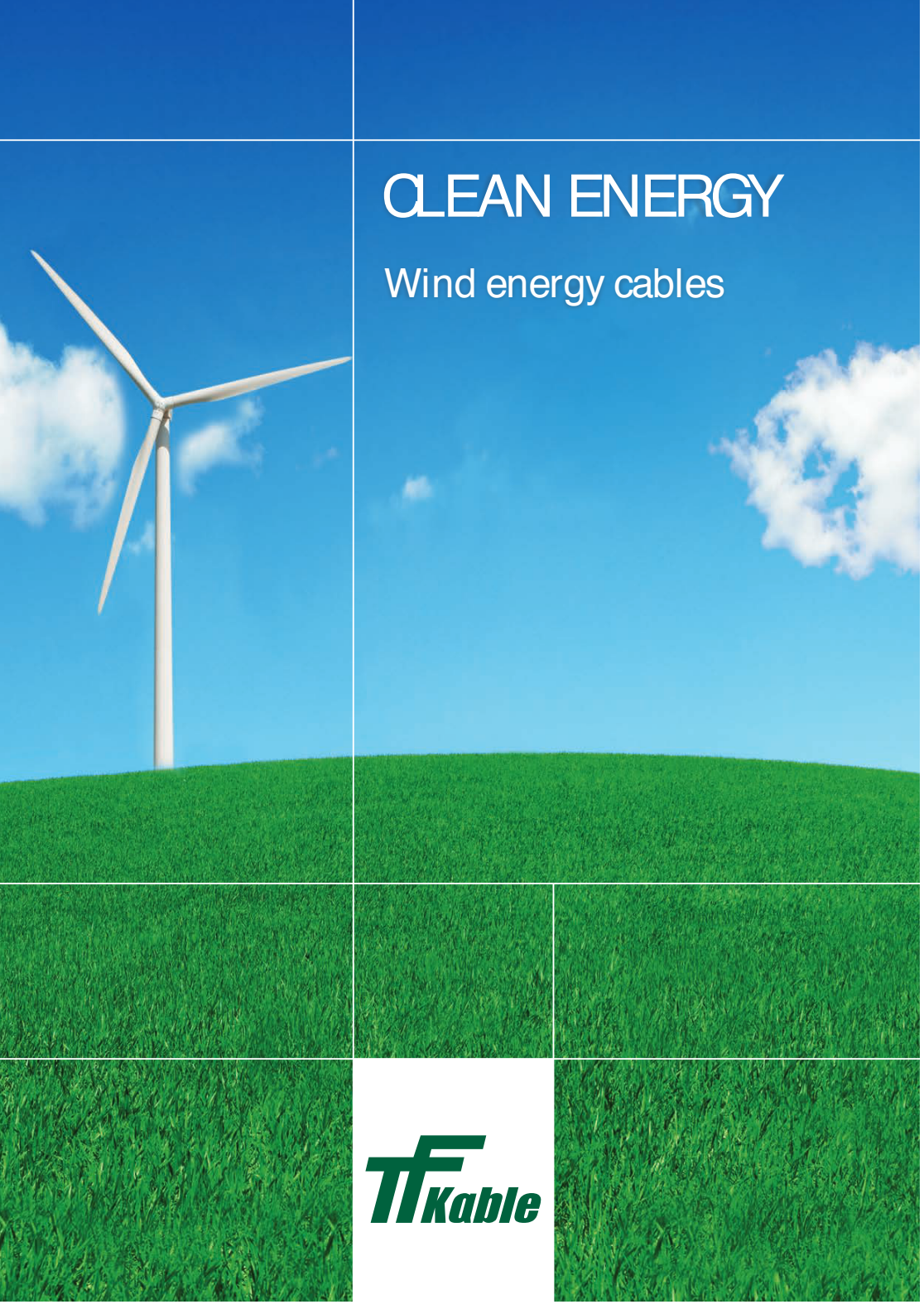

CLEAN ENERGY

Wind energy cables

TF Kable

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CLEAN ENERGY

Wind energy is the most advanced and desirable technology among all renewable energy sources. Selecting the right cables that meet strict standards and quality required for trouble-free operation of wind farms is a major challenge.

TELE-FONIA Kable has over 20 years of experience is production of special cables specially designed for wind energy sector. The current position of our company is a result of continuous research, development and modernization of the machinery, combined with the use of highest quality materials. TELE-FONIKA Kable only works with the best manufacturers of cable accessories, which ensures the highest quality of products supplied by us. Our experience in production and supply of renewable energy cables allows us to create a comprehensive range of products that can satisfy demands of the most demanding clients.

TELE-FONIKA Kable offers cables and wires of high and medium voltage, control cables, fiber optic cables (for data and information transfer), which are used in the construction and operation of offshore and onshore wind farms.

Our products used for construction and operation of wind farms have proven long-term durability and guarantee safe and cost-effective operation. Cables were designed to withstand long and harsh working conditions and have proven track record of fatigue, torsion or abrasion capabilities.

We work closely with our customers in providing practical ex cient solutions.

TELE-FONIKA Kable

The Group TELE-FONIKA Kable (TF Kable) is ranked in the forefront of the global cable industry. The Group is the third manufacturer of cables and wires in Europe with significant development potential, based entirely on Polish capital.

TELE-FONIKA Kable Group's considerable investment in research and development centers and multi-skilled work teams, which have included eminent scientists working with our specialists, has been rewarded by the introduction of new-generation products and comprehensive services in the field of cable engineering. Products manufactured in our plants are sold in over 90 countries. Our product assortment includes 25 thousand cable types. The highest quality of our products is confirmed by over 460 certificates for groups of wares licensed by 34 renown centres of certification worldwide. The company combines the good tradition of the cable industry in Poland and innovative technical solutions. TELE-FONIKA Kable Group consists of seven plants — five in Poland, one in Ukraine, and one in Serbia. We own over a dozen trade agencies abroad, reaching customers in several dozen countries around the world.

TFkable

Innovative and safe solutions

PRODUCTION POTENTIAL

Our chief asset is extensive technological know-how in the field of production of wide variety of cables and wires supported by our experienced personnel. Our products match to a great extent the general trends concerning ecology and maintenance safety of wares. Extremely strict legislation in these areas has become the indicator of the technological progress of the manufactured cables.

Kraków-Wielicka Plant

Kraków-Wielicka Plant was established in 1928. In 1992 it received the ISO 9002 certificate (now ISO 9001) and in 1998 the ISO 14001 given by the British certification body: BASEC. The plant specializes in the production of rubber insulated cables and wires for mining and industrial applications. All types of rubber mixes used for EPR, CR, EVA and CSP cables are based on an original prescription designed together with research and development centres. The production offer of the plant are also medium voltage cables made in XLPE technology, as well as signal and control wires for special purposes.

Kraków-Bieżanów Plant

Kraków-Bieżanów Plant was established in 2001. In 2002 it received the ISO 9001 certificate and 14001 given by the British certification body: BASEC. The plant specializes in the production of overhead conductors from alloyed aluminium, conductors for railway traction network from copper and its alloys and installation wires for general usage.

Bydgoszcz Plant

Bydgoszcz Plant started production of cables and wires back in 1923. In 1992 it received the ISO 9002 certificate (now ISO 9001) and in 1998 the ISO 14001 given by the British certification body: BASEC. Bydgoszcz Plant specializes in power supply cables of medium and high voltage up to 500 kV. It is equipped with six modern chain lines for crosslinking polyethylene in XLPE technology. Complementary technological lines for producing the abovementioned cables ranging from thick wire drawing machines, cable stranding machines and screening machines to covering lines and two large-size high voltage laboratories called "Faraday cage" place the plant in the top of the list of the largest production centres of medium and high voltage cables in Europe.

Myślenice Plant

Myślenice Plant was established in April 1992 under the name Zakłady Kablowe TELE-FONIKA s.c. In 1995 it received the ISO 9001 certificate and in 1999 the ISO 14001 certificate. The certification body is BASEC. In September 2007 the plant received the ISO/TS 16949 certificate for automotive cables given by the certification body: SGS. Myślenice Plant specializes in the production of copper and fibre optic telecommunication cables, computer cables and automotive wires.

Szczecin Plant

Szczecin Plant was established in 1958. In 1992 it received the ISO 9002 certificate (now ISO 9001) and in 1998 the ISO 14001 given by the British certification body: BASEC. This Plant is also certified according to ISO/TS 16949 by SGS. It specializes in production of enamelled magnet wires.

TOW TF Kabel (Ukraine)

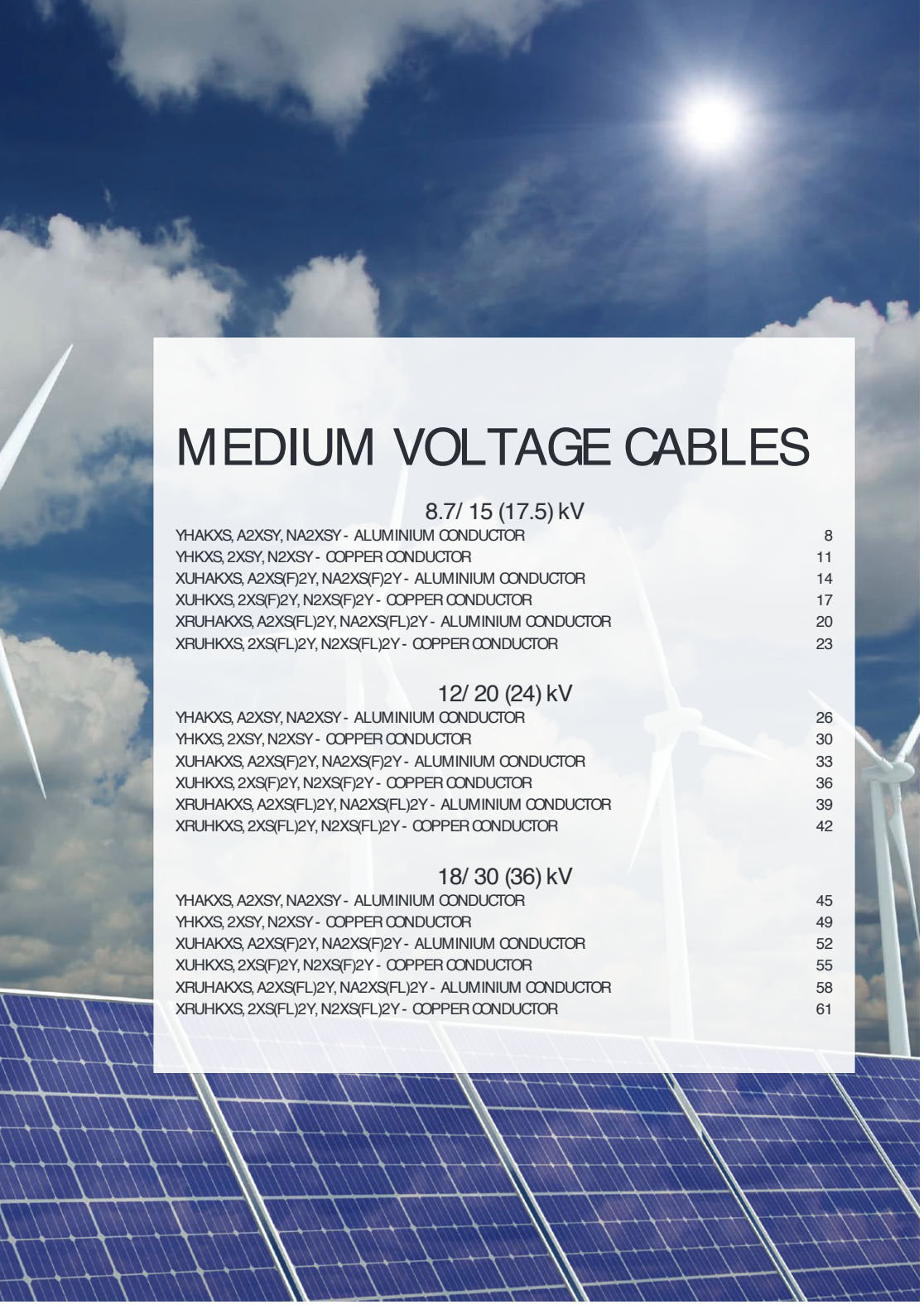
The plant was established in 2002. In 2007 the plant was joined into the TELE-FONIKA Kable Group. This Plant is certified according to ISO 9001 and 14001. It specializes in the production of overhead conductors and cables for voltage up to 1 kV, including halogen-free, fire resistant and flame retardant cables versions.

TF Kable Fabrika Kablova Zajecar A.D. (Serbia)

The plant was established in 1974. In 2007 the plant was joined into the TELE-FONIKA Kable Group. This plant is certified according to ISO 9001 and 14001 by DAS Certification Ltd. It specializes in the production of low and medium voltage cables, as well as halogen-free, fire resistant and flame retardant cables, telecommunication cables and PVC and polyethylene-coated conductors.

TF Kable

We look into the future



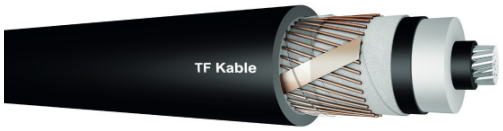
MEDIUM VOLTAGE CABLES

8.7/ 15 (17.5) kV

12/ 20 (24) kV

18/ 30 (36) kV

MEDIUM VOLTAGE XLPE POWER CABLES
8.7/ 15 (17.5) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
YAHKXS acc. to ZN-TF-501-2002
A2XSY acc. to IEC 60502-2-2005 and BS 6622-2007
NA2XSY acc. to DIN VDE 0276-620 and HD 620S2-2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	4.5	18.5	16	22.4	27.1	780	1.5	0.41
1x70RMC	$9.5^{+0.20}$	4.5	19.7	25	23.6	28.4	950	2.1	0.43
1x95RMC	$11.3^{+0.20}$	4.5	21.5	35	25.4	30.2	1160	2.85	0.45
1x120RMC	$12.5^{+0.20}$	4.5	22.7	50	26.6	31.4	1400	3.6	0.47
1x150RMC	$14.2^{+0.20}$	4.5	24.4	50	28.3	33.1	1520	4.5	0.50
1x185RMC	$15.8^{+0.20}$	4.5	26.0	50	29.9	34.7	1660	5.55	0.52
1x240RMC	$17.9^{+0.10}$	4.5	28.1	50	32.0	36.8	1870	7.2	0.55
1x300RMC	$20.0^{+0.30}$	4.5	30.2	50	34.1	38.9	2080	9	0.58
1x400RMC	$22.9^{+0.30}$	4.5	33.1	50	37.0	41.8	2390	12	0.63
1x500RMC	$25.7^{+0.40}$	4.5	36.4	50	40.5	45.3	2810	15	0.68
1x630RMC	$29.3^{+0.50}$	4.5	40.3	50	44.4	49.3	3310	18.9	0.74
1x800RMC	$33.0^{+0.50}$	4.5	44.4	50	48.5	53.6	3920	24	0.80
1x1000RMC	$38.0^{+0.50}$	4.5	49.4	50	53.5	59.0	4680	30	0.89

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e +70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

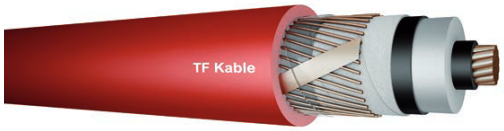
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$o^O o^2$	$o^O o^2$	$o^O o^2$
											ooo^3	ooo^3	ooo^3
											ooo^4	ooo^4	ooo^4
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RM/16	0.641	0.822	1.12	1.38	2.72/1.37	2.20	0.075	0.19	17.2	0.51	0.43	0.134	0.833
											0.73	0.229	0.853
											0.61	0.192	0.844
1x70RM/25	0.443	0.568	0.72	0.89	2.63/1.40	1.45	0.070	0.20	15.7	0.56	0.41	0.128	0.582
											0.70	0.221	0.610
											0.59	0.186	0.598
1x95RM/35	0.320	0.411	0.51	0.63	2.53/1.45	1.04	0.064	0.23	13.9	0.63	0.39	0.121	0.428
											0.67	0.211	0.462
											0.57	0.179	0.448
1x120RM/50	0.253	0.325	0.36	0.44	2.48/1.47	0.77	0.061	0.25	12.9	0.67	0.37	0.117	0.345
											0.65	0.205	0.384
											0.56	0.175	0.369
1x150RM/50	0.206	0.265	0.36	0.44	2.42/1.51	0.71	0.057	0.27	11.8	0.74	0.36	0.112	0.288
											0.63	0.198	0.331
											0.54	0.171	0.315
1x185RM/50	0.164	0.211	0.36	0.44	2.37/1.53	0.65	0.054	0.29	10.9	0.80	0.35	0.109	0.237
											0.61	0.193	0.286
											0.53	0.167	0.269
1x240RM/50	0.125	0.161	0.36	0.44	2.32/1.56	0.60	0.050	0.32	9.9	0.88	0.33	0.105	0.192
											0.59	0.186	0.246
											0.52	0.163	0.229
1x300RM/50	0.100	0.130	0.36	0.44	2.28/1.59	0.57	0.047	0.35	9.1	0.96	0.32	0.101	0.164
											0.57	0.180	0.222
											0.51	0.159	0.205
1x400RM/50	0.0778	0.102	0.36	0.44	2.24/1.61	0.54	0.044	0.39	8.1	1.07	0.31	0.097	0.141
											0.55	0.173	0.201
											0.49	0.155	0.185
1x500RM/50	0.0605	0.0801	0.36	0.44	2.18/1.62	0.52	0.043	0.43	7.3	1.18	0.30	0.095	0.124
											0.54	0.168	0.186
											0.49	0.153	0.173

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							o o o²	o o o²	o o o²
											o o o³	o o o³	o o o³
											o o o⁴	o o o⁴	o o o⁴
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/25	0.0469	0.0634	0.36	0.44	2.14/1.65	0.51	0.040	0.49	6.5	1.33	0.29	0.092	0.112
											0.52	0.162	0.174
											0.48	0.150	0.163
1x800RM/25	0.0367	0.0513	0.36	0.44	2.11/1.67	0.49	0.039	0.54	5.9	1.49	0.29	0.090	0.103
											0.50	0.157	0.165
											0.47	0.148	0.156
1x1000RM/25	0.0291	0.0427	0.36	0.44	2.08/1.69	0.49	0.036	0.61	5.2	1.67	0.28	0.087	0.097
											0.48	0.151	0.157
											0.46	0.145	0.151

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/16	4.7	3.7	224	225	212	212	230	231	196	196
1x70RM/25	6.6	5.3	272	276	258	259	283	286	242	242
1x95RM/35	9.0	7.1	324	333	310	312	343	350	294	295
1x120RM/50	11.3	9.8	364	379	353	356	388	403	337	340
1x150RM/50	14.2	9.8	407	428	397	401	440	461	384	387
1x185RM/50	17.5	9.8	456	487	460	455	501	530	440	445
1x240RM/50	22.7	9.8	520	567	522	530	583	627	518	526
1x300RM/50	28.4	9.8	578	643	589	600	660	722	593	604
1x400RM/50	37.8	9.8	660	742	676	692	758	849	692	708
1x500RM/50	47.3	9.8	725	851	770	793	862	991	802	825
1x630RM/50	59.5	9.8	808	979	876	908	981	1161	931	963
1x800RM/50	75.6	9.8	889	1116	983	1028	1101	1347	1065	1110
1x1000RM/50	94.5	9.8	971	1262	1093	1152	1225	1568	1210	1271

MEDIUM VOLTAGE XLPE POWER CABLES
8.7/ 15 (17.5) kV



COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
YHKXS acc. to ZN-TF-501:2002
2XSY acc. to IEC 60502-2:2005 and BS 6622:2007
N2XSY acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²		mm		mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	4.5	17.2	16	21.1	25.9	920	1.75	0.39
1x50RMC	$8.25^{+0.20}$	4.5	18.5	16	22.4	27.1	1080	2.5	0.41
1x70RMC	$9.6^{+0.20}$	4.5	19.8	25	23.7	28.5	1370	3.5	0.43
1x95RMC	$11.5^{+0.20}$	4.5	21.7	35	25.6	30.4	1740	4.75	0.46
1x120RMC	$12.9^{+0.25}$	4.5	23.1	50	27.0	31.8	2140	6	0.48
1x150RMC	$14.5^{+0.30}$	4.5	24.7	50	28.6	33.4	2430	7.5	0.50
1x185RMC	$16.0^{+0.30}$	4.5	26.2	50	30.1	34.9	2790	9.25	0.52
1x240RMC	$18.5^{+0.30}$	4.5	28.7	50	32.6	37.4	3350	12	0.56
1x300RMC	$20.5^{+0.30}$	4.5	30.7	50	34.6	39.4	3940	15	0.59
1x400RMC	$23.5^{+0.30}$	4.5	33.7	50	37.6	42.4	4810	20	0.64
1x500RMC	$26.5^{+0.40}$	4.5	37.2	50	41.3	46.1	5920	25	0.69
1x630RMC	$30.3^{+0.40}$	4.5	41.3	50	45.4	50.3	7290	31.5	0.75
1x800RMC	$34.6^{+0.50}$	4.5	46.0	50	50.1	55.4	9010	40	0.83
1x1000RMC	$38.2^{+0.40}$	4.5	49.6	50	53.7	59.2	10980	50	0.89

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

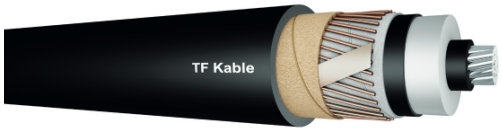
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C									
											[2]	[2]	[2]
											[3]	[3]	[3]
											[4]	[4]	[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RM/16	0.524	0.668	1.12	1.38	2.84/1.32	2.05	0.082	0.17	19.1	0.46	0.45	0.141	0.683
											0.76	0.238	0.710
											0.64	0.200	0.697
1x50RM/16	0.387	0.494	1.12	1.38	2.72/1.37	1.88	0.075	0.19	17.2	0.51	0.43	0.134	0.512
											0.73	0.229	0.544
											0.61	0.192	0.530
1x70RM/25	0.268	0.342	0.72	0.89	2.63/1.41	1.23	0.070	0.20	15.6	0.56	0.41	0.128	0.365
											0.70	0.220	0.407
											0.59	0.186	0.389
1x95RM/35	0.193	0.247	0.51	0.63	2.52/1.45	0.88	0.063	0.23	13.7	0.63	0.38	0.120	0.274
											0.67	0.210	0.324
											0.57	0.178	0.304
1x120RM/50	0.153	0.196	0.36	0.44	2.46/1.48	0.64	0.060	0.25	12.7	0.69	0.37	0.116	0.228
											0.65	0.204	0.282
											0.55	0.174	0.262
1x150RM/50	0.124	0.159	0.36	0.44	2.41/1.51	0.60	0.056	0.27	11.6	0.75	0.36	0.112	0.194
											0.63	0.197	0.253
											0.54	0.170	0.233
1x185RM/50	0.0991	0.128	0.36	0.44	2.37/1.54	0.57	0.053	0.30	10.8	0.81	0.34	0.108	0.167
											0.61	0.192	0.230
											0.53	0.166	0.210
1x240RM/50	0.0754	0.0979	0.36	0.44	2.31/1.57	0.54	0.049	0.33	9.6	0.90	0.33	0.103	0.142
											0.59	0.184	0.209
											0.51	0.162	0.189
1x300RM/50	0.0601	0.0789	0.36	0.44	2.27/1.59	0.52	0.047	0.36	8.9	0.98	0.32	0.100	0.128
											0.57	0.179	0.196
											0.50	0.158	0.177
1x400RM/50	0.0470	0.0630	0.36	0.44	2.23/1.62	0.51	0.043	0.40	7.9	1.10	0.31	0.096	0.115
											0.55	0.172	0.183
											0.49	0.154	0.167

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							Ω/Ω^2	Ω/Ω^2	Ω/Ω^2
											$\Omega\Omega\Omega^3$	$\Omega\Omega\Omega^3$	$\Omega\Omega\Omega^3$
											$\Omega\Omega\Omega^4$	$\Omega\Omega\Omega^4$	$\Omega\Omega\Omega^4$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/250	0.0366	0.0506	0.36	0.44	2.17/1.63	0.49	0.042	0.44	7.2	1.21	0.30	0.094	0.107
											0.53	0.167	0.174
											0.48	0.152	0.160
1x630RM/250	0.0283	0.0412	0.36	0.44	2.13/1.65	0.48	0.040	0.50	6.4	1.37	0.29	0.091	0.100
											0.51	0.160	0.166
											0.47	0.149	0.155
1x800RM/250	0.0221	0.0344	0.36	0.44	2.1/1.67	0.48	0.038	0.57	5.6	1.55	0.28	0.089	0.095
											0.49	0.155	0.158
											0.47	0.147	0.151
1x1000RM/250	0.0221	0.0344	0.36	0.44	2.1/1.67	0.48	0.038	0.57	5.6	1.55	0.28	0.089	0.095
											0.49	0.155	0.158
											0.47	0.147	0.151

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x35RM/216	5.0	3.7	243	245	230	230	246	248	210	211
1x50RM/216	7.2	3.7	288	291	273	273	296	298	252	253
1x70RM/225	10.0	5.3	348	356	333	334	363	370	311	313
1x95RM/235	13.6	7.1	413	430	400	403	438	454	380	383
1x120RM/250	17.2	9.8	466	491	454	460	492	523	435	440
1x150RM/250	21.5	9.8	505	554	510	518	555	598	495	502
1x185RM/250	26.5	9.8	560	628	575	586	625	685	564	574
1x240RM/250	34.3	9.8	634	733	667	684	725	814	665	681
1x300RM/250	42.9	9.8	697	830	750	773	812	935	757	779
1x400RM/250	57.2	9.8	773	953	849	882	920	1093	874	906
1x500RM/250	71.5	9.8	850	1088	957	1002	1034	1270	1003	1047
1x630RM/250	90.1	9.8	935	1243	1073	1133	1158	1480	1148	1208
1x800RM/250	114.4	9.8	1015	1402	1185	1264	1278	1703	1294	1375
1x1000RM/250	143.0	9.8	1081	1553	1283	1382	1382	1917	1424	1526

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally Sealed
8.7/ 15 (17.5) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
XUHAKXS acc. ZN-TF-501:2002
A2XS(F)2Y acc. to IEC 60502-2:2005 and BS 6622:2007
NA2XS(F)2Y acc. to DIN VDE 0276-620 and HD 620 S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	4.5	18.5	16	22.6	28.1	720	1.5	0.42
1x70RMC	$9.5^{+0.20}$	4.5	19.7	25	23.8	29.4	890	2.1	0.44
1x95RMC	$11.3^{+0.20}$	4.5	21.5	35	25.6	31.2	1100	2.85	0.47
1x120RMC	$12.5^{+0.20}$	4.5	22.7	50	26.8	32.4	1330	3.6	0.49
1x150RMC	$14.2^{+0.20}$	4.5	24.4	50	28.5	34.1	1440	4.5	0.51
1x185RMC	$15.8^{+0.20}$	4.5	26.0	50	30.1	35.7	1580	5.55	0.54
1x240RMC	$17.9^{+0.10}$	4.5	28.1	50	32.2	37.8	1780	7.2	0.57
1x300RMC	$20.0^{+0.30}$	4.5	30.2	50	34.3	39.9	1990	9	0.60
1x400RMC	$22.9^{+0.30}$	4.5	33.1	50	37.2	42.8	2300	12	0.64
1x500RMC	$25.7^{+0.40}$	4.5	36.4	50	40.7	46.3	2710	15	0.69
1x630RMC	$29.3^{+0.50}$	4.5	40.3	50	44.6	50.3	3190	18.9	0.75
1x800RMC	$33.0^{+0.50}$	4.5	44.4	50	48.7	54.6	3780	24	0.82
1x1000RMC	$38.0^{+0.50}$	4.5	49.4	50	53.7	60.0	4510	30	0.90

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ\circ^2$	$\circ\circ^2$	$\circ\circ^2$
											$\circ\circ\circ^3$	$\circ\circ\circ^3$	$\circ\circ\circ^3$
											$\circ\circ\circ^4$	$\circ\circ\circ^4$	$\circ\circ\circ^4$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RM/16	0.641	0.822	1.12	1.38	2.72/1.37	2.20	0.076	0.19	17.2	0.51	0.43	0.136	0.833
											0.73	0.229	0.853
											0.62	0.194	0.845
1x70RM/25	0.443	0.568	0.72	0.89	2.63/1.40	1.45	0.070	0.20	15.7	0.56	0.41	0.130	0.583
											0.70	0.221	0.610
											0.60	0.188	0.599
1x95RM/35	0.320	0.411	0.51	0.63	2.53/1.45	1.04	0.064	0.23	13.9	0.63	0.39	0.123	0.429
											0.67	0.212	0.462
											0.58	0.181	0.449
1x120RM/50	0.253	0.325	0.36	0.44	2.48/1.47	0.77	0.061	0.25	12.9	0.67	0.38	0.119	0.346
											0.66	0.206	0.385
											0.56	0.177	0.370
1x150RM/50	0.206	0.265	0.36	0.44	2.42/1.51	0.71	0.057	0.27	11.8	0.74	0.36	0.114	0.288
											0.63	0.199	0.331
											0.55	0.172	0.316
1x185RM/50	0.164	0.211	0.36	0.44	2.37/1.53	0.65	0.054	0.29	10.9	0.80	0.35	0.110	0.238
											0.61	0.193	0.286
											0.54	0.169	0.270
1x240RM/50	0.125	0.161	0.36	0.44	2.32/1.56	0.60	0.050	0.32	9.9	0.88	0.34	0.106	0.193
											0.59	0.187	0.247
											0.52	0.164	0.230
1x300RM/50	0.100	0.130	0.36	0.44	2.28/1.59	0.57	0.048	0.35	9.1	0.96	0.33	0.103	0.165
											0.58	0.181	0.222
											0.51	0.161	0.206
1x400RM/50	0.0778	0.102	0.36	0.44	2.24/1.61	0.54	0.044	0.39	8.1	1.07	0.31	0.099	0.142
											0.55	0.174	0.201
											0.50	0.157	0.187
1x500RM/50	0.0605	0.0800	0.36	0.44	2.18/1.62	0.52	0.043	0.43	7.3	1.18	0.31	0.096	0.125
											0.54	0.169	0.187
											0.49	0.154	0.174

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C									
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0634	0.36	0.44	2.14/1.65	0.51	0.041	0.49	6.5	1.33	0.30	0.093	0.113
											0.52	0.163	0.174
											0.48	0.151	0.164
1x800RM/250	0.0367	0.0512	0.36	0.44	2.11/1.67	0.49	0.039	0.54	5.9	1.49	0.29	0.091	0.104
											0.50	0.157	0.165
											0.47	0.149	0.158
1x1000RM/250	0.0291	0.0426	0.36	0.44	2.08/1.69	0.48	0.036	0.61	5.2	1.67	0.28	0.088	0.098
											0.48	0.151	0.157
											0.46	0.146	0.152

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/16	4.7	3.7	227	228	214	214	234	235	198	198
1x70RM/25	6.6	5.3	276	280	261	262	288	291	245	245
1x95RM/35	9.0	7.1	329	337	314	315	349	357	298	299
1x120RM/50	11.3	9.8	369	384	357	360	396	411	342	344
1x150RM/50	14.2	9.8	412	433	402	406	449	469	389	393
1x185RM/50	17.5	9.8	462	493	455	460	511	540	446	451
1x240RM/50	22.7	9.8	527	574	527	536	594	639	525	533
1x300RM/50	28.4	9.8	586	651	595	607	673	736	601	612
1x400RM/50	37.8	9.8	668	751	683	700	774	865	702	717
1x500RM/50	47.3	9.8	734	861	778	801	880	1009	813	836
1x630RM/50	59.5	9.8	818	990	884	917	1003	1184	944	976
1x800RM/50	75.6	9.8	899	1128	992	1037	1126	1373	1080	1125
1x1000RM/50	94.5	9.8	983	1276	1103	1163	1255	1591	1228	1290

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally Sealed
8.7/ 15 (17.5) kV

COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
XUHKXS acc. ZN-TF-501 2002
2XS(F)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
N2XS(F)2Y acc. to DIN VDE 0276-620 and HD 620S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	4.5	17.2	16	21.3	26.9	860	1.75	0.40
1x50RMC	$8.25^{+0.20}$	4.5	18.5	16	22.6	28.1	1000	2.5	0.42
1x70RMC	$9.6^{+0.20}$	4.5	19.8	25	23.9	29.5	1300	3.5	0.44
1x95RMC	$11.5^{+0.20}$	4.5	21.7	35	25.8	31.4	1670	4.75	0.47
1x120RMC	$12.9^{+0.25}$	4.5	23.1	50	27.2	32.8	2070	6	0.49
1x150RMC	$14.5^{+0.30}$	4.5	24.7	50	28.8	34.4	2360	7.5	0.52
1x185RMC	$16.0^{+0.30}$	4.5	26.2	50	30.3	35.9	2710	9.25	0.54
1x240RMC	$18.5^{+0.30}$	4.5	28.7	50	32.8	38.4	3260	12	0.58
1x300RMC	$20.5^{+0.30}$	4.5	30.7	50	34.8	40.4	3650	15	0.61
1x400RMC	$23.5^{+0.30}$	4.5	33.7	50	37.8	43.4	4720	20	0.65
1x500RMC	$26.5^{+0.40}$	4.5	37.2	50	41.5	47.1	5810	25	0.71
1x630RMC	$30.3^{+0.40}$	4.5	41.3	50	45.6	51.3	7160	31.5	0.77
1x800RMC	$34.6^{+0.50}$	4.5	46.0	50	50.3	56.4	8860	40	0.85
1x1000RMC	$38.2^{+0.40}$	4.5	49.6	50	53.9	60.2	10760	50	0.90

