

HIGH VOLTAGE



Nexans
Olex



65 years of

Olex has been designing and manufacturing cables in Australia for over half a century, developing an international reputation for high quality, advanced technology and reliability.

Now as part of the world's largest cable manufacturer, Nexans, Olex are able to access the worldwide resources of the company, including R&D and testing facilities, new products and technical knowledge and experience.

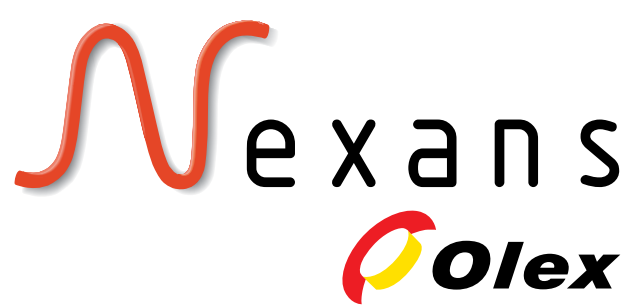


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Contents

Introduction	2–3
Single Core 3.8/6.6–19/33kV	5
3.8/6.6kV Copper/Aluminium	6–7
6.35/11kV Copper/Aluminium	8–9
12.7/22kV Copper/Aluminium	10–11
19/33kV Copper/Aluminium	12–13
Three Core 3.8/6.6–19/33kV	15
3.8/6.6kV Copper/Aluminium	16–17
6.35/11kV Copper/Aluminium	18–19
12.7/22kV Copper/Aluminium	20–21
19/33kV Copper/Aluminium	22–23
Three Core URD 6.35/11–12.7/22kV	
6.35/11kV Aluminium	24
12.7/22kV Aluminium	25
Three Core Triplex 6.35/11–12.7/22kV	27
6.35/11kV Copper/Aluminium	28–29
12.7/22kV Copper/Aluminium	30–31
6.35/11kV URD/12.7/22kV URD/Aluminium	32–33
Three Core SWA 3.8/6.6–19/33kV	35
3.8/6.6kV Copper/Aluminium	36–37
6.35/11kV Copper/Aluminium	38–39
12.7/22kV Copper/Aluminium	40–41
19/33kV Copper/Aluminium	42–43
General Technical Information	
Current Ratings	44
Thermal Resistivity of Soil Variation	45
Installation Factors Affecting Current Ratings	46
Derating Factors for Grouping of Cables	47
Short Circuit Ratings	48
Installation Issues	49
Bending Radius and Duct Sizes	50
Pulling Tension and Stress Limits	51
Testing of Cables	52

Olex employs over 900 people in factories and sales offices throughout Australia, New Zealand and China, with a regional sales office in Singapore and distributors throughout the Pacific region. Much of the Olex high voltage XLPE cable manufacturing is done at the Melbourne factory location in Tottenham. The 26 hectare (65 acre) Tottenham site has a sophisticated research and development facility and the expertise to design and manufacture cables at the leading edge of world technology.





Design. Technology. FI

This catalogue provides details for a rationalised range of cables of 3.8/6.6kV up to 19/33kV designed and manufactured to comply with AS/NZS 1429.1.



Standard cable constructions

- All the cable constructions and options defined in AS/NZS 1429.1 are available from Olex upon request but subject to MOQ requirements. More information is available at the Olex web site, www.olex.com.au
- AS/NZS 1429.1 is based on IEC 60502.2 and has additional requirements and test procedures to improve the product.
- Copper or aluminium conductors are made to AS/NZS 1125 and IEC 60228. To reduce cable diameter, weight and cost, compacted stranded conductors are used.



Alternative cable constructions

Depending on the end use, the construction and protective covering of Olex cables vary considerably. Variations include extruded lead alloy or aluminium/polyester laminate moisture barriers and mechanical protection by steel wire armour or corrugated metal sheaths, such as stainless steel. Designs are also available for submarine installations. Olex always aims to design cables to provide optimum performance for the end application. Cables can be designed in accordance with differing customer requirements to Australian, New Zealand, British, USA or IEC Standards, as required.

In addition to the High Voltage XLPE range of power cables, Olex provides a full range of cables for power, mining and industrial applications.

Power Cables

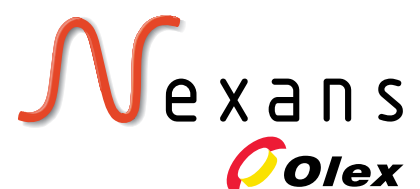
- High and Low Voltage cables for Aerial applications
- Cross-linked Polyethylene (XLPE)
- Paper Insulated Lead Covered (PILC)
- Cross-linked EPR
- Polyvinyl Chloride (PVC)
- Pyrolex™ Ceramifiable® fire performance cables
- Flexolex® flexible cords and cables
- Envirolex™ PVC Free cables
- Powerlex PVC cords
- Varolex® variable speed drive cables
- Versolex® flexible power (plastomeric).

Mining and Industrial Cables

- High voltage reeling and trailing flexible cables for underground and surface mining
- Flexible cables for use in stackers, reclaimers, cranes etc.
- Mine feeder cables
- Full range of PVC, elastomeric and polymeric insulated cables up to 33kV
- Instrolex™ instrumentation cables.

Meeting and exceeding standards

Olex has achieved internationally recognised certification for quality systems operating within all three Australasian manufacturing sites. Certification to the internationally accepted AS/NZS ISO 9001 has been achieved by Olex sites in Melbourne, Australia and New Zealand. Olex certification covers the complete supply process from initial enquiry and contract review, through design, production, handling and delivery of the finished product.





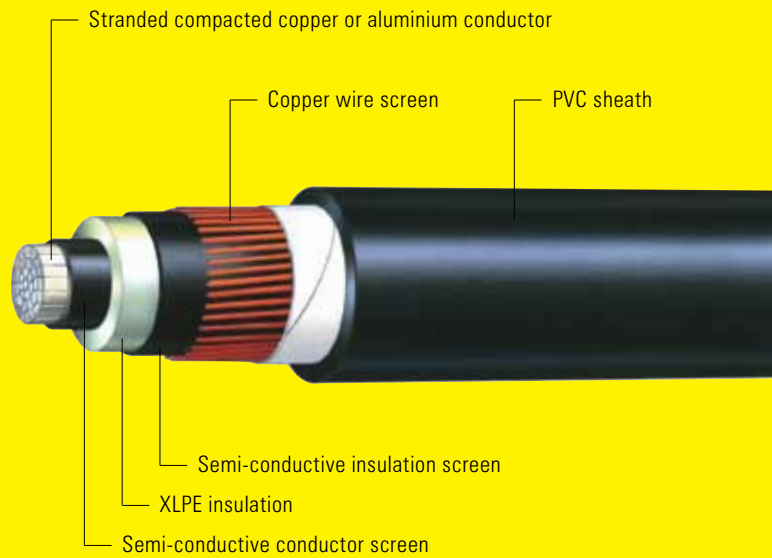
High Voltage XLPE Sin

Construction Stranded compacted copper or aluminium conductor, triple extruded conductor screen, insulation and insulation screen, copper wire screened, PVC sheathed.