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance	Zero reactance	Capacitance	Capacitive reactance	Charging current	Inductance	Inductive reactance	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C		R_0	X_0	C	X_c	I_c	L	Xl	
											ooo[2] / ooo[3] / ooo[4]	ooo[2] / ooo[3] / ooo[4]	ooo[2] / ooo[3] / ooo[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RMC/16	0.524	0.668	1.12	1.38	2.84/1.32	2.05	0.082	0.17	19.1	0.46	0.46	0.144	0.684
											0.76	0.239	0.710
											0.64	0.202	0.698
1x50RMC/16	0.387	0.494	1.12	1.38	2.72/1.37	1.88	0.076	0.19	17.2	0.51	0.43	0.136	0.512
											0.73	0.229	0.544
											0.62	0.194	0.531
1x70RMC/25	0.268	0.342	0.72	0.89	2.63/1.41	1.23	0.070	0.20	15.6	0.56	0.41	0.130	0.366
											0.70	0.221	0.407
											0.60	0.188	0.390
1x95RMC/35	0.193	0.247	0.51	0.63	2.52/1.45	0.88	0.064	0.23	13.7	0.63	0.39	0.122	0.275
											0.67	0.211	0.324
											0.57	0.180	0.306
1x120RMC/50	0.153	0.196	0.36	0.44	2.46/1.48	0.64	0.060	0.25	12.7	0.69	0.38	0.118	0.229
											0.65	0.204	0.283
											0.56	0.176	0.263
1x150RMC/50	0.124	0.159	0.36	0.44	2.41/1.51	0.60	0.056	0.27	11.6	0.75	0.36	0.114	0.195
											0.63	0.198	0.254
											0.55	0.172	0.234
1x185RMC/50	0.0991	0.128	0.36	0.44	2.37/1.54	0.57	0.054	0.30	10.8	0.81	0.35	0.110	0.168
											0.61	0.193	0.231
											0.54	0.168	0.211
1x240RMC/50	0.0754	0.0978	0.36	0.44	2.31/1.57	0.54	0.050	0.33	9.6	0.90	0.33	0.105	0.144
											0.59	0.185	0.209
											0.52	0.163	0.190
1x300RMC/50	0.0601	0.0789	0.36	0.44	2.27/1.59	0.52	0.047	0.36	8.9	0.98	0.32	0.102	0.129
											0.57	0.180	0.196
											0.51	0.160	0.178
1x400RMC/50	0.0470	0.0629	0.36	0.44	2.23/1.62	0.51	0.044	0.40	7.9	1.10	0.31	0.098	0.116
											0.55	0.173	0.184
											0.50	0.156	0.168

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							$o^{O}o^{2}$	$o^{O}o^{2}$	$o^{O}o^{2}$
											ooo^{3}	ooo^{3}	ooo^{3}
											ooo^{4}	ooo^{4}	ooo^{4}
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/250	0.0366	0.0505	0.36	0.44	2.17/1.63	0.49	0.042	0.44	7.2	1.21	0.30	0.095	0.108
											0.53	0.167	0.175
											0.49	0.153	0.162
1x630RM/250	0.0283	0.0410	0.36	0.44	2.13/1.65	0.48	0.040	0.50	6.4	1.37	0.29	0.092	0.101
											0.51	0.161	0.166
											0.48	0.150	0.156
1x800RM/250	0.0221	0.0343	0.36	0.44	2.1/1.67	0.48	0.038	0.57	5.6	1.55	0.29	0.090	0.096
											0.49	0.155	0.159
											0.47	0.148	0.152
1x1000RM/250	0.0176	0.0296	0.36	0.44	2.08/1.69	0.47	0.036	0.62	5.2	1.68	0.28	0.088	0.093
											0.48	0.151	0.154
											0.46	0.146	0.149

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x35RM/216	5.0	3.7	246	248	232	233	251	252	213	213
1x50RM/216	7.2	3.7	292	295	276	277	301	303	255	256
1x70RM/225	10.0	5.3	353	361	337	338	370	376	316	317
1x95RM/235	13.6	7.1	418	436	405	408	446	462	385	388
1x120RM/250	17.2	9.8	462	497	459	465	502	533	441	446
1x150RM/250	21.5	9.8	512	561	516	524	566	609	501	509
1x185RM/250	26.5	9.8	568	636	581	593	638	698	571	582
1x240RM/250	34.3	9.8	643	742	675	692	740	830	674	690
1x300RM/250	42.9	9.8	707	840	758	782	829	963	767	790
1x400RM/250	57.2	9.8	783	964	858	891	940	114	886	918
1x500RM/250	71.5	9.8	861	1100	966	1011	1056	1294	1016	1061
1x630RM/250	90.1	9.8	947	1256	1083	1144	1184	1508	1164	1224
1x800RM/250	114.4	9.8	1027	1417	1196	1277	1309	1738	1314	1395
1x1000RM/250	143.0	9.8	1095	1570	1295	1395	1417	1957	1446	1549

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally and Radially Sealed
8.7/ 15 (17.5) kV

ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
XRUHAKXS acc. ZN-TF-501 2002
A2XS(FL)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
NA2XS(FL)2Y acc. to DIN VDE 0276-620 and HD 620 S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	4.5	18.5	16	22.5	28.6	780	1.5	0.60
1x70RMC	$9.5^{+0.20}$	4.5	19.7	25	23.8	29.8	950	2.1	0.63
1x95RMC	$11.3^{+0.20}$	4.5	21.5	35	25.6	31.6	1160	2.85	0.68
1x120RMC	$12.5^{+0.20}$	4.5	22.7	50	26.8	32.8	1400	3.6	0.71
1x150RMC	$14.2^{+0.20}$	4.5	24.4	50	28.5	34.5	1520	4.5	0.75
1x185RMC	$15.8^{+0.20}$	4.5	26.0	50	30.1	36.1	1660	5.55	0.79
1x240RMC	$17.9^{+0.10}$	4.5	28.1	50	32.2	38.2	1860	7.2	0.84
1x300RMC	$20.0^{+0.30}$	4.5	30.2	50	34.3	40.3	2080	9	0.89
1x400RMC	$22.9^{+0.30}$	4.5	33.1	50	37.2	43.2	2380	12	0.97
1x500RMC	$25.7^{+0.40}$	4.5	36.4	50	40.7	46.7	2800	15	1.05
1x630RMC	$29.3^{+0.50}$	4.5	40.3	50	44.5	50.8	3290	18.9	1.15
1x800RMC	$33.0^{+0.50}$	4.5	44.4	50	48.6	55.3	3910	24	1.25
1x1000RMC	$38.0^{+0.50}$	4.5	49.4	50	53.6	60.5	4630	30	1.38

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e +70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

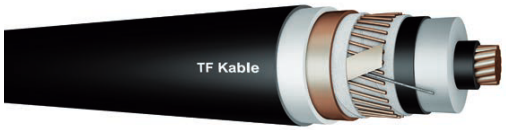
Nominal cross sectional area Conductor/ Metallic screen	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ^{O}\circ^{2}$	$\circ^{O}\circ^{2}$	$\circ^{O}\circ^{2}$
											$\circ\circ\circ^{3}$	$\circ\circ\circ^{3}$	$\circ\circ\circ^{3}$
											$\circ\circ\circ^{4}$	$\circ\circ\circ^{4}$	$\circ\circ\circ^{4}$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RM/16	0.641	0.822	1.12	1.38	2.72/1.37	1.63	0.078	0.19	17.2	0.51	0.44	0.137	0.833
											0.73	0.230	0.853
											0.62	0.195	0.845
1x70RM/25	0.443	0.568	0.72	0.89	2.63/1.40	1.17	0.073	0.20	15.7	0.56	0.42	0.131	0.583
											0.71	0.222	0.610
											0.60	0.189	0.599
1x95RM/35	0.320	0.411	0.51	0.63	2.53/1.45	0.88	0.066	0.23	13.9	0.63	0.39	0.124	0.429
											0.67	0.212	0.462
											0.58	0.182	0.449
1x120RM/50	0.253	0.325	0.36	0.44	2.48/1.47	0.67	0.063	0.25	12.9	0.67	0.38	0.120	0.346
											0.66	0.206	0.385
											0.57	0.178	0.370
1x150RM/50	0.206	0.265	0.36	0.44	2.42/1.51	0.61	0.059	0.27	11.8	0.74	0.37	0.115	0.289
											0.63	0.199	0.331
											0.55	0.173	0.316
1x185RM/50	0.164	0.211	0.36	0.44	2.37/1.53	0.55	0.055	0.29	10.9	0.80	0.35	0.111	0.238
											0.62	0.193	0.286
											0.54	0.169	0.270
1x240RM/50	0.125	0.161	0.36	0.44	2.32/1.56	0.50	0.052	0.32	9.9	0.88	0.34	0.107	0.193
											0.59	0.187	0.247
											0.53	0.165	0.231
1x300RM/50	0.100	0.130	0.36	0.44	2.28/1.59	0.46	0.049	0.35	9.1	0.96	0.33	0.103	0.166
											0.58	0.181	0.223
											0.51	0.161	0.207
1x400RM/50	0.0778	0.102	0.36	0.44	2.24/1.61	0.43	0.046	0.39	8.1	1.07	0.32	0.099	0.142
											0.55	0.174	0.202
											0.50	0.157	0.187
1x500RM/50	0.0605	0.0800	0.36	0.44	2.18/1.62	0.40	0.044	0.43	7.3	1.18	0.31	0.097	0.126
											0.54	0.169	0.187
											0.49	0.155	0.174

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C									
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0633	0.36	0.44	2.14/1.65	0.38	0.042	0.49	6.5	1.33	0.30	0.094	0.113
											0.52	0.163	0.175
											0.48	0.152	0.165
1x800RM/250	0.0367	0.0511	0.36	0.44	2.11/1.67	0.36	0.040	0.54	5.9	1.49	0.29	0.092	0.105
											0.50	0.158	0.166
											0.48	0.150	0.158
1x1000RM/250	0.0291	0.0425	0.36	0.44	2.08/1.69	0.34	0.037	0.61	5.2	1.67	0.28	0.088	0.098
											0.48	0.151	0.157
											0.47	0.147	0.153

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, CB	BE	SPB, CB	BE	SPB, CB	BE	SPB, CB
mm²	kA/sec		A							
1x50RM/16	4.7	3.7	226	228	213	214	234	236	200	200
1x70RM/25	6.6	5.3	274	279	261	262	288	292	247	247
1x95RM/35	9.0	7.1	326	336	313	315	348	357	300	302
1x120RM/50	11.3	9.8	365	383	355	359	394	411	343	347
1x150RM/50	14.2	9.8	407	432	400	405	445	470	391	395
1x185RM/50	17.5	9.8	455	491	453	460	506	541	447	454
1x240RM/50	22.7	9.8	516	572	525	535	586	639	526	536
1x300RM/50	28.4	9.8	571	649	592	606	660	736	601	615
1x400RM/50	37.8	9.8	638	749	677	699	755	864	699	720
1x500RM/50	47.3	9.8	705	859	768	798	852	1007	808	838
1x630RM/50	59.5	9.8	778	987	871	913	960	1181	935	977
1x800RM/50	75.6	9.8	846	1123	975	1034	1064	1368	1065	1125
1x1000RM/50	94.5	9.8	915	1271	1078	1157	1175	1584	1206	1267

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally and Radially Sealed
8.7/ 15 (17.5) kV



COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
XRUHKXS acc. ZN-TF-501 2002
2XS(FL)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
N2XS(FL)2Y acc. to DIN VDE 0276-620 and HD 620 S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	4.5	17.2	16	21.3	27.3	920	1.75	0.57
1x50RMC	$8.25^{+0.20}$	4.5	18.5	16	22.5	28.6	1060	2.5	0.60
1x70RMC	$9.6^{+0.20}$	4.5	19.8	25	23.9	29.9	1370	3.5	0.63
1x95RMC	$11.5^{+0.20}$	4.5	21.7	35	25.8	31.8	1740	4.75	0.68
1x120RMC	$12.9^{+0.25}$	4.5	23.1	50	27.2	33.2	2140	6	0.72
1x150RMC	$14.5^{+0.30}$	4.5	24.7	50	28.8	34.8	2420	7.5	0.76
1x185RMC	$16.0^{+0.30}$	4.5	26.2	50	30.3	36.3	2780	9.25	0.79
1x240RMC	$18.5^{+0.30}$	4.5	28.7	50	32.8	38.8	3340	12	0.86
1x300RMC	$20.5^{+0.30}$	4.5	30.7	50	34.8	40.8	3930	15	0.91
1x400RMC	$23.5^{+0.30}$	4.5	33.7	50	37.8	43.8	4800	20	0.98
1x500RMC	$26.5^{+0.40}$	4.5	37.2	50	41.5	47.5	5910	25	1.07
1x630RMC	$30.3^{+0.40}$	4.5	41.3	50	45.5	51.8	7270	31.5	1.18
1x800RMC	$34.6^{+0.50}$	4.5	46.0	50	50.2	56.9	8970	40	1.30
1x1000RMC	$38.2^{+0.40}$	4.5	49.6	50	53.8	60.7	10880	50	1.38

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

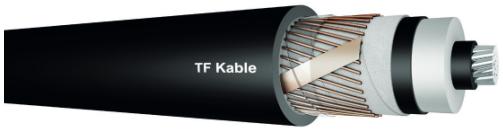
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							○○[2]	○○[2]	○○[2]
											○○○[3]	○○○[3]	○○○[3]
											○○○[4]	○○○[4]	○○○[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RM/16	0.524	0.668	1.12	1.38	2.84/1.32	1.48	0.085	0.17	19.1	0.46	0.46	0.145	0.684
											0.76	0.239	0.710
											0.65	0.203	0.698
1x50RM/16	0.387	0.494	1.12	1.38	2.72/1.37	1.30	0.078	0.19	17.2	0.51	0.44	0.137	0.512
											0.73	0.230	0.544
											0.62	0.195	0.531
1x70RM/25	0.268	0.342	0.72	0.89	2.63/1.41	0.94	0.072	0.20	15.6	0.56	0.42	0.131	0.366
											0.70	0.221	0.407
											0.60	0.189	0.391
1x95RM/35	0.193	0.247	0.51	0.63	2.52/1.45	0.71	0.066	0.23	13.7	0.63	0.39	0.123	0.276
											0.67	0.211	0.324
											0.58	0.181	0.306
1x120RM/50	0.153	0.196	0.36	0.44	2.46/1.48	0.55	0.062	0.25	12.7	0.69	0.38	0.119	0.229
											0.65	0.204	0.283
											0.56	0.177	0.264
1x150RM/50	0.124	0.159	0.36	0.44	2.41/1.51	0.51	0.058	0.27	11.6	0.75	0.36	0.114	0.196
											0.63	0.198	0.254
											0.55	0.172	0.234
1x185RM/50	0.0991	0.128	0.36	0.44	2.37/1.54	0.47	0.055	0.30	10.8	0.81	0.35	0.111	0.169
											0.61	0.193	0.231
											0.54	0.169	0.212
1x240RM/50	0.0754	0.0978	0.36	0.44	2.31/1.57	0.43	0.051	0.33	9.6	0.90	0.34	0.106	0.144
											0.59	0.185	0.209
											0.52	0.164	0.191
1x300RM/50	0.0601	0.0789	0.36	0.44	2.27/1.59	0.41	0.048	0.36	8.9	0.98	0.33	0.103	0.129
											0.57	0.180	0.196
											0.51	0.161	0.179
1x400RM/50	0.0470	0.0629	0.36	0.44	2.23/1.62	0.39	0.045	0.40	7.9	1.10	0.31	0.098	0.117
											0.55	0.173	0.184
											0.50	0.156	0.169

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							o o o²	o o o²	o o o²
											ooo³	ooo³	ooo³
											ooo⁴	ooo⁴	ooo⁴
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/25O	0.0366	0.0505	0.36	0.44	2.17/1.63	0.37	0.043	0.44	7.2	1.21	0.31	0.096	0.108
											0.53	0.167	0.175
											0.49	0.154	0.162
1x630RM/25O	0.0283	0.0410	0.36	0.44	2.13/1.65	0.35	0.041	0.50	6.4	1.37	0.30	0.093	0.102
											0.51	0.161	0.166
											0.48	0.151	0.156
1x800RM/25O	0.0221	0.0342	0.36	0.44	2.1/1.67	0.34	0.039	0.57	5.6	1.55	0.29	0.091	0.097
											0.49	0.155	0.159
											0.47	0.149	0.152
1x1000RM/25O	0.0176	0.0295	0.36	0.44	2.08/1.69	0.33	0.037	0.62	5.2	1.68	0.28	0.088	0.093
											0.48	0.151	0.154
											0.47	0.146	0.149

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x35RM/16	5.0	3.7	244	247	232	233	251	253	215	215
1x50RM/16	7.2	3.7	289	294	275	276	300	304	258	258
1x70RM/25	10.0	5.3	360	360	336	338	368	377	318	319
1x95RM/35	13.6	7.1	413	435	404	408	443	463	387	391
1x120RM/50	17.2	9.8	455	496	457	465	498	534	443	449
1x150RM/50	21.5	9.8	502	560	513	523	559	610	503	512
1x185RM/50	26.5	9.8	555	634	577	592	627	698	572	585
1x240RM/50	34.3	9.8	624	740	667	689	723	830	672	693
1x300RM/50	42.9	9.8	682	838	749	779	805	952	764	793
1x400RM/50	57.2	9.8	749	982	848	890	905	1113	880	921
1x500RM/50	71.5	9.8	816	1097	951	1009	1008	1291	1006	1082
1x630RM/50	90.1	9.8	887	1252	1082	1140	1117	1504	1146	1225
1x800RM/50	114.4	9.8	951	1412	1165	1289	1220	1731	1288	1393
1x1000RM/50	143.0	9.8	1003	1562	1257	1387	1306	1946	1411	1545

MEDIUM VOLTAGE XLPE POWER CABLES
12/ 20 (24) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
YHAKXS acc. to ZN-TF-501:2002
A2XSY acc. to IEC 60502-2:2005 and BS 6622:2007
NA2XSY acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	5.5	20.5	16	24.4	29.1	860	1.5	0.44
1x70RMC	$9.5^{+0.20}$	5.5	21.7	25	25.6	30.4	1040	2.1	0.46
1x95RMC	$11.3^{+0.20}$	5.5	23.5	35	27.4	32.2	1260	2.85	0.48
1x120RMC	$12.5^{+0.20}$	5.5	24.7	50	28.6	33.4	1500	3.6	0.50
1x150RMC	$14.2^{+0.20}$	5.5	26.4	50	30.3	35.1	1620	4.5	0.53
1x185RMC	$15.8^{+0.20}$	5.5	28.0	50	31.9	36.7	1770	5.55	0.55
1x240RMC	$17.9^{+0.10}$	5.5	30.1	50	34.0	38.8	1980	7.2	0.58
1x300RMC	$20.0^{+0.30}$	5.5	32.2	50	36.1	40.9	2200	9	0.61
1x400RMC	$22.9^{+0.30}$	5.5	35.1	50	39.0	43.8	2510	12	0.66
1x500RMC	$25.7^{+0.40}$	5.5	38.4	50	42.5	47.3	2940	15	0.71
1x630RMC	$29.3^{+0.50}$	5.5	42.3	50	46.4	51.3	3460	18.9	0.77
1x800RMC	$33.0^{+0.50}$	5.5	46.4	50	50.5	55.8	4100	24	0.84
1x1000RMC	$38.0^{+0.50}$	5.5	51.4	50	55.5	61.0	4850	30	0.92

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area Conductor/ Metallic screen	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
	DC 20°C	AC 90°C	DC 20°C	AC 80°C							trefoil[2]	flat[3]	flat[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RMC/16	0.641	0.822	1.12	1.38	3.27/1.48	2.20	0.081	0.16	19.8	0.61	0.44	0.138	0.834
											0.73	0.230	0.854
											0.63	0.197	0.845
1x70RMC/25	0.443	0.568	0.72	0.89	3.15/1.52	1.45	0.075	0.18	18.1	0.66	0.42	0.132	0.583
											0.71	0.222	0.610
											0.61	0.190	0.599
1x95RMC/35	0.320	0.411	0.51	0.63	3.01/1.58	1.04	0.069	0.20	16.1	0.74	0.40	0.125	0.429
											0.68	0.212	0.462
											0.58	0.183	0.450
1x120RMC/50	0.253	0.325	0.36	0.44	2.94/1.61	0.77	0.065	0.21	15.0	0.80	0.39	0.121	0.347
											0.66	0.207	0.385
											0.57	0.179	0.371
1x150RMC/50	0.206	0.265	0.36	0.44	2.86/1.65	0.71	0.061	0.23	13.8	0.87	0.37	0.116	0.289
											0.64	0.200	0.331
											0.55	0.174	0.317
1x185RMC/50	0.164	0.211	0.36	0.44	2.80/1.68	0.65	0.058	0.25	12.7	0.94	0.36	0.112	0.239
											0.62	0.194	0.286
											0.54	0.170	0.271
1x240RMC/50	0.125	0.161	0.36	0.44	2.73/1.71	0.60	0.054	0.27	11.6	1.04	0.34	0.108	0.194
											0.60	0.187	0.247
											0.53	0.166	0.231
1x300RMC/50	0.100	0.130	0.36	0.44	2.67/1.74	0.57	0.051	0.30	10.6	1.13	0.33	0.104	0.166
											0.58	0.181	0.223
											0.52	0.162	0.208
1x400RMC/50	0.0778	0.102	0.36	0.44	2.61/1.78	0.54	0.047	0.33	9.6	1.25	0.32	0.100	0.143
											0.56	0.175	0.202
											0.50	0.158	0.188
1x500RMC/50	0.0605	0.0799	0.36	0.44	2.54/1.79	0.52	0.046	0.37	8.7	1.38	0.31	0.098	0.126
											0.54	0.169	0.187
											0.50	0.156	0.175

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							Ω/km^2	Ω/km^2	Ω/km^2
											Ω/km^3	Ω/km^3	Ω/km^3
											Ω/km^4	Ω/km^4	Ω/km^4
mm^2	Ω/km				kV/mm	Ω/km	Ω/km	$\mu F/km$	$k\Omega/km$	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0633	0.36	0.44	2.49/1.83	0.51	0.043	0.41	7.7	1.55	0.30	0.094	0.114
											0.52	0.163	0.175
											0.49	0.153	0.165
1x800RM/250	0.0367	0.0511	0.36	0.44	2.45/1.85	0.49	0.041	0.46	7.0	1.73	0.29	0.092	0.105
											0.50	0.158	0.166
											0.48	0.150	0.159
1x1000RM/250	0.0291	0.0425	0.36	0.44	2.41/1.88	0.48	0.038	0.51	6.2	1.94	0.28	0.089	0.099
											0.48	0.152	0.157
											0.47	0.147	0.153

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm^2	kA/sec		A							
1x50RM/16	4.7	3.7	222	224	211	211	230	231	197	197
1x70RM/25	6.6	5.3	271	274	257	258	283	286	243	244
1x95RM/35	9.0	7.1	323	330	309	310	342	349	296	297
1x120RM/50	11.3	9.8	362	376	351	354	388	402	339	342
1x150RM/50	14.2	9.8	405	425	396	399	440	459	386	389
1x185RM/50	17.5	9.8	455	483	448	453	501	528	442	447
1x240RM/50	22.7	9.8	519	563	520	528	582	624	520	528
1x300RM/50	28.4	9.8	578	639	588	599	659	719	595	606
1x400RM/50	37.8	9.8	650	738	674	690	758	844	694	710
1x500RM/50	47.3	9.8	726	846	769	791	862	985	805	826
1x630RM/50	59.5	9.8	810	974	875	907	982	1154	933	964
1x800RM/50	75.6	9.8	890	1109	982	1026	1098	1336	1057	1111
1x1000RM/50	94.5	9.8	975	1256	1093	1152	1226	1547	1213	1272

TFKable

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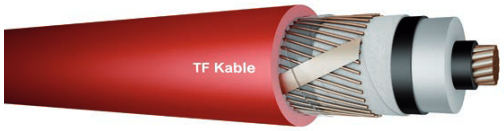
MEDIUM VOLTAGE XLPE POWER CABLES
12/ 20 (24) kV



COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
YHKXS acc. to ZN-TF-501:2002
2XSY acc. to IEC 60502-2:2005 and BS 6622:2007
N2XSY acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	5.5	19.2	16	23.1	27.9	990	1.75	0.42
1x50RMC	$8.25^{+0.20}$	5.5	20.5	16	24.4	29.1	1140	2.5	0.44
1x70RMC	$9.6^{+0.20}$	5.5	21.8	25	25.7	30.5	1450	3.5	0.46
1x95RMC	$11.5^{+0.20}$	5.5	23.7	35	27.6	32.4	1830	4.75	0.49
1x120RMC	$12.9^{+0.25}$	5.5	25.1	50	29.0	33.8	2230	6	0.51
1x150RMC	$14.5^{+0.30}$	5.5	26.7	50	30.6	35.4	2520	7.5	0.53
1x185RMC	$16.0^{+0.30}$	5.5	28.2	50	32.1	36.9	2880	9.25	0.55
1x240RMC	$18.5^{+0.30}$	5.5	30.7	50	34.6	39.4	3460	12	0.59
1x300RMC	$20.5^{+0.30}$	5.5	32.7	50	36.6	41.4	4060	15	0.62
1x400RMC	$23.5^{+0.30}$	5.5	35.7	50	39.6	44.4	4940	20	0.67
1x500RMC	$26.5^{+0.40}$	5.5	39.2	50	43.3	48.1	6050	25	0.72
1x630RMC	$30.3^{+0.40}$	5.5	43.3	50	47.4	52.5	7460	31.5	0.79
1x800RMC	$34.6^{+0.50}$	5.5	48.0	50	52.1	57.4	9170	40	0.86
1x1000RMC	$38.2^{+0.40}$	5.5	51.6	50	55.7	61.4	11130	50	0.92

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e +70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

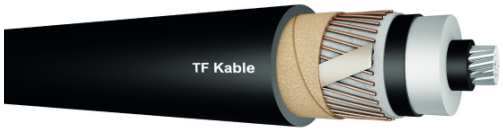
Nominal cross sectional area Conductor/ Metallic screen	Conductor resistance DC20°C	Conductor resistance AC90°C	Metallic screen resistance DC20°C	Metallic screen resistance AC80°C	Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L trefoil[2]	Inductive reactance Xl trefoil[2]	Impedance trefoil[2]
											flat[3]	flat[3]	flat[3]
											flat[4]	flat[4]	flat[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RMC/16	0.524	0.668	1.12	1.38	3.43/1.43	2.05	0.088	0.15	21.8	0.55	0.47	0.146	0.684
											0.76	0.240	0.710
											0.65	0.204	0.699
1x50RMC/16	0.387	0.494	1.12	1.38	3.27/1.48	1.88	0.081	0.16	19.8	0.61	0.44	0.138	0.513
											0.73	0.230	0.545
											0.63	0.197	0.531
1x70RMC/25	0.268	0.342	0.72	0.89	3.14/1.53	1.23	0.075	0.18	18.0	0.67	0.42	0.132	0.367
											0.70	0.221	0.407
											0.60	0.190	0.391
1x95RMC/35	0.193	0.247	0.51	0.63	3/1.58	0.88	0.068	0.20	15.9	0.75	0.40	0.124	0.276
											0.67	0.211	0.325
											0.58	0.182	0.307
1x120RMC/50	0.153	0.196	0.36	0.44	2.92/1.62	0.64	0.064	0.22	14.7	0.82	0.38	0.120	0.230
											0.65	0.205	0.283
											0.57	0.178	0.265
1x150RMC/50	0.124	0.159	0.36	0.44	2.85/1.65	0.60	0.060	0.23	13.5	0.89	0.37	0.115	0.196
											0.63	0.198	0.254
											0.55	0.173	0.235
1x185RMC/50	0.0991	0.128	0.36	0.44	2.79/1.68	0.57	0.057	0.25	12.6	0.95	0.36	0.112	0.170
											0.61	0.193	0.231
											0.54	0.170	0.212
1x240RMC/50	0.0754	0.0978	0.36	0.44	2.71/1.72	0.54	0.053	0.28	11.3	1.06	0.34	0.107	0.145
											0.59	0.185	0.210
											0.52	0.165	0.192
1x300RMC/50	0.0601	0.0788	0.36	0.44	2.66/1.75	0.52	0.050	0.30	10.4	1.15	0.33	0.103	0.130
											0.57	0.180	0.197
											0.51	0.161	0.180
1x400RMC/50	0.0470	0.0628	0.36	0.44	2.6/1.79	0.51	0.047	0.34	9.4	1.28	0.32	0.099	0.117
											0.55	0.173	0.184
											0.50	0.157	0.169

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							Ω/km^2	Ω/km^2	Ω/km^2
											Ω/km^3	Ω/km^3	Ω/km^3
											Ω/km^4	Ω/km^4	Ω/km^4
mm^2	Ω/km				kV/mm	Ω/km	Ω/km	$\mu F/km$	$k\Omega/km$	A/km	mH/km	Ω/km	Ω/km
1x500RM/250	0.0366	0.0504	0.36	0.44	2.53/1.8	0.49	0.045	0.38	8.5	1.42	0.31	0.097	0.109
											0.53	0.168	0.175
											0.49	0.155	0.163
1x630RM/250	0.0283	0.0409	0.36	0.44	2.48/1.83	0.48	0.042	0.42	7.5	1.59	0.30	0.094	0.102
											0.51	0.162	0.167
											0.48	0.152	0.157
1x800RM/250	0.0221	0.0341	0.36	0.44	2.44/1.86	0.48	0.040	0.48	6.7	1.79	0.29	0.091	0.097
											0.50	0.156	0.159
											0.47	0.149	0.153
1x1000RM/250	0.0176	0.0294	0.36	0.44	2.41/1.88	0.47	0.038	0.52	6.2	1.95	0.25	0.089	0.094
											0.48	0.151	0.154
											0.47	0.147	0.150

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm^2	kA/sec		A							
1x35RM/16	5.0	3.7	241	243	229	229	246	248	212	212
1x50RM/16	7.2	3.7	286	289	272	272	295	298	254	255
1x70RM/25	10.0	5.3	346	354	332	333	363	369	314	315
1x95RM/35	13.6	7.1	411	427	399	401	438	452	382	385
1x120RM/50	17.2	9.8	465	487	452	458	493	522	438	443
1x150RM/50	21.5	9.8	505	550	508	516	555	596	498	505
1x185RM/50	26.5	9.8	560	623	573	584	626	682	567	577
1x240RM/50	34.3	9.8	635	728	665	682	725	811	668	683
1x300RM/50	42.9	9.8	699	825	748	771	813	931	760	782
1x400RM/50	57.2	9.8	775	947	849	881	922	1088	878	909
1x500RM/50	71.5	9.8	854	1082	957	1000	1036	1263	1007	1050
1x630RM/50	90.1	9.8	938	1235	1071	1131	1159	1469	1152	1211
1x800RM/50	114.4	9.8	1020	1395	1187	1265	1282	1693	1300	1379
1x1000RM/50	143.0	9.8	1086	1545	1285	1384	1382	1902	1430	1530

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally Sealed
12/ 20 (24) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
XUHAKXS acc. ZN-TF-501:2002
A2XS(F)2Y acc. to IEC 60502-2:2005 and BS 6622:2007
NA2XS(F)2Y acc. to DIN VDE 0276-620 and HD 620 S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50 RMC	$8.25^{+0.10}$	5.5	20.5	16	24.6	30.1	790	1.5	0.45
1x70 RMC	$9.5^{+0.20}$	5.5	21.7	25	25.8	31.4	970	2.1	0.47
1x95 RMC	$11.3^{+0.20}$	5.5	23.5	35	27.6	33.2	1180	2.85	0.50
1x120 RMC	$12.5^{+0.20}$	5.5	24.7	50	28.8	34.4	1420	3.6	0.52
1x150 RMC	$14.2^{+0.20}$	5.5	26.4	50	30.5	36.1	1540	4.5	0.54
1x185 RMC	$15.8^{+0.20}$	5.5	28.0	50	32.1	37.7	1680	5.55	0.57
1x240 RMC	$17.9^{+0.10}$	5.5	30.1	50	34.2	39.8	1890	7.2	0.60
1x300 RMC	$20.0^{+0.30}$	5.5	32.2	50	36.3	41.9	2110	9	0.63
1x400 RMC	$22.9^{+0.30}$	5.5	35.1	50	39.2	44.8	2420	12	0.67
1x500 RMC	$25.7^{+0.40}$	5.5	38.4	50	42.7	48.3	2840	15	0.72
1x630 RMC	$29.3^{+0.50}$	5.5	42.3	50	46.6	52.3	3330	18.9	0.78
1x800 RMC	$33.0^{+0.50}$	5.5	46.4	50	50.7	56.8	3950	24	0.85
1x1000 RMC	$38.0^{+0.50}$	5.5	51.4	50	55.7	62.0	4680	30	0.93