3.8/6.6 to 19/33kV



Single Core

3.8/6.6kV Single Core Screened & PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
16	4.8	2.5	11.0	15.9	28/0.85	14.3	18.4	54	XHHP15AA001	1.1	330	220	50	65
25	5.8	2.5	12.0	24.4	43/0.85	15.3	19.4	72	XHHP17AA001	1.8	350	230	50	65
35	6.8	2.5	13.0	34.4	24/1.35	17.3	21.4	93	XHHP18AA001	2.5	380	260	50	65
50	8.0	2.5	14.1	48.7	34/1.35	18.4	22.5	120	XHHP19AA001	3.5	410	270	50	65
70	9.6	2.5	15.7	68.1	30/1.70	20.7	25.0	160	XHHP20AA001	4.9	450	300	50	80
95	11.5	2.5	17.6	68.1	30/1.70	22.6	26.9	190	XHHP22AA001	6.7	480	320	50	80
120	13.1	2.5	19.2	68.7	48/1.35	23.5	27.6	215	XHHP23AA001	8.4	500	330	50	80
150	14.5	2.5	20.6	68.7	48/1.35	24.9	29.0	245	XHHP24AA001	11	520	350	50	100
185	16.1	2.5	22.2	68.7	48/1.35	26.5	30.8	275	XHHP25AA001	13	550	370	63	100
240	18.5	2.6	24.9	68.7	48/1.35	29.2	33.7	335	XHHP26AA001	17	610	400	63	100
300	20.7	2.8	27.6	68.7	48/1.35	31.9	36.6	400	XHHP27AA001	21	660	440	63	100
400	23.6	3.0	30.9	68.7	48/1.35	35.2	40.2	500	XHHP28AA001	28	720	480	65	150

Note: For larger sizes use 6.35/11kV cables

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A													Fault current carrying capacity for 1 second	
	In air					In ground			In underground ducts						
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Cond. kA	Screen kA
16	113	133	104	110	79	116	118	113	102	103	101	91	2.29	2.36	
25	146	172	135	143	102	148	150	145	130	131	128	116	3.57	3.62	
35	180	211	166	176	123	178	179	174	155	155	153	139	5.00	5.09	
50	214	250	198	210	146	208	208	204	180	178	179	164	7.15	7.22	
70	266	307	248	264	182	251	248	249	215	211	216	202	10.0	10.1	
95	322	370	301	321	219	297	291	296	252	245	255	241	13.6	10.1	
120	366	418	344	367	247	334	324	335	282	271	287	273	17.1	10.2	
150	412	467	389	415	285	369	355	373	310	296	318	309	21.4	10.2	
185	467	524	443	474	322	411	391	419	344	325	356	348	26.4	10.2	
240	543	600	521	558	373	466	437	481	388	361	407	400	34.3	10.2	
300	614	668	595	636	436	515	477	537	428	394	454	460	42.9	10.2	
400	698	748	684	732	495	570	521	604	471	429	507	518	57.2	10.2	

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C			Cond. AC resistance at 50Hz and 90°C			Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Screen DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
	Ohm/km	Trefoil or flat touching	Flat spaced	Trefoil touching	Flat touching	Flat spaced	MegOhm.km	μF/km	A/km								
16	1.15	1.47	1.47	0.155	0.170	0.216	11000	0.221	0.263	4.00	2.06	1.14	2.29	0.0842			
25	0.727	0.927	0.927	0.146	0.161	0.207	9700	0.248	0.296	4.50	1.99	0.739	1.47	0.0770			
35	0.524	0.668	0.668	0.142	0.157	0.203	8700	0.276	0.330	5.01	1.93	0.525	1.05	0.0732			
50	0.387	0.494	0.494	0.135	0.150	0.196	7800	0.308	0.368	5.59	1.87	0.371	0.758	0.0678			
70	0.268	0.342	0.342	0.130	0.145	0.191	6900	0.352	0.420	6.39	1.82	0.265	0.533	0.0632			
95	0.193	0.247	0.247	0.120	0.135	0.181	6000	0.404	0.482	7.33	1.77	0.266	0.459	0.0551			
120	0.153	0.196	0.195	0.113	0.128	0.174	5400	0.447	0.534	8.11	1.74	0.263	0.416	0.0506			
150	0.124	0.160	0.159	0.110	0.125	0.171	5000	0.486	0.580	8.81	1.72	0.263	0.388	0.0480			
185	0.0991	0.128	0.127	0.107	0.122	0.168	4600	0.530	0.632	9.61	1.69	0.263	0.363	0.0455			
240	0.0754	0.0982	0.0973	0.103	0.119	0.164	4200	0.576	0.687	10.4	1.61	0.263	0.339	0.0430			
300	0.0601	0.0792	0.0781	0.102	0.117	0.163	4000	0.597	0.713	10.8	1.49	0.263	0.325	0.0420			
400	0.0470	0.0632	0.0618	0.0982	0.113	0.159	3800	0.627	0.749	11.4	1.38	0.263	0.312	0.0394			



3.8/6.6kV Single Core Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
35	6.9	2.5	13.0	22.7	40/0.85	16.3	20.4	60	XHHA18AA001	1.8	370	250	50	65
50	8.1	2.5	14.2	32.9	23/1.35	18.5	22.6	76	XHHA19AA001	2.5	410	270	50	65
70	9.6	2.5	15.8	45.8	32/1.35	20.1	24.2	97	XHHA20AA001	3.5	440	290	50	80
95	11.4	2.5	17.5	61.5	43/1.35	21.8	25.9	120	XHHA22AA001	4.8	470	310	50	80
120	12.8	2.5	18.9	68.7	48/1.35	23.2	27.3	140	XHHA23AA001	6.0	490	330	50	80
150	14.2	2.5	20.3	68.7	48/1.35	24.6	28.7	150	XHHA24AA001	7.5	520	340	50	80
185	15.7	2.5	21.8	68.7	48/1.35	26.1	30.4	160	XHHA25AA001	9.3	550	360	63	100
240	18.0	2.6	24.3	68.7	48/1.35	28.6	33.1	185	XHHA26AA001	12	600	400	63	100
300	20.1	2.8	27.0	68.7	48/1.35	31.3	36.0	210	XHHA27AA001	15	650	430	63	100
400	23.0	3.0	30.3	68.7	48/1.35	34.6	39.5	245	XHHA28AA001	20	710	470	65	150

Note: For larger sizes use 6.35/11kV cables

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A													Fault current carrying capacity for 1 second	
	In air				In ground			In underground ducts						Cond. kA	Screen kA
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	138	163	127	134	95	138	139	134	121	122	119	107	3.31	3.37	
50	167	197	154	164	113	163	164	159	142	143	140	128	4.73	4.88	
70	208	244	192	204	142	198	199	194	172	171	170	158	6.62	6.79	
95	252	293	233	248	170	234	233	231	202	199	201	188	8.99	9.13	
120	288	334	268	286	193	264	260	262	226	221	227	213	11.4	10.2	
150	326	375	303	324	223	293	288	292	251	244	253	242	14.2	10.2	
185	371	424	347	371	253	328	320	329	281	272	286	273	17.5	10.2	
240	435	492	410	438	294	376	362	380	320	306	328	316	22.7	10.2	
300	495	553	469	502	345	419	399	426	356	337	368	365	28.4	10.2	
400	572	629	546	585	397	471	443	485	400	374	418	416	37.8	10.2	

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C Ohm/km		Inductive reactance at 50Hz and 90°C Ohm/km			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress at 20°C kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 50Hz Ohm/km	Zero seq. react. Ohm/km
		Trefoil or flat touching	Flat spaced	Trefoil touching	Flat touching	Flat spaced								
35	0.868	1.11	1.11	0.138	0.154	0.199	8700	0.278	0.332	5.04	1.92	0.799	1.67	0.0709
50	0.641	0.821	0.821	0.135	0.150	0.196	7800	0.309	0.369	5.61	1.87	0.548	1.19	0.0676
70	0.443	0.568	0.568	0.125	0.140	0.185	6800	0.353	0.422	6.41	1.82	0.395	0.838	0.0591
95	0.320	0.410	0.410	0.118	0.134	0.179	6000	0.400	0.478	7.26	1.77	0.294	0.614	0.0543
120	0.253	0.325	0.325	0.114	0.129	0.175	5500	0.439	0.524	7.96	1.74	0.263	0.516	0.0512
150	0.206	0.265	0.264	0.111	0.126	0.171	5100	0.477	0.569	8.66	1.72	0.263	0.469	0.0485
185	0.164	0.211	0.211	0.108	0.123	0.169	4700	0.518	0.618	9.40	1.70	0.263	0.428	0.0462
240	0.125	0.161	0.161	0.104	0.119	0.165	4300	0.561	0.670	10.2	1.62	0.264	0.389	0.0436
300	0.100	0.130	0.129	0.102	0.118	0.163	4100	0.582	0.695	10.6	1.50	0.263	0.363	0.0426
400	0.0778	0.102	0.101	0.0989	0.114	0.160	3900	0.613	0.731	11.1	1.39	0.263	0.342	0.0399

6.35/11kV Single Core Screened & PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius During pulling mm	Set in position mm	Nominal duct diameter	
													⊗ mm	⊙ mm
16	4.8	3.4	12.8	15.9	28/0.85	16.1	20.2	59	XJHP15AA001	1.1	360	240	50	65
25	5.8	3.4	13.8	24.4	43/0.85	17.1	21.2	78	XJHP17AA001	1.8	380	250	50	65
35	6.8	3.4	14.8	34.4	24/1.35	19.1	23.2	99	XJHP18AA001	2.5	420	280	50	65
50	8.0	3.4	16.0	48.7	34/1.35	20.3	24.4	125	XJHP19AA001	3.5	440	290	50	80
70	9.6	3.4	17.6	68.1	30/1.70	22.6	26.9	165	XJHP20AA001	4.9	480	320	50	80
95	11.5	3.4	19.4	68.7	48/1.35	23.7	27.9	195	XJHP22AA001	6.7	500	330	50	80
120	13.1	3.4	21.0	68.7	48/1.35	25.3	29.4	225	XJHP23AA001	8.4	530	350	50	100
150	14.5	3.4	22.4	68.7	48/1.35	26.7	31.1	255	XJHP24AA001	11	560	370	63	100
185	16.1	3.4	24.1	68.7	48/1.35	28.4	32.7	285	XJHP25AA001	13	590	390	63	100
240	18.5	3.4	26.5	68.7	48/1.35	30.8	35.3	345	XJHP26AA001	17	640	420	63	100
300	20.7	3.4	28.9	68.7	48/1.35	33.2	37.9	410	XJHP27AA001	21	680	450	63	150
400	23.6	3.4	31.8	68.7	48/1.35	36.3	41.2	505	XJHP28AA001	28	740	490	65	150
500	26.5	3.4	34.7	68.7	48/1.35	39.2	44.3	605	XJHP30AA001	35	800	530	65	150
630	29.9	3.4	38.4	68.7	48/1.35	42.9	48.7	730	XJHP32AA001	44	880	580	80	150
800	35.9	3.4	44.5	68.7	48/1.35	49.0	55.0	925	XJHP33AA001	56	990	660	80	200

Note: For larger sizes, use 12.7/22kV cables

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A												Fault current carrying capacity for 1 second		
	In air			In ground			In underground ducts						Cond. kA	Screen kA	
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
16	114	134	106	112	81	116	118	113	103	104	101	91	2.29	2.36	
25	148	173	137	145	103	148	150	145	131	131	129	117	3.57	3.62	
35	182	211	168	178	125	177	179	174	156	156	154	140	5.00	5.09	
50	216	251	201	213	150	208	208	204	181	180	180	167	7.15	7.22	
70	269	308	251	266	184	251	248	249	216	212	217	204	10.0	10.1	
95	323	368	302	321	219	297	291	296	253	246	256	242	13.6	10.1	
120	370	420	348	370	257	334	325	336	284	274	289	279	17.1	10.2	
150	416	468	393	419	288	370	356	374	314	300	322	311	21.4	10.2	
185	471	525	448	478	325	412	392	420	347	328	359	350	26.4	10.2	
240	548	602	525	561	376	467	439	482	391	365	410	402	34.3	10.2	
300	617	670	598	639	438	516	478	538	431	397	457	462	42.9	10.2	
400	701	750	687	735	497	571	522	605	474	431	510	519	57.2	10.2	
500	787	831	782	837	558	627	565	674	520	466	568	580	71.5	10.2	
630	877	911	886	948	624	683	607	746	560	496	620	642	90.0	10.2	
800	986	1014	1008	1082	727	740	651	822	616	537	693	734	114	10.2	

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C		Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
		Trefoil or flat touching Ohm/km	Flat spaced Ohm/km	Trefoil touching Ohm/km	Flat touching Ohm/km	Flat spaced Ohm/km								
16	1.15	1.47	1.47	0.161	0.176	0.222	14000	0.177	0.354	8.98	2.77	1.14	2.29	0.0922
25	0.727	0.927	0.927	0.152	0.167	0.213	12000	0.198	0.394	10.0	2.65	0.740	1.47	0.0845
35	0.524	0.668	0.668	0.147	0.163	0.208	11000	0.219	0.436	11.1	2.55	0.527	1.05	0.0800
50	0.387	0.494	0.494	0.140	0.155	0.201	10000	0.242	0.484	12.3	2.46	0.371	0.758	0.0742
70	0.268	0.342	0.342	0.135	0.150	0.196	8800	0.275	0.549	13.9	2.37	0.266	0.534	0.0689
95	0.193	0.247	0.247	0.122	0.138	0.183	7700	0.314	0.626	15.9	2.30	0.263	0.457	0.0594
120	0.153	0.196	0.195	0.117	0.133	0.178	7000	0.346	0.689	17.5	2.25	0.264	0.417	0.0556
150	0.124	0.160	0.159	0.114	0.129	0.175	6400	0.374	0.747	19.0	2.21	0.263	0.388	0.0527
185	0.0991	0.128	0.127	0.111	0.126	0.172	5900	0.407	0.811	20.6	2.17	0.263	0.363	0.0499
240	0.0754	0.0980	0.0973	0.106	0.122	0.167	5300	0.456	0.909	23.1	2.13	0.262	0.339	0.0465
300	0.0601	0.0791	0.0781	0.104	0.119	0.165	4800	0.503	1.00	25.5	2.10	0.263	0.324	0.0444
400	0.0470	0.0631	0.0618	0.0988	0.115	0.161	4300	0.561	1.12	28.5	2.07	0.263	0.312	0.0412
500	0.0366	0.0508	0.0489	0.0970	0.112	0.158	3900	0.620	1.24	31.4	2.05	0.263	0.302	0.0390
630	0.0283	0.0412	0.0389	0.0953	0.111	0.156	3500	0.694	1.38	35.2	2.02	0.263	0.294	0.0373
800	0.0221	0.0347	0.0318	0.0906	0.106	0.151	3000	0.816	1.63	41.3	1.99	0.263	0.288	0.0337

6.35/11kV Single Core Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
35	6.9	3.4	14.9	22.7	40/0.85	18.2	22.3	66	XJHA18AA001	1.8	400	270	50	65
50	8.1	3.4	16.0	32.9	23/1.35	20.3	24.4	82	XJHA19AA001	2.5	440	290	50	80
70	9.6	3.4	17.6	45.8	32/1.35	21.9	26.0	105	XJHA20AA001	3.5	470	310	50	80
95	11.4	3.4	19.3	61.5	43/1.35	23.6	27.7	130	XJHA22AA001	4.8	500	330	50	80
120	12.8	3.4	20.7	68.7	48/1.35	25.0	29.1	145	XJHA23AA001	6.0	520	350	50	100
150	14.2	3.4	22.1	68.7	48/1.35	26.4	30.7	155	XJHA24AA001	7.5	550	370	63	100
185	15.7	3.4	23.6	68.7	48/1.35	27.9	32.2	170	XJHA25AA001	9.3	580	390	63	100
240	18.0	3.4	25.9	68.7	48/1.35	30.2	34.7	190	XJHA26AA001	12	630	420	63	100
300	20.1	3.4	28.3	68.7	48/1.35	32.6	37.3	215	XJHA27AA001	15	670	450	63	150
400	23.0	3.4	31.1	68.7	48/1.35	35.6	40.5	250	XJHA28AA001	20	730	490	65	150
500	26.5	3.4	34.7	68.7	48/1.35	39.2	44.3	295	XJHA30AA001	25	800	530	65	150
630	29.9	3.4	38.4	68.7	48/1.35	42.9	48.4	345	XJHA32AA001	32	870	580	80	150
800	34.2	3.4	42.8	68.7	48/1.35	47.3	53.0	405	XJHA33AA001	40	950	640	80	200