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							o o [2]	o o [2]	o o [2]
											ooo [3]	ooo [3]	ooo [3]
											ooo [4]	ooo [4]	ooo [4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RMC/16	0.641	0.822	1.12	1.38	3.27/1.48	2.20	0.081	0.16	19.8	0.61	0.45	0.141	0.834
											0.73	0.231	0.854
											0.63	0.199	0.846
1x70RMC/25	0.443	0.568	0.72	0.89	3.15/1.52	1.45	0.076	0.18	18.1	0.66	0.43	0.134	0.584
											0.71	0.223	0.610
											0.61	0.192	0.600
1x95RMC/35	0.320	0.411	0.51	0.63	3.01/1.58	1.04	0.069	0.20	16.1	0.74	0.40	0.127	0.430
											0.68	0.213	0.462
											0.59	0.185	0.450
1x120RMC/50	0.253	0.325	0.36	0.44	2.94/1.61	0.77	0.066	0.21	15.0	0.80	0.39	0.123	0.347
											0.66	0.207	0.385
											0.58	0.181	0.372
1x150RMC/50	0.206	0.265	0.36	0.44	2.86/1.65	0.71	0.061	0.23	13.8	0.87	0.38	0.118	0.290
											0.64	0.200	0.332
											0.56	0.176	0.318
1x185RMC/50	0.164	0.211	0.36	0.44	2.80/1.68	0.65	0.058	0.25	12.7	0.94	0.36	0.114	0.240
											0.62	0.194	0.287
											0.55	0.172	0.272
1x240RMC/50	0.125	0.161	0.36	0.44	2.73/1.71	0.60	0.054	0.27	11.6	1.04	0.35	0.109	0.195
											0.60	0.188	0.247
											0.53	0.168	0.233
1x300RMC/50	0.100	0.129	0.36	0.44	2.67/1.74	0.57	0.051	0.30	10.6	1.13	0.34	0.106	0.167
											0.58	0.182	0.223
											0.52	0.164	0.209
1x400RMC/50	0.0778	0.101	0.36	0.44	2.61/1.78	0.54	0.048	0.33	9.6	1.25	0.32	0.101	0.143
											0.56	0.175	0.202
											0.51	0.159	0.189
1x500RMC/50	0.0605	0.0799	0.36	0.44	2.54/1.79	0.52	0.046	0.37	8.7	1.38	0.31	0.099	0.127
											0.54	0.170	0.188
											0.50	0.157	0.176

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							o o o²	o o o²	o o o²
											ooo³	ooo³	ooo³
											ooo⁴	ooo⁴	ooo⁴
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0632	0.36	0.44	2.49/1.83	0.51	0.043	0.41	7.7	1.55	0.30	0.096	0.115
											0.52	0.164	0.175
											0.49	0.154	0.166
1x800RM/250	0.0367	0.0510	0.36	0.44	2.45/1.85	0.49	0.041	0.46	7.0	1.73	0.30	0.093	0.106
											0.50	0.158	0.166
											0.48	0.151	0.160
1x1000RM/250	0.0291	0.0424	0.36	0.44	2.41/1.88	0.48	0.038	0.51	6.2	1.94	0.29	0.090	0.099
											0.48	0.152	0.158
											0.47	0.148	0.154

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/16	4.7	3.7	225	226	213	213	233	234	200	200
1x70RM/25	6.6	5.3	274	278	260	261	287	290	246	247
1x95RM/35	9.0	7.1	327	334	313	314	348	355	300	301
1x120RM/50	11.3	9.8	367	381	355	358	395	409	343	346
1x150RM/50	14.2	9.8	410	430	400	403	448	467	391	394
1x185RM/50	17.5	9.8	461	489	463	468	510	537	448	453
1x240RM/50	22.7	9.8	526	570	525	533	593	635	527	534
1x300RM/50	28.4	9.8	585	646	594	605	672	731	603	614
1x400RM/50	37.8	9.8	668	746	681	697	773	859	704	719
1x500RM/50	47.3	9.8	734	855	776	798	879	1002	815	837
1x630RM/50	59.5	9.8	819	984	883	915	1002	1175	946	977
1x800RM/50	75.6	9.8	901	1121	991	1035	1123	1362	1082	1126
1x1000RM/50	94.5	9.8	986	1269	1103	1162	1255	1578	1231	1290

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally Sealed
12/ 20 (24) kV

COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
XUHKXS acc. ZN-TF-501:2002
2XS(F)2Y acc. to IEC 60502-2:2005 and BS 6622:2007
N2XS(F)2Y acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²		mm		mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	5.5	19.2	16	23.3	28.9	930	1.75	0.43
1x50RMC	$8.25^{+0.20}$	5.5	20.5	16	24.6	30.1	1080	2.5	0.45
1x70RMC	$9.6^{+0.20}$	5.5	21.8	25	25.9	31.5	1380	3.5	0.47
1x95RMC	$11.5^{+0.20}$	5.5	23.7	35	27.8	33.4	1760	4.75	0.50
1x120RMC	$12.9^{+0.25}$	5.5	25.1	50	29.2	34.8	2150	6	0.52
1x150RMC	$14.5^{+0.30}$	5.5	26.7	50	30.8	36.4	2440	7.5	0.55
1x185RMC	$16.0^{+0.30}$	5.5	28.2	50	32.3	37.9	2800	9.25	0.57
1x240RMC	$18.5^{+0.30}$	5.5	30.7	50	34.8	40.4	3370	12	0.61
1x300RMC	$20.5^{+0.30}$	5.5	32.7	50	36.8	42.4	3960	15	0.64
1x400RMC	$23.5^{+0.30}$	5.5	35.7	50	39.8	45.4	4840	20	0.68
1x500RMC	$26.5^{+0.40}$	5.5	39.2	50	43.5	49.1	5940	25	0.74
1x630RMC	$30.3^{+0.40}$	5.5	43.3	50	47.6	53.5	7320	31.5	0.80
1x800RMC	$34.6^{+0.50}$	5.5	48.0	50	52.3	58.4	9020	40	0.88
1x1000RMC	$38.2^{+0.40}$	5.5	51.6	50	55.9	62.4	10940	50	0.94

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

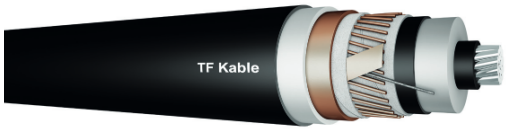
Nominal cross sectional area Conductor/ Metallic screen	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ^{O}\circ^{2}$	$\circ^{O}\circ^{2}$	$\circ^{O}\circ^{2}$
											$\circ\circ\circ^{3}$	$\circ\circ\circ^{3}$	$\circ\circ\circ^{3}$
											$\circ\circ\circ^{4}$	$\circ\circ\circ^{4}$	$\circ\circ\circ^{4}$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RM/16	0.524	0.668	1.12	1.38	3.43/1.43	2.05	0.088	0.15	21.8	0.55	0.47	0.148	0.685
											0.76	0.240	0.710
											0.66	0.206	0.699
1x50RM/16	0.387	0.494	1.12	1.38	3.27/1.48	1.88	0.081	0.16	19.8	0.61	0.45	0.141	0.513
											0.73	0.231	0.545
											0.63	0.199	0.532
1x70RM/25	0.268	0.342	0.72	0.89	3.14/1.53	1.23	0.075	0.18	18.0	0.67	0.43	0.134	0.357
											0.71	0.222	0.408
											0.61	0.192	0.392
1x95RM/35	0.193	0.247	0.51	0.63	3/1.58	0.88	0.069	0.20	15.9	0.75	0.40	0.126	0.277
											0.67	0.212	0.325
											0.59	0.184	0.308
1x120RM/50	0.153	0.196	0.36	0.44	2.92/1.62	0.64	0.065	0.22	14.7	0.82	0.39	0.122	0.230
											0.65	0.205	0.284
											0.57	0.180	0.266
1x150RM/50	0.124	0.159	0.36	0.44	2.85/1.65	0.60	0.061	0.23	13.5	0.89	0.37	0.117	0.197
											0.63	0.199	0.255
											0.56	0.175	0.237
1x185RM/50	0.0991	0.128	0.36	0.44	2.79/1.68	0.57	0.058	0.25	12.6	0.95	0.36	0.113	0.171
											0.62	0.194	0.232
											0.55	0.172	0.214
1x240RM/50	0.0754	0.0978	0.36	0.44	2.71/1.72	0.54	0.053	0.28	11.3	1.06	0.34	0.108	0.146
											0.59	0.186	0.210
											0.53	0.166	0.193
1x300RM/50	0.0601	0.0787	0.36	0.44	2.66/1.75	0.52	0.051	0.30	10.4	1.15	0.33	0.105	0.131
											0.58	0.181	0.197
											0.52	0.163	0.181
1x400RM/50	0.0470	0.0628	0.36	0.44	2.6/1.79	0.51	0.047	0.34	9.4	1.28	0.32	0.101	0.119
											0.55	0.174	0.185
											0.51	0.159	0.171

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							$o^{O}o^{2}$	$o^{O}o^{2}$	$o^{O}o^{2}$
											ooo^{3}	ooo^{3}	ooo^{3}
											ooo^{4}	ooo^{4}	ooo^{4}
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/25O	0.0366	0.0503	0.36	0.44	2.53/1.8	0.49	0.045	0.38	8.5	1.42	0.31	0.098	0.110
											0.54	0.168	0.176
											0.50	0.156	0.164
1x630RM/25O	0.0283	0.0408	0.38	0.44	2.48/1.83	0.48	0.043	0.42	7.5	1.59	0.30	0.095	0.103
											0.52	0.162	0.167
											0.49	0.153	0.158
1x800RM/25O	0.0221	0.0340	0.36	0.44	2.44/1.86	0.48	0.040	0.48	6.7	1.79	0.29	0.092	0.098
											0.50	0.156	0.160
											0.48	0.150	0.154
1x1000RM/25O	0.0176	0.0293	0.36	0.44	2.41/1.88	0.47	0.038	0.52	6.2	1.95	0.29	0.090	0.095
											0.48	0.152	0.155
											0.47	0.148	0.151

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x35RM/16	5.0	3.7	244	246	231	231	250	252	215	215
1x50RM/16	7.2	3.7	289	292	275	275	300	303	257	258
1x70RM/25	10.0	5.3	351	358	335	337	369	375	318	319
1x95RM/35	13.6	7.1	416	432	403	406	445	460	387	390
1x120RM/50	17.2	9.8	461	493	457	463	502	531	443	449
1x150RM/50	21.5	9.8	511	556	514	522	566	606	504	511
1x185RM/50	26.5	9.8	567	631	579	590	638	694	574	584
1x240RM/50	34.3	9.8	643	736	672	689	740	825	677	692
1x300RM/50	42.9	9.8	708	834	756	779	829	947	770	792
1x400RM/50	57.2	9.8	785	968	857	889	940	1107	889	920
1x500RM/50	71.5	9.8	864	1093	965	1009	1057	1285	1020	1063
1x630RM/50	90.1	9.8	949	1249	1082	1142	1185	1496	1168	1227
1x800RM/50	114.4	9.8	1032	1410	1198	1277	1312	1725	1319	1398
1x1000RM/50	143.0	9.8	1100	1561	1297	1397	1417	1941	1452	1553

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally and Radially Sealed
12/ 20 (24) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
XRUHAKXS acc. ZN-TF-501 2002
A2XS(FL)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
NA2XS(FL)2Y acc. to DIN VDE 0276-620 and HD 620 S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	8.25 $^{+0.10}$	5.5	20.5	16	24.5	30.6	860	1.5	0.65
1x70RMC	9.5 $^{+0.20}$	5.5	21.7	25	25.8	31.8	1030	2.1	0.68
1x95RMC	11.3 $^{+0.20}$	5.5	23.5	35	27.6	33.6	1250	2.85	0.73
1x120RMC	12.5 $^{+0.20}$	5.5	24.7	50	28.8	34.8	1490	3.6	0.76
1x150RMC	14.2 $^{+0.20}$	5.5	26.4	50	30.5	36.5	1610	4.5	0.80
1x185RMC	15.8 $^{+0.20}$	5.5	28.0	50	32.1	38.1	1760	5.55	0.84
1x240RMC	17.9 $^{+0.10}$	5.5	30.1	50	34.2	40.2	1970	7.2	0.89
1x300RMC	20.0 $^{+0.30}$	5.5	32.2	50	36.3	42.3	2190	9	0.94
1x400RMC	22.9 $^{+0.30}$	5.5	35.1	50	39.2	45.2	2500	12	1.02
1x500RMC	25.7 $^{+0.40}$	5.5	38.4	50	42.7	48.7	2930	15	1.10
1x630RMC	29.3 $^{+0.50}$	5.5	42.3	50	46.5	53.0	3450	18.9	1.20
1x800RMC	33.0 $^{+0.50}$	5.5	46.4	50	50.6	57.3	4060	24	1.30
1x1000RMC	38.0 $^{+0.50}$	5.5	51.4	50	55.6	62.7	4820	30	1.43

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

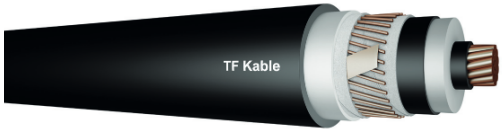
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ\circ^2$	$\circ\circ^2$	$\circ\circ^2$
											$\circ\circ\circ^3$	$\circ\circ\circ^3$	$\circ\circ\circ^3$
											$\circ\circ\circ^4$	$\circ\circ\circ^4$	$\circ\circ\circ^4$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RM/16	0.641	0.822	1.12	1.38	3.27/1.48	1.60	0.083	0.16	19.8	0.61	0.45	0.142	0.834
											0.74	0.231	0.854
											0.64	0.200	0.846
1x70RM/25	0.443	0.568	0.72	0.89	3.15/1.52	1.16	0.078	0.18	18.1	0.66	0.43	0.135	0.584
											0.71	0.223	0.610
											0.62	0.193	0.600
1x95RM/35	0.320	0.411	0.51	0.63	3.01/1.58	0.86	0.071	0.20	16.1	0.74	0.41	0.128	0.430
											0.68	0.213	0.463
											0.59	0.186	0.451
1x120RM/250	0.253	0.325	0.36	0.44	2.94/1.61	0.67	0.057	0.21	15.0	0.80	0.39	0.124	0.347
											0.66	0.207	0.365
											0.58	0.182	0.372
1x150RM/250	0.206	0.265	0.36	0.44	2.86/1.65	0.61	0.053	0.23	13.8	0.87	0.38	0.119	0.290
											0.64	0.200	0.332
											0.56	0.177	0.318
1x185RM/250	0.164	0.211	0.36	0.44	2.80/1.68	0.55	0.050	0.25	12.7	0.94	0.36	0.115	0.240
											0.62	0.195	0.287
											0.55	0.173	0.273
1x240RM/250	0.125	0.161	0.36	0.44	2.73/1.71	0.49	0.056	0.27	11.6	1.04	0.35	0.110	0.195
											0.60	0.188	0.248
											0.54	0.168	0.233
1x300RM/250	0.100	0.129	0.36	0.44	2.67/1.74	0.46	0.053	0.30	10.6	1.13	0.34	0.106	0.168
											0.58	0.182	0.224
											0.52	0.164	0.209
1x400RM/250	0.0778	0.101	0.36	0.44	2.61/1.78	0.43	0.049	0.33	9.6	1.25	0.32	0.102	0.144
											0.56	0.175	0.203
											0.51	0.160	0.190
1x500RM/250	0.0605	0.0799	0.36	0.44	2.54/1.79	0.40	0.047	0.37	8.7	1.38	0.32	0.099	0.128
											0.54	0.170	0.188
											0.50	0.157	0.177

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC90°C									
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0632	0.36	0.44	2.49/1.83	0.38	0.044	0.41	7.7	1.55	0.31	0.097	0.115
											0.52	0.164	0.176
											0.49	0.155	0.167
1x800RM/250	0.0367	0.0510	0.36	0.44	2.45/1.85	0.36	0.042	0.46	7.0	1.73	0.30	0.094	0.107
											0.50	0.159	0.167
											0.48	0.152	0.160
1x1000RM/250	0.0291	0.0423	0.36	0.44	2.41/1.88	0.34	0.039	0.51	6.2	1.94	0.29	0.091	0.100
											0.48	0.152	0.158
											0.47	0.149	0.155

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/216	4.7	3.7	224	226	212	213	233	235	201	201
1x70RM/225	6.6	5.3	272	277	260	261	287	291	248	249
1x95RM/235	9.0	7.1	324	334	312	314	347	356	301	303
1x120RM/250	11.3	9.8	363	380	354	357	393	409	345	348
1x150RM/250	14.2	9.8	405	429	398	403	444	467	392	397
1x185RM/250	17.5	9.8	453	488	451	458	504	538	449	455
1x240RM/250	22.7	9.8	515	568	523	533	585	635	527	537
1x300RM/250	28.4	9.8	570	644	589	603	659	731	603	616
1x400RM/250	37.8	9.8	637	744	675	696	753	868	701	721
1x500RM/250	47.3	9.8	705	853	766	795	851	1000	810	838
1x630RM/250	59.5	9.8	778	981	870	912	958	1171	936	977
1x800RM/250	75.6	9.8	848	1117	974	1032	1063	1357	1057	1125
1x1000RM/250	94.5	9.8	916	1264	1077	1155	1173	1570	1208	1267

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally and Radially Sealed
12/ 20 (24) kV



COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
XRUHKXS acc. ZN-TF-501 2002
2XS(FL)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
N2XS(FL)2Y acc. to DIN VDE 0276-620 and HD 620 S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	5.5	19.2	16	23.2	29.3	1000	1.75	0.62
1x50RMC	$8.25^{+0.20}$	5.5	20.5	16	24.5	30.6	1140	2.5	0.65
1x70RMC	$9.6^{+0.20}$	5.5	21.8	25	25.9	31.9	1450	3.5	0.68
1x95RMC	$11.5^{+0.20}$	5.5	23.7	35	27.8	33.8	1830	4.75	0.73
1x120RMC	$12.9^{+0.25}$	5.5	25.1	50	29.2	35.2	2230	6	0.77
1x150RMC	$14.5^{+0.30}$	5.5	26.7	50	30.8	36.8	2520	7.5	0.81
1x185RMC	$16.0^{+0.30}$	5.5	28.2	50	32.3	38.3	2890	9.25	0.84
1x240RMC	$18.5^{+0.30}$	5.5	30.7	50	34.8	40.8	3450	12	0.91
1x300RMC	$20.5^{+0.30}$	5.5	32.7	50	36.8	42.8	4050	15	0.96
1x400RMC	$23.5^{+0.30}$	5.5	35.7	50	39.8	45.8	4920	20	1.03
1x500RMC	$26.5^{+0.40}$	5.5	39.2	50	43.5	49.7	6060	25	1.12
1x630RMC	$30.3^{+0.40}$	5.5	43.3	50	47.5	54.0	7430	31.5	1.23
1x800RMC	$34.6^{+0.50}$	5.5	48.0	50	52.2	59.1	9150	40	1.34
1x1000RMC	$38.2^{+0.40}$	5.5	51.6	50	55.8	62.9	11070	50	1.43

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

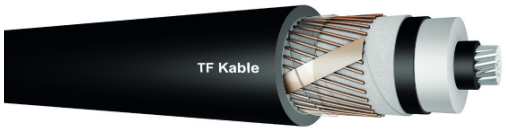
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ\circ^2$	$\circ\circ^2$	$\circ\circ^2$
											$\circ\circ\circ^3$	$\circ\circ\circ^3$	$\circ\circ\circ^3$
											$\circ\circ\circ^4$	$\circ\circ\circ^4$	$\circ\circ\circ^4$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RM/16	0.524	0.668	1.12	1.38	3.43/1.43	1.46	0.090	0.15	21.8	0.55	0.47	0.149	0.685
											0.77	0.240	0.710
											0.66	0.207	0.700
1x50RM/16	0.387	0.494	1.12	1.38	3.27/1.48	1.27	0.083	0.16	19.8	0.61	0.45	0.142	0.514
											0.74	0.231	0.545
											0.64	0.200	0.533
1x70RM/25	0.268	0.342	0.72	0.89	3.14/1.53	0.93	0.077	0.18	18.0	0.67	0.43	0.135	0.368
											0.71	0.222	0.408
											0.61	0.193	0.393
1x95RM/35	0.193	0.247	0.51	0.63	3/1.58	0.70	0.070	0.20	15.9	0.75	0.40	0.127	0.277
											0.67	0.212	0.325
											0.59	0.185	0.308
1x120RM/50	0.153	0.196	0.36	0.44	2.92/1.62	0.54	0.066	0.22	14.7	0.82	0.39	0.122	0.231
											0.65	0.206	0.284
											0.57	0.180	0.266
1x150RM/50	0.124	0.159	0.36	0.44	2.85/1.65	0.50	0.062	0.23	13.5	0.89	0.37	0.118	0.198
											0.63	0.199	0.255
											0.56	0.176	0.237
1x185RM/50	0.0991	0.128	0.36	0.44	2.79/1.68	0.47	0.059	0.25	12.6	0.95	0.36	0.114	0.171
											0.62	0.194	0.232
											0.55	0.172	0.214
1x240RM/50	0.0754	0.0977	0.36	0.44	2.71/1.72	0.43	0.055	0.28	11.3	1.06	0.35	0.109	0.146
											0.59	0.186	0.210
											0.53	0.167	0.194
1x300RM/50	0.0601	0.0787	0.36	0.44	2.66/1.75	0.41	0.052	0.30	10.4	1.15	0.34	0.106	0.132
											0.58	0.181	0.197
											0.52	0.164	0.182
1x400RM/50	0.0470	0.0627	0.36	0.44	2.6/1.79	0.39	0.048	0.34	9.4	1.28	0.32	0.101	0.119
											0.55	0.174	0.185
											0.51	0.159	0.171

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC90°C							$o^{o}o^{2}$	$o^{o}o^{2}$	$o^{o}o^{2}$
											ooo^{3}	ooo^{3}	ooo^{3}
											ooo^{4}	ooo^{4}	ooo^{4}
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/250	0.0366	0.0503	0.36	0.44	2.53/1.8	0.37	0.046	0.38	8.5	1.42	0.31	0.099	0.111
											0.54	0.169	0.176
											0.50	0.157	0.165
1x630RM/250	0.0283	0.0408	0.36	0.44	2.48/1.83	0.35	0.044	0.42	7.5	1.59	0.30	0.096	0.104
											0.52	0.162	0.167
											0.49	0.154	0.159
1x800RM/250	0.0221	0.0340	0.36	0.44	2.44/1.86	0.34	0.041	0.48	6.7	1.79	0.30	0.093	0.099
											0.50	0.157	0.160
											0.48	0.151	0.155
1x1000RM/250	0.0176	0.0292	0.36	0.44	2.41/1.88	0.33	0.039	0.52	6.2	1.95	0.29	0.091	0.095
											0.48	0.152	0.155
											0.47	0.149	0.152

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x35RM/216	5.0	3.7	242	245	231	231	250	252	216	217
1x50RM/216	7.2	3.7	287	292	274	275	300	303	259	260
1x70RM/225	10.0	5.3	347	357	334	336	367	376	319	321
1x95RM/235	13.6	7.1	411	431	402	406	442	461	389	392
1x120RM/250	17.2	9.8	463	492	455	462	497	531	445	451
1x150RM/250	21.5	9.8	501	555	511	521	558	606	505	514
1x185RM/250	26.5	9.8	554	629	575	589	627	694	574	587
1x240RM/250	34.3	9.8	624	735	666	687	722	824	675	695
1x300RM/250	42.9	9.8	682	832	747	776	805	946	767	794
1x400RM/250	57.2	9.8	750	955	846	887	906	1105	883	922
1x500RM/250	71.5	9.8	818	1089	949	1006	1008	1281	1008	1064
1x630RM/250	90.1	9.8	889	1244	1060	1138	1117	1491	1150	1227
1x800RM/250	114.4	9.8	954	1403	1167	1271	1220	1716	1291	1395
1x1000RM/250	143.0	9.8	1006	1554	1257	1387	1305	1931	1415	1548

MEDIUM VOLTAGE XLPE POWER CABLES
18/ 30 (36) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
YHAKXS acc. to ZN-TF-501-2002
A2XSY acc. to IEC 60502-2-2005 and BS 6622-2007
NA2XSY acc. to DIN VDE 0276-620 and HD 620S2-2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	8.0	25.5	16	29.4	34.1	1080	1.5	0.51
1x70RMC	$9.5^{+0.20}$	8.0	26.7	25	30.6	35.4	1270	2.1	0.53
1x95RMC	$11.3^{+0.20}$	8.0	28.5	35	32.4	37.2	1500	2.85	0.56
1x120RMC	$12.5^{+0.20}$	8.0	29.7	50	33.6	38.4	1750	3.6	0.58
1x150RMC	$14.2^{+0.20}$	8.0	31.4	50	35.3	40.1	1980	4.5	0.60
1x185RMC	$15.8^{+0.20}$	8.0	33.0	50	36.9	41.7	2050	5.55	0.63
1x240RMC	$17.9^{+0.10}$	8.0	35.1	50	39.0	43.8	2280	7.2	0.66
1x300RMC	$20.0^{+0.30}$	8.0	37.2	50	41.1	45.9	2510	9	0.69
1x400RMC	$22.9^{+0.30}$	8.0	40.1	50	44.0	48.8	2850	12	0.73
1x500RMC	$25.7^{+0.40}$	8.0	43.4	50	47.5	52.7	3350	15	0.79
1x630RMC	$29.3^{+0.50}$	8.0	47.3	50	51.4	56.7	3980	18.9	0.85
1x800RMC	$33.0^{+0.50}$	8.0	51.4	50	55.5	61.0	4550	24	0.92
1x1000RMC	$38.0^{+0.50}$	8.0	56.4	50	60.5	66.4	5370	30	1.00

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e +70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							○○[2]	○○[2]	○○[2]
											○○○[3]	○○○[3]	○○○[3]
											○○○[4]	○○○[4]	○○○[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RMC/16	0.641	0.822	1.12	1.38	3.85/1.40	2.20	0.093	0.13	25.2	0.71	0.47	0.148	0.835
											0.74	0.233	0.854
											0.66	0.206	0.847
1x70RMC/25	0.443	0.568	0.72	0.89	3.67/1.44	1.45	0.087	0.14	23.2	0.77	0.45	0.142	0.586
											0.72	0.225	0.611
											0.64	0.200	0.602
1x95RMC/35	0.320	0.411	0.51	0.63	3.48/1.50	1.04	0.080	0.15	20.9	0.86	0.43	0.134	0.432
											0.68	0.215	0.464
											0.61	0.192	0.463
1x120RMC/50	0.253	0.325	0.36	0.44	3.38/1.54	0.77	0.076	0.16	19.6	0.92	0.41	0.130	0.350
											0.67	0.210	0.386
											0.60	0.188	0.375
1x150RMC/50	0.206	0.265	0.36	0.44	3.28/1.58	0.71	0.071	0.18	18.1	1.00	0.40	0.124	0.292
											0.64	0.202	0.333
											0.58	0.183	0.321
1x185RMC/50	0.164	0.211	0.36	0.44	3.17/1.62	0.65	0.067	0.19	16.8	1.07	0.38	0.120	0.243
											0.63	0.197	0.288
											0.57	0.178	0.276
1x240RMC/50	0.125	0.161	0.36	0.44	3.08/1.66	0.60	0.063	0.21	15.4	1.17	0.37	0.115	0.198
											0.60	0.190	0.249
											0.55	0.174	0.237
1x300RMC/50	0.100	0.129	0.36	0.44	3.00/1.69	0.57	0.059	0.22	14.2	1.26	0.35	0.111	0.171
											0.59	0.184	0.225
											0.54	0.170	0.213
1x400RMC/50	0.0778	0.101	0.36	0.44	2.91/1.73	0.54	0.055	0.25	12.9	1.40	0.34	0.107	0.147
											0.56	0.177	0.204
											0.52	0.165	0.194
1x500RMC/50	0.0605	0.0797	0.36	0.44	2.82/1.76	0.52	0.053	0.27	11.7	1.53	0.33	0.104	0.131
											0.55	0.172	0.190
											0.52	0.162	0.181

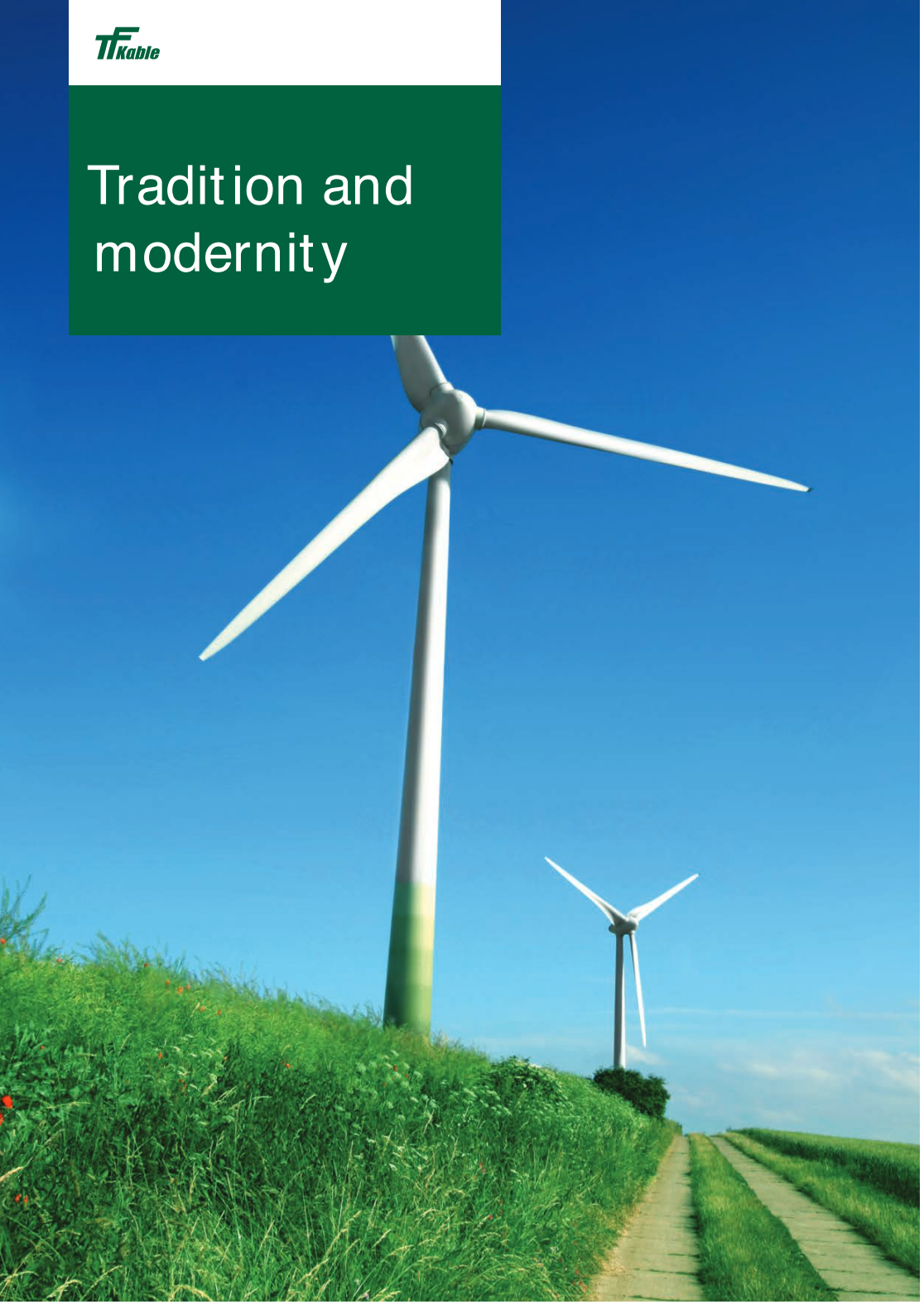
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC90°C									
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0630	0.36	0.44	2.75/1.80	0.51	0.050	0.30	10.5	1.71	0.32	0.101	0.119
											0.53	0.166	0.177
											0.51	0.159	0.171
1x800RM/250	0.0367	0.0507	0.36	0.44	2.69/1.84	0.49	0.047	0.33	9.5	1.89	0.31	0.098	0.110
											0.51	0.160	0.168
											0.50	0.156	0.164
1x1000RM/250	0.0291	0.0420	0.36	0.44	2.63/1.87	0.48	0.044	0.37	8.5	2.12	0.30	0.094	0.103
											0.49	0.154	0.160
											0.49	0.152	0.158

AMPACITY

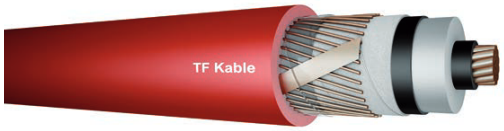
Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/16	4.7	3.7	219	220	208	209	229	230	200	200
1x70RM/25	6.6	5.3	267	270	255	256	282	284	247	247
1x95RM/35	9.0	7.1	319	325	307	308	341	347	300	301
1x120RM/50	11.3	9.8	357	371	348	350	387	399	343	345
1x150RM/50	14.2	9.8	402	418	392	395	438	455	390	393
1x185RM/50	17.5	9.8	452	476	445	450	499	523	447	451
1x240RM/50	22.7	9.8	517	555	517	524	580	618	524	531
1x300RM/50	28.4	9.8	577	630	584	594	657	710	600	609
1x400RM/50	37.8	9.8	650	728	670	684	756	833	699	712
1x500RM/50	47.3	9.8	726	834	763	784	868	969	808	828
1x630RM/50	59.5	9.8	811	961	870	900	978	1134	936	965
1x800RM/50	75.6	9.8	895	1095	980	1022	1097	1314	1071	1112
1x1000RM/50	94.5	9.8	980	1241	1091	1147	1222	1518	1216	1272