Note: For larger sizes, use 12.7/22kV cables

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A												Fault current carrying capacity for 1 second		
	In air				In ground			In underground ducts					Cond. kA	Screen kA	
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	140	163	129	136	96	138	139	134	121	122	119	108	3.31	3.37	
50	169	198	156	166	117	163	164	159	143	144	141	130	4.73	4.88	
70	210	244	194	206	143	198	199	194	173	172	171	159	6.62	6.79	
95	254	293	235	250	171	234	233	231	203	200	202	189	8.99	9.13	
120	291	334	271	288	200	264	261	262	227	223	228	218	11.4	10.2	
150	328	375	306	326	225	293	288	292	254	248	256	244	14.2	10.2	
185	374	425	350	373	255	329	321	330	283	274	287	275	17.5	10.2	
240	438	492	413	441	296	376	363	380	323	308	330	318	22.7	10.2	
300	497	553	472	504	347	419	400	427	358	338	369	366	28.4	10.2	
400	573	630	548	586	398	471	444	485	402	376	419	417	37.8	10.2	
500	660	715	638	682	456	528	491	550	449	414	474	473	47.3	10.2	
630	751	801	734	786	518	586	537	620	494	450	530	533	59.6	10.2	
800	848	893	840	900	610	645	583	692	544	488	591	618	75.7	10.2	

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C		Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
		Trefoil or flat touching Ohm/km	Flat spaced Ohm/km	Trefoil touching Ohm/km	Flat touching Ohm/km	Flat spaced Ohm/km								
35	0.868	1.11	1.11	0.144	0.159	0.205	11000	0.220	0.439	11.1	2.54	0.796	1.66	0.0779
50	0.641	0.821	0.821	0.140	0.155	0.201	9900	0.243	0.486	12.3	2.46	0.548	1.19	0.0740
70	0.443	0.568	0.568	0.129	0.145	0.190	8700	0.276	0.551	14.0	2.37	0.395	0.838	0.0650
95	0.320	0.410	0.410	0.123	0.138	0.184	7800	0.311	0.620	15.8	2.30	0.294	0.614	0.0597
120	0.253	0.325	0.325	0.118	0.134	0.179	7100	0.339	0.677	17.2	2.25	0.263	0.517	0.0563
150	0.206	0.265	0.264	0.115	0.130	0.176	6600	0.368	0.734	18.6	2.22	0.263	0.469	0.0533
185	0.164	0.211	0.211	0.112	0.127	0.172	6100	0.398	0.794	20.2	2.18	0.263	0.428	0.0506
240	0.125	0.161	0.161	0.107	0.123	0.168	5400	0.445	0.887	22.5	2.14	0.264	0.389	0.0472
300	0.100	0.130	0.129	0.105	0.120	0.166	4900	0.491	0.980	24.9	2.11	0.263	0.363	0.0451
400	0.0778	0.102	0.101	0.101	0.116	0.162	4400	0.548	1.09	27.8	2.08	0.263	0.342	0.0418
500	0.0605	0.0803	0.0790	0.0970	0.112	0.158	3900	0.620	1.24	31.4	2.05	0.263	0.325	0.0390
630	0.0469	0.0636	0.0620	0.0950	0.110	0.156	3500	0.695	1.39	35.2	2.02	0.264	0.312	0.0374
800	0.0367	0.0516	0.0494	0.0920	0.107	0.153	3100	0.782	1.56	39.6	2.00	0.263	0.302	0.0351

12.7/22kV Single Core Screened & PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
35	6.8	5.5	19.1	34.4	24/1.35	23.4	27.5	115	XLHP18AA001	2.5	500	330	50	80
50	8.0	5.5	20.3	48.7	34/1.35	24.6	28.7	140	XLHP19AA001	3.5	520	340	50	80
70	9.6	5.5	21.9	68.7	48/1.35	26.2	30.5	185	XLHP20AA001	4.9	550	370	63	100
95	11.5	5.5	23.8	68.7	48/1.35	28.1	32.4	215	XLHP22AA001	6.7	580	390	63	100
120	13.1	5.5	25.3	68.7	48/1.35	29.6	34.1	245	XLHP23AA001	8.4	610	410	63	100
150	14.5	5.5	26.8	68.7	48/1.35	31.1	35.6	275	XLHP24AA001	11	640	430	63	100
185	16.1	5.5	28.4	68.7	48/1.35	32.7	37.4	310	XLHP25AA001	13	670	450	63	150
240	18.5	5.5	30.8	68.7	48/1.35	35.1	40.0	375	XLHP26AA001	17	720	480	65	150
300	20.7	5.5	33.2	68.7	48/1.35	37.7	42.6	440	XLHP27AA001	21	770	510	65	150
400	23.6	5.5	36.1	68.7	48/1.35	40.6	46.1	535	XLHP28AA001	28	830	550	65	150
500	26.5	5.5	39.0	68.7	48/1.35	43.5	49.0	640	XLHP30AA001	35	880	590	80	150
630	29.9	5.5	42.7	68.7	48/1.35	47.2	53.4	765	XLHP32AA001	44	960	640	80	200
800	35.9	5.5	48.8	68.7	48/1.35	53.3	59.7	965	XLHP33AA001	56	1070	720	100	200
1000	40.2	5.5	54.3	68.7	48/1.35	58.8	65.4	1160	XLHP34AA001	70	1180	780	100	200
1200	43.8	5.5	58.3	68.7	48/1.35	62.8	69.6	1360	XLHP50AA001	84	1250	840	100	200

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A												Fault current carrying capacity for 1 second		
	In air			In ground			In underground ducts						Cond. kA	Screen kA	
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	186	212	173	182	130	177	179	174	157	157	155	144	5.00	5.09	
50	221	251	206	217	157	208	208	205	183	182	181	172	7.15	7.22	
70	272	307	254	269	192	251	248	249	220	217	221	209	10.0	10.1	
95	329	369	309	327	230	297	292	297	259	252	261	249	13.6	10.1	
120	376	420	355	377	262	335	326	336	290	280	294	282	17.1	10.2	
150	423	469	400	425	293	371	358	374	319	305	326	314	21.4	10.2	
185	479	526	456	485	342	413	394	421	354	335	365	362	26.4	10.2	
240	556	604	534	568	396	469	441	483	399	373	417	417	34.3	10.2	
300	627	674	608	647	446	519	482	541	440	406	465	466	42.9	10.2	
400	710	752	697	743	504	574	526	607	485	441	520	523	57.2	10.2	
500	798	835	794	847	567	632	570	679	526	472	572	585	71.5	10.2	
630	889	916	898	959	662	689	612	752	574	508	635	673	90.0	10.2	
800	999	1020	1022	1093	738	748	657	829	613	539	687	741	114	10.2	
1000	1150	1125	1211	1295	861	839	707	961	674	579	772	856	143	10.2	
1200	1239	1196	1326	1420	932	888	738	1036	715	606	832	921	171	10.2	

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C		Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
		Trefoil or flat touching Ohm/km	Flat spaced Ohm/km	Trefoil touching Ohm/km	Flat touching Ohm/km	Flat spaced Ohm/km								
35	0.524	0.668	0.668	0.159	0.174	0.219	16000	0.156	0.622	31.6	3.63	0.526	1.05	0.0937
50	0.387	0.494	0.494	0.151	0.166	0.212	14000	0.171	0.682	34.7	3.48	0.371	0.758	0.0871
70	0.268	0.342	0.342	0.143	0.158	0.204	13000	0.192	0.765	38.9	3.31	0.263	0.531	0.0799
95	0.193	0.247	0.247	0.132	0.147	0.193	11000	0.216	0.862	43.8	3.16	0.263	0.457	0.0705
120	0.153	0.196	0.195	0.127	0.143	0.188	10000	0.236	0.942	47.8	3.07	0.263	0.417	0.0660
150	0.124	0.159	0.159	0.123	0.138	0.184	9500	0.254	1.01	51.5	3.00	0.262	0.387	0.0626
185	0.0991	0.128	0.127	0.119	0.135	0.180	8800	0.274	1.09	55.6	2.93	0.263	0.363	0.0593
240	0.0754	0.0978	0.0972	0.115	0.130	0.176	7900	0.305	1.22	61.8	2.85	0.263	0.340	0.0551
300	0.0601	0.0788	0.0780	0.112	0.127	0.172	7200	0.334	1.33	67.8	2.79	0.263	0.325	0.0528
400	0.0470	0.0628	0.0617	0.107	0.122	0.168	6500	0.371	1.48	75.1	2.73	0.263	0.312	0.0485
500	0.0366	0.0503	0.0488	0.104	0.119	0.165	5900	0.407	1.62	82.4	2.69	0.263	0.302	0.0457
630	0.0283	0.0407	0.0388	0.101	0.117	0.162	5300	0.453	1.81	91.8	2.64	0.263	0.294	0.0436
800	0.0221	0.0341	0.0317	0.0960	0.111	0.157	4600	0.528	2.11	107	2.58	0.263	0.288	0.0392
1000	0.0182	0.0246	0.0240	0.0948	0.110	0.156	4000	0.597	2.38	121	2.54	0.263	0.282	0.0387
1200	0.0150	0.0208	0.0201	0.0932	0.108	0.154	3700	0.646	2.58	131	2.51	0.263	0.279	0.0375

12.7/22kV Single Core Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
35	6.9	5.5	19.2	22.7	40/0.85	22.5	26.6	81	XLHA18AA001	1.8	480	320	50	80
50	8.1	5.5	20.3	32.9	23/1.35	24.6	28.7	98	XLHA19AA001	2.5	520	340	50	80
70	9.6	5.5	21.9	45.8	32/1.35	26.2	30.5	120	XLHA20AA001	3.5	550	370	63	100
95	11.4	5.5	23.6	61.5	43/1.35	27.9	32.2	150	XLHA22AA001	4.8	580	390	63	100
120	12.8	5.5	25.0	68.7	48/1.35	29.3	33.8	170	XLHA23AA001	6.0	610	410	63	100
150	14.2	5.5	26.4	68.7	48/1.35	30.7	35.2	180	XLHA24AA001	7.5	630	420	63	100
185	15.7	5.5	27.9	68.7	48/1.35	32.2	36.9	195	XLHA25AA001	9.3	670	440	63	100
240	18.0	5.5	30.3	68.7	48/1.35	34.6	39.5	220	XLHA26AA001	12	710	470	65	150
300	20.1	5.5	32.6	68.7	48/1.35	37.1	42.0	245	XLHA27AA001	15	760	500	65	150
400	23.0	5.5	35.4	68.7	48/1.35	39.9	45.2	280	XLHA28AA001	20	810	540	65	150
500	26.5	5.5	39.0	68.7	48/1.35	43.5	49.0	325	XLHA30AA001	25	880	590	80	150
630	29.9	5.5	42.7	68.7	48/1.35	47.2	53.1	380	XLHA32AA001	32	960	640	80	200
800	34.2	5.5	47.1	68.7	48/1.35	51.6	57.7	445	XLHA33AA001	40	1040	690	100	200
1000	40.2	5.5	54.3	68.7	48/1.35	58.8	65.1	540	XLHA34AA001	50	1170	780	100	200
1200	43.8	5.5	58.3	68.7	48/1.35	62.8	69.3	620	XLHA50AA001	60	1250	830	100	200

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A												Fault current carrying capacity for 1 second		
	In air		In ground			In underground ducts							Cond. kA	Screen kA	
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	143	164	133	140	100	138	139	135	122	123	120	111		3.31	3.37
50	173	198	160	169	122	163	164	159	144	145	142	134		4.73	4.88
70	214	244	199	210	150	198	199	194	177	176	175	163		6.62	6.79
95	258	293	240	255	179	234	233	232	207	205	206	194		8.99	9.13
120	295	334	276	293	204	264	261	262	232	228	233	220		11.4	10.2
150	333	375	312	331	229	294	289	293	257	251	259	246		14.2	10.2
185	379	424	356	378	268	329	321	330	287	278	290	284		17.5	10.2
240	443	492	419	446	312	377	364	381	329	315	336	329		22.7	10.2
300	504	553	479	509	352	420	402	428	365	346	376	369		28.4	10.2
400	579	629	555	591	403	473	446	486	408	382	425	420		37.8	10.2
500	666	715	644	687	461	530	494	552	454	420	479	476		47.3	10.2
630	757	801	742	791	547	590	540	622	503	458	538	557		59.6	10.2
800	855	894	848	906	616	649	587	695	545	491	591	622		75.7	10.2
1000	993	1007	1002	1072	715	729	640	799	606	536	669	712		94.6	10.2
1200	1084	1083	1109	1186	782	781	675	870	648	565	725	773		114	10.2

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C		Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
		Trefoil or flat touching Ohm/km	Flat spaced Ohm/km	Trefoil touching Ohm/km	Flat touching Ohm/km	Flat spaced Ohm/km								
35	0.868	1.11	1.11	0.156	0.171	0.217	15000	0.157	0.626	31.8	3.62	0.797	1.67	0.0919
50	0.641	0.821	0.821	0.151	0.166	0.212	14000	0.172	0.685	34.8	3.47	0.549	1.19	0.0869
70	0.443	0.568	0.568	0.140	0.155	0.201	13000	0.192	0.768	39.0	3.30	0.395	0.838	0.0769
95	0.320	0.410	0.410	0.133	0.148	0.194	11000	0.214	0.855	43.4	3.17	0.293	0.613	0.0709
120	0.253	0.325	0.325	0.128	0.143	0.189	10000	0.232	0.926	47.0	3.08	0.263	0.516	0.0668
150	0.206	0.264	0.264	0.124	0.139	0.185	9700	0.250	0.997	50.7	3.01	0.262	0.469	0.0633
185	0.164	0.211	0.211	0.121	0.136	0.181	9000	0.269	1.07	54.5	2.95	0.263	0.428	0.0601
240	0.125	0.161	0.161	0.116	0.131	0.177	8100	0.298	1.19	60.4	2.87	0.263	0.388	0.0560
300	0.100	0.129	0.129	0.113	0.128	0.173	7400	0.327	1.30	66.3	2.81	0.263	0.364	0.0536
400	0.0778	0.102	0.101	0.108	0.123	0.169	6700	0.363	1.45	73.5	2.75	0.263	0.342	0.0492
500	0.0605	0.0800	0.0790	0.104	0.119	0.165	5900	0.407	1.62	82.4	2.69	0.263	0.325	0.0457
630	0.0469	0.0632	0.0619	0.101	0.116	0.162	5300	0.453	1.81	91.9	2.64	0.263	0.312	0.0436
800	0.0367	0.0511	0.0493	0.0976	0.113	0.159	4800	0.507	2.02	103	2.59	0.263	0.302	0.0408
1000	0.0298	0.0391	0.0387	0.0945	0.110	0.155	4000	0.597	2.38	121	2.54	0.263	0.294	0.0387
1200	0.0247	0.0328	0.0323	0.0930	0.108	0.154	3700	0.646	2.58	131	2.51	0.263	0.288	0.0375