TF Kable

Tradition and modernity



MEDIUM VOLTAGE XLPE POWER CABLES
18/ 30 (36) kV



COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
YHKXS acc. to ZN-TF-501:2002
2XSY acc. to IEC 60502-2:2005 and BS 6622:2007
N2XSY acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	8.0	24.2	16	28.1	32.9	1210	1.75	0.49
1x50RMC	$8.25^{+0.20}$	8.0	25.5	16	29.4	34.1	1370	2.5	0.51
1x70RMC	$9.6^{+0.20}$	8.0	26.8	25	30.7	35.5	1680	3.5	0.53
1x95RMC	$11.5^{+0.20}$	8.0	28.7	35	32.6	37.4	2080	4.75	0.56
1x120RMC	$12.9^{+0.25}$	8.0	30.1	50	34.0	38.8	2490	6	0.58
1x150RMC	$14.5^{+0.30}$	8.0	31.7	50	35.6	40.4	2800	7.5	0.61
1x185RMC	$16.0^{+0.30}$	8.0	33.2	50	37.1	41.9	3180	9.25	0.63
1x240RMC	$18.5^{+0.30}$	8.0	35.7	50	39.6	44.4	3760	12	0.67
1x300RMC	$20.5^{+0.30}$	8.0	37.7	50	41.6	46.4	4370	15	0.70
1x400RMC	$23.5^{+0.30}$	8.0	40.7	50	44.6	49.6	5230	20	0.74
1x500RMC	$26.5^{+0.40}$	8.0	44.2	50	48.3	53.5	6460	25	0.80
1x630RMC	$30.3^{+0.40}$	8.0	48.3	50	52.4	57.7	7880	31.5	0.87
1x800RMC	$34.6^{+0.50}$	8.0	53.0	50	57.1	62.8	9660	40	0.94
1x1000RMC	$38.2^{+0.40}$	8.0	56.6	50	60.7	66.6	11620	50	1.00

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

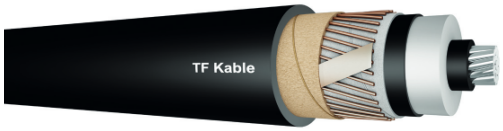
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							o o o[2]	o o o[2]	o o o[2]
											o o o[3]	o o o[3]	o o o[3]
											o o o[4]	o o o[4]	o o o[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RMC/16	0.524	0.668	1.12	1.38	4.07/1.34	2.05	0.101	0.12	27.6	0.65	0.50	0.156	0.686
											0.77	0.243	0.711
											0.68	0.215	0.702
1x50RMC/16	0.387	0.494	1.12	1.38	3.85/1.40	1.88	0.093	0.13	25.2	0.71	0.47	0.148	0.516
											0.74	0.233	0.546
											0.66	0.206	0.535
1x70RMC/25	0.268	0.342	0.72	0.89	3.66/1.45	1.23	0.087	0.14	23.1	0.78	0.45	0.141	0.370
											0.71	0.224	0.409
											0.64	0.200	0.386
1x95RMC/35	0.193	0.247	0.51	0.63	3.47/1.51	0.88	0.079	0.15	20.7	0.87	0.42	0.133	0.280
											0.68	0.214	0.327
											0.61	0.191	0.312
1x120RMC/50	0.153	0.196	0.36	0.44	3.35/1.55	0.64	0.075	0.17	19.2	0.94	0.41	0.128	0.234
											0.66	0.208	0.285
											0.59	0.187	0.270
1x150RMC/50	0.124	0.159	0.36	0.44	3.25/1.59	0.60	0.070	0.18	17.8	1.01	0.39	0.124	0.201
											0.64	0.201	0.256
											0.58	0.182	0.241
1x185RMC/50	0.0991	0.127	0.36	0.44	3.16/1.62	0.57	0.067	0.19	16.7	1.08	0.38	0.120	0.175
											0.62	0.196	0.234
											0.57	0.178	0.219
1x240RMC/50	0.0754	0.0976	0.36	0.44	3.05/1.67	0.54	0.062	0.21	15.1	1.19	0.36	0.114	0.150
											0.60	0.188	0.212
											0.55	0.172	0.198
1x300RMC/50	0.0601	0.0786	0.36	0.44	2.98/1.70	0.52	0.059	0.23	14.0	1.29	0.35	0.111	0.136
											0.58	0.183	0.199
											0.54	0.169	0.186
1x400RMC/50	0.0470	0.0625	0.36	0.44	2.90/1.74	0.50	0.054	0.25	12.6	1.42	0.34	0.106	0.123
											0.56	0.176	0.187
											0.52	0.164	0.176

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							$o^{O}o^{2}$	$o^{O}o^{2}$	$o^{O}o^{2}$
											ooo^{3}	ooo^{3}	ooo^{3}
											ooo^{4}	ooo^{4}	ooo^{4}
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/250	0.0366	0.0500	0.36	0.44	2.80/1.77	0.49	0.052	0.28	11.5	1.57	0.33	0.103	0.115
											0.54	0.170	0.178
											0.51	0.161	0.169
1x630RM/250	0.0283	0.0404	0.36	0.44	2.73/1.81	0.48	0.049	0.31	10.3	1.75	0.32	0.100	0.108
											0.52	0.164	0.169
											0.50	0.158	0.163
1x800RM/250	0.0221	0.0336	0.36	0.44	2.67/1.85	0.48	0.046	0.35	9.2	1.97	0.31	0.097	0.102
											0.50	0.158	0.162
											0.49	0.155	0.158
1x1000RM/250	0.0176	0.0288	0.36	0.44	2.63/1.87	0.47	0.044	0.38	8.5	2.13	0.30	0.094	0.098
											0.49	0.154	0.157
											0.48	0.152	0.155

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, CB	BE	SPB, CB	BE	SPB, CB	BE	SPB, CB
mm²	kA/sec		A							
1x35RM/216	5.0	3.7	237	239	226	226	246	247	215	216
1x50RM/216	7.2	3.7	282	284	269	269	294	296	258	258
1x70RM/225	10.0	5.3	342	348	329	330	361	367	318	319
1x95RM/235	13.6	7.1	407	420	396	398	436	449	387	389
1x120RM/250	17.2	9.8	463	480	448	453	492	518	443	447
1x150RM/250	21.5	9.8	503	541	504	511	555	590	503	509
1x185RM/250	26.5	9.8	559	614	569	579	626	676	572	582
1x240RM/250	34.3	9.8	636	717	661	676	726	802	674	688
1x300RM/250	42.9	9.8	702	814	744	765	814	919	767	786
1x400RM/250	57.2	9.8	779	934	845	875	923	1072	885	913
1x500RM/250	71.5	9.8	859	1066	953	995	1035	1242	1014	1053
1x630RM/250	90.1	9.8	946	1220	1072	1129	1163	1446	1160	1215
1x800RM/250	114.4	9.8	1029	1379	1187	1263	1283	1663	1309	1384
1x1000RM/250	143.0	9.8	1098	1529	1289	1386	1389	1871	1442	1538

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally Sealed
18/ 30 (36) kV



ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
XUHAKXS acc. ZN-TF-501:2002
A2XS(F)2Y acc. to IEC 60502-2:2005 and BS 6622:2007
NA2XS(F)2Y acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	8.0	25.5	16	29.6	35.1	1000	1.5	0.53
1x70RMC	$9.5^{+0.20}$	8.0	26.7	25	30.8	36.4	1190	2.1	0.55
1x95RMC	$11.3^{+0.20}$	8.0	28.5	35	32.6	38.2	1410	2.85	0.57
1x120RMC	$12.5^{+0.20}$	8.0	29.7	50	33.8	39.4	1660	3.6	0.59
1x150RMC	$14.2^{+0.20}$	8.0	31.4	50	35.5	41.1	1800	4.5	0.62
1x185RMC	$15.8^{+0.20}$	8.0	33.0	50	37.1	42.7	1980	5.55	0.64
1x240RMC	$17.9^{+0.10}$	8.0	35.1	50	39.2	44.8	2180	7.2	0.67
1x300RMC	$20.0^{+0.30}$	8.0	37.2	50	41.3	46.9	2410	9	0.70
1x400RMC	$22.9^{+0.30}$	8.0	40.1	50	44.2	49.8	2740	12	0.75
1x500RMC	$25.7^{+0.40}$	8.0	43.4	50	47.7	53.7	3210	15	0.81
1x630RMC	$29.3^{+0.50}$	8.0	47.3	50	51.6	57.7	3740	18.9	0.87
1x800RMC	$33.0^{+0.50}$	8.0	51.4	50	55.7	62.0	4380	24	0.93
1x1000RMC	$38.0^{+0.50}$	8.0	56.4	50	60.7	67.4	5160	30	1.01

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							o o o[2]	o o o[2]	o o o[2]
											o o o[3]	o o o[3]	o o o[3]
											o o o[4]	o o o[4]	o o o[4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RMC/16	0.641	0.822	1.12	1.38	3.85/1.40	2.20	0.094	0.13	25.2	0.71	0.48	0.150	0.836
											0.74	0.234	0.855
											0.66	0.208	0.848
1x70RMC/25	0.443	0.568	0.72	0.89	3.67/1.44	1.45	0.087	0.14	23.2	0.77	0.46	0.144	0.586
											0.72	0.226	0.611
											0.64	0.202	0.603
1x95RMC/35	0.320	0.411	0.51	0.63	3.48/1.50	1.04	0.080	0.15	20.9	0.86	0.43	0.136	0.432
											0.69	0.216	0.464
											0.62	0.194	0.454
1x120RMC/50	0.253	0.325	0.36	0.44	3.38/1.54	0.77	0.076	0.16	19.6	0.92	0.42	0.131	0.360
											0.67	0.210	0.387
											0.60	0.189	0.376
1x150RMC/50	0.206	0.265	0.36	0.44	3.28/1.58	0.71	0.071	0.18	18.1	1.00	0.40	0.126	0.298
											0.65	0.203	0.334
											0.59	0.184	0.322
1x185RMC/50	0.164	0.211	0.36	0.44	3.17/1.62	0.65	0.067	0.19	16.8	1.07	0.39	0.122	0.243
											0.63	0.197	0.289
											0.57	0.180	0.277
1x240RMC/50	0.125	0.161	0.36	0.44	3.08/1.66	0.60	0.063	0.21	15.4	1.17	0.37	0.117	0.199
											0.61	0.191	0.250
											0.56	0.175	0.238
1x300RMC/50	0.100	0.129	0.36	0.44	3.00/1.69	0.57	0.060	0.22	14.2	1.26	0.36	0.113	0.172
											0.59	0.185	0.226
											0.54	0.171	0.214
1x400RMC/50	0.0778	0.101	0.36	0.44	2.91/1.73	0.54	0.055	0.25	12.9	1.40	0.34	0.108	0.148
											0.57	0.178	0.205
											0.53	0.166	0.195
1x500RMC/50	0.0605	0.0797	0.36	0.44	2.82/1.76	0.52	0.053	0.27	11.7	1.53	0.34	0.106	0.132
											0.55	0.173	0.190
											0.52	0.164	0.182

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C									
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0629	0.36	0.44	2.75/1.80	0.51	0.050	0.30	10.5	1.71	0.32	0.102	0.120
											0.53	0.166	0.178
											0.51	0.160	0.172
1x800RM/250	0.0367	0.0506	0.36	0.44	2.69/1.84	0.49	0.047	0.33	9.5	1.89	0.31	0.099	0.111
											0.51	0.161	0.169
											0.50	0.157	0.165
1x1000RM/250	0.0291	0.0419	0.36	0.44	2.63/1.87	0.48	0.044	0.37	8.5	2.12	0.30	0.095	0.104
											0.49	0.155	0.160
											0.49	0.153	0.159

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/16	4.7	3.7	221	222	210	211	232	233	202	202
1x70RM/25	6.6	5.3	270	272	257	258	285	288	249	250
1x95RM/35	9.0	7.1	322	328	309	311	346	352	303	304
1x120RM/250	11.3	9.8	362	374	351	354	392	405	347	349
1x150RM/250	14.2	9.8	406	422	396	399	445	462	394	397
1x185RM/250	17.5	9.8	457	481	449	454	507	531	452	456
1x240RM/250	22.7	9.8	523	560	521	528	590	627	530	537
1x300RM/250	28.4	9.8	583	636	589	599	668	721	607	616
1x400RM/250	37.8	9.8	657	734	676	690	769	846	707	720
1x500RM/250	47.3	9.8	734	843	769	791	874	984	818	838
1x630RM/250	59.5	9.8	820	970	877	907	997	1153	948	977
1x800RM/250	75.6	9.8	905	1106	969	1031	1120	1336	1085	1126
1x1000RM/250	94.5	9.8	992	1253	1101	1158	1250	1546	1234	1290

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally Sealed
18/ 30 (36) kV

COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
XUHKXS acc. ZN-TF-501:2002
2XS(F)2Y acc. to IEC 60502-2:2005 and BS 6622:2007
N2XS(F)2Y acc. to DIN VDE 0276-620 and HD 620S2:2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²		mm		mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	8.0	24.2	16	28.3	33.9	1140	1.75	0.51
1x50RMC	$8.25^{+0.20}$	8.0	25.5	16	29.6	35.1	1230	2.5	0.53
1x70RMC	$9.6^{+0.20}$	8.0	26.8	25	30.9	36.5	1600	3.5	0.55
1x95RMC	$11.5^{+0.20}$	8.0	28.7	35	32.8	38.4	1990	4.75	0.58
1x120RMC	$12.9^{+0.25}$	8.0	30.1	50	34.2	39.8	2400	6	0.60
1x150RMC	$14.5^{+0.30}$	8.0	31.7	50	35.8	41.4	2710	7.5	0.62
1x185RMC	$16.0^{+0.30}$	8.0	33.2	50	37.3	42.9	3080	9.25	0.64
1x240RMC	$18.5^{+0.30}$	8.0	35.7	50	39.8	45.4	3660	12	0.68
1x300RMC	$20.5^{+0.30}$	8.0	37.7	50	41.8	47.4	4270	15	0.71
1x400RMC	$23.5^{+0.30}$	8.0	40.7	50	44.8	50.6	5170	20	0.76
1x500RMC	$26.5^{+0.40}$	8.0	44.2	50	48.5	54.5	6330	25	0.82
1x630RMC	$30.3^{+0.40}$	8.0	48.3	50	52.6	58.7	7720	31.5	0.88
1x800RMC	$34.6^{+0.50}$	8.0	53.0	50	57.3	63.8	9470	40	0.96
1x1000RMC	$38.2^{+0.40}$	8.0	56.6	50	60.9	67.6	11410	50	1.01

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area Conductor/ Metallic screen	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ^{O}\circ^{2}$	$\circ^{O}\circ^{2}$	$\circ^{O}\circ^{2}$
											$\circ\circ\circ^{3}$	$\circ\circ\circ^{3}$	$\circ\circ\circ^{3}$
											$\circ\circ\circ^{4}$	$\circ\circ\circ^{4}$	$\circ\circ\circ^{4}$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RMC/16	0.524	0.668	1.12	1.38	4.07/1.34	2.05	0.101	0.12	27.6	0.65	0.50	0.158	0.687
											0.77	0.243	0.711
											0.69	0.216	0.702
1x50RMC/16	0.387	0.494	1.12	1.38	3.85/1.40	1.88	0.094	0.13	25.2	0.71	0.48	0.150	0.516
											0.74	0.234	0.546
											0.66	0.208	0.536
1x70RMC/25	0.268	0.342	0.72	0.89	3.66/1.45	1.23	0.087	0.14	23.1	0.78	0.46	0.143	0.371
											0.72	0.225	0.409
											0.64	0.201	0.397
1x95RMC/35	0.193	0.247	0.51	0.63	3.47/1.51	0.88	0.079	0.15	20.7	0.87	0.43	0.135	0.281
											0.68	0.215	0.327
											0.61	0.193	0.313
1x120RMC/50	0.153	0.196	0.36	0.44	3.35/1.55	0.64	0.075	0.17	19.2	0.94	0.41	0.130	0.235
											0.66	0.208	0.286
											0.60	0.188	0.271
1x150RMC/50	0.124	0.159	0.36	0.44	3.25/1.59	0.60	0.071	0.18	17.8	1.01	0.40	0.125	0.202
											0.64	0.202	0.257
											0.58	0.183	0.243
1x185RMC/50	0.0991	0.127	0.36	0.44	3.16/1.62	0.57	0.067	0.19	16.7	1.08	0.39	0.121	0.176
											0.63	0.197	0.234
											0.57	0.179	0.220
1x240RMC/50	0.0754	0.0976	0.36	0.44	3.05/1.67	0.54	0.062	0.21	15.1	1.19	0.37	0.116	0.151
											0.60	0.189	0.213
											0.55	0.174	0.199
1x300RMC/50	0.0601	0.0785	0.36	0.44	2.98/1.70	0.52	0.059	0.23	14.0	1.29	0.36	0.112	0.137
											0.58	0.183	0.200
											0.54	0.170	0.187
1x400RMC/50	0.0470	0.0625	0.36	0.44	2.90/1.74	0.50	0.055	0.25	12.6	1.42	0.34	0.107	0.124
											0.56	0.177	0.187
											0.53	0.166	0.177

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							$o^{O}o^{2}$	$o^{O}o^{2}$	$o^{O}o^{2}$
											ooo^{3}	ooo^{3}	ooo^{3}
											ooo^{4}	ooo^{4}	ooo^{4}
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/250	0.0366	0.0500	0.36	0.44	2.80/1.77	0.49	0.052	0.28	11.5	1.57	0.33	0.105	0.116
											0.54	0.171	0.178
											0.52	0.163	0.170
1x630RM/250	0.0283	0.0404	0.36	0.44	2.73/1.81	0.48	0.049	0.31	10.3	1.75	0.32	0.101	0.109
											0.52	0.165	0.170
											0.51	0.159	0.164
1x800RM/250	0.0221	0.0335	0.36	0.44	2.67/1.85	0.48	0.046	0.35	9.2	1.97	0.31	0.098	0.103
											0.51	0.159	0.162
											0.50	0.156	0.159
1x1000RM/250	0.0176	0.0287	0.36	0.44	2.63/1.87	0.47	0.044	0.38	8.5	2.13	0.30	0.095	0.099
											0.49	0.154	0.157
											0.49	0.153	0.156

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, CB	BE	SPB, CB	BE	SPB, CB	BE	SPB, CB
mm²	kA/sec		A							
1x35RM/216	5.0	3.7	240	241	228	228	249	250	218	218
1x50RM/216	7.2	3.7	284	287	271	272	298	300	261	261
1x70RM/225	10.0	5.3	345	352	332	333	367	372	321	322
1x95RM/235	13.6	7.1	411	425	399	402	443	456	391	394
1x120RM/250	17.2	9.8	468	485	452	457	500	525	448	452
1x150RM/250	21.5	9.8	509	547	509	516	564	599	509	515
1x185RM/250	26.5	9.8	566	620	575	584	636	686	579	588
1x240RM/250	34.3	9.8	643	724	667	682	738	813	682	695
1x300RM/250	42.9	9.8	710	821	750	771	829	933	776	795
1x400RM/250	57.2	9.8	788	943	853	883	940	1089	895	924
1x500RM/250	71.5	9.8	869	1077	962	1004	1056	1262	1026	1066
1x630RM/250	90.1	9.8	957	1232	1082	1139	1187	1470	1175	1231
1x800RM/250	114.4	9.8	1041	1393	1198	1274	1313	1693	1327	1403
1x1000RM/250	143.0	9.8	1111	1545	1301	1398	1423	1905	1463	1559

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally and Radially Sealed
18/ 30 (36) kV

ALUMINIUM CONDUCTOR - Round, stranded and compacted conductor - Class 2
XRUHAKXS acc. ZN-TF-501 2002
A2XS(FL)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
NA2XS(FL)2Y acc. to DIN VDE 0276-620 and HD 620S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²		mm		mm²	mm	mm	kg/km	kN	m
1x50RMC	$8.25^{+0.10}$	8.0	25.5	16	29.5	35.6	1080	1.5	0.78
1x70RMC	$9.5^{+0.20}$	8.0	26.7	25	30.8	36.8	1270	2.1	0.81
1x95RMC	$11.3^{+0.20}$	8.0	28.5	35	32.6	38.6	1500	2.85	0.85
1x120RMC	$12.5^{+0.20}$	8.0	29.7	50	33.8	39.8	1750	3.6	0.88
1x150RMC	$14.2^{+0.20}$	8.0	31.4	50	35.5	41.5	1880	4.5	0.92
1x185RMC	$15.8^{+0.20}$	8.0	33.0	50	37.1	43.1	2040	5.55	0.96
1x240RMC	$17.9^{+0.10}$	8.0	35.1	50	39.2	45.2	2270	7.2	1.02
1x300RMC	$20.0^{+0.30}$	8.0	37.2	50	41.3	47.3	2500	9	1.07
1x400RMC	$22.9^{+0.30}$	8.0	40.1	50	44.2	50.4	2850	12	1.15
1x500RMC	$25.7^{+0.40}$	8.0	43.4	50	47.7	54.1	3320	15	1.24
1x630RMC	$29.3^{+0.50}$	8.0	47.3	50	51.5	58.4	3880	18.9	1.34
1x800RMC	$33.0^{+0.50}$	8.0	51.4	50	55.6	62.7	4520	24	1.44
1x1000RMC	$38.0^{+0.50}$	8.0	56.4	50	60.6	68.1	5320	30	1.57

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

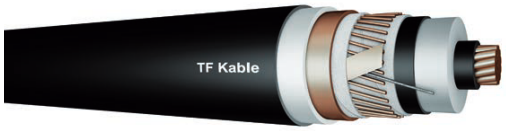
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							o o [2]	o o [2]	o o [2]
											ooo [3]	ooo [3]	ooo [3]
											ooo [4]	ooo [4]	ooo [4]
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x50RM/16	0.641	0.822	1.12	1.38	3.85/1.40	1.55	0.095	0.13	25.2	0.71	0.48	0.151	0.836
											0.74	0.234	0.855
											0.67	0.209	0.848
1x70RM/25	0.443	0.568	0.72	0.89	3.67/1.44	1.12	0.089	0.14	23.2	0.77	0.46	0.144	0.586
											0.72	0.226	0.611
											0.64	0.202	0.603
1x95RM/35	0.320	0.411	0.51	0.63	3.48/1.50	0.85	0.082	0.15	20.9	0.86	0.43	0.136	0.433
											0.69	0.216	0.464
											0.62	0.195	0.454
1x120RM/250	0.253	0.325	0.36	0.44	3.38/1.54	0.66	0.078	0.16	19.6	0.92	0.42	0.132	0.351
											0.67	0.210	0.387
											0.61	0.190	0.376
1x150RM/250	0.206	0.265	0.36	0.44	3.26/1.58	0.60	0.073	0.18	18.1	1.00	0.40	0.127	0.293
											0.65	0.203	0.334
											0.59	0.185	0.323
1x185RM/250	0.164	0.211	0.36	0.44	3.17/1.62	0.54	0.069	0.19	16.8	1.07	0.39	0.122	0.244
											0.63	0.197	0.289
											0.57	0.180	0.278
1x240RM/250	0.125	0.161	0.36	0.44	3.08/1.66	0.49	0.064	0.21	15.4	1.17	0.37	0.117	0.199
											0.61	0.191	0.250
											0.56	0.176	0.238
1x300RM/250	0.100	0.129	0.36	0.44	3.00/1.69	0.45	0.061	0.22	14.2	1.26	0.36	0.113	0.172
											0.59	0.185	0.226
											0.55	0.171	0.215
1x400RM/250	0.0778	0.101	0.36	0.44	2.91/1.73	0.42	0.057	0.25	12.9	1.40	0.35	0.109	0.149
											0.57	0.178	0.205
											0.53	0.167	0.195
1x500RM/250	0.0605	0.0797	0.36	0.44	2.82/1.76	0.39	0.054	0.27	11.7	1.53	0.34	0.106	0.133
											0.55	0.173	0.190
											0.52	0.164	0.182

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							0 0 0 2	0 0 0 2	0 0 0 2
											0 0 0 3	0 0 0 3	0 0 0 3
											0 0 0 4	0 0 0 4	0 0 0 4
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x630RM/250	0.0469	0.0629	0.36	0.44	2.75/1.80	0.36	0.051	0.30	10.5	1.71	0.33	0.103	0.120
											0.53	0.167	0.178
											0.51	0.161	0.173
1x800RM/250	0.0367	0.0506	0.36	0.44	2.69/1.84	0.35	0.048	0.33	9.5	1.89	0.32	0.100	0.112
											0.51	0.161	0.169
											0.50	0.158	0.166
1x1000RM/250	0.0291	0.0418	0.36	0.44	2.63/1.87	0.33	0.045	0.37	8.5	2.12	0.31	0.096	0.105
											0.49	0.155	0.160
											0.49	0.154	0.160

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x50RM/216	4.7	3.7	220	222	210	210	231	233	203	203
1x70RM/225	6.6	5.3	268	272	257	257	285	288	250	251
1x95RM/235	9.0	7.1	319	328	308	310	344	352	304	305
1x120RM/250	11.3	9.8	359	374	351	354	390	405	348	350
1x150RM/250	14.2	9.8	401	422	394	399	441	462	395	399
1x185RM/250	17.5	9.8	449	480	447	453	501	531	452	457
1x240RM/250	22.7	9.8	512	559	518	528	581	626	530	539
1x300RM/250	28.4	9.8	568	634	585	598	655	720	605	617
1x400RM/250	37.8	9.8	636	732	670	689	748	844	703	722
1x500RM/250	47.3	9.8	705	840	761	789	845	982	812	838
1x630RM/250	59.5	9.8	779	966	864	905	953	1149	938	977
1x800RM/250	75.6	9.8	849	1102	968	1025	1060	1331	1069	1124
1x1000RM/250	94.5	9.8	919	1248	1075	1152	1169	1538	1209	1286

MEDIUM VOLTAGE XLPE POWER CABLES – Longitudinally and Radially Sealed
18/ 30 (36) kV



COPPER CONDUCTOR - Round, stranded and compacted conductor - Class 2
XRUHKXS acc. ZN-TF-501 2002
2XS(FL)2Y acc. to IEC 60502-2 2005 and BS 6622 2007
N2XS(FL)2Y acc. to DIN VDE 0276-620 and HD 620S2 2010 part 10 section C

Conductor – nominal cross sectional area	Conductor diameter	Insulation		Metallic screen		Cable diameter D_e	Cable weight	Maximum cable pulling force	Recommended min. bending radius for laying
		Thickness	Diameter over insulation	Cross sectional area	Diameter over metallic screen				
mm²		mm		mm²	mm	mm	kg/km	kN	m
1x35RMC	$7.0^{+0.15}$	8.0	24.2	16	28.3	34.3	1210	1.75	0.74
1x50RMC	$8.25^{+0.20}$	8.0	25.5	16	29.5	35.6	1370	2.5	0.78
1x70RMC	$9.6^{+0.20}$	8.0	26.8	25	30.9	36.9	1630	3.5	0.81
1x95RMC	$11.5^{+0.20}$	8.0	28.7	35	32.8	38.8	2080	4.75	0.86
1x120RMC	$12.9^{+0.25}$	8.0	30.1	50	34.2	40.2	2490	6	0.89
1x150RMC	$14.5^{+0.30}$	8.0	31.7	50	35.8	41.8	2790	7.5	0.93
1x185RMC	$16.0^{+0.30}$	8.0	33.2	50	37.3	43.3	3170	9.25	0.97
1x240RMC	$18.5^{+0.30}$	8.0	35.7	50	39.8	45.8	3750	12	1.03
1x300RMC	$20.5^{+0.30}$	8.0	37.7	50	41.8	47.8	4360	15	1.08
1x400RMC	$23.5^{+0.30}$	8.0	40.7	50	44.8	51.0	5270	20	1.16
1x500RMC	$26.5^{+0.40}$	8.0	44.2	50	48.5	54.9	6440	25	1.25
1x630RMC	$30.3^{+0.40}$	8.0	48.3	50	52.5	59.4	7860	31.5	1.35
1x800RMC	$34.6^{+0.50}$	8.0	53.0	50	57.2	64.5	9620	40	1.47
1x1000RMC	$38.2^{+0.40}$	8.0	56.6	50	60.8	68.3	11570	50	1.56

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor IC (C - compacted), Class 2
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[2] - Cables in trefoil formation, the distance between cables D_e
[3] - Cables in flat formation (in the ground) – the distance between cables D_e + 70 mm
[4] - Cables in flat formation (in the air) – the distance between cables 2 x D_e

Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC 20°C	AC 90°C	DC 20°C	AC 80°C							$\circ\circ^2$	$\circ\circ^2$	$\circ\circ^2$
											$\circ\circ\circ^3$	$\circ\circ\circ^3$	$\circ\circ\circ^3$
											$\circ\circ\circ^4$	$\circ\circ\circ^4$	$\circ\circ\circ^4$
mm²	Ω/km				kV/mm	Ω/km	Ω/km	μF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x35RM/16	0.524	0.668	1.12	1.38	4.07/1.34	1.41	0.103	0.12	27.6	0.65	0.51	0.159	0.687
											0.78	0.244	0.711
											0.69	0.217	0.703
1x50RM/16	0.387	0.494	1.12	1.38	3.85/1.40	1.22	0.095	0.13	25.2	0.71	0.48	0.151	0.516
											0.74	0.234	0.546
											0.67	0.209	0.536
1x70RM/25	0.268	0.342	0.72	0.89	3.66/1.45	0.89	0.088	0.14	23.1	0.78	0.46	0.144	0.371
											0.72	0.225	0.410
											0.64	0.202	0.397
1x95RM/35	0.193	0.247	0.51	0.63	3.47/1.51	0.68	0.081	0.15	20.7	0.87	0.43	0.136	0.281
											0.68	0.215	0.327
											0.62	0.194	0.314
1x120RM/50	0.153	0.196	0.36	0.44	3.35/1.55	0.53	0.076	0.17	19.2	0.94	0.42	0.131	0.235
											0.66	0.209	0.286
											0.60	0.189	0.272
1x150RM/50	0.124	0.159	0.36	0.44	3.25/1.59	0.49	0.072	0.18	17.8	1.01	0.40	0.126	0.203
											0.64	0.202	0.257
											0.59	0.184	0.243
1x185RM/50	0.0991	0.127	0.36	0.44	3.16/1.62	0.46	0.068	0.19	16.7	1.08	0.39	0.122	0.176
											0.63	0.197	0.234
											0.57	0.180	0.220
1x240RM/50	0.0754	0.0976	0.36	0.44	3.05/1.67	0.42	0.063	0.21	15.1	1.19	0.37	0.116	0.152
											0.60	0.189	0.213
											0.55	0.174	0.200
1x300RM/50	0.0601	0.0785	0.36	0.44	2.98/1.70	0.40	0.060	0.23	14.0	1.29	0.36	0.112	0.137
											0.58	0.184	0.200
											0.54	0.171	0.188
1x400RM/50	0.0470	0.0625	0.36	0.44	2.90/1.74	0.38	0.056	0.25	12.6	1.42	0.34	0.108	0.125
											0.56	0.177	0.187
											0.53	0.166	0.177

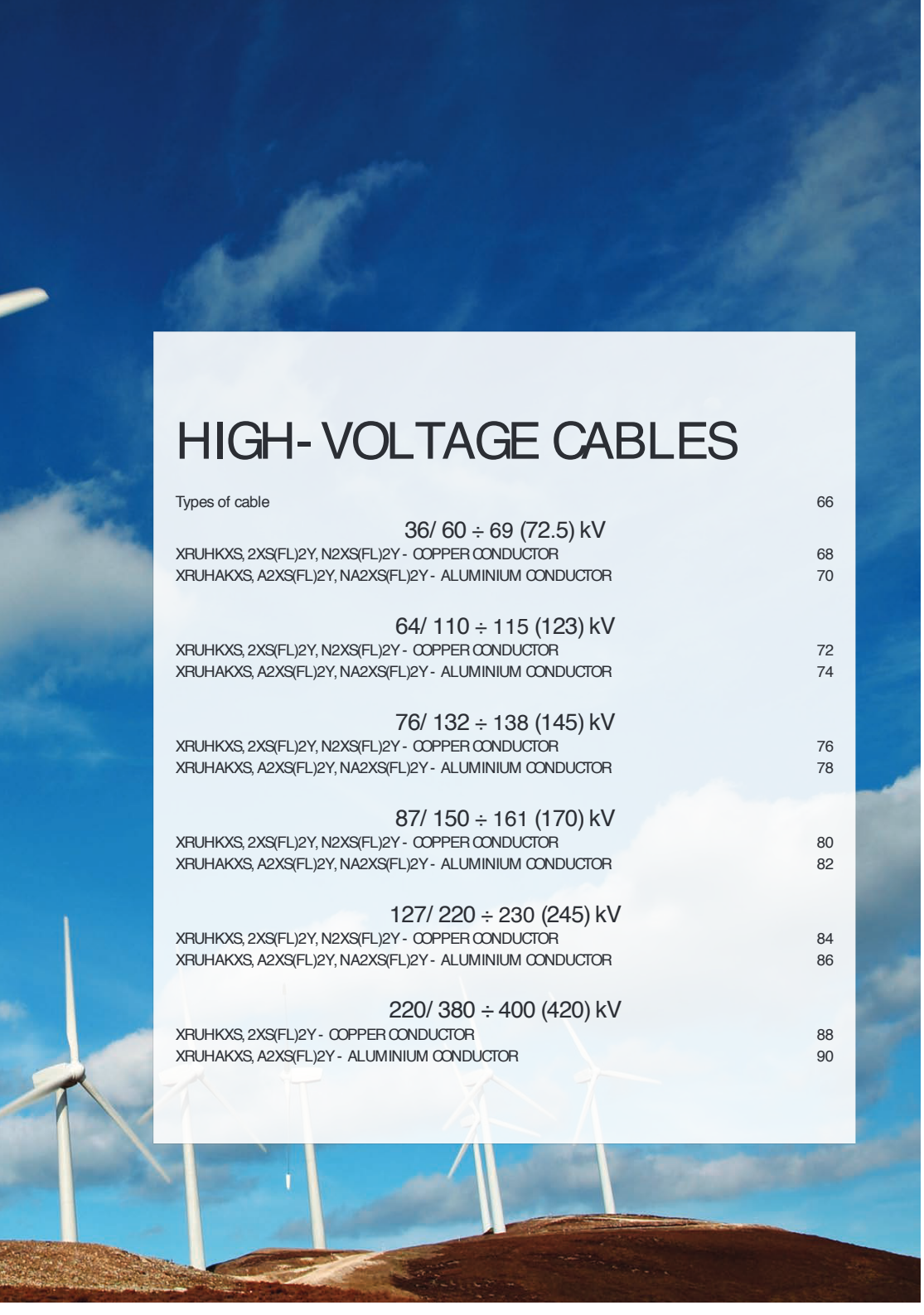
Nominal cross sectional area	Conductor resistance		Metallic screen resistance		Electrical Field stress on conductor/ insulation	Zero resistance R_0	Zero reactance X_0	Capacitance C	Capacitive reactance X_c	Charging current I_c	Inductance L	Inductive reactance Xl	Impedance
Conductor/ Metallic screen	DC20°C	AC90°C	DC20°C	AC80°C							o o o²	o o o²	o o o²
											o o o³	o o o³	o o o³
											o o o⁴	o o o⁴	o o o⁴
mm²	Ω/km				kV/mm	Ω/km	Ω/km	µF/km	kΩ/km	A/km	mH/km	Ω/km	Ω/km
1x500RM/25O	0.0366	0.0499	0.36	0.44	2.80/1.77	0.36	0.053	0.28	11.5	1.57	0.33	0.105	0.116
											0.54	0.171	0.178
											0.52	0.163	0.171
1x630RM/25O	0.0283	0.0403	0.36	0.44	2.73/1.81	0.34	0.050	0.31	10.3	1.75	0.32	0.102	0.109
											0.53	0.165	0.170
											0.51	0.160	0.165
1x800RM/25O	0.0221	0.0334	0.36	0.44	2.67/1.85	0.33	0.047	0.35	9.2	1.97	0.31	0.098	0.104
											0.51	0.159	0.163
											0.50	0.156	0.160
1x1000RM/25O	0.0176	0.0287	0.36	0.44	2.63/1.87	0.32	0.045	0.38	8.5	2.13	0.30	0.096	0.100
											0.49	0.155	0.157
											0.49	0.154	0.156

AMPACITY

Nominal cross sectional area	Max short circuit capacity		GROUND				AIR			
			FLAT		TREFOIL		FLAT		TREFOIL	
	Conductor	Metallic screen	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB	BE	SPB, OB
mm²	kA/sec		A							
1x35RM/16	5.0	3.7	238	241	228	228	248	250	219	219
1x50RM/16	7.2	3.7	282	286	271	272	297	301	262	262
1x70RM/25	10.0	5.3	342	351	331	332	364	372	323	324
1x95RM/35	13.6	7.1	406	424	397	401	439	456	392	395
1x120RM/50	17.2	9.8	450	483	451	457	495	525	448	454
1x150RM/50	21.5	9.8	499	546	506	515	556	599	509	517
1x185RM/50	26.5	9.8	552	618	571	584	625	685	578	590
1x240RM/50	34.3	9.8	623	723	661	680	721	813	679	697
1x300RM/50	42.9	9.8	683	820	743	770	804	932	771	797
1x400RM/50	57.2	9.8	753	940	841	881	905	1087	867	924
1x500RM/50	71.5	9.8	821	1073	945	999	1006	1259	1013	1066
1x630RM/50	90.1	9.8	894	1226	1058	1134	1116	1464	1155	1229
1x800RM/50	114.4	9.8	969	1386	1165	1267	1220	1684	1298	1398
1x1000RM/50	143.0	9.8	1014	1534	1260	1389	1306	1894	1423	1552

TFkable

Manufacturer of highest quality cables



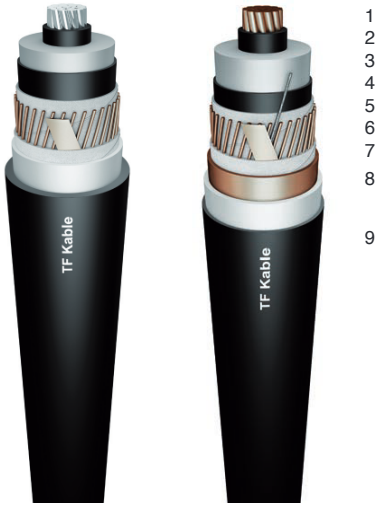
HIGH- VOLTAGE CABLES

TYPES OF CABLE

Cable constructions are shown in the following figures:

Figure 1 : XRUHAKXS, XRUHKXS – NA2XS(FL)2Y, N2XS(FL)2Y.