19/33kV Single Core Screened & PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
50	8.0	8.0	25.5	48.7	34/1.35	29.8	34.3	170	XNHP19AA001	3.5	620	410	63	100
70	9.6	8.0	27.1	68.7	48/1.35	31.4	36.1	215	XNHP20AA001	4.9	650	430	63	100
95	11.5	8.0	29.0	68.7	48/1.35	33.3	38.0	245	XNHP22AA001	6.7	680	460	65	150
120	13.1	8.0	30.6	68.7	48/1.35	34.9	39.8	280	XNHP23AA001	8.4	720	480	65	150
150	14.5	8.0	32.0	68.7	48/1.35	36.5	41.4	310	XNHP24AA001	11	750	500	65	150
185	16.1	8.0	33.6	68.7	48/1.35	38.1	43.2	345	XNHP25AA001	13	780	520	65	150
240	18.5	8.0	36.0	68.7	48/1.35	40.5	45.9	410	XNHP26AA001	17	830	550	65	150
300	20.7	8.0	38.4	68.7	48/1.35	42.9	48.4	475	XNHP27AA001	21	870	580	80	150
400	23.6	8.0	41.3	68.7	48/1.35	45.8	51.5	575	XNHP28AA001	28	930	620	80	150
500	26.5	8.0	44.2	68.7	48/1.35	48.7	54.9	685	XNHP30AA001	35	990	660	80	200
630	29.9	8.0	47.9	68.7	48/1.35	52.4	58.8	815	XNHP32AA001	44	1060	710	100	200
800	35.9	8.0	54.0	68.7	48/1.35	58.5	65.3	1020	XNHP33AA001	56	1180	780	100	200
1000	40.2	8.0	59.5	68.7	48/1.35	64.0	71.0	1220	XNHP34AA001	70	1280	850	125	200
1200	43.8	8.0	63.5	68.7	48/1.35	68.0	75.2	1420	XNHP50AA001	84	1350	900	125	200

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A														Fault current carrying capacity for 1 second	
	In air					In ground			In underground ducts						Cond. kA	Screen kA
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
50	224	250	210	221	160	208	209	205	187	186	185	174	7.15	7.22		
70	276	306	259	273	202	251	249	249	223	219	223	216	10.0	10.1		
95	333	369	315	332	242	297	292	297	265	258	267	258	13.6	10.1		
120	381	420	361	381	276	335	327	336	296	287	300	292	17.1	10.2		
150	429	469	407	430	308	372	359	375	327	313	333	325	21.4	10.2		
185	485	527	463	490	348	414	397	421	362	343	372	366	26.4	10.2		
240	563	605	542	574	402	471	444	485	408	382	425	420	34.3	10.2		
300	634	674	616	653	452	521	485	542	446	413	471	469	42.9	10.2		
400	719	756	706	750	533	579	531	610	492	449	526	547	57.2	10.2		
500	807	837	803	854	600	637	574	682	539	484	585	611	71.5	10.2		
630	902	924	911	969	672	697	619	759	576	513	635	680	90.0	10.2		
800	1012	1026	1036	1103	748	756	664	838	630	552	705	748	114	10.2		
1000	1160	1131	1219	1300	888	845	713	966	661	578	749	880	143	10.2		
1200	1252	1204	1337	1426	963	896	745	1043	698	603	801	948	171	10.2		

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C		Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
		Trefoil or flat touching Ohm/km	Flat spaced Ohm/km	Trefoil touching Ohm/km	Flat touching Ohm/km	Flat spaced Ohm/km								
50	0.387	0.494	0.494	0.163	0.178	0.224	18000	0.133	0.796	60.5	4.05	0.372	0.759	0.0999
70	0.268	0.342	0.342	0.154	0.169	0.215	16000	0.148	0.883	67.1	3.82	0.263	0.531	0.0919
95	0.193	0.247	0.247	0.143	0.158	0.204	15000	0.165	0.984	74.8	3.61	0.263	0.457	0.0817
120	0.153	0.195	0.195	0.137	0.153	0.198	14000	0.179	1.07	81.1	3.48	0.263	0.416	0.0767
150	0.124	0.159	0.159	0.133	0.148	0.194	13000	0.191	1.14	86.8	3.38	0.264	0.389	0.0731
185	0.0991	0.127	0.127	0.129	0.144	0.190	12000	0.205	1.23	93.2	3.29	0.264	0.364	0.0693
240	0.0754	0.0976	0.0972	0.124	0.139	0.185	11000	0.227	1.35	103	3.17	0.263	0.340	0.0645
300	0.0601	0.0786	0.0779	0.120	0.135	0.181	9800	0.247	1.48	112	3.09	0.264	0.325	0.0612
400	0.0470	0.0625	0.0616	0.115	0.130	0.176	8900	0.272	1.62	123	3.00	0.263	0.312	0.0564
500	0.0366	0.0499	0.0487	0.111	0.126	0.172	8100	0.297	1.77	135	2.93	0.263	0.302	0.0531
630	0.0283	0.0403	0.0387	0.108	0.123	0.169	7300	0.329	1.96	149	2.86	0.263	0.294	0.0504
800	0.0221	0.0336	0.0315	0.102	0.117	0.163	6300	0.381	2.27	173	2.78	0.263	0.289	0.0452
1000	0.0182	0.0245	0.0240	0.100	0.115	0.161	5600	0.427	2.55	194	2.72	0.263	0.282	0.0441
1200	0.0150	0.0207	0.0201	0.0984	0.114	0.159	5200	0.461	2.75	209	2.68	0.263	0.279	0.0426

19/33kV Single Core Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

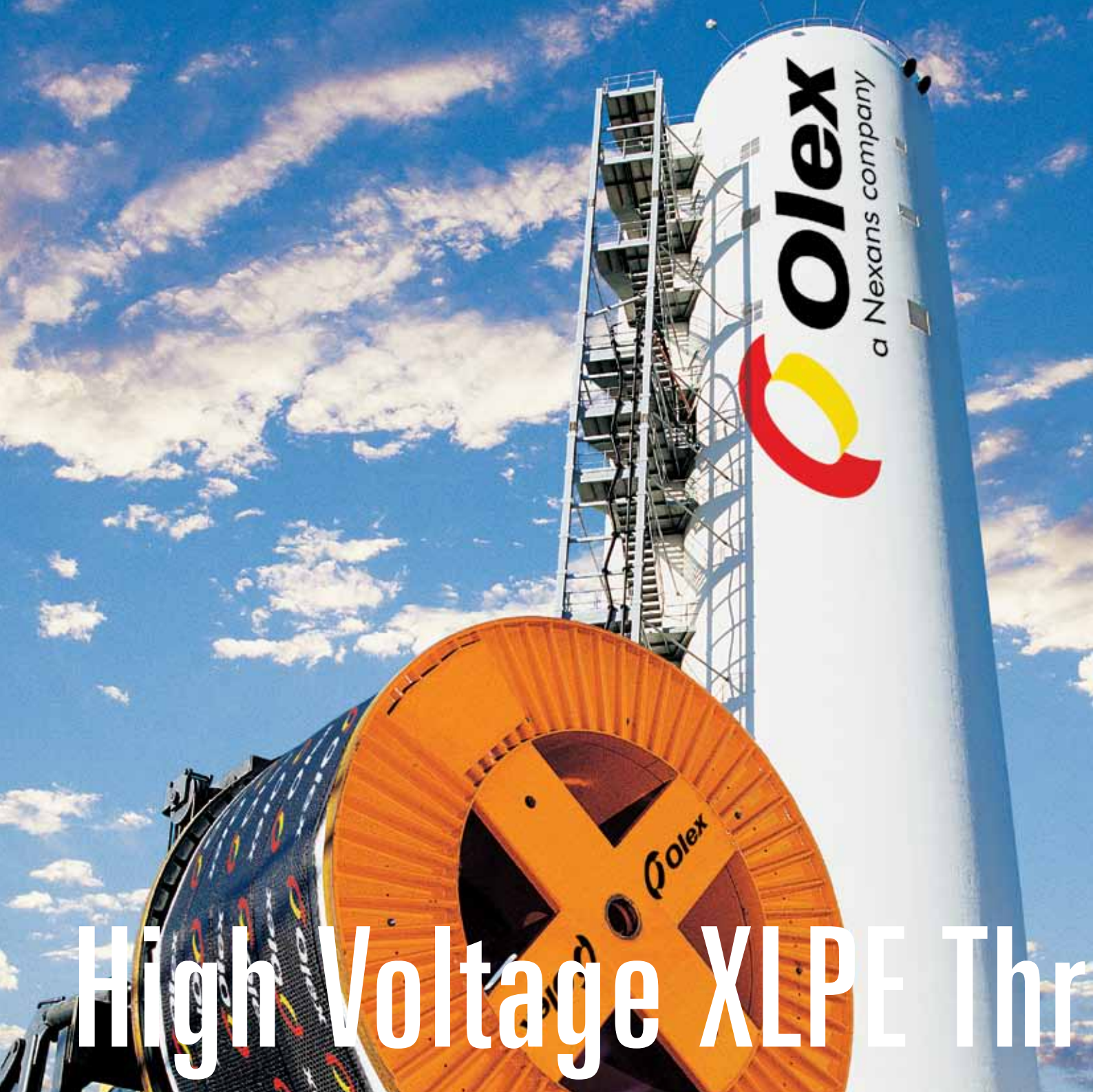
Nominal conductor area mm ²	Nominal conductor diameter mm	Nominal insulation thickness mm	Nominal diameter over insulation mm	Nominal screen area on each core mm ²	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen mm	Nominal overall diameter mm	Approx. mass kg/100m	Product code	Max. pulling tension kN	Min. bending radius		Nominal duct diameter	
											During pulling mm	Set in position mm	⊗ mm	⊙ mm
50	8.1	8.0	25.6	32.9	23/1.35	29.9	34.4	125	XNHA19AA001	2.5	620	410	63	100
70	9.6	8.0	27.2	45.8	32/1.35	31.5	36.2	150	XNHA20AA001	3.5	650	430	63	100
95	11.4	8.0	28.9	61.5	43/1.35	33.2	37.9	180	XNHA22AA001	4.8	680	450	63	150
120	12.8	8.0	30.3	68.7	48/1.35	34.6	39.5	200	XNHA23AA001	6.0	710	470	65	150
150	14.2	8.0	31.7	68.7	48/1.35	36.2	41.1	215	XNHA24AA001	7.5	740	490	65	150
185	15.7	8.0	33.2	68.7	48/1.35	37.7	42.8	230	XNHA25AA001	9.3	770	510	65	150
240	18.0	8.0	35.5	68.7	48/1.35	40.0	45.1	255	XNHA26AA001	12	810	540	65	150
300	20.1	8.0	37.8	68.7	48/1.35	42.3	47.8	285	XNHA27AA001	15	860	570	80	150
400	23.0	8.0	40.7	68.7	48/1.35	45.2	50.9	320	XNHA28AA001	20	920	610	80	150
500	26.5	8.0	44.2	68.7	48/1.35	48.7	54.6	370	XNHA30AA001	25	980	660	80	200
630	29.9	8.0	48.0	68.7	48/1.35	52.5	58.6	430	XNHA32AA001	32	1050	700	100	200
800	34.2	8.0	52.3	68.7	48/1.35	56.8	63.4	500	XNHA33AA001	40	1140	760	100	200
1000	40.2	8.0	59.5	68.7	48/1.35	64.0	70.8	600	XNHA34AA001	50	1270	850	100	200
1200	43.8	8.0	63.5	68.7	48/1.35	68.0	75.0	680	XNHA50AA001	60	1350	900	125	200

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A														Fault current carrying capacity for 1 second	
	In air						In ground						In underground ducts		Cond. kA	Screen kA
	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
50	175	197	163	172	125	162	164	159	147	148	145	135	135	135	4.73	4.88
70	217	243	202	213	158	198	199	194	178	178	175	169	169	169	6.62	6.79
95	262	292	245	258	189	234	234	232	209	207	208	201	201	201	8.99	9.13
120	299	332	281	296	215	264	262	262	237	233	237	228	228	228	11.4	10.2
150	337	374	317	335	241	294	290	293	263	257	264	254	254	254	14.2	10.2
185	383	422	362	382	272	330	323	330	293	285	296	287	287	287	17.5	10.2
240	448	491	425	450	316	378	366	382	334	321	340	331	331	331	22.7	10.2
300	508	551	484	513	357	421	404	428	370	352	381	371	371	371	28.4	10.2
400	584	628	561	595	425	475	449	487	414	389	430	437	437	437	37.8	10.2
500	671	714	651	691	487	533	497	554	462	428	486	497	497	497	47.3	10.2
630	764	802	748	795	553	593	545	625	507	464	541	560	560	560	59.6	10.2
800	862	895	855	910	623	654	591	699	556	501	602	625	625	625	75.7	10.2
1000	997	1007	1006	1072	736	733	644	801	619	546	681	730	730	730	94.6	10.2
1200	1089	1085	1113	1187	805	786	681	873	639	565	710	794	794	794	114	10.2

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Cond. AC resistance at 50Hz and 90°C		Inductive reactance at 50Hz and 90°C			Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Screen DC resistance at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
		Trefoil or flat touching Ohm/km	Flat spaced Ohm/km	Trefoil touching Ohm/km	Flat touching Ohm/km	Flat spaced Ohm/km								
50	0.641	0.821	0.821	0.163	0.178	0.223	18000	0.134	0.798	60.7	4.04	0.550	1.19	0.0997
70	0.443	0.568	0.568	0.151	0.166	0.212	16000	0.148	0.885	67.3	3.81	0.394	0.838	0.0890
95	0.320	0.410	0.410	0.143	0.159	0.204	15000	0.164	0.977	74.3	3.62	0.294	0.613	0.0822
120	0.253	0.325	0.325	0.138	0.154	0.199	14000	0.176	1.05	79.9	3.50	0.263	0.516	0.0776
150	0.206	0.264	0.264	0.134	0.149	0.195	13000	0.189	1.13	85.5	3.40	0.263	0.470	0.0740
185	0.164	0.211	0.211	0.130	0.145	0.191	12000	0.202	1.20	91.5	3.31	0.263	0.428	0.0703
240	0.125	0.161	0.161	0.125	0.140	0.186	11000	0.222	1.32	101	3.20	0.263	0.388	0.0655
300	0.100	0.129	0.129	0.121	0.136	0.182	10000	0.242	1.44	110	3.11	0.263	0.364	0.0622
400	0.0778	0.101	0.101	0.116	0.131	0.177	9100	0.267	1.59	121	3.02	0.263	0.342	0.0573
500	0.0605	0.0797	0.0797	0.111	0.126	0.172	8100	0.297	1.77	135	2.93	0.263	0.325	0.0531
630	0.0469	0.0629	0.0629	0.108	0.123	0.168	7300	0.329	1.96	149	2.86	0.263	0.312	0.0504
800	0.0367	0.0507	0.0507	0.104	0.119	0.165	6600	0.366	2.19	166	2.80	0.263	0.301	0.0470
1000	0.0298	0.0390	0.0390	0.1000	0.115	0.161	5600	0.427	2.55	194	2.72	0.263	0.293	0.0441
1200	0.0247	0.0327	0.0327	0.0981	0.113	0.159	5200	0.461	2.75	209	2.68	0.263	0.289	0.0426