Description of Figure 1
1 – Aluminium or copper conductor
2 – Semi-conductive screen extruded on the phase conductor
3 – XLPE insulation
4 – Semi-conductive screen extruded on insulation
5 – Wrapping of semi-conductive water swelling tape
6 – Metallic screen
7 – Wrapping of semi-conductive water swelling tape
8 – Longitudinally applied aluminium tape coated with PE copolymer
9 – HDPE / MDPE outer sheath



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For unusual applications TELE-FONIKA Kable offers you the single-core cables:

Figure 2: YHAKXS, YHKXS – NA2XSY, N2XSY – XHAKXS, XHKXS – NA2XS2Y, N2XS2Y, NHAKXS, NHKXS – NA2XSH, N2XSH.

Description of Figure 2
1 – Aluminium or copper conductor
2 – Semi-conductive screen extruded on the phase conductor
3 – XLPE insulation
4 – Semi-conductive screen extruded on insulation
5 – Semi-conductive tape wrap, non swelling under action of water
6 – Metallic screen
7 – Wrapping of polyester tape
8 – Outer sheath: PVC, HDPE / MDPE, LSF

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Figure 3: XUHAKXS, XUHKXS – NA2XS(F)2Y, N2XS(F)2Y, NUHAKXS, NUHKXS – NA2XS(F)H, N2XS(F)H.

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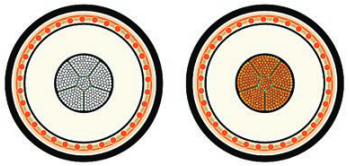
Description of Figure 3
1 – Aluminium or copper conductor
2 – Semi-conductive screen extruded on the phase conductor
3 – XLPE insulation
4 – Semi-conductive screen extruded on insulation
5 – Wrapping of semi-conductive water swelling tape
6 – Metallic screen
7 – Wrapping of non conductive water swelling tape
8 – Outer sheath: PVC, HDPE / MDPE, LSF

Milliken design conductors are applied for cables conductors with cross-sections > 1000 mm²



Selection of cable

High voltage cables are manufactured based on customer specifications and factory standards.
Cable structures are based on the requirements of IEC standards:
IEC 60287 – Calculation of current-carrying capacity of cables (load factor 100%)
IEC 60853 – Calculation of current-carrying capacity of cables for cyclic load or fault conditions
IEC 61443 – Maximum short circuit temperature for cables for voltages above 30kV
IEC 60228 – Conductors of wires and cables
When selecting cable, specialized software is used to simulate the cable system operation.

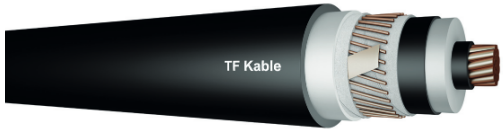
Calculation basis

In the soil – the temperature of 20° C, cabling depth 1.0 m, soil thermal resistivity K = 1.0 Km/ W, the distance between phases = 2xD.
For cables laid in separate cable culverts the load capacity (current-carrying capacity) is reduced to 90% of values presented in the tables.
In the air – the temperature of 35° C

Terms of cabling

Minimum temperature of laying cable: -20° C for cables < 110 kV and -5° C for cables ≥ 110 kV provided they are soaked immediately before laying (detailed information can be found in the guidelines for laying MV and HV cables).
Minimum bend radius: a value in meters is given in the tables
The maximum pulling force for the working conductor or with cable grip on external shell: the value in kN is given in the tables.
The minimum diameter of casing pipes: min. 1.5 x D (mm), where D = external diameter of cable in mm.

HIGH- VOLTAGE XLPE CABLES
36/ 60 (69)(72.5) kV



COPPER CONDUCTOR
XRUHKXS according to ZN- TF- 530:2009; IEC 60840
2XS(FL)2Y according to IEC 60840
N2XS(FL)2Y according to DIN VDE 0276- 632

Cross-section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross-section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x120RM	12.9 +0.25	13	40.1	35	44.3	51.3	3080	6.0	1.01
1x150RM	14.5 +0.30	12	39.7	35	43.9	50.9	3270	7.5	1.00
1x185RM	16.0 +0.30	12	41.2	35	45.4	52.4	3670	9.3	1.03
1x240RM	18.5 +0.30	11	41.7	35	45.9	53.1	4150	12.0	1.04
1x300RM	20.5 +0.30	11	43.7	35	47.9	55.1	4780	15.0	1.09
1x400RM	23.5 +0.30	11	47.1	35	51.7	59.3	5820	20.0	1.17
1x500RM	26.5 +0.40	10	48.1	35	52.7	60.3	6770	25.0	1.19
1x630RM	30.3 +0.40	10	52.2	35	56.8	64.5	8220	31.5	1.28
1x800RM	34.6 +0.50	10	56.5	35	61.1	69.2	9990	40.0	1.38
1x1000RM	38.2 +0.40	10	60.5	50	65.5	73.8	12210	50.0	1.47
1x1200RMS	43.6 +0.80	10	67.6	50	72.6	81.6	14610	60.0	1.63
1x1400RMS	46.6 +1.00	10	70.6	50	75.6	84.8	16570	70.0	1.70
1x1600RMS	50.0 +1.00	10	74.0	50	79.0	88.5	18570	80.0	1.77
1x1800RMS	53.3 +1.00	9	77.3	50	82.3	92.0	20560	90.0	1.84
1x2000RMS	56.3 +1.20	10	80.3	50	85.3	95.2	22600	100.0	1.91

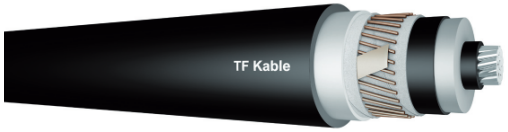
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		trefoil[2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1 x 120 RM	0.1530	0.1956	0.542	0.670	5.17 / 1.82	17.5	7.4	0.122	0.649	388 / 364	467 / 449
									0.465	370 / 357	414 / 411
1 x 150 RM	0.1240	0.1588	0.542	0.670	5.23 / 2.07	21.8	7.4	0.138	0.624	436 / 403	534 / 507
									0.440	416 / 411	470 / 466
1 x 185 RM	0.0991	0.1273	0.542	0.670	5.07 / 2.12	26.9	7.4	0.146	0.611	493 / 447	610 / 572
									0.426	469 / 462	535 / 529
1 x 240 RM	0.0754	0.0974	0.542	0.670	5.16 / 2.44	34.8	7.4	0.170	0.584	574 / 504	725 / 664
									0.399	545 / 534	631 / 621
1 x 300 RM	0.0601	0.0783	0.542	0.670	5.02 / 2.49	43.5	7.4	0.183	0.571	648 / 553	831 / 744
									0.386	614 / 599	721 / 707
1 x 400 RM	0.0470	0.0620	0.542	0.670	4.82 / 2.57	57.9	7.4	0.203	0.558	741 / 607	965 / 839
									0.374	698 / 676	835 / 814
1 x 500 RM	0.0366	0.0491	0.542	0.670	5.05 / 2.95	72.2	7.4	0.238	0.538	845 / 663	1125 / 942
									0.353	791 / 760	963 / 933
1 x 630 RM	0.0283	0.0389	0.542	0.670	4.90 / 3.02	90.9	7.4	0.264	0.525	974 / 707	1308 / 1051
									0.340	894 / 850	1112 / 1067
1 x 800 RM	0.0221	0.0313	0.542	0.670	4.78 / 3.09	115.4	7.4	0.292	0.512	1082 / 765	1505 / 1155
									0.327	998 / 938	1266 / 1204
1 x 1000 RM	0.0176	0.0260	0.379	0.468	4.69 / 3.14	144.1	10.5	0.318	0.505	1197 / 759	1684 / 1189
									0.320	1082 / 994	1398 / 1306
1 x 1200 RMS	0.0151	0.0203	0.379	0.468	4.56 / 3.21	172.8	10.5	0.364	0.499	1365 / 802	1981 / 1303
									0.314	1258 / 1127	1663 / 1552
1 x 1400 RMS	0.0129	0.0176	0.379	0.468	4.52 / 3.24	201.5	10.5	0.384	0.493	1486 / 824	2166 / 1360
									0.308	1346 / 1189	1804 / 1632
1 x 1600 RMS	0.0113	0.0156	0.379	0.468	4.48 / 3.27	230.3	10.5	0.406	0.488	1596 / 841	2340 / 1411
									0.303	1424 / 1242	1933 / 1730
1 x 1800 RMS	0.0101	0.0141	0.379	0.468	4.44 / 3.29	259.0	10.5	0.427	0.483	1685 / 855	2499 / 1456
									0.298	1490 / 1286	2047 / 1816
1 x 2000 RMS	0.0090	0.0128	0.379	0.468	4.41 / 3.31	287.7	10.5	0.446	0.478	1775 / 868	2659 / 1497
									0.294	1556 / 1329	2160 / 1898

HIGH- VOLTAGE XLPE CABLES
36/ 60 (69)(72.5) kV



ALUMINIUM CONDUCTOR
XRUHAKXS according to ZN- TF- 530:2009; IEC 60840
A2XS(FL)2Y according to IEC 60840
NA2XS(FL)2Y according to DIN VDE 0276- 632

Cross-section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross-section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x120RM	$12.5^{+0.20}$	13	39.7	35	43.9	50.9	2340	3.6	1.00
1x150RM	$14.2^{+0.20}$	12	39.4	35	43.6	50.6	2360	4.5	0.99
1x185RM	$15.8^{+0.20}$	12	41.0	35	45.2	52.2	2540	5.6	1.03
1x240RM	$17.9^{+0.10}$	11	41.1	35	45.3	52.3	2640	7.2	1.03
1x300RM	$20.0^{+0.30}$	11	43.2	35	47.4	54.6	2910	9.0	1.07
1x400RM	$22.9^{+0.30}$	11	46.5	35	51.1	58.5	3370	12.0	1.16
1x500RM	$25.7^{+0.40}$	10	47.3	35	51.9	59.5	3660	15.0	1.17
1x630RM	$29.3^{+0.50}$	10	51.2	35	55.8	63.5	4230	18.9	1.26
1x800RM	$33.0^{+0.50}$	10	54.9	35	59.5	67.4	4870	24.0	1.34
1x1000RM	$38.0^{+0.50}$	10	60.3	50	65.3	73.6	5980	30.0	1.47
1x1200RM	$41.0^{+0.60}$	10	63.3	50	68.3	76.8	6740	36.0	1.53
1x1200RMS	$43.6^{+0.80}$	10	67.6	50	72.6	81.6	7160	36.0	1.63
1x1400RMS	$46.6^{+1.00}$	10	70.6	50	75.6	84.8	7890	42.0	1.70
1x1600RMS	$50.0^{+1.00}$	10	74.0	50	79.0	88.5	8660	48.0	1.77
1x1800RMS	$53.3^{+1.00}$	10	77.3	50	82.3	92.0	9420	54.0	1.84
1x2000RMS	$55.4^{+1.00}$	10	79.4	50	84.4	94.3	10090	60.0	1.89

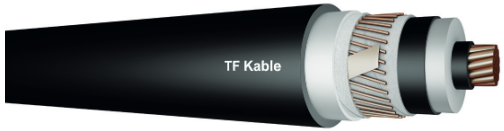
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
									trefoil[1]	SPB, CB / BE	SPB, CB / BE
									flat[2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1x120RM	0.2530	0.3247	0.542	0.670	5.23 / 1.80	11.6	7.4	0.120	0.654	300 / 288	360 / 351
									0.469	286 / 285	320 / 318
1x150RM	0.2060	0.2645	0.542	0.670	5.27 / 2.06	14.5	7.4	0.136	0.627	338 / 321	412 / 399
									0.443	322 / 319	393 / 391
1x185RM	0.1640	0.2108	0.542	0.670	5.09 / 2.11	17.8	7.4	0.145	0.612	382 / 360	473 / 454
									0.427	364 / 361	415 / 412
1x240RM	0.1250	0.1610	0.542	0.670	5.21 / 2.42	23.1	7.4	0.167	0.588	444 / 410	560 / 529
									0.403	422 / 417	488 / 483
1x300RM	0.1000	0.1292	0.542	0.670	5.05 / 2.48	28.8	7.4	0.180	0.574	503 / 454	642 / 599
									0.389	477 / 470	559 / 552
1x400RM	0.0778	0.1011	0.542	0.670	4.85 / 2.56	38.3	7.4	0.199	0.561	578 / 508	750 / 686
									0.376	547 / 536	652 / 642
1x500RM	0.0605	0.0794	0.542	0.670	5.08 / 2.93	47.8	7.4	0.232	0.541	663 / 582	878 / 781
									0.366	625 / 609	757 / 741
1x630RM	0.0469	0.0624	0.542	0.670	4.93 / 3.00	60.2	7.4	0.258	0.528	761 / 619	1027 / 885
									0.343	714 / 690	881 / 858
1x800RM	0.0367	0.0497	0.542	0.670	4.82 / 3.06	76.4	7.4	0.282	0.516	865 / 672	1190 / 989
									0.332	806 / 774	1015 / 982
1x1000RM	0.0291	0.0402	0.379	0.468	4.69 / 3.14	95.3	10.5	0.317	0.506	975 / 691	1368 / 1060
									0.321	898 / 845	1157 / 1102
1x1200RM	0.0247	0.0347	0.379	0.468	4.64 / 3.17	114.3	10.5	0.336	0.499	1056 / 719	1501 / 1123
									0.314	963 / 900	1259 / 1192
1x1200RMS	0.0247	0.0322	0.379	0.468	4.56 / 3.21	114.3	10.5	0.364	0.499	1121 / 740	1601 / 1173
									0.314	1034 / 957	1362 / 1281
1x1400RMS	0.0212	0.0278	0.379	0.468	4.52 / 3.24	133.3	10.5	0.384	0.493	1218 / 767	1759 / 1238
									0.308	1115 / 1021	1489 / 1387
1x1600RMS	0.0186	0.0245	0.379	0.468	4.48 / 3.27	152.3	10.5	0.406	0.488	1310 / 789	1915 / 1297
									0.303	1192 / 1079	1612 / 1488
1x1800RMS	0.0165	0.0218	0.379	0.468	4.44 / 3.29	171.2	10.5	0.427	0.483	1397 / 808	2065 / 1350
									0.298	1283 / 1131	1728 / 1581
1x2000RMS	0.0149	0.0198	0.379	0.468	4.42 / 3.31	190.2	10.5	0.440	0.480	1473 / 824	2195 / 1390
									0.295	1324 / 1174	1827 / 1668

HIGH- VOLTAGE XLPE CABLES
64/ 110 ÷115(123) kV



COPPER CONDUCTOR
XRUHKXS according to ZN- TF- 530:2009; IEC 60840
2XS(FL)2Y according to IEC 60840
N2XS(FL)2Y according to DIN VDE 0276- 632

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x150RM	14.5 $^{+0.30}$	17	51.5	95	57.3	65.3	5080	7.5	1.29
1x185RM	16.0 $^{+0.30}$	17	52.4	95	58.2	66.2	5450	9.3	1.31
1x240RM	18.5 $^{+0.30}$	16	52.5	95	58.3	66.3	5890	12.0	1.31
1x300RM	20.5 $^{+0.30}$	15	52.5	95	58.3	66.3	6370	15.0	1.31
1x400RM	23.5 $^{+0.30}$	15	55.5	95	61.3	69.5	7380	20.0	1.38
1x500RM	26.5 $^{+0.40}$	15	58.5	95	64.3	72.7	8560	25.0	1.45
1x630RM	30.3 $^{+0.40}$	15	63.0	95	68.8	77.5	10160	31.5	1.55
1x800RM	34.6 $^{+0.50}$	15	67.3	95	73.1	82.0	11980	40.0	1.64
1x1000RM	38.2 $^{+0.40}$	15	70.9	95	76.7	85.8	14030	50.0	1.72
1x1200RMS	43.6 $^{+0.80}$	15	77.6	95	83.4	93.3	16520	60.0	1.87
1x1400RMS	46.6 $^{+1.00}$	15	80.6	95	86.4	96.5	18530	70.0	1.93
1x1600RMS	50.0 $^{+1.00}$	15	84.0	95	89.8	100.1	20580	80.0	2.01
1x1800RMS	53.3 $^{+1.00}$	15	87.3	95	93.1	103.6	22630	90.0	2.08
1x2000RMS	56.3 $^{+1.20}$	15	90.3	95	96.1	106.8	24720	100.0	2.15

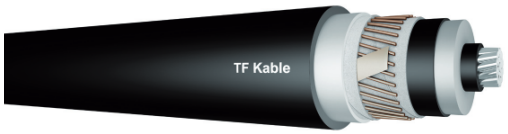
*production range up to 3000 mm²; cable data for sections >2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		cc o[1]	SPB, CB / BE	SPB, CB / BE
									o o[2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1 x 150 RM	0.1240	0.1587	0.200	0.247	6.72 / 2.28	21.8	19.0	0.118	0.674	434 / 384	521 / 486
									0.489	413 / 404	469 / 463
1 x 185 RM	0.0991	0.1272	0.200	0.247	6.60 / 2.32	26.9	19.0	0.122	0.657	490 / 422	595 / 546
									0.473	465 / 453	534 / 524
1 x 240 RM	0.0754	0.0973	0.200	0.247	6.59 / 2.57	34.8	19.0	0.136	0.629	570 / 470	707 / 628
									0.444	539 / 520	629 / 613
1 x 300 RM	0.0601	0.0781	0.200	0.247	6.66 / 2.86	43.5	19.0	0.151	0.608	644 / 510	811 / 699
									0.423	607 / 580	717 / 694
1 x 400 RM	0.0470	0.0618	0.200	0.247	6.40 / 2.94	57.9	19.0	0.164	0.590	736 / 553	943 / 783
									0.405	690 / 652	828 / 795
1 x 500 RM	0.0366	0.0489	0.200	0.247	6.20 / 3.02	72.2	19.0	0.178	0.575	838 / 595	1091 / 869
									0.390	780 / 728	953 / 905
1 x 630 RM	0.0283	0.0397	0.200	0.247	5.95 / 3.12	90.9	19.0	0.198	0.561	946 / 641	1264 / 959
									0.377	880 / 808	1095 / 1028
1 x 800 RM	0.0221	0.0312	0.200	0.247	5.77 / 3.20	115.4	19.0	0.216	0.546	1074 / 682	1452 / 1046
									0.361	980 / 895	1244 / 1153
1 x 1000 RM	0.0176	0.0259	0.200	0.247	5.65 / 3.26	144.1	19.0	0.232	0.535	1185 / 701	1628 / 1118
									0.351	1069 / 951	1380 / 1263
1 x 1200 RMS	0.0151	0.0202	0.200	0.247	5.46 / 3.35	172.8	19.0	0.261	0.526	1366 / 738	1910 / 1218
									0.341	1232 / 1062	1625 / 1452
1 x 1400 RMS	0.0129	0.0175	0.200	0.247	5.39 / 3.39	201.5	19.0	0.274	0.519	1462 / 763	2085 / 1272
									0.334	1316 / 1116	1759 / 1550
1 x 1600 RMS	0.0113	0.0155	0.200	0.247	5.32 / 3.42	230.3	19.0	0.289	0.512	1572 / 772	2250 / 1390
									0.327	1389 / 1162	1882 / 1638
1 x 1800 RMS	0.0101	0.0140	0.200	0.247	5.26 / 3.46	259.0	19.0	0.303	0.506	1668 / 785	2400 / 1360
									0.321	1452 / 1200	1990 / 1715
1 x 2000 RMS	0.0090	0.0127	0.200	0.247	5.22 / 3.48	287.7	19.0	0.316	0.501	1699 / 812	2552 / 1396
									0.317	1513 / 1235	2097 / 1788

HIGH- VOLTAGE XLPE CABLES
64/ 110 ÷115(123) kV



ALUMINIUM CONDUCTOR
XRUHAKXS according to ZN- TF- 530:2009; IEC 60840
A2XS(FL)2Y according to IEC 60840
NA2XS(FL)2Y according to DIN VDE 0276- 632

Cross-section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross-section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x150RM	$14.2^{+0.20}$	17	51.2	95	57.0	64.8	4150	4.5	1.29
1x185RM	$15.8^{+0.20}$	17	52.2	95	58.0	66.0	4320	5.6	1.31
1x240RM	$17.9^{+0.10}$	16	51.9	95	57.7	65.7	4390	7.2	1.30
1x300RM	$20.0^{+0.30}$	15	52.0	95	57.8	65.8	4500	9.0	1.30
1x400RM	$22.9^{+0.30}$	15	54.9	95	60.7	68.9	4940	12.0	1.37
1x500RM	$25.7^{+0.40}$	15	57.7	95	63.5	71.9	5420	15.0	1.43
1x630RM	$29.3^{+0.50}$	15	62.0	95	67.8	76.3	6120	18.9	1.52
1x800RM	$33.0^{+0.50}$	15	65.7	95	71.5	80.4	6860	24.0	1.60
1x1000RM	$38.0^{+0.50}$	15	70.7	95	76.5	85.6	7770	30.0	1.71
1x1200RM	$41.0^{+0.60}$	15	73.7	95	79.5	88.9	8590	36.0	1.78
1x1200RMS	$43.6^{+0.80}$	15	77.6	95	83.4	93.3	9070	36.0	1.87
1x1400RMS	$46.6^{+1.00}$	15	80.6	95	86.4	96.5	9850	42.0	1.93
1x1600RMS	$50.0^{+1.00}$	15	84.0	95	89.8	100.1	10660	48.0	2.01
1x1800RMS	$53.3^{+1.00}$	15	87.3	95	93.1	103.6	11490	54.0	2.08
1x2000RMS	$55.4^{+1.00}$	15	89.4	95	95.2	105.9	12200	60.0	2.13

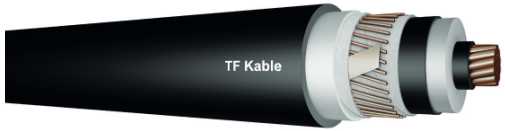
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		trefoil[2]	SPB, CB / BE	SPB, CB / BE
									flat[1]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1 x 150 RM	0.2060	0.2645	0.200	0.247	6.77 / 2.27	14.5	19.0	0.117	0.677	336 / 311	403 / 385
									0.492	320 / 316	383 / 380
1 x 185 RM	0.1640	0.2108	0.200	0.247	6.62 / 2.31	17.8	19.0	0.121	0.659	381 / 346	462 / 437
									0.474	362 / 356	415 / 410
1 x 240 RM	0.1250	0.1609	0.200	0.247	6.66 / 2.55	23.1	19.0	0.133	0.633	442 / 390	546 / 506
									0.449	420 / 410	487 / 479
1 x 300 RM	0.1000	0.1291	0.200	0.247	6.71 / 2.84	28.8	19.0	0.149	0.612	500 / 429	628 / 570
									0.427	474 / 461	557 / 546
1 x 400 RM	0.0778	0.1009	0.200	0.247	6.45 / 2.93	38.3	19.0	0.162	0.594	575 / 474	733 / 649
									0.409	542 / 523	648 / 631
1 x 500 RM	0.0605	0.0791	0.200	0.247	6.25 / 3.00	47.8	19.0	0.174	0.579	659 / 519	852 / 731
									0.394	618 / 591	750 / 726
1 x 630 RM	0.0469	0.0621	0.200	0.247	6.00 / 3.10	60.2	19.0	0.193	0.565	755 / 565	994 / 821
									0.380	704 / 666	870 / 835
1 x 800 RM	0.0367	0.0494	0.200	0.247	5.83 / 3.17	76.4	19.0	0.209	0.552	858 / 607	1148 / 909
									0.367	795 / 741	999 / 949
1 x 1000 RM	0.0291	0.0400	0.200	0.247	5.65 / 3.25	95.3	19.0	0.231	0.536	975 / 691	1323 / 1001
									0.351	888 / 817	1141 / 1071
1 x 1200 RM	0.0247	0.0346	0.200	0.247	5.55 / 3.30	114.3	19.0	0.244	0.528	1049 / 669	1449 / 1059
									0.344	953 / 867	1240 / 1155
1 x 1200 RMS	0.0247	0.0321	0.200	0.247	5.46 / 3.35	114.3	19.0	0.261	0.526	1111 / 688	1546 / 1103
									0.341	1018 / 915	1335 / 1233
1 x 1400 RMS	0.0212	0.0277	0.200	0.247	5.39 / 3.39	133.3	19.0	0.274	0.519	1195 / 716	1696 / 1163
									0.334	1096 / 972	1456 / 1330
1 x 1600 RMS	0.0186	0.0244	0.200	0.247	5.32 / 3.42	152.3	19.0	0.289	0.512	1306 / 788	1848 / 1286
									0.327	1192 / 1075	1591 / 1473
1 x 1800 RMS	0.0165	0.0217	0.200	0.247	5.26 / 3.46	171.2	19.0	0.303	0.506	1380 / 748	1987 / 1267
									0.321	1237 / 1089	1683 / 1506
1 x 2000 RMS	0.0149	0.0197	0.200	0.247	5.23 / 3.48	190.2	19.0	0.313	0.503	1455 / 761	2110 / 1303
									0.318	1296 / 1107	1777 / 1575

HIGH- VOLTAGE XLPE CABLES
76/ 132 ÷138(145) kV



COPPER CONDUCTOR
XRUHKXS according to ZN- TF- 530:2009; IEC 60840
2XS(FL)2Y according to IEC 60840
N2XS(FL)2Y according to DIN VDE 0276- 632

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x185RM	16.0 +0.30	17	52.4	95	58.2	66.2	5450	9.3	1.31
1x240RM	18.5 +0.30	16	52.5	95	58.3	66.3	5890	12.0	1.31
1x300RM	20.5 +0.30	15	52.5	95	58.3	66.3	6370	15.0	1.31
1x400RM	23.5 +0.30	15	55.5	95	61.3	69.5	7380	20.0	1.38
1x500RM	26.5 +0.40	15	58.5	95	64.3	72.7	8560	25.0	1.45
1x630RM	30.3 +0.40	15	63.0	95	68.8	77.5	10160	31.5	1.55
1x800RM	34.6 +0.50	15	67.3	95	73.1	82.0	11980	40.0	1.64
1x1000RM	38.2 +0.40	15	70.9	95	76.7	85.8	14030	50.0	1.72
1x1200RMS	43.6 +0.80	15	77.6	95	83.4	93.3	16520	60.0	1.87
1x1400RMS	46.6 +1.00	15	80.6	95	86.4	96.5	18530	70.0	1.93
1x1600RMS	50.0 +1.00	15	84.0	95	89.8	100.1	20580	80.0	2.01
1x1800RMS	53.3 +1.00	15	87.3	95	93.1	103.6	22630	90.0	2.08
1x2000RMS	56.3 +1.20	15	90.3	95	96.1	106.8	24720	100.0	2.15

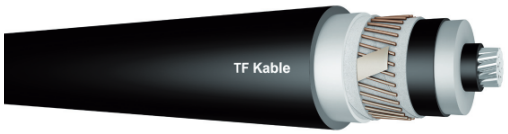
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		trefoil[1]	SPB, CB / BE	SPB, CB / BE
									flat[2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1 x 185 RM	0.0991	0.1272	0.200	0.247	7.92 / 2.78	26.9	19.0	0.122	0.657	490 / 422	595 / 546
									0.473	465 / 453	534 / 524
1 x 240 RM	0.0754	0.0973	0.200	0.247	7.91 / 3.09	34.8	19.0	0.136	0.629	570 / 470	707 / 628
									0.444	539 / 520	629 / 613
1 x 300 RM	0.0601	0.0781	0.200	0.247	8.00 / 3.43	43.5	19.0	0.151	0.608	644 / 510	811 / 699
									0.423	607 / 580	717 / 694
1 x 400 RM	0.0470	0.0618	0.200	0.247	7.69 / 3.53	57.9	19.0	0.164	0.590	736 / 553	943 / 783
									0.405	690 / 652	828 / 795
1 x 500 RM	0.0366	0.0489	0.200	0.247	7.44 / 3.62	72.2	19.0	0.178	0.575	838 / 595	1091 / 869
									0.390	780 / 728	953 / 905
1 x 630 RM	0.0283	0.0387	0.200	0.247	7.14 / 3.74	90.9	19.0	0.198	0.561	946 / 641	1264 / 959
									0.377	880 / 808	1095 / 1028
1 x 800 RM	0.0221	0.0312	0.200	0.247	6.92 / 3.84	115.4	19.0	0.216	0.546	1074 / 682	1452 / 1046
									0.361	980 / 885	1244 / 1153
1 x 1000 RM	0.0176	0.0259	0.200	0.247	6.77 / 3.91	144.1	19.0	0.232	0.535	1185 / 701	1628 / 1118
									0.351	1069 / 951	1380 / 1263
1 x 1200 RMS	0.0151	0.0202	0.200	0.247	6.55 / 4.02	172.8	19.0	0.261	0.526	1366 / 738	1910 / 1218
									0.341	1232 / 1062	1625 / 1462
1 x 1400 RMS	0.0129	0.0175	0.200	0.247	6.47 / 4.06	201.5	19.0	0.274	0.519	1462 / 763	2085 / 1272
									0.334	1316 / 1116	1759 / 1550
1 x 1600 RMS	0.0113	0.0155	0.200	0.247	6.39 / 4.11	230.3	19.0	0.289	0.512	1572 / 772	2250 / 1319
									0.327	1399 / 1162	1882 / 1638
1 x 1800 RMS	0.0101	0.0140	0.200	0.247	6.32 / 4.15	259.0	19.0	0.303	0.506	1658 / 785	2400 / 1360
									0.321	1452 / 1200	1990 / 1715
1 x 2000 RMS	0.0090	0.0127	0.200	0.247	6.26 / 4.18	287.7	19.0	0.316	0.501	1699 / 812	2552 / 1396
									0.317	1513 / 1235	2097 / 1788

HIGH- VOLTAGE XLPE CABLES
76/ 132 ÷138(145) kV



ALUMINIUM CONDUCTOR
XRUHAKXS according to ZN- TF- 530:2009; IEC 60840
A2XS(FL)2Y according to IEC 60840
NA2XS(FL)2Y according to DIN VDE 0276- 632

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x185RM	15.8$^{+0.20}$	17	52.2	95	58.0	66.0	4320	5.6	1.31
1x240RM	17.9$^{+0.10}$	16	51.9	95	57.7	65.7	4390	7.2	1.30
1x300RM	20.0$^{+0.30}$	15	52.0	95	57.8	65.8	4500	9.0	1.30
1x400RM	22.9$^{+0.30}$	15	54.9	95	60.7	68.9	4940	12.0	1.37
1x500RM	25.7$^{+0.40}$	15	57.7	95	63.5	71.9	5420	15.0	1.43
1x630RM	29.3$^{+0.50}$	15	62.0	95	67.8	76.3	6120	18.9	1.52
1x800RM	33.0$^{+0.50}$	15	65.7	95	71.5	80.4	6860	24.0	1.60
1x1000RM	38.0$^{+0.50}$	15	70.7	95	76.5	85.6	7770	30.0	1.71
1x1200RM	41.0$^{+0.60}$	15	73.7	95	79.5	88.9	8590	36.0	1.78
1x1200RMS	43.6$^{+0.80}$	15	77.6	95	83.4	93.3	9070	36.0	1.87
1x1400RMS	46.6$^{+1.00}$	15	80.6	95	86.4	96.5	9850	42.0	1.93
1x1600RMS	50.0$^{+1.00}$	15	84.0	95	89.8	100.1	10660	48.0	2.01
1x1800RMS	53.3$^{+1.00}$	15	87.3	95	93.1	103.6	11490	54.0	2.08
1x2000RMS	55.4$^{+1.00}$	15	89.4	95	95.2	105.9	12200	60.0	2.13

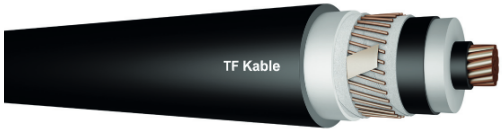
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		trefoil[2]	SPB, CB / BE	SPB, CB / BE
									flat[1]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1x185RM	0.1640	0.2108	0.200	0.247	7.95 / 2.77	17.8	19.0	0.121	0.659	381 / 346	462 / 437
									0.474	362 / 356	415 / 410
1x240RM	0.1250	0.1609	0.200	0.247	7.99 / 3.06	23.1	19.0	0.133	0.633	442 / 390	546 / 506
									0.449	420 / 410	487 / 479
1x300RM	0.1000	0.1291	0.200	0.247	8.05 / 3.41	28.8	19.0	0.149	0.612	500 / 429	628 / 570
									0.427	474 / 461	557 / 546
1x400RM	0.0778	0.1009	0.200	0.247	7.74 / 3.51	38.3	19.0	0.162	0.594	575 / 474	733 / 649
									0.409	542 / 523	648 / 631
1x500RM	0.0605	0.0791	0.200	0.247	7.50 / 3.60	47.8	19.0	0.174	0.579	659 / 519	852 / 731
									0.394	618 / 591	750 / 726
1x630RM	0.0469	0.0621	0.200	0.247	7.20 / 3.72	60.2	19.0	0.193	0.565	755 / 565	994 / 821
									0.380	704 / 666	870 / 835
1x800RM	0.0367	0.0494	0.200	0.247	7.00 / 3.80	76.4	19.0	0.209	0.552	868 / 607	1148 / 909
									0.357	795 / 741	999 / 949
1x1000RM	0.0291	0.0400	0.200	0.247	6.78 / 3.90	95.3	19.0	0.231	0.536	975 / 691	1323 / 1001
									0.351	888 / 817	1141 / 1071
1x1200RM	0.0247	0.0346	0.200	0.247	6.67 / 3.96	114.3	19.0	0.244	0.528	1049 / 669	1449 / 1059
									0.344	953 / 857	1240 / 1155
1x1200RMS	0.0247	0.0321	0.200	0.247	6.55 / 4.02	114.3	19.0	0.261	0.526	1111 / 688	1546 / 1103
									0.341	1018 / 915	1335 / 1233
1x1400RMS	0.0212	0.0277	0.200	0.247	6.47 / 4.06	133.3	19.0	0.274	0.519	1195 / 716	1696 / 1163
									0.334	1096 / 972	1456 / 1330
1x1600RMS	0.0186	0.0244	0.200	0.247	6.39 / 4.11	152.3	19.0	0.289	0.512	1306 / 788	1848 / 1286
									0.327	1192 / 1075	1591 / 1473
1x1800RMS	0.0165	0.0217	0.200	0.247	6.32 / 4.15	171.2	19.0	0.303	0.506	1380 / 748	1987 / 1267
									0.321	1237 / 1069	1683 / 1506
1x2000RMS	0.0149	0.0197	0.200	0.247	6.28 / 4.17	190.2	19.0	0.313	0.503	1455 / 761	2110 / 1303
									0.318	1296 / 1107	1777 / 1575

HIGH- VOLTAGE XLPE CABLES
87/ 150 ÷161(170) kV



COPPER CONDUCTOR
XRUHKXS according to ZN- TF- 530:2009; IEC 60840
2XS(FL)2Y according to IEC 60840
N2XS(FL)2Y according to DIN VDE 0276- 632

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x185RM	16.0 $^{+0.30}$	23	64.8	95	70.6	79.4	6820	9.3	1.59
1x240RM	18.5 $^{+0.30}$	22	64.5	95	70.3	79.1	7210	12.0	1.58
1x300RM	20.5 $^{+0.30}$	21	64.5	95	70.3	79.1	7690	15.0	1.58
1x400RM	23.5 $^{+0.30}$	20	65.5	95	71.3	80.1	8500	20.0	1.60
1x500RM	26.5 $^{+0.40}$	19	66.5	95	72.3	81.3	9490	25.0	1.62
1x630RM	30.3 $^{+0.40}$	19	71.0	95	76.8	85.9	11130	31.5	1.72
1x800RM	34.6 $^{+0.50}$	19	75.3	95	81.1	90.7	13050	40.0	1.82
1x1000RM	38.2 $^{+0.40}$	19	78.9	95	84.7	94.5	15140	50.0	1.90
1x1200RMS	43.6 $^{+0.80}$	19	85.6	95	91.4	101.9	17720	60.0	2.04
1x1400RMS	46.6 $^{+1.00}$	19	88.6	95	94.4	105.1	19760	70.0	2.11
1x1600RMS	50.0 $^{+1.00}$	19	92.0	95	97.8	108.7	21860	80.0	2.18
1x1800RMS	53.3 $^{+1.00}$	19	95.3	95	101.1	112.2	23950	90.0	2.26
1x2000RMS	56.3 $^{+1.20}$	19	98.3	95	104.1	115.4	26080	100.0	2.32

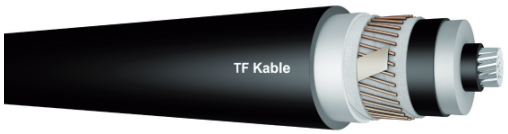
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		trefoil[1]	SPB, CB / BE	SPB, CB / BE
									flat[2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1 x 185 RM	0.0991	0.1271	0.200	0.247	7.45 / 2.16	26.9	19.0	0.103	0.694	488 / 423	582 / 540
									0.509	463 / 452	531 / 522
1 x 240 RM	0.0754	0.0972	0.200	0.247	7.37 / 2.34	34.8	19.0	0.111	0.664	567 / 472	690 / 623
									0.479	537 / 519	625 / 611
1 x 300 RM	0.0601	0.0780	0.200	0.247	7.31 / 2.55	43.5	19.0	0.121	0.643	641 / 513	791 / 695
									0.459	605 / 580	712 / 692
1 x 400 RM	0.0470	0.0617	0.200	0.247	7.20 / 2.80	57.9	19.0	0.135	0.619	733 / 557	922 / 781
									0.434	687 / 652	823 / 794
1 x 500 RM	0.0366	0.0488	0.200	0.247	7.17 / 3.07	72.2	19.0	0.151	0.598	835 / 599	1070 / 868
									0.413	779 / 728	947 / 904
1 x 630 RM	0.0283	0.0386	0.200	0.247	6.85 / 3.18	90.9	19.0	0.167	0.582	945 / 644	1239 / 961
									0.397	879 / 810	1089 / 1028
1 x 800 RM	0.0221	0.0311	0.200	0.247	6.61 / 3.27	115.4	19.0	0.182	0.566	1073 / 676	1422 / 1050
									0.381	980 / 886	1238 / 1153
1 x 1000 RM	0.0176	0.0258	0.200	0.247	6.45 / 3.34	144.1	19.0	0.194	0.555	1184 / 705	1594 / 1123
									0.370	1071 / 954	1374 / 1264
1 x 1200 RMS	0.0151	0.0202	0.200	0.247	6.20 / 3.45	172.8	19.0	0.218	0.543	1364 / 744	1869 / 1227
									0.358	1230 / 1063	1613 / 1460
1 x 1400 RMS	0.0129	0.0175	0.200	0.247	6.11 / 3.49	201.5	19.0	0.228	0.536	1472 / 763	2040 / 1282
									0.351	1316 / 1119	1746 / 1550
1 x 1600 RMS	0.0113	0.0155	0.200	0.247	6.02 / 3.53	230.3	19.0	0.240	0.529	1545 / 788	2201 / 1331
									0.344	1389 / 1164	1868 / 1639
1 x 1800 RMS	0.0101	0.0140	0.200	0.247	5.94 / 3.57	259.0	19.0	0.251	0.522	1655 / 791	2348 / 1373
									0.337	1452 / 1202	1976 / 1716
1 x 2000 RMS	0.0090	0.0127	0.200	0.247	5.88 / 3.61	287.7	19.0	0.261	0.517	1741 / 803	2496 / 1410
									0.332	1516 / 1239	2084 / 1790

HIGH- VOLTAGE XLPE CABLES
87/ 150 ÷161(170) kV



ALUMINIUM CONDUCTOR
XRUHAKXS according to ZN- TF- 530:2009; IEC 60840
A2XS(FL)2Y according to IEC 60840
NA2XS(FL)2Y according to DIN VDE 0276- 632

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²	mm			mm²	mm	mm	kg/km	kN	m
1x185RM	$15.8^{+0.20}$	23	64.6	95	70.4	79.2	5680	5.6	1.58
1x240RM	$17.9^{+0.10}$	22	63.9	95	69.7	78.5	5690	7.2	1.57
1x300RM	$20.0^{+0.30}$	21	64.0	95	69.8	78.6	5810	9.0	1.57
1x400RM	$22.9^{+0.30}$	20	64.9	95	70.7	79.5	6050	12.0	1.59
1x500RM	$25.7^{+0.40}$	19	65.7	95	71.5	80.5	6350	15.0	1.61
1x630RM	$29.3^{+0.50}$	19	70.0	95	75.8	84.9	7100	18.9	1.70
1x800RM	$33.0^{+0.50}$	19	73.7	95	79.5	88.9	7880	24.0	1.78
1x1000RM	$38.0^{+0.50}$	19	78.7	95	84.5	94.3	8890	30.0	1.89
1x1200RM	$41.0^{+0.60}$	19	81.7	95	87.5	97.5	9740	36.0	1.96
1x1200RMS	$43.6^{+0.80}$	19	85.6	95	91.4	101.9	10260	36.0	2.04
1x1400RMS	$46.6^{+1.00}$	19	88.6	95	94.4	105.1	11090	42.0	2.11
1x1600RMS	$50.0^{+1.00}$	19	92.0	95	97.8	108.7	11940	48.0	2.18
1x1800RMS	$53.3^{+1.00}$	19	95.3	95	101.1	112.2	12810	54.0	2.26
1x2000RMS	$55.4^{+1.00}$	19	97.4	95	103.2	114.5	13550	60.0	2.30

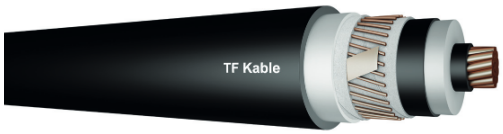
*production range up to 3000 mm²; cable data for sections >2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		trefoil[2]	SPB, CB / BE	SPB, CB / BE
									flat[1]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1x185RM	0.1640	0.2107	0.200	0.247	7.48 / 2.15	17.8	19.0	0.103	0.696	379 / 346	451 / 430
									0.511	361 / 355	412 / 408
1x240RM	0.1250	0.1609	0.200	0.247	7.46 / 2.32	23.1	19.0	0.110	0.669	440 / 391	533 / 499
									0.484	418 / 409	484 / 477
1x300RM	0.1000	0.1290	0.200	0.247	7.37 / 2.53	28.8	19.0	0.120	0.647	498 / 430	612 / 563
									0.462	471 / 459	553 / 543
1x400RM	0.0778	0.1009	0.200	0.247	7.26 / 2.79	38.3	19.0	0.133	0.622	572 / 476	717 / 643
									0.437	540 / 522	643 / 629
1x500RM	0.0605	0.0790	0.200	0.247	7.24 / 3.05	47.8	19.0	0.148	0.602	666 / 521	836 / 727
									0.417	616 / 590	745 / 723
1x630RM	0.0469	0.0620	0.200	0.247	6.92 / 3.16	60.2	19.0	0.163	0.586	753 / 557	974 / 818
									0.402	703 / 665	864 / 832
1x800RM	0.0367	0.0493	0.200	0.247	6.69 / 3.24	76.4	19.0	0.176	0.572	866 / 610	1125 / 908
									0.387	793 / 741	992 / 946
1x1000RM	0.0291	0.0399	0.200	0.247	6.45 / 3.34	95.3	19.0	0.194	0.555	966 / 649	1295 / 1000
									0.370	888 / 817	1132 / 1068
1x1200RM	0.0247	0.0345	0.200	0.247	6.34 / 3.39	114.3	19.0	0.204	0.547	1046 / 674	1418 / 1060
									0.362	954 / 869	1232 / 1152
1x1200RMS	0.0247	0.0320	0.200	0.247	6.20 / 3.45	114.3	19.0	0.218	0.543	1108 / 692	1512 / 1105
									0.358	1015 / 915	1322 / 1227
1x1400RMS	0.0212	0.0276	0.200	0.247	6.11 / 3.49	133.3	19.0	0.228	0.536	1203 / 716	1658 / 1167
									0.351	1095 / 973	1442 / 1325
1x1600RMS	0.0186	0.0243	0.200	0.247	6.02 / 3.53	152.3	19.0	0.240	0.529	1303 / 790	1806 / 1283
									0.344	1190 / 1074	1575 / 1464
1x1800RMS	0.0165	0.0217	0.200	0.247	5.94 / 3.57	171.2	19.0	0.251	0.522	1377 / 753	1941 / 1273
									0.337	1236 / 1070	1668 / 1501
1x2000RMS	0.0149	0.0196	0.200	0.247	5.90 / 3.60	190.2	19.0	0.258	0.519	1452 / 767	2062 / 1311
									0.334	1295 / 1108	1761 / 1571

HIGH- VOLTAGE XLPE CABLES
127/ 220 ÷230(245) kV



COPPER CONDUCTOR
XRUHKXS according to ZN- TF- 530:2009; IEC 62067
2XS(FL)2Y according to IEC 62067

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x300RM	$20.5^{+0.30}$	24	70.9	95	77.1	86.3	8550	15.0	1.73
1x400RM	$23.5^{+0.30}$	24	73.9	95	80.1	89.8	9690	20.0	1.79
1x500RM	$26.5^{+0.40}$	23	74.9	95	81.1	90.8	10680	25.0	1.82
1x630RM	$30.3^{+0.40}$	22	77.0	95	83.2	93.0	12050	31.5	1.86
1x800RM	$34.6^{+0.50}$	22	81.3	95	87.5	97.5	13980	40.0	1.96
1x1000RM	$38.2^{+0.40}$	22	84.9	95	91.1	101.3	16110	50.0	2.04
1x1200RMS	$43.6^{+0.60}$	22	91.6	95	97.8	108.7	18760	60.0	2.18
1x1400RMS	$46.6^{+1.00}$	22	94.6	95	100.8	111.9	20840	70.0	2.25
1x1600RMS	$50.0^{+1.00}$	22	98.0	95	104.2	115.5	22980	80.0	2.32
1x1800RMS	$53.3^{+1.00}$	22	101.3	95	107.5	119.0	25100	90.0	2.40
1x2000RMS	$56.3^{+1.20}$	22	104.3	95	110.5	122.2	27270	100.0	2.46

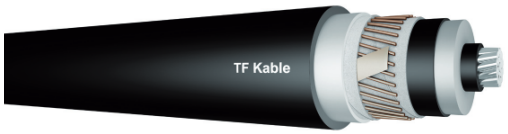
*production range up to 3000 mm²; cable data for sections > 2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		cc o [1]	SPB, CB / BE	SPB, CB / BE
									o o [2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1x300RM	0.0601	0.0779	0.200	0.247	9.82 / 3.17	43.5	19.0	0.113	0.661	635 / 510	777 / 689
									0.476	598 / 574	704 / 686
1x400RM	0.0470	0.0616	0.200	0.247	9.35 / 3.28	57.9	19.0	0.122	0.642	725 / 554	901 / 774
									0.457	680 / 645	813 / 786
1x500RM	0.0366	0.0487	0.200	0.247	9.23 / 3.56	72.2	19.0	0.134	0.620	826 / 596	1045 / 863
									0.435	769 / 720	935 / 895
1x630RM	0.0283	0.0385	0.200	0.247	9.09 / 3.89	90.9	19.0	0.151	0.598	941 / 635	1215 / 951
									0.413	870 / 798	1077 / 1016
1x800RM	0.0221	0.0311	0.200	0.247	8.74 / 4.01	115.4	19.0	0.164	0.581	1059 / 673	1394 / 1047
									0.396	968 / 877	1224 / 1144
1x1000RM	0.0176	0.0258	0.200	0.247	8.51 / 4.10	144.1	19.0	0.175	0.569	1169 / 702	1563 / 1121
									0.384	1058 / 944	1358 / 1255
1x1200RMS	0.0151	0.0201	0.200	0.247	8.15 / 4.24	172.8	19.0	0.195	0.556	1345 / 739	1830 / 1227
									0.371	1212 / 1049	1591 / 1438
1x1400RMS	0.0129	0.0174	0.200	0.247	8.02 / 4.29	201.5	19.0	0.204	0.549	1452 / 738	1998 / 1282
									0.364	1296 / 1104	1723 / 1537
1x1600RMS	0.0113	0.0154	0.200	0.247	7.89 / 4.35	230.3	19.0	0.214	0.541	1548 / 773	2155 / 1332
									0.356	1389 / 1150	1844 / 1627
1x1800RMS	0.0101	0.0140	0.200	0.247	7.78 / 4.40	259.0	19.0	0.224	0.534	1612 / 792	2298 / 1374
									0.349	1430 / 1186	1951 / 1704
1x2000RMS	0.0090	0.0126	0.200	0.247	7.69 / 4.45	287.7	19.0	0.233	0.528	1717 / 797	2443 / 1414
									0.344	1492 / 1222	2057 / 1778

HIGH- VOLTAGE XLPE CABLES
127/ 220 ÷230(245) kV



ALUMINIUM CONDUCTOR
XRUHAKXS according to ZN- TF- 530:2009; IEC 62067
A2XS(FL)2Y according to IEC 62067

Cross-section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross-section	Diameter over screen				
mm²	mm			mm²	mm	kg/km	kN	m	
1x300RM	20.0 $^{+0.30}$	24	70.4	95	76.6	85.8	6660	9.0	1.72
1x400RM	22.9 $^{+0.30}$	24	73.3	95	79.5	89.0	7200	12.0	1.78
1x500RM	25.7 $^{+0.40}$	23	74.1	95	80.3	90.0	7530	15.0	1.80
1x630RM	29.3 $^{+0.50}$	22	76.0	95	82.2	91.8	7990	18.9	1.84
1x800RM	33.0 $^{+0.50}$	22	79.7	95	85.9	95.9	8820	24.0	1.92
1x1000RM	38.0 $^{+0.50}$	22	84.7	95	90.9	101.1	9860	30.0	2.03
1x1200RM	41.0 $^{+0.60}$	22	87.7	95	93.9	104.3	10740	36.0	2.10
1x1200RMS	43.6 $^{+0.80}$	22	91.6	95	97.8	108.7	11310	36.0	2.18
1x1400RMS	46.6 $^{+1.00}$	22	94.6	95	100.8	111.9	12170	42.0	2.25
1x1600RMS	50.0 $^{+1.00}$	22	98.0	95	104.2	115.5	13050	48.0	2.32
1x1800RMS	53.3 $^{+1.00}$	22	101.3	95	107.5	119.0	13970	54.0	2.40
1x2000RMS	55.4 $^{+1.00}$	22	103.4	95	109.6	121.3	14720	60.0	2.44

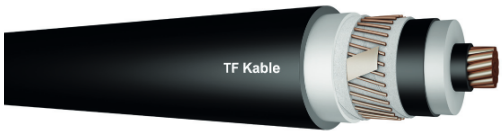
*production range up to 3000 mm²; cable data for sections >2000 mm² are available on request

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross-section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
										In ground	In air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C		Conductor	of return conductor Screen		cc o [1]	SPB, CB / BE	SPB, CB / BE
									o o [2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1sec.		µF/km	mH/km	A	
1x300RM	0.1000	0.1290	0.200	0.247	9.90 / 3.15	28.8	19.0	0.112	0.665	493 / 427	601 / 557
									0.480	466 / 454	547 / 538
1x400RM	0.0778	0.1008	0.200	0.247	9.44 / 3.26	38.3	19.0	0.120	0.645	566 / 472	701 / 635
									0.460	534 / 516	635 / 622
1x500RM	0.0605	0.0789	0.200	0.247	9.32 / 3.54	47.8	19.0	0.132	0.624	649 / 517	816 / 718
									0.439	609 / 583	735 / 715
1x630RM	0.0469	0.0619	0.200	0.247	9.18 / 3.86	60.2	19.0	0.148	0.602	744 / 563	955 / 810
									0.417	694 / 657	854 / 823
1x800RM	0.0367	0.0492	0.200	0.247	8.86 / 3.97	76.4	19.0	0.159	0.587	846 / 605	1102 / 899
									0.402	784 / 732	980 / 935
1x1000RM	0.0291	0.0398	0.200	0.247	8.52 / 4.09	95.3	19.0	0.174	0.569	954 / 644	1269 / 992
									0.384	877 / 807	1118 / 1056
1x1200RM	0.0247	0.0344	0.200	0.247	8.35 / 4.16	114.3	19.0	0.183	0.560	1032 / 669	1389 / 1052
									0.375	941 / 857	1216 / 1140
1x1200RMS	0.0247	0.0320	0.200	0.247	8.15 / 4.24	114.3	19.0	0.195	0.556	1093 / 687	1480 / 1098
									0.371	1000 / 901	1303 / 1213
1x1400RMS	0.0212	0.0276	0.200	0.247	8.02 / 4.29	133.3	19.0	0.204	0.549	1186 / 710	1623 / 1159
									0.364	1078 / 958	1421 / 1309
1x1600RMS	0.0186	0.0243	0.200	0.247	7.89 / 4.35	152.3	19.0	0.214	0.541	1285 / 779	1767 / 1269
									0.356	1172 / 1057	1551 / 1444
1x1800RMS	0.0165	0.0216	0.200	0.247	7.78 / 4.40	171.2	19.0	0.224	0.534	1357 / 747	1899 / 1266
									0.349	1216 / 1053	1643 / 1484
1x2000RMS	0.0149	0.0196	0.200	0.247	7.72 / 4.43	190.2	19.0	0.231	0.530	1431 / 760	2016 / 1304
									0.345	1275 / 1091	1736 / 1553

HIGH- VOLTAGE XLPE CABLES
220/ 380 ÷400(420) kV



COPPER CONDUCTOR
XRUHKXS according to ZN- TF- 530:2009; IEC 62067
2XS(FL)2Y according to IEC 62067

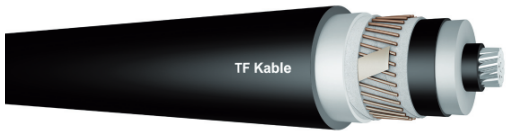
Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x630RM	$30.3^{+0.40}$	31.0	96.6	95	103.0	114.6	15300	31.5	2.86
1x800RM	$34.6^{+0.50}$	31.0	100.9	95	107.5	119.1	17370	40.0	2.96
1x1000RM	$38.2^{+0.40}$	30.0	101.5	95	108.0	119.7	19050	50.0	3.00
1x1200RMS	$43.6^{+0.80}$	29.0	105.4	95	112.0	124.0	21330	60.0	3.10
1x1400RMS	$46.6^{+1.00}$	27.0	105.0	95	111.6	123.6	22810	70.0	3.09
1x1600RMS	$50.0^{+1.00}$	27.0	108.0	95	114.5	126.8	25080	80.0	3.17
1x1800RMS	$53.3^{+1.00}$	27.0	111.3	95	117.8	130.3	27150	90.0	3.25
1x2000RMS	$56.3^{+1.0}$	26.0	112.3	95	118.8	131.3	28970	100.0	3.28
1x2500RMS	$62.4^{+1.0}$	26.0	121.0	150	128.0	141.0	36080	100.0	3.52
1x3000RMS	$68.0^{+1.0}$	26.0	125.0	150	132.0	145.4	41220	100.0	3.60

ELECTRICAL DATA

RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
						conductor	of return conductor screen			in ground	in air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C					∞[1]	SPB, CB / BE	SPB, CB / BE
									∞[2]	SPB, CB / BE	SPB, CB / BE
mm²	Ω/km				kV/mm	kA/1 sec.		µF/km	mH/km	A	
1 x 630 RM	0.0283	0.0385	0.200	0.247	12.40/4.45	90.9	19.0	0.130	0.640	980/660	1165/950
									0.460	865/780	1060/1000
1 x 800 RM	0.0221	0.0311	0.200	0.247	11.90/4.60	115.4	19.0	0.140	0.620	1050/695	1340/1045
									0.440	970/860	1210/1120
1 x 1000 RM	0.0176	0.0258	0.200	0.247	11.85/4.85	144.1	19.0	0.150	0.605	1160/725	1350/1235
									0.420	1070/925	1350/1235
1 x 1200 RMS	0.0151	0.0201	0.200	0.247	11.65/5.30	172.8	19.0	0.170	0.585	1335/765	1775/1230
									0.400	1235/1010	1595/1400
1 x 1400 RMS	0.0129	0.0174	0.200	0.247	11.95/5.80	201.5	19.0	0.185	0.570	1445/780	1950/1285
									0.385	1325/1055	1735/1495
1 x 1600 RMS	0.0113	0.0154	0.200	0.247	11.80/5.90	230.3	19.0	0.190	0.560	1540/795	2110/1335
									0.375	1405/1095	1865/1580
1 x 1800 RMS	0.0101	0.0140	0.200	0.247	11.60/5.95	259.0	19.0	0.200	0.555	1630/805	2250/1380
									0.370	1475/1130	1980/1655
1 x 2000 RMS	0.0090	0.0126	0.200	0.247	11.75/6.30	287.7	19.0	0.215	0.545	1700/815	2355/1405
									0.360	1535/1155	2065/1705
1 x 2500 RMS	0.0072	0.0106	0.135	0.150	11.35/6.50	359.8	29.1	0.240	0.540	1885/830	2675/1480
									0.355	1675/1150	2315/1780
1 x 3000 RMS	0.0062	0.0095	0.135	0.150	11.25/6.55	430.8	29.1	0.250	0.530	2045/845	2950/1530
									0.345	1790/1185	2525/1880

HIGH- VOLTAGE XLPE CABLES
220/ 380 ÷400(420) kV



ALUMINIUM CONDUCTOR
XRUHAKXS according to ZN- TF- 530:2009; IEC 62067
A2XS(FL)2Y according to IEC 62067

Cross section of conductor*	Diameter of conductor	Insulation		Screen		D_e Outer diameter of cable	Cable weight	Maximum pulling force	Minimal bending radius
		Nominal thickness	Diameter over insulation	Cross section	Diameter over screen				
mm²		mm		mm²		mm	kg/km	kN	m
1x630RM	29.3$^{+0.50}$	31.0	95.6	95	102.0	113.4	11190	18.9	2.80
1x800RM	33.0$^{+0.50}$	31.0	99.3	95	105.8	117.5	12150	24.0	2.90
1x1000RM	38.0$^{+0.50}$	30.0	101.3	95	107.8	119.5	12780	30.0	2.95
1x1200RMS	41.0$^{+0.60}$	29.0	103.8	95	110.2	122.2	13580	36.0	3.00
1x1200RMS	43.6$^{+0.80}$	29.0	105.4	95	112.0	124.0	13840	36.0	3.10
1x1400RMS	46.6$^{+1.00}$	27.0	104.4	95	110.8	122.8	13990	42.0	3.05
1x1600RMS	50.0$^{+1.00}$	27.0	108.0	95	114.5	126.8	15030	48.0	3.15
1x1800RMS	53.3$^{+1.00}$	27.0	111.3	95	117.8	130.3	16020	54.0	3.25
1x2000RMS	55.4$^{+1.00}$	26.0	111.4	95	117.9	130.4	16380	60.0	3.25
1x2500RMS	61.4$^{+1.00}$	26.0	120.0	150	126.8	140.0	19520	60.0	3.50
1x3000RMS	67.0$^{+1.00}$	26.0	125.6	150	132.4	146.0	21700	60.0	3.65

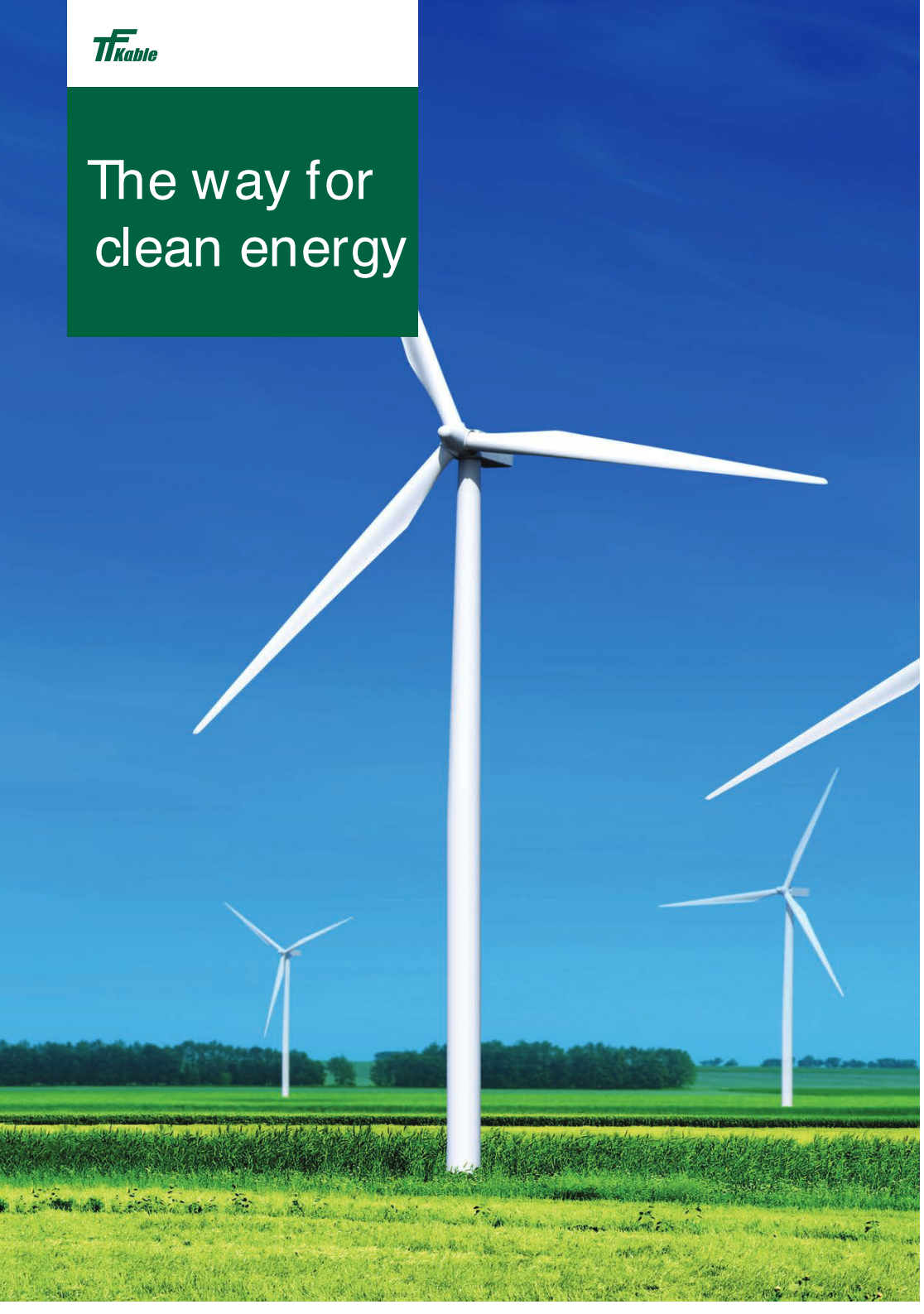
ELECTRICAL DATA

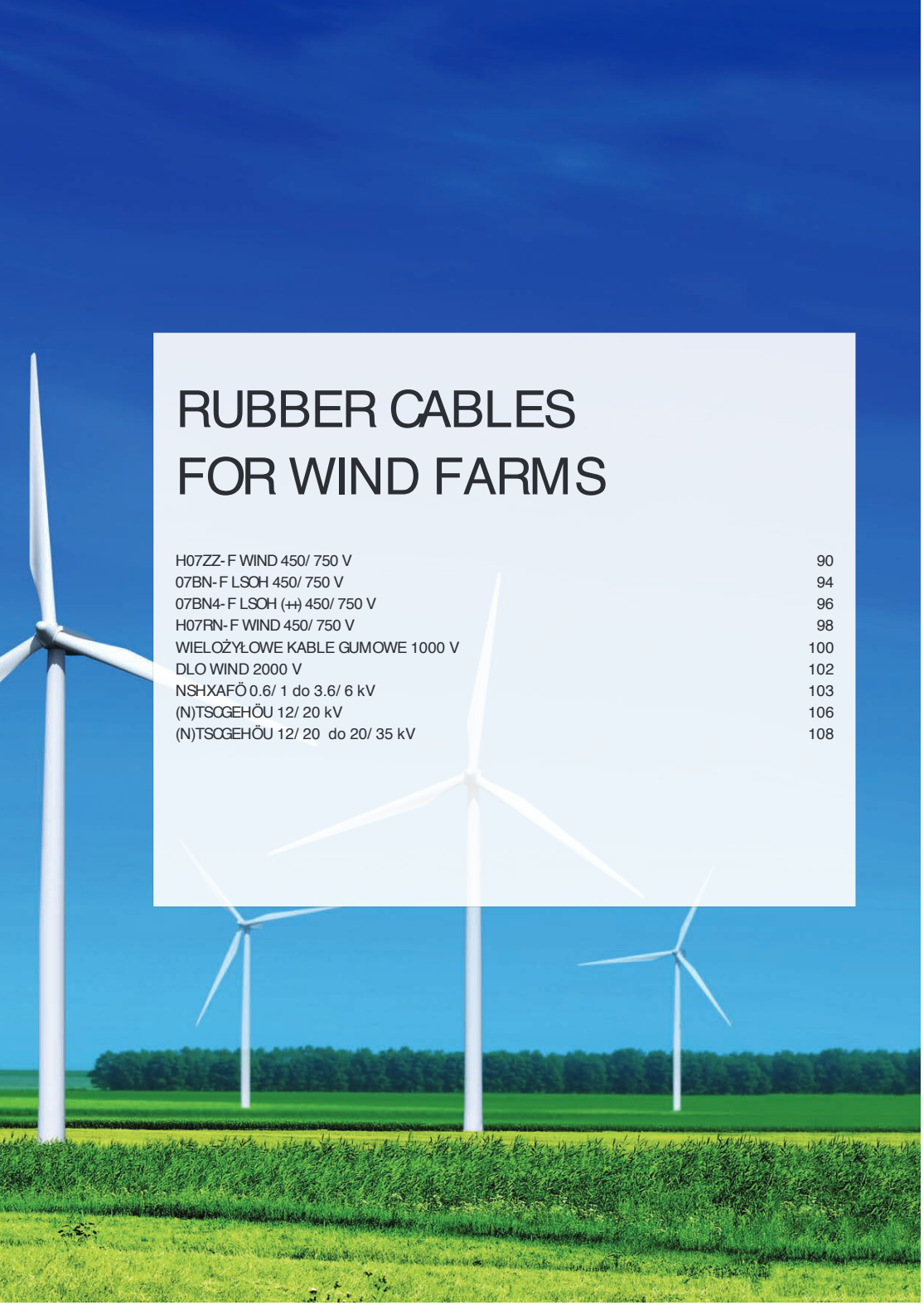
RM (RMC) - Round Multiwire Conductor (C - compacted), Class 2
RMS (Milliken type) – Round Multiwire Segmented Conductor
SPB - Single Point Bonded
CB - Cross Bonded
BE - Both Ends
D_e - Cable diameter
[1] - Cables in flat formation, the distance between cables 2 x D_e
[2] - Cables in trefoil formation, the distance between cables D_e

Cross section of conductor	Resistance of conductor		Resistance of screen		Electric field strength at the conductor screen / insulation	Short-circuit current-carrying capacity		Capacitance	Inductance	Current-carrying capacity	
						conductor	of return conductor screen			in ground	in air
	DC 20°C	AC 90°C	DC 20°C	DC 80°C					trefoil[1]	SPB, CB / BE	SPB, CB / BE
									flat[2]	SPB, CB / BE	SPB, CB / BE
mm^2	Ω/km				kV/mm	kA/1 sec.		µF/km	mH/km	A	
1 x 630 RM	0.0469	0.0619	0.200	0.247	12.55/4.40	60.2	19.0	0.130	0.645	730/580	915/800
									0.460	680/645	835/805
1 x 800 RM	0.0367	0.0492	0.200	0.247	12.10/4.55	76.4	19.0	0.135	0.630	835/625	1055/890
									0.445	780/720	965/915
1 x 1000 RM	0.0291	0.0398	0.200	0.247	11.90/4.85	95.3	19.0	0.150	0.605	945/665	1225/990
									0.420	875/790	1105/1035
1 x 1200 RM	0.0247	0.0344	0.200	0.247	11.75/5.20	114.3	19.0	0.165	0.585	1025/695	1355/1060
									0.400	945/840	1215/1130
1 x 1200 RMS	0.0247	0.0320	0.200	0.247	11.65/5.30	114.3	19.0	0.170	0.585	1070/705	1415/1085
									0.400	990/875	1275/1180
1 x 1400 RMS	0.0212	0.0276	0.200	0.247	12.00/5.80	133.3	19.0	0.185	0.575	1160/730	1565/1155
									0.390	1070/925	1405/1280
1 x 1600 RMS	0.0186	0.243	0.200	0.247	11.80/5.90	152.3	19.0	0.195	0.560	1250/750	1700/1210
									0.380	1150/975	1520/1365
1 x 1800 RMS	0.0165	0.0216	0.200	0.247	11.60/5.95	171.2	19.0	0.200	0.555	1335/770	1835/1265
									0.370	1220/1020	1630/1450
1 x 2000 RMS	0.0149	0.0196	0.200	0.247	11.80/6.30	190.2	19.0	0.215	0.545	1405/780	1955/1305
									0.365	1280/1050	1730/1520
1 x 2500 RMS	0.0120	0.0158	0.135	0.150	11.40/6.50	237.5	29.1	0.235	0.540	1530/790	2160/1365
									0.355	1385/1060	1900/1585
1 x 3000 RMS	0.0092	0.0100	0.135	0.150	11.20/6.55	284.9	29.1	0.250	0.530	1760/820	2520/1460
									0.345	1570/1135	2195/1755

TFKable

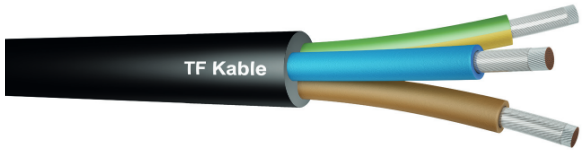
The way for clean energy





RUBBER CABLES FOR WIND FARMS

H07ZZ-F WIND 450/ 750 V



Flexible cables, cross-linked halogen-free compound insulated and sheathed, with low smoke and corrosive gases emission	
Standards: PN-EN 50525-3-21	
CONSTRUCTION	
Conductors	Annealed flexible stranded tin coated or bare copper class 5 to EN 60228
Separator	A suitable tape separator between the conductor and insulation
Insulation	Cross-linked halogen free thermosetting compound type E13 in acc. to EN 50363-15
Circuit identification Twin 3 core 4 core 5 core Above 5 core	Colour coding of power conductors comply to HD 308, DIN VDE 0293-308 Blue and brown Green-yellow, blue, brown Green-yellow, brown, black, grey Green-yellow, blue, brown black, grey Green-yellow, other cores black with white numbering
Outer jacket	Cross-linked halogen free thermosetting compound type EM9 in acc. to EN 50363-16
Colour of outer jacket	Black or colours can be provided
Flame propagation	IEC 60332-1-2:2004, EN 60332-1-2:2004
CHARACTERISTICS	
Low smoke, halogen free, flame retardant jacket	
Temperature range -25°C to +90°C. For fixed lowest temperature is -40°C	
UV, sunlight, ozone and oil resistant	
Ink jet printed for easy identification	
Application	For use in wind turbines. Also for indoor and temporary outdoors usage, particularly in the case of fire/burning when low emission of smoke and corrosive gases is required
Standard length cable packing	1000 m on drums. Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Maximum diameter of wires	Nominal thickness of insulation	Nominal thickness of sheath	Approximate overall diameter	Approximate net weight	Maximum conductor resistance at temperature 20°C
n x mm²	mm	mm	mm	mm	kg/km	Ω/km
1x1.5	0.26	0.8	1.4	5.9	49	13.7
1x2.5	0.26	0.9	1.4	6.6	65	8.21
1x4	0.31	1.0	1.5	7.5	88	5.09
1x6	0.31	1.0	1.6	8.2	114	3.39
1x10	0.41	1.2	1.8	10.1	178	1.95
1x16	0.41	1.2	1.9	11.4	247	1.24
1x25	0.41	1.4	2.0	13.2	353	0.795
1x35	0.41	1.4	2.2	14.4	462	0.565
1x50	0.41	1.6	2.4	17.1	648	0.393
1x70	0.51	1.6	2.6	19.3	870	0.277
1x95	0.51	1.8	2.8	22.2	1135	0.210
1x120	0.51	1.8	3.0	23.7	1426	0.164
1x150	0.51	2.0	3.2	26.3	1726	0.132
1x185	0.51	2.2	3.4	29.4	2098	0.108
1x240	0.51	2.4	3.5	31.5	2652	0.0817
1x300	0.51	2.6	3.6	35.7	3290	0.0654
1x400	0.51	2.8	3.8	38.4	4199	0.0495
1x500	0.61	3.0	4.0	43.8	5363	0.0391
1x630	0.61	3.0	4.1	48.4	6829	0.0391
2x1	0.21	0.8	1.3	8.2	89	20.0
2x1.5	0.26	0.8	1.5	9.2	114	13.7
2x2.5	0.26	0.9	1.7	11.0	166	8.21
2x4	0.31	1.0	1.8	12.5	226	5.09
2x6	0.31	1.0	2.0	14.1	297	3.39
2x10	0.41	1.2	3.1	19.1	535	1.95
2x16	0.41	1.2	3.3	21.8	732	1.24
2x25	0.41	1.4	3.6	25.6	1044	0.795
3x1	0.21	0.8	1.4	8.8	107	20.0
3x1.5	0.26	0.8	1.6	9.9	138	13.7
3x2.5	0.26	0.9	1.8	11.7	201	8.21
3x4	0.31	1.0	1.9	13.4	276	5.09
3x6	0.31	1.0	2.1	15.0	366	3.39
3x10	0.41	1.2	3.3	20.5	660	1.95
3x16	0.41	1.2	3.5	23.4	912	1.24
3x25	0.41	1.4	3.8	27.4	1308	0.795
3x35	0.41	1.4	4.1	29.5	1662	0.565
3x50	0.41	1.6	4.5	35.5	2363	0.393
3x70	0.51	1.6	4.8	40.0	3137	0.277
3x95	0.51	1.8	5.3	46.4	4144	0.210
3x120	0.51	1.8	5.6	49.3	5006	0.164
3x150	0.51	2.0	6.0	55.0	6214	0.132

Number and cross-sectional area of conductor	Maximum diameter of wires	Nominal thickness of insulation	Nominal thickness of sheath	Approximate overall diameter	Approximate net weight	Maximum conductor resistance at temperature 20°C
n x mm²	mm	mm	mm	mm	kg/km	Ω/km
3x185	0.51	2.2	6.4	61.4	7596	0.108
3x240	0.51	2.4	7.1	66.9	9617	0.0817
3x300	0.51	2.6	7.7	76.8	12159	0.0654
4x1	0.21	0.8	1.5	9.7	131	20.0
4x1.5	0.26	0.8	1.7	10.9	169	13.7
4x2.5	0.26	0.9	1.9	12.9	247	8.21
4x4	0.31	1.0	2.0	14.7	340	5.09
4x6	0.31	1.0	2.3	16.7	459	3.39
4x10	0.41	1.2	3.4	22.4	805	1.95
4x16	0.41	1.2	3.6	25.6	1132	1.24
4x25	0.41	1.4	4.1	30.4	1669	0.795
4x35	0.41	1.4	4.4	32.7	2113	0.565
4x50	0.41	1.6	4.8	39.3	3001	0.393
4x70	0.51	1.6	5.2	44.5	4011	0.277
4x95	0.51	1.8	5.9	51.9	5333	0.210
4x120	0.51	1.8	6.0	54.7	6402	0.164
4x150	0.51	2.0	6.5	61.2	7969	0.132
4x185	0.51	2.2	7.0	68.5	9756	0.108
4x240	0.51	2.4	7.7	74.4	12360	0.0817
5x1	0.21	0.8	1.6	10.7	162	20.0
5x1.5	0.26	0.8	1.8	12.0	209	13.7
5x2.5	0.26	0.9	2.0	14.2	304	8.21
5x4	0.31	1.0	2.2	16.4	427	5.09
5x6	0.31	1.0	2.5	19.1	645	3.39
5x10	0.41	1.2	3.6	24.6	994	1.95
5x16	0.41	1.2	3.9	28.3	1398	1.24
5x25	0.41	1.4	4.4	33.6	2045	0.795
5x35*	0.41	1.4	4.6	36.0	2589	0.565
5x50*	0.41	1.6	5.2	43.6	3717	0.393
6x1.5	0.26	0.8	2.5	14.3	286	13.7
6x2.5	0.26	0.9	2.7	16.7	407	8.21
6x4	0.31	1.0	2.9	19.2	561	5.09
12x1.5	0.26	0.8	2.9	18.7	480	13.7
12x2.5	0.26	0.9	3.1	21.9	688	8.21
12x4	0.31	1.0	3.5	25.5	977	5.09
18x1.5	0.26	0.8	3.2	21.9	681	13.7
18x2.5	0.26	0.9	3.5	25.9	1034	8.21
18x4	0.31	1.0	3.9	30.1	1407	5.09
24x1.5	0.26	0.8	3.5	25.6	884	13.7
24x2.5	0.26	0.9	3.9	30.5	1299	8.21
36x1.5	0.26	0.8	3.8	29.3	1233	13.7
36x2.5	0.26	0.9	4.3	35.1	1833	8.21

* Based on standard

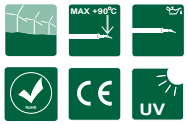
Current ratings for cables for ambient temperature 30°C				
Installations	In open air *	Multicore cable for the application for household equipment		Multicore cable (for application other than household equipment)[1][2]
Number of loaded cores	1	2	3	2 up to 3
mm²	A			
1	19	10	10	15
1.5	24	16	16	18
2.5	32	25	20	26
4	42	32	25	34
6	54	40	-	44
10	73	63	-	61
16	98	-	-	82
25	129	-	-	108
35	158	-	-	135
50	198	-	-	168
70	245	-	-	207
95	292	-	-	250
120	344	-	-	292
150	391	-	-	335
185	448	-	-	382
240	528	-	-	453
300	608	-	-	523
400	726	-	-	-
500	830	-	-	-

* Current rating acc. to HD 516 S2 and DIN VDE 0298-4. Ambient temperature: 30°C Permissible operating temperature at conductor: 70°C

[1] Conversion factors for ambient temperature over 30°C								
Ambient temperature, °C	30	35	40	45	50	55	60	65
Conversion factors	1.00	0.94	0.87	0.79	0.71	0.61	0.50	0.35

[2] Conversion factors for multicore cable (≥ 5 cores)	
Number of loaded cores	Conversion factors
5	0.75
7	0.65
10	0.55
14	0.50
19	0.45
24	0.40

07BN-F LSOH 450/ 750 V



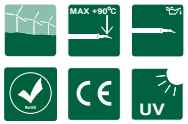
Halogen free flexible rubber insulated and sheathed cables	
Standards: based on EN 50525-2-21 and Siemens WP spec. PS557915	
CONSTRUCTION	
Conductors	Annealed flexible stranded bare copper class 5 to EN 60228
Separator	A suitable tape separator between the conductor and insulation
Insulation	Ethylene-propylene rubber (EPR) type E17 in acc. to EN 50363-1
Circuit identification	Colour coding of power conductors comply to HD 308, DIN VDE 0293-308
Outer jacket	Halogen free thermosetting compound type EM2 in acc. to EN 50363-2-1
Colour of outer jacket	Black
Flame retardant	EN 60332-1-2, IEC 60332-1-2:2004
Bending radius	Moving application: > 6 x diameter, Fixed application: > 4 x diameter
Permissible pulling force	> 15 N/mm²
Twist in temperature range	From (-20°C to 50°C, > 150°/m, > 2000 cycles
CHARACTERISTICS	
Torsion resistance and excellent flexibility	
Low smoke and low emission of corrosive gases, low emission of toxic	
Temperature range -35°C to +90°C	
UV, ozone and oil resistant	
Ink jet printed for easy identification	
Application	For installation in the tower and nacelle of a wind turbine in loop section. Cables may be rated 0.6/1 kV where the installation has been built in protection and for motors in lifting appliances – machine tools etc.
Standard length cable packing	1000 m on drums. Other forms of packing and delivery are available on request

Size	Number maximum diameter of wire	Nominal thickness of insulation	Nominal thickness of jacket	Approximate OD of cable	Approximate weight of cable	Maximum conductor resistance at 20°C
n x mm²	mm	mm	mm	mm	kg/km	Ω/km
3G1.5	28x0.26	0.8	1.6	9.5	137	13.3
3G2.5	45x0.26	0.9	1.8	11.3	202	7.98
3G6	76x0.31	1.0	2.1	15.0	390	3.30
4G1.5	28x0.26	0.8	1.7	10.4	167	13.3
4G2.5	45x0.26	0.9	1.9	12.5	247	7.98
4G4	51x0.31	1.0	2.0	14.3	340	4.95
4G6	76x0.31	1.0	2.3	16.3	463	3.30
4G10	74x0.41	1.2	1.4+2.2	22.1	831	1.91
4G16	116x0.41	1.2	3.6	25.3	11696	1.21
4G35	254x0.41	1.4	1.7+2.7	32.5	2190	0.554
5G1.5	28x0.26	0.8	1.8	11.5	206	13.3
5G2.5	45x0.26	0.9	2.0	13.7	304	7.98
5G6	76x0.31	1.0	2.5	18.1	579	3.30
5G10	74x0.41	1.2	1.4+2.2	24.3	1024	1.91
5G16	116x0.41	1.2	1.5+2.4	28.7	1440	1.21
7G1.5	28x0.26	0.8	2.6	16.1	338	13.3
7G2.5	45x0.26	0.9	3.8	18.7	481	7.98
12G1.5	28x0.26	0.8	2.9	18.2	484	13.3

Current Rating in free air at air temperature of 30°C and conductor temperature of 85°C						
Cross section	Single core	Two cores	Three cores	Four cores	Five cores	Seven cores
mm²	A					
1.5	24	23	23	21	21	15
2.5	32	32	32	29	29	23
4	42	42	42	38	38	28
6	55	55	55	50	50	55
10	77	77	77	67	67	74
16	101	101	101	91	91	-
25	133	133	133	121	121	-
35	165	-	165	149	-	-
50	202	-	202	183	-	-
70	250	-	260	231	-	-
95	300	-	310	280	-	-
120	360	-	370	324	-	-
150	412	-	430	372	-	-
185	465	-	490	423	-	-
240	550	-	580	501	-	-
300	630	-	680	-	-	-
500	831	-	-	-	-	-

Correction factor for ambient temperature										
Temperature of air °C	35	40	45	50	55	60	65	70	75	80
Correct factor	0.95	0.90	0.85	0.82	0.76	0.70	0.64	0.57	0.50	0.40

07BN4-F LSOH (++) 450/ 750 V



Halogen free flexible rubber insulated and sheathed cables	
Standards: based on EN 50525-2-21 and Siemens WP spec. PS557916	
CONSTRUCTION	
Conductors	Annealed flexible stranded bare copper class 5 to EN 60228
Separator	A suitable tape separator between the conductor and insulation
Insulation	Ethylene propylene rubber (EPR) type E17 in acc. to EN 50363-1
Circuit identification	Colour coding of power conductors comply to HD 308, DIN VDE 0293-308
Outer jacket	Halogen free thermosetting compound type EM2 in acc. to EN 50363-2-1
Colour of outer jacket	Black
Flame retardant	EN 60332-1-2, IEC 60332-1-2:2004
Bending radius	Moving application: > 6 x diameter, fixed application > 4 x diameter
Permissible pulling force	> 15 N/mm²
Twist in temperature range	From -20°C to 50°C, > 150°/m, > 2000 cycles
CHARACTERISTICS	
Torsion resistance, excellent flexibility	
Low smoke and low emission of corrosive gases, low emission of toxic	
Temperature range: -30°C do +50°C	
UV, ozone, extra oil resistant	
Ink jet printed for easy identification	
Application	For installation in the tower and nacelle of a wind turbine in loop section. Cables may be rated 0.6/1 kV where the installation has been built in protection and for motors in lifting appliances – machine tools etc.
Standard length cable packing	1000 m on drums. Other forms of packing and delivery are available on request

Size	Number maximum diameter of wire	Nominal thickness of insulation	Nominal thickness of jacket	Approximate OD of cable	Approximate weight of cable	Maximum conductor resistance at 20°C
n x mm²	mm	mm	mm	mm	kg/km	Ω/km
1x240	1752x0.51	2.4	3.5	31.2	2720	0.0801
1x300	2203x0.51	2.6	3.6	35.4	3385	0.0641
3 G50	364x0.41	1.6	4.5	35.2	2452	0.386
3 G70	514x0.51	1.6	4.8	39.7	3253	0.272
3 G95	684x0.51	1.8	5.3	46.1	4303	0.206

Current rating in free air at air temperature of 30°C and conductor temperature of 85°C						
Cross section	Single Core	Two cores	Three cores	Four cores	Five cores	Seven cores
mm²	A					
1.5	24	23	23	21	21	15
2.5	32	32	32	29	29	23
4	42	42	42	38	38	28
6	55	55	55	50	50	55
10	77	77	77	67	67	74
16	101	101	101	91	91	-
25	133	133	133	121	121	-
35	165	-	165	149	-	-
50	202	-	202	183	-	-
70	250	-	260	231	-	-
95	300	-	310	280	-	-
120	360	-	370	324	-	-
150	412	-	430	372	-	-
185	465	-	490	423	-	-
240	550	-	580	501	-	-
300	630	-	680	-	-	-
500	831	-	-	-	-	-

Correction factor for ambient temperature										
Temperature of air °C	35	40	45	50	55	60	65	70	75	80
Correct factor	0.95	0.90	0.85	0.82	0.76	0.70	0.64	0.57	0.50	0.40

H07RN-F WIND 450/ 750 V

Flexible rubber insulated and sheathed cables	
Standards: EN 50525-2-21, GE Specification 104W7006	
CONSTRUCTION	
Conductors	Annealed flexible stranded tinned copper exceed parameters of class 5 to EN 60228
Separator	A suitable tape separator between the conductor and insulation
Insulation	Ethylene Propylene rubber (EPR) exceed parameters of type E4 in accordance to EN 50363-1
Outer jacket	A synthetic thermosetting compound exceed parameters of type EM2 in accordance to EN 50363-2-1
Colour of outer jacket	Black
Flame propagation	EN 60332-1-2:2004, IEC 60332-1-2:2004
CHARACTERISTICS	
Torsion resistant in accordance GE specification	
Excellent flexibility	
Flame retardant	
Temperature range: -25°C to +60°C. For fixed protected installation: -40°C to +85°C	
UV, sunlight, ozone, oil, resistant	
Ink jet printed for easy identification	
Application	Specially designed for wind turbines. Cables may be rated 0.6/1 kV where the installation has been built in protection and for motors in lifting appliances – machine tools etc. Heavy Duty flexible cables for medium mechanical stress in dry and wet, suitable for large boiling installations, heating plates Inspection lamps, electrical tools such as drills circular saws Domestic electric tools, transportable motors etc.
Standard length cable packing	500 m on drums. Other forms of packing and delivery are available on request
Certificates	EAC IHAR

Size	Number x diameter of wire	Nominal thickness of insulation	Nominal thickness of jacket	Approximate OD. of cable	Approximate weight of cable	Maximum conductor resistance at 20°C
n x mm²	mm	mm	mm	mm	kg/km	Ω/km
1x120	870x0.4	1.8	3.0	23.7	1388	0.164
1x240	1752x0.4	2.4	3.5	31.5	2639	0.0817
1x300	2203x0.4	2.6	3.6	35.8	3273	0.0654

Current rating in free air at air temperature of 30°C and conductor temperature of 85°C						
Cross section	Single Core	Two cores	Three cores	Four cores	Five cores	Seven cores
mm²	A					
120	360	-	370	324	-	-
150	412	-	430	372	-	-
185	465	-	490	423	-	-
240	550	-	580	501	-	-
300	630	-	680	-	-	-

Correction factor for ambient temperature										
Temperature of air °C	35	40	45	50	55	60	65	70	75	80
Correct factor	0.95	0.90	0.85	0.82	0.76	0.70	0.64	0.57	0.50	0.40

Minimum bending radius	For cable diameter D (mm)			
	D≤ 8	8< D≤ 12	12< D≤ 20	D> 20
For fixed installation:	3D	3D	4D	4D
At inlet of portable appliance or mobile equipment. No mechanical load on cable:	4D	4D	5D	6D
Under mechanical load:	6D	6D	6D	8D

MULTI-CORE RUBBER CABLES 1000 V

Multi-cores flexible cables for wind tower application	
Standards: based on CSA C22.2 No. 210.2 and in line with GE specification 107W8653P	
CONSTRUCTION	
Nominal voltage	1000 V
Conductors	Annealed flexible stranded bare copper conductor ASTM B3
Separator	If needed tape separator between conductor and insulation
Insulation	Thermosetting rubber compound in accordance Tab. 13 CSA C22.2 No. 210.2 for 90°C
Core identification	The insulation shall be black with white print, and one ground wire in green/yellow. Insulation Print – The format shall be: "1 – ONE", "2 – TWO", "3 – THREE", up through the number of conductors
Jacket	Black CPE thermosetting compound in accordance Tab. 13 CSA C22.2 No. 210.2 for 90°C
Bending radius	For fixed minimum 4xDM minimum 6xD, D outer diameter of cable
CHARACTERISTICS	
Torsion resistant	
Abrasion resistant	
Rated 1kV	
Temperature range: -40°C to 90°C	
Ozone, sunlight, oil, grease, weather, chemical	
Application	Designed for wind turbines For uses requiring a flexible power cables For portable or fixed installations
Standard length cable packing	1000 ft on drums. Other forms of packing and delivery are available on request

Power conductor size	Power conductor stranding	Nominal insulation thickness	Nominal jacket thickness	Nominal overall diameter	Weight
AWG		mm	mm	mm	kg/km
5 7/16	26x0.54	1.14	0.76	11.9	190.0
7 7/16	26x0.54	1.14	1.27	15.5	287.0
12 7/16	26x0.54	1.14	1.27	18.7	445.0

TFkable

Innovative technologies

DLO WIND
RHH/ RHW2/ RW90 2000 V

Industrial Power Cable EP/ CPE	
Standards: UL 44, CSA C22.2 No. 38 CSA C22.2 No. 210.2, GE specification 104W7006, 03.12.2012, ASTM B-3-01	
CONSTRUCTION	
Nominal voltage	RHH/RHW-2 600 i 2000 V, RW90 CSA 1 kV, DLO 2 kV
Conductors	Annealed flexible stranded bare copper conductor ASTM B3, B174
Separator	If needed tape separator between conductor and insulation
Insulation	Ethylene propylene rubber (EPR), UL, CSA, ICEA, AAR RP-588, 90°C
Jacket	Black heavy duty CPE thermosetting compound, ICEA S-95-658 NEMA WC70, AAR 586
Bending radius	For fixed minimum 4xD, Minimum 6 x D, D=outer diameter of cable
Torsion resistant	92°/m, GE specification
CHARACTERISTICS	
UL listed RHH/RHW-2 600 V and 2000 V for black jacket	
Rated 2 kV DLO, 1 kV RW90	
90°C (dry), 90°C (wet)	
Ozone, sunlight, oil, grease, weather, chemical and abrasion resistant	
Rated RW90-TC (Tray Cable) for sizes 1/0 and larger	
MSHA, VW-1, SUN RES, FOR CT USE for sizes 1/0 AWG and larger and for black jacket	
Limited Smoke (LS) ST1 in accordance with (UL) 1685	
CSA listed RW90, RW90-TC (for black jacket) 1 kV	
Application	For wind turbines as power, control tray cables. Dedicated for the "loop section" into the wind tower. Designed for uses requiring a flexible power cables. Leads for motors generators, batteries, jumper cables. Deep well submersible pump cable
Standard length cable packing	1000 ft on drums. Other forms of packing and delivery are available on request
APPROVALS	
UL: E193954 (CPE JACKET) RHW-2 90OC WET AND DRY, VW-1 SUN RES, FOR 1/0 AND LARGER ST1, FT4 IEEE 1202, FOR CT USE C(UL) E193954 TYPE RW90 EP, 1KV FT1 CSA 1101269, LL 103932-205591, RW90 0C FT1, FT4, -40OC, FOR 1/0 AWG AND LARGER, OIL RES, TRAY CABLE, SUN RES MSHA P-7-268080-01	

Power conductor size	Power conductor stranding	Conductor diameter	Nominal insulation thickness	Nominal jacket thickness	Approximate overall diameter Tolerance ±5%	Weight		Ampacity at 30°C in air
AWG or MCM	N/AWG	Inches	Inches	Inches	Inches	Lbs/100 ft	kg/km	A
4/0	532/24	0.587	0.080	0.065	0.87	873	1299	405
262.6	646/24	0.638	0.095	0.065	0.98	1068	1589	471
313.1	775/24	0.705	0.095	0.065	1.05	1258	1872	511
373.1	925/24	0.776	0.095	0.065	1.12	1462	2176	590
444.4	1110/24	0.835	0.092	0.065	1.19	1678	2498	656
535.3	1332/24	0.929	0.110	0.065	1.30	2018	3046	731
646.4	1591/24	1.020	0.110	0.065	1.39	2346	3491	815
777.7	1924/24	1.122	0.110	0.065	1.49	2881	4287	905

NSHXAFÖ 0.6/ 1 do 3.6/ 6 kV

Single conductor halogen free flexible power cables	
Standards: DIN VDE 0250 p. 606	
CONSTRUCTION	
Conductors	Annealed flexible stranded tin coated or bare copper class 5 to IEC 60228, HD 383
Separator	A suitable tape between the conductor and insulation
Insulation	Ethylene Propylene rubber EPR type 3GI3 to DIN VDE 0207 p. 20
Outer jacket	Halogen free thermosetting compound type HM3 to DIN VDE 0207 p. 24
Colour of outer jacket	Black or colours can be provided
CHARACTERISTICS	
Excellent flexibility	
Water resistant and flame retardant	
Temperature range -25°C to +90°C. For fixed installation lowest temperature is -40°C	
UV, sunlight, ozone and oil resistant	
Ink jet printed for easy identification	
Application	Heavy Duty flexible single core power cables for mobile and fixed applications
Standard length cable packing	1000 m on drums. Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Nominal thickness of insulation	Nominal thickness of sheath	Approximate overall diameter	Approximate net weight of cables	Current-carrying capacity at 30°C in air
mm²	mm	mm	mm	kg/km	A
NSHXAFÖ 0.6/1 kV					
1x1.5	0.8	0.8	5.5	34	30
1x2.5	0.9	0.8	6.5	47	41
1x4	1.0	0.8	8.0	64	55
1x6	1.0	0.8	9.0	89	70
1x10	1.2	0.9	10.5	147	98
1x16	1.2	0.8	11.5	201	132
1x25	1.4	0.8	14.0	286	176
1x35	1.4	1.0	15.5	380	218
1x50	1.6	1.0	17.5	545	276
1x70	1.6	1.0	19.5	738	347
1x95	1.8	1.0	22.5	906	416
1x120	1.8	1.0	25.0	1194	488
1x150	2.0	1.0	27.5	1482	566
1x185	2.2	1.2	24.1	1821	644
1x240	2.4	1.2	33.5	2400	775
1x300	2.6	1.2	37.5	2950	898
1x500	3.0	1.4	38.6	4804	1250
NSHXAFÖ 1.8/3 kV					
1x1	1.3	0.8	5.4/6.7	41	-
1x1.5	1.3	0.8	5.7/7.0	47	30.26
1x2.5	1.3	0.8	6.2/7.5	60	18.13
1x4	1.3	0.8	6.7/9.0	77	11.24
1x6	1.3	0.8	7.2/9.5	98	7.49
1x10	1.5	0.8	8.6/11.0	149	4.31
1x16	1.5	0.8	10.7/13.0	222	2.74
1x25	1.8	1.0	12.9/15.0	333	1.76
1x35	1.8	1.0	13.6/16.5	425	1.26
1x50	1.8	1.0	15.6/18.0	576	0.88
1x70	1.8	1.0	17.4/20.5	770	0.63
1x95	2.2	1.0	20.3/24.0	1002	0.49
1x120	2.2	1.0	21.5/26.0	1255	0.39
1x150	2.2	1.2	23.4/28.0	1553	0.33
1x185	2.4	1.2	24.5/31.0	1853	0.28
1x240	2.6	1.2	28.9/34.5	2409	0.23
1x300	2.8	1.2	31.6/38.0	2985	0.21
1x400	3.1	1.4	34.4/40.0	3830	0.18
1x500	3.4	1.6	43.2/46.0	5007	0.16
NSHXAFÖ 3.6/6 kV					
1x1.5	2.6	0.8	8.3/10.5	88	13.7
1x2.5	2.6	0.8	8.8/11.5	103	8.21

Number and cross-sectional area of conductor	Nominal thickness of insulation	Nominal thickness of sheath	Approximate overall diameter	Approximate net weight of cables	Current-carrying capacity at 30°C in air
mm²	mm	mm	mm	kg/km	A
1x2.5	2.6	0.8	8.8/11.5	103	8.21
1x4	2.6	0.8	9.7/12	130	5.09
1x6	2.6	0.8	10.2/13	155	3.39
1x10	2.6	0.8	11.6/14.5	215	1.95
1x16	2.6	1.0	12.7/15.5	283	1.24
1x25	2.9	1.0	14.5/17.5	393	0.795
1x35	2.9	1.0	15.2/19	489	0.565
1x50	2.9	1.0	17.2/21	651	0.393
1x70	2.9	1.0	19.0/23	856	0.277
1x95	3.2	1.0	21.7/26.5	1109	0.210
1x120	3.2	1.0	23.2/28.5	1389	0.164
1x150	3.2	1.2	25.0/30.5	1652	0.132
1x185	3.2	1.2	27.3/33	1965	0.108
1x240	3.2	1.2	29.6/34	2526	0.0817

(N)TSCGEHXÖU 12/ 20 kV

Medium voltage cable for wind turbines	
Standards: based on DIN VDE 0250 p. 813	
CONSTRUCTION	
Conductors	Annealed flexible stranded bare copper class 5 to IEC 60228, HD 383
Separator	If needed a suitable semi-conductive tape between the conductor and insulation
Conductor screen	Semi-conductive layer
Insulation	Ethylene-propylene rubber (EPR) type 3GI3 to DIN VDE 0207 part 20
Insulation screen	Semi-conductive layer + tape + the wrap of tinned copper wires
Assembly	Three power cores laid up and wrapped rubberized cotton tape
Internal layer of sheath	A synthetic thermosetting compound type GM1b to DIN VDE 0207 part 21
Outer layer of sheath	Halogen free, flame retardant synthetic thermosetting compound
Colour of outer sheath	Black
CHARACTERISTICS	
Excellent tear, impact and abrasion resistance	
Flame retardant	
Temperature range: -30°C to +80°C	
UV, sunlight, ozone and oil resistant	
Embossing marking for easy identification	
Application	For use at medium mechanical stress in wind turbines
Standard length cable packing	500 m on drums. Other forms of packing and delivery are available on request

Number of cores cross-section	Conductor diameter	Thickness of sheath	Approximate OD	Approximate weight	Conductor resistance at 20°C	Current-currying capacity at 30°C
mm²	mm	mm	mm	kg/km	Ω/km	A
(N)TSCGEHXÖU 12/20 kV						
3x25+3x25/3E	6.30	1.8+3.0	50.3	3524	0.780	146
3x50+3x35/3E	9.00	2.0+3.5	58.9	5064	0.382	227
3x70+3x50/3E	10.80	2.0+3.5	63.4	6284	0.272	277

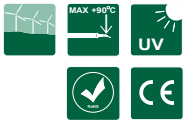
ELECTRICAL PARAMETERS							
Current–currying capacity: according to DIN VDE 0298 part 4 Conversion factor for current rating ambient temperatures deviating from 30°C							
Ambient temperature °C	20	25	30	35	40	45	50
Conversion factor	1.09	1.05	1.0	0.92	0.88	0.83	0.78
Partial discharge: max. 20 pC							

THERMAL PARAMETERS	
Ambient temperature	for fixed installation: +80°C/-30°C for mobile application: +80°C/-30°C
Maximum permissible operating temp. of conductor	90°C
Short-circuit temperature of conductor	250°C
BEHAVIOUR ON FIRE	EN 60 332-1-2

MECHANICAL PARAMETERS	
Smallest admissible bending radius	according to DIN VDE 0298 Part 3
Torsion stress	± 100°/m
Tensile load	up to 20 N/mm²

CHEMICAL PARAMETERS	
Resistance to oil	DIN VDE 811-2-1 p. 10
Weather resistance	resistant to ozone, UV and moisture

(N)TSCGEHXÖU 12/ 20 to 20/ 35 kV



Medium voltage cable for wind turbines	
Standards: DIN VDE 0250 p. 813+ T0502-N0651-DASH-304-W2E-001-7-DE Edition 7, T0502-T0411-001-DASH-304-W2E-001-9-DE Edition 9	
CONSTRUCTION	
Conductors	Flexible stranded tinned copper conductor class 5 to IEC 60228, DIN VDE 0295
Separator	If needed a suitable semi-conductive tape between the conductor and insulation
Conductor screen	Semi-conductive layer
Insulation	Ethylene-propylene rubber-HEPR-type 3GI3 to DIN VDE 0207 part 20
Insulation screen	Semi-conductive layer
Assembly	Three insulated and covered semi-conducting layer laid up together with earth core covered semi-conductive thermosetting compound
Internal layer of sheath	A synthetic halogen free compound type GM1b to DIN VDE 0207 part 21
Outer layer of sheath	Halogen free, flame retardant synthetic thermosetting compound
Colour of outer sheath	Black
Torsion resistance	+/- 150°/m
AC-voltage test	50 kV, 5 min for 20/35 kV, 29 kV, 5 min for nominal voltage 12/20 kV
CHARACTERISTICS	
Designed for wind application as halogen free flame retardant torsion resistance cable	
Temperature range: -40°C to +90°C	
Ozone and oil resistant jacket	
Marking for easy identification	
Application	For use at medium mechanical stress in wind turbines
Standard length cable packing	500 m on drums. Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Nominal conductor diameter	Nominal semi-con layer thickness	Nominal insulation thickness	Nominal semi-con layer thickness	Nominal inner layer jacket thickness	Nominal outer layer jacket thickness	Nominal/ max. overall diameter	Current carrying capacity at 30°C	Approximate net weight of cable
mm²	mm	mm	mm	mm	mm	mm	mm	A	kg/km
(N)TSCGEHAKÖU 20/35 kV 3x25+25 mm²									
3x25+25	6.3	0.7	7.0	0.8	2.4	3.4	68.0/75.0	139	5639
(N)TSCGEHAKÖU 12/20 kV 3x35+35 mm²									
3x35+35	7.0	0.7	4.2	0.8	2.0	3.0	55.3/60	172	3930

ELECTRICAL PARAMETERS							
Current–carrying capacity: according to DIN VDE 0298 part 4 Conversion factor for current rating ambient temperatures deviating from 30°C							
Ambient temperature °C	20	25	30	35	40	45	50
Conversion factor	1.09	1.05	1.0	0.92	0.88	0.83	0.78
Partial discharge: max. 20 pC							

THERMAL PARAMETERS	
Ambient temperature	for fixed installation: +80°C/-30°C for mobile application: +80°C/-30°C
Maximum permissible operating temp. of conductor	90°C
Short-circuit temperature of conductor	250°C
BEHAVIOUR ON FIRE	EN 60 332-1-2

MECHANICAL PARAMETERS	
Smallest admissible bending radius	according to DIN VDE 0298 Part 3
Tensile load	up to 15 N/mm²

CHEMICAL PARAMETERS	
Resistance to oil	DIN VDE 811-2-1 p. 10
Weather resistance	resistant to ozone, UV and moisture

TFKable

We deliver reliability

OPTO- TELECOMMUNICATION CABLES FOR WIND FARMS

A- DQ(ZN)B2Y

Fibre optic cable

Standards: VDE- 0888- 3

CONSTRUCTION

ELEMENT	TYPE	MATERIAL	DIMENSIONS		
Optical fibres	ITU-T G.652.D or according to the attached specifications				
Identification of fibres	IEC 60304 compliant: red, green, blue, white, violet, orange, grey, yellow, brown, pink, black, turquoise				
Central strength member	Straight rod	FRP	Φ 1.8 or 2.5 mm		
Oversheath on the central strength member	―	HDPE, black	o.d. of the central strength member		
			No. of the elements in a cable	Φ of the strength member	
				1.8 mm	2.5 mm
			8	3.0 mm	4.1 mm
			12	5.3 mm	7.1 mm
			24	3.5 mm	4.9 mm
Secondary coating	Loose tube contains 2, 4, 6 or 12 optical fibres	PBT	Φ approx. 1.8 mm or approx. 2.4 mm		
Filling of the secondary coating	Gel	Thixotripic gel	―		
Identification of tubes or fillers	1st tube: second tube the other tubes fillers (when needed)	optical fibre type B9/125 G50/125 G62.5/125	red green yellow green blue black		
Interstitial water blocking	Dry sealing	Swelling tape	Thickness: approx. 0.20 mm		
Reinforcement	Dielectric	Glass yarn	―		
Outer sheath	―	HDPE, black	Thickness: min. spot: 1.6 mm average: 2.0 mm		
Attenuation @ 1310 nm	≤ 0.4 dB/km*				
Attenuation @ 1550 nm	≤ 0.25 dB/km*				
Marking	FIBRE OPTIC CABLE A-DQ(ZN)B2Y number and type of fibres TF-Kable 1 year of production length marking different type of marking also possible				
Production length	To be agreed; standard 4200 +/- 100 m				

* Max. attenuation for SM-fin cable, other parameters of the fibre according to the attached specifications

CHARACTERISTICS

Fully dielectric	
Resistant to electromagnetic interferences	
Resistant to longitudinal water penetration	
Anti-rodent	
Can be installed in the proximity of the H-V installations	
Application	Cables are designated for transmission of digital and analogue signals within the whole optical bandwidth. They can be installed in primary or secondary conduits

PARAMETERS								
No. of fibres in a cable	Tube diameter	No. of elements in a cable (tubs or tubs and fillers)	Cable dimensions		Mechanical parameters			
			Outer diameter	Weight	Max tensile load		Min. bending radius	
					Dynamic (during installation)	Static (during installation)	Dynamic (during installation)	Static (during installation)
	mm		mm	kg/km	N		mm	
4-72	1.8	6	10.5	95	2700	1350	160	210
74-96	1.8	8	11.6	115	2700	1350	175	230
98-144	1.8	12	14.0	165	2700	1350	210	280
146-216	1.8	18	14.2	180	2700	1350	215	290
218-288	1.8	24	15.9	220	2700	1350	240	320
4-72	2.4	6	12.8	130	4000	2000	190	260
74-96	2.4	8	14.4	165	4000	2000	215	290
98-144	2.4	12	17.4	230	4000	2000	260	350
52-216	2.4	18	18.0	250	4000	2000	270	360
76-288	2.4	24	20.0	310	4000	2000	300	400

ADDITIONAL MECHANICAL PROPERTIES (only for cables with tubes of 2.4 mm in diameter)			
Test	Standard	Value	Criteria
Crush	IEC 60794-1-2-E3	2000 N, t = 15 min	Δα ≤ 0,05 dB @ 1550 N no damages
Impact	IEC 60794-1-2-E4	5 Nm, 3 impacts	Δα ≤ 0,05 dB @ 1550 N
Repeated bending	IEC 60794-1-2-E6	R = 20xD, F = 100 N 100 cycles, 90°, 15 cycles/min	Δα ≤ 0,1 dB @ 1550 N no damages
Torsion	IEC 60794-1-2-E7	100 N, 5 cycles, 180°	Δα ≤ 0,05 dB @ 1550 N no damages

ENVIRONMENTAL PROPERTIES		
Water penetration	IEC 60794-1-2-F5B	Sample 1 m, water head 1 m, t = 24 h
Temperature range	-	Transport/storage: -40/+70°C Installation: -15/+60°C Operation: -40/+70°C

A- DQ(ZN)B2Y TC

Fibre optic cable

Standards: VDE- 0888- 3; IEC 60794- 1

CONSTRUCTION

ELEMENT	TYPE	MATERIAL	DIMENSIONS
Fibres	ITU-T G.652.D or according to the attached specifications		
Identification of fibres	IEC 60304-compliant: red, green, blue, yellow, white, grey, brown, violet, turquoise, black, orange, pink Additional marking stripes above 12 fibres		
Secondary coating	Central tube, 2, 4, 6, 12 or 24 fibres	PBT	Φ approx. 4.2 mm
Colour of the secondary coating		E9/125 fibres – yellow G50/125 fibres – green G62.5/125 fibres – blue	
Filling of the secondary coating	Gel	Thixotropic gel	-
Interstitial water blocking	Dry sealing	Swelling tape or yarns	Thickness: approx. 0.20 mm
Supporting elements- reinforcement	Dielectric	Glass yarns	-
Outer sheath	-	HDPE, black	Thickness: min. spot: 1.6 mm average: 2.0 mm
Ripcord(s)	Under the outer sheath		
Attenuation @1310 nm	≤ 0.4 dB/km*		
Attenuation @1550 nm	≤ 0.25 dB/km*		
Marking	FIBRE OPTIC CABLE A-DQ(ZN)B2Y number and type of fibres TF Kable 1 year of production length marking Different type of marking is also possible		
Standard delivery lengths	To be agreed, standard – 2000 +/- 100 m		

* Max. attenuation for SM-Fin cable. Other parameters of the fibres according to the attached specifications

CHARACTERISTICS

- Fully dielectric
- Resistant to electromagnetic interferences
- Resistant to longitudinal water penetration
- Can be installed in the proximity to electric installation
- Easy to install
- The outer sheath is made of high-density polyethylene. The marking and the metric overprint are printed on the outer sheath. Cable marking can be tailored to customer requirements

Application	Cables are designated for transmission of digital and analogue signals within the whole optical bandwidth. They are prepared for making fast connection between optoelectronics devices, installation in cable ducts, use in places with high risk of rodents attack

PARAMETERS							
No. of fibres in a cable	Outer diameter of tube	Cable dimensions		Mechanical properties			
				Max tensile load		Min. bending radius	
		Outer diameter	Cable weight	Dynamic (during installation)	Static (during installation)	Dynamic (during installation)	Static (during installation)
	mm	mm	kg/km	N		mm	
2-24	4.2	10.0	100	2500	1250	150	200

ADDITIONAL MECHANICAL PROPERTIES			
Test	Standard	Value	Criteria
Crush	IEC 60794-1-2-E3	1500 N, t = 15 min	Δα ≤ 0,05 dB @ 1550 N no damage
Impact	IEC 60794-1-2-E4	5 Nm, 3 impacts	Δα ≤ 0,05 dB @ 1550 N
Repeated bending	IEC 60794-1-2-E6	R = 20xD, F = 100 N 100 cycles, 90°, 15 cycles/min	Δα ≤ 0,1 dB @ 1550 N no damage
Torsion	IEC 60794-1-2-E7	100 N, 5 cycles, 180°	Δα ≤ 0,05 dB @ 1550 N no damage

ENVIRONMENTAL SPECIFICATIONS		
Water penetration	IEC 60794-1-2-F5B	Sample 1 m, water head 1 m, 24 hours
Temperature range	-	Transport/storage: -25/+70°C Installation: -15/+55°C Operation: -25/+60°C

Z-(VX)OTKtsdD, Z-(XV)OTKtsdD

Fibre optic cable

CONSTRUCTION

ELEMENT	TYPE	MATERIAL	DIMENSIONS		
Optical fibres	ITU-T G.652.D or according to the attached specifications				
Identification of fibres	IEC 60304 compliant: red, green, blue, white, violet, orange, grey, yellow, brown, pink, black, turquoise				
Central strength member	Rod	FRP	Φ 1.8 or 2.5 mm		
Oversheath on the central strength member	–	HDPE, black	od. of the central strength member		
			No. of the elements in a cable	Φ of the strength member	
				1.8 mm	2.5 mm
			8	3.0 mm	4.1 mm
			12	5.3 mm	7.1 mm
			24	3.5 mm	4.9 mm
Secondary coating	Loose tube contains 2, 4, 6 or 12 optical fibres	PBT	Φ 1.8 or approx. 2.4 mm		
Filling of the secondary coating	GEL	Thixotropic gel	–		
Identification of tubes or fillers	1st tube: red second tube blue the other tubes natural fillers (when needed) black The colour sequence repeats in every layer				
Interstitial waterblocking	Dry sealing	Swelling tape	Thickness approx. 0.20 mm		
Reinforcement	Dielectric	Aramid	–		
Outer sheath – 1st layer (inner)	–	HDPE, black	Thickness: spot: 1.0 mm average: 1.2 mm		
Outer sheath – 2nd layer	–	Polyamide, orange	Thickness: spot: 0.7 mm average: 0.8 mm		
	In case of Z(DX)(XV)OTKtsdD cable the 1st and 2nd layer of the outer sheath are swapped, i.e. the HDPE is the outermost layer				
Attenuation @ 1310 nm	≤ 0.4 dB/km*				
Attenuation @ 1550 nm	≤ 0.25 dB/km*				
Marking	FIBRE OPTICAL CABLE Z-(VX)OTKtsdD number and type of fibres TF-Kable 1 year of production length marking Different type of marking is also possible				
Production length	To be agreed, standard – 4200 +/- 100 m				

* Max. attenuation for SMF in cable, other parameters of the fibre according to the attached specifications

CHARACTERISTICS	
Fully dielectric	
Resistant to electromagnetic interferences	
Resistant to longitudinal water penetration	
Flame retardant, low smoke emission, zero halogen	
Anti-rodent	
Can be installed in the proximity of the electric installation	
A cable with the outermost layer of HDPE is UV resistant	
Application	Cables are designated for transmission of digital and analogue signals within the whole optical bandwidth. They can be applied to optoelectronic devices interconnections, installed in cable ducts and in the places of the high risk of rodent damage. The cables can be also hang on poles of telephone lines, MV and LV power lines, and they can be installed in the proximity of the HV lines

PARAMETERS

No. of fibres in a cable	Tube diameter	No. of elements in a cable (tubs or tubs and fillers)	Cable dimensions		Mechanical parameters			
					Max tensile load		Min. bending radius	
			Outer diameter	Weight	Dynamic (during installation)	Static (during installation)	Dynamic (during installation)	Static (during installation)
	mm		mm	kg/km	N		mm	
4-72	1.8	6	10.2	85	2700	1350	150	200
28-96	1.8	8	11.4	105	3000	1500	170	230
36-144	1.8	12	13.7	150	4000	2000	210	270
52-216	1.8	18	14.1	150	4000	2000	210	280
76-288	1.8	24	15.8	185	4000	2000	240	320
4-72	2.4	6	12.2	115	4000	2000	180	240
28-96	2.4	8	13.8	145	5000	2500	210	280
36-144	2.4	12	16.8	215	6000	3000	250	340
52-216	2.4	18	17.3	225	6000	3000	260	340
76-288	2.4	24	19.5	290	6000	3000	290	390

ENVIRONMENTAL PROPERTIES

Water penetration	IEC 60794-1-2-F5B	Sample 1 m, water head 1 m, t=24 h
Temperature range	-	Transport/storage: -40/+70°C Installation: -15/+60°C Operation: -40/+70°C

ZKS-XXOTKtsFf

Fibre optic cable

CONSTRUCTION

ELEMENT	TYPE	MATERIAL	DIMENSIONS
Optical fibres	ITU-T G.652.D or according to the attached specifications		
Identification of fibres	IEC 60304 compliant: red, green, blue, white, violet, orange, grey, yellow, brown, pink, black, turquoise		
Central strength member	Rod	FRP	Φ1.8 or 2.5 mm
Oversheath on the central strength member	◻	HDPE	O.D. of the central strength member No. of the elements in a cable: Φ of the strength member 1.8 mm / 2.5 mm 8: 3.0 mm / 4.1 mm 12: 5.3 mm / 7.1 mm 24: 3.5 mm / 4.9 mm
Secondary coating	Loose tube contains 2, 4, 6 or 12 optical fibres	PBT	Φ1.8 or approx. 2.4 mm
Filling of the secondary coating	GEL	Thixotropic gel	◻
Identification of tubes or fillers	First tube: red Second tube: blue The other tubes: natural Fillers (When needed): black The colour sequence repeats in every layer		
Interstitial waterblocking	Dry sealing	Swelling tape	Thickness: approx. 0.20 mm
Inner sheath	◻	HDPE	Thickness: minimal: 0.45 mm average: 0.55 mm
Armouring	Steel	Steel tape covered with a copolymer	Thickness: 0.25 mm
Outer sheath	◻	HDPE, black	Thickness: min.spot: 1.55 mm average: 1.70 mm
Attenuation @ 1310 nm	≤ 0.4 dB/km*		
Attenuation @ 1550 nm	≤ 0.25 dB/km*		
Marking	FIBRE OPTICAL CABLE ZKS-XXOTKtsFf number and type of fibres TF-Kable 1 year of production ☎ length marking Different type of marking is also possible		
Production length	To be agreed; standard – 2100 +/- 100 m		

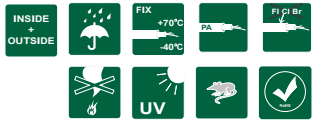
* Max. attenuation for SM-Fin cable. Other parameters of the fibre according to the attached specifications

CHARACTERISTICS	
Fully dielectric	
Resistant to electromagnetic interferences	
Resistant to abrasion, UV and fatigue corrosion	
Resistant to longitudinal water penetration	
Due to corrugated steel tape a cable is flexible yet resistant to transverse stress and rodent attacks	
Application	Cables are designated for transmission of digital and analogue signals within the whole optical bandwidth. They can be installed in primary or secondary conduits or directly in ground in mines or places of high risk of mechanical damage

PARAMETERS

No. of fibres in a cable	Tube diameter	No. of element s in a cable (tubs or tubs and fillers)	Cable dimensions		Mechanical parameters			
			Outer diameter	Weight	Max tensile load		Min. bending radius	
					Dynamic (during installation)	Static (during installation)	Dynamic (during installation)	Static (during installation)
	mm		mm	kg/km	N		mm	
4-72	1.8	6	12.3	140	1000	500	180	250
28-96	1.8	8	13.5	180	1500	750	200	270
36-144	1.8	12	15.8	240	2200	1100	240	320
52-216	1.8	18	16.2	255	1000	500	240	320
76-288	1.8	24	17.9	300	2500	1250	270	360
4-72	2.4	6	14.2	185	2700	1350	210	280
28-96	2.4	8	15.8	230	2700	1350	240	320
36-144	2.4	12	18.8	305	2700	1350	280	380
52-216	2.4	18	19.3	315	2700	1350	290	390
76-288	2.4	24	21.5	365	2700	1350	320	430

ZW-(NV)OTKtsdD



Fibre optic cable

CONSTRUCTION			
ELEMENTS	TYPE	MATERIAL	DIMENSIONS
Optical fibres	ITU-T G.652.D or according to the attached specifications		
Identification of fibres	IEC 60304 compliant: red, green, blue, white, violet, orange, grey, yellow, brown, pink, black, turquoise		
Central strength member	Straight rod	FRP	Φ2.5 mm
Oversheath on the central strength member	-	HDPE, Black	8 elements Φ4.1 mm 12 elements Φ7.1 mm 24 elements Φ4.9 mm
Secondary coating	Loose tube contains 2, 4, 6 or 12 optical fibres	PBT	Φ approx. 2.4 mm
Identification of tubes or fillers	First tube: red Second tube: blue The other tubes: natural Fillers: When needed: black		
Filling of the secondary coating	GEL	Thixotripic gel	-
Interstitial water blocking	Dry sealing	Swelling tape	Thickness: approx. 0.20 mm
Reinforcement	Dielectric	Aramid yarn	-
Outer sheath – 1st layer	-	Polyamide 12	Thickness: spot: 0.7 mm average: 0.8 mm
Outer sheath – 2nd layer	-	LSOH, black	Thickness: spot: 1.1 mm average: 1.2 mm
Attenuation @ 1310 nm	≤ 0.4 dB/km*		
Atenuation @ 1550 nm	≤ 0.25 dB/km*		
Marking	FIBRE OPTICAL CABLE ZW-(NV)OTKtsdD number and type of fibres TF Kable 1 year of production length marking Different type of marking also possible		
Production length	To be agreed, standard – 4200 +/- 100 m		
* Max attenuation for SM fin cable. Other parameters of the fibre according to the attached specifications			

CHARACTERISTICS	
Fully dielectric	
Resistant to electromagnetic interferences	
Resistant to longitudinal water penetration	
Flame retardant. Low smoke emission. Halogen free	
Anti-rodent	
Can be installed in the proximity of the electric installation	
Application	Cables are designated for transmission of digital and analogue signals within the whole optical bandwidth. They can be installed in residential buildings, trenches, tunnels, on walls or by means of hanging.

PARAMETERS								
No. of fibres in a cable	Tube diameter	No. of elements in a cable (tubs or tubs and fillers)	Cable dimensions		Mechanical parameters			
			Outer diameter	Weight	Max tensile load		Min. bending radius	
					Dynamic (during installation)	Static (during installation)	Dynamic (during installation)	Static (during installation)
	mm		mm	kg/km	N		mm	
4-72	2.4	6	12.2	140	4000	2000	180	240
28-96	2.4	8	13.8	175	5000	2500	210	280
36-144	2.4	12	16.8	250	6000	3000	250	340
52-216	2.4	18 (6+12)	17.3	260	6000	3000	260	340
76-288	2.4	24 (9+15)	19.5	325	6000	3000	290	390

ENVIRONMENTAL PROPERTIES		
Water penetration	IEC60794-1-2-F5B	Sample 1 m, water head 1 m, t=24 h
Temperature range	-	Transport/storage: -40/+70°C Installation: -15/+60°C Operation: -40/+70°C

Sample data of wooden cable drums

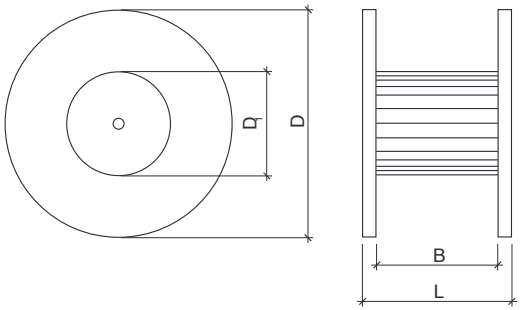
Approximate capacity wooden cable drums - amount of cable (in running metres) on sample cable drums.

Cable diameter [mm]	Type of sample cable drum						
	28	30	32	34	37	40	43
57	1000	1420	2800	2220	2830	4080	4930
58	1000	1420	2320	2150	2820	3970	4800
59	1020	1380	2270	2150	2820	3590	4800
60	1020	1380	2270	2150	2750	3490	4700
61	970	1330	2210	2090	2750	3490	4300
62	970	1330	2210	1820	2330	3490	4080
63	970	1330	2150	1760	2330	3490	4080
64	970	1290	1900	1760	2270	2950	4080
65	780	1080	1840	1700	2270	2950	4080
66	780	1080	1840	1700	2200	2870	3590
67	780	1080	1840	1700	2200	2870	3590
68	740	1080	1760	1650	2140	2760	3500
69	740	1000	1760	1410	1830	2760	3500
70	740	1000	1760	1410	1830	2760	3500
71	740	1000	1320	1360	1760	2390	3060
72	710	960	1320	1360	1760	2390	3060
73	710	960	1320	1360	1720	2320	2960
74	710	960	1470	1310	1720	2320	2960
75	710	960	1470	1310	1720	2320	2960
76	540	740	1470	1310	1660	2250	2880
77	540	740	1420	1260	1660	2250	2880
78	540	740	1220	1260	1660	1960	2570
79	540	740	1220	1050	1340	1880	2480
80	540	710	1220	1050	1340	1880	2480
81	520	710	1080	1010	1340	1880	2480
82	520	710	1080	1010	1290	1820	2390
83	520	710	1080	1010	1290	1820	2390
84	520	680	1080	1010	1290	1820	2390
85	520	680	1030	970	1290	1820	2390
86	490	680	1030	970	1250	1760	2030
87	490	680	1030	970	1250	1760	2030
88	490	650	960	970	1250	1500	2030
89	490	650	920	920	1250	1500	2030
90	490	650		920	1200	1440	1960
91	380	500		920	1200	1440	1960
92	350	500		750	970	1440	1960
93	350	470		750	970	1440	1960
94	350	470		710	930	1380	1890

Cable diameter [mm]	Type of sample cable drum						
	28	30	32	34	37	40	43
95		470		710	930	1380	1880
96		470		710	930	1380	1880
97		470		710	930	1380	1880
98		470		710	930	1380	1880
99		450		670	890	1330	1570
100		450		670	890	1330	1570
101		450		670	890	1310	1570
102		450		670	890	1310	1570
103		450		670	890	1310	1570
104		450		670	860	1060	1500
105		450		670	860	1060	1500
106				640	860	1060	1500
107				640	860	1060	1280
108				640	860	1060	1280
109				640	810	1010	1220
110				640	810	1010	1220
111				480	630	1010	1220
112				480	630	1010	1220
113				460	630	1010	1220
114				460	630	1010	1220
115				460	630	1010	1220
116					590	960	1060
117					590	770	1060
118					590	770	1060
119					560	770	1060
120					590	770	1060
121					590	780	1060
122					590	780	970
123					560	730	910
124					560	730	910
125					560	730	910
126					560	730	910
127					560	730	910
128					560	730	910
129					560	730	910
130					560	730	910
131					530	690	860

Sample data of wooden cable drums

Sample data regarding wooden cable drums								
Type		28	30	32	34	37	40	43
ØD	mm	2800	300	3200	3400	3700	4000	4300
ØDI	mm	1800	2000	1700	2200	2500	2500	2500
B	mm	1400	1700	1800	1800	2100	2100	2100
L	mm	1675	1990	2095	2200	2500	2500	2500
Weight	kg	1370	1798	1814	2500	4250	4690	5170



Note: Figures used are indicative and may vary due to manufacturing tolerances, so should only be used as guidance.

DESCRIPTION OF PICTOGRAMS USED IN CATALOGUE

Minimum and maximum exploitation temperature


Cable conforms with the essential requirements of the applicable EC directives

Minimum installation temperature


Non-flammable sheath


Anti-rodent protection


Oil resistant

Maximum conductor operating temperature

Halogen-free sheath

Cable with polyamid sheath


Cable complies with requirements of RoHS directive

Minimum and maximum installation temperature


Underground cable

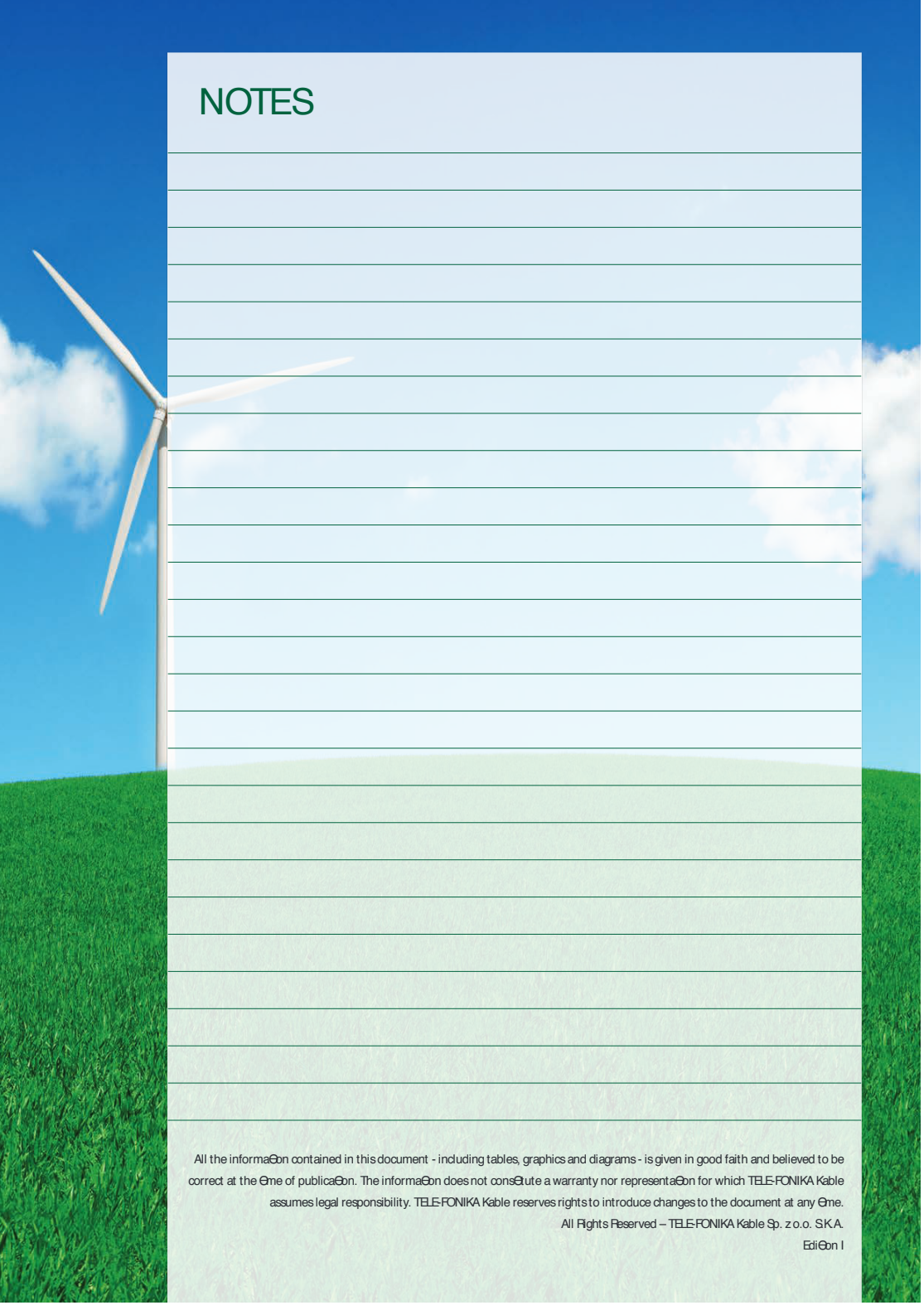
UV resistant


Cable designed for use in wind farms


Humidity resistant

Universal cable, for outdoor and indoor installation

Outdoor cable



NOTES

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