High Voltage XLPE Thr

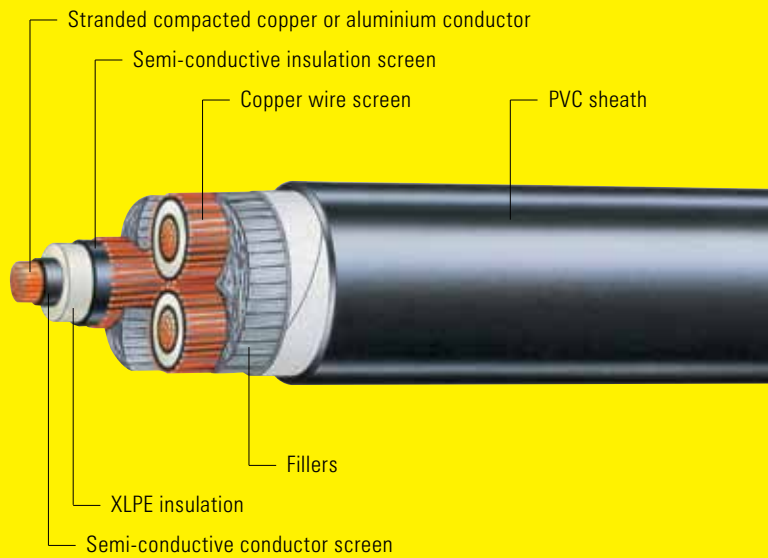
Construction Stranded compacted copper or aluminium conductor, triple extruded conductor screen, insulation and insulation screen, copper wire screened, PVC sheathed.





ee Core

3.8/6.6 to 19/33kV



3.8/6.6kV Three Core Ind. Screened & PVC Sheathed

Copper Conductors, up to 10kA fault level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
16	4.8	2.5	11.0	17.0	10/0.85	14.3	35.6	130	XHHP15AA003
25	5.8	2.5	12.0	25.5	15/0.85	15.3	37.9	170	XHHP17AA003
35	6.8	2.5	13.0	34.0	20/0.85	16.3	40.3	215	XHHP18AA003
50	8.0	2.5	14.1	49.4	29/0.85	17.4	43.0	275	XHHP19AA003
70	9.6	2.5	15.7	68.1	40/0.85	19.0	46.7	360	XHHP20AA003
95	11.5	2.5	17.6	68.1	40/0.85	20.9	51.1	455	XHHP22AA003
120	13.1	2.5	19.2	68.1	40/0.85	22.5	54.8	545	XHHP23AA003
150	14.5	2.5	20.6	68.1	40/0.85	23.9	58.2	630	XHHP24AA003
185	16.1	2.5	22.2	68.1	40/0.85	25.5	61.8	735	XHHP25AA003
240	18.5	2.6	24.9	68.1	40/0.85	28.2	67.9	930	XHHP26AA003
300	20.7	2.8	27.6	68.1	40/0.85	30.9	74.3	1130	XHHP27AA003
400	23.6	3.0	30.9	68.1	40/0.85	34.2	81.8	1440	XHHP28AA003

Note: For larger sizes use 6.35/11kV cables

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In ground	In air	In ground	Conductor kA	Screen kA	
16	102	108	75	113	86	2.29	2.52
25	132	141	96	145	111	3.57	3.79
35	160	171	118	173	134	5.00	5.05
50	191	205	140	204	159	7.15	7.32
70	238	256	173	249	195	10.0	10.1
95	291	313	212	298	237	13.6	10.1
120	336	363	243	339	270	17.1	10.1
150	381	411	281	379	307	21.4	10.1
185	436	472	319	429	348	26.4	10.1
240	515	559	373	496	404	34.3	10.1
300	591	642	439	559	468	42.9	10.1
400	683	744	503	634	532	57.2	10.1

Installation

Maximum pulling tension kN	Minimum bending radius		Nominal duct dia. mm
	During pulling mm	Set in position mm	
3.4	640	430	63
5.3	680	450	63
7.4	730	480	65
11	770	520	65
15	840	560	65
20	920	610	80
25	990	660	80
32	1050	700	100
39	1110	740	100
50	1220	810	100
63	1340	890	125
84	1470	980	125

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance µF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
16	1.15	1.47	0.134	11000	0.221	0.263	4.00	2.06	1.06	4.34	0.0842
25	0.727	0.927	0.127	9700	0.248	0.296	4.50	1.99	0.706	2.84	0.0770
35	0.524	0.668	0.120	8700	0.276	0.330	5.01	1.93	0.533	2.12	0.0712
50	0.387	0.494	0.115	7800	0.308	0.368	5.59	1.87	0.366	1.49	0.0660
70	0.268	0.342	0.109	6900	0.352	0.420	6.39	1.82	0.265	1.06	0.0603
95	0.193	0.247	0.101	6000	0.404	0.482	7.33	1.77	0.265	0.989	0.0525
120	0.153	0.196	0.0969	5400	0.447	0.534	8.11	1.74	0.266	0.951	0.0491
150	0.124	0.160	0.0942	5000	0.486	0.580	8.81	1.72	0.265	0.920	0.0467
185	0.0991	0.128	0.0917	4600	0.530	0.632	9.61	1.69	0.265	0.896	0.0443
240	0.0754	0.0986	0.0890	4200	0.576	0.687	10.4	1.61	0.266	0.874	0.0418
300	0.0601	0.0798	0.0879	4000	0.597	0.713	10.8	1.49	0.265	0.857	0.0409
400	0.0470	0.0640	0.0852	3800	0.627	0.749	11.4	1.38	0.265	0.845	0.0384



3.8/6.6kV Three Core Ind. Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core no/mm	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	kg/100m	
35	6.9	2.5	13.0	23.8	14/0.85	16.3	40.5	140	XHHA18AA003
50	8.1	2.5	14.2	32.3	19/0.85	17.5	43.1	170	XHHA19AA003
70	9.6	2.5	15.8	46.0	27/0.85	19.1	46.8	210	XHHA20AA003
95	11.4	2.5	17.5	61.3	36/0.85	20.8	50.8	270	XHHA22AA003
120	12.8	2.5	18.9	68.1	40/0.85	22.2	54.1	305	XHHA23AA003
150	14.2	2.5	20.3	68.1	40/0.85	23.6	57.3	340	XHHA24AA003
185	15.7	2.5	21.8	68.1	40/0.85	25.1	60.8	385	XHHA25AA003
240	18.0	2.6	24.3	68.1	40/0.85	27.6	66.6	465	XHHA26AA003
300	20.1	2.8	27.0	68.1	40/0.85	30.3	72.8	550	XHHA27AA003
400	23.0	3.0	30.3	68.1	40/0.85	33.6	80.3	660	XHHA28AA003

Note: For larger sizes use 6.35/11kV cables

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air	In ground	In ground	In ground	Conductor kA	Screen kA
35	124	133	92	134	104	3.31	3.53
50	148	159	109	158	123	4.73	4.80
70	185	199	134	193	151	6.62	6.82
95	225	242	164	231	183	8.99	9.09
120	260	280	188	263	209	11.4	10.1
150	295	318	217	294	238	14.2	10.1
185	338	365	247	333	270	17.5	10.1
240	400	434	290	387	315	22.7	10.1
300	459	499	342	436	365	28.4	10.1
400	537	584	396	500	420	37.8	10.1

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.
	During pulling mm	Set in position mm	
kN			mm
5.3	730	490	65
7.5	780	520	65
11	840	560	65
14	920	610	80
18	970	650	80
23	1030	690	100
28	1090	730	100
36	1200	800	100
45	1310	870	125
60	1450	960	125

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance µF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
35	0.868	1.11	0.120	8700	0.278	0.332	5.04	1.92	0.761	3.15	0.0709
50	0.641	0.822	0.115	7800	0.309	0.369	5.61	1.87	0.559	2.32	0.0658
70	0.443	0.569	0.106	6800	0.353	0.422	6.41	1.82	0.393	1.62	0.0574
95	0.320	0.410	0.101	6000	0.400	0.478	7.26	1.77	0.295	1.20	0.0528
120	0.253	0.325	0.0976	5500	0.439	0.524	7.96	1.74	0.265	1.05	0.0497
150	0.206	0.265	0.0948	5100	0.477	0.569	8.66	1.72	0.266	1.00	0.0472
185	0.164	0.211	0.0923	4700	0.518	0.618	9.40	1.70	0.265	0.960	0.0449
240	0.125	0.162	0.0896	4300	0.561	0.670	10.2	1.62	0.265	0.922	0.0424
300	0.100	0.130	0.0885	4100	0.582	0.695	10.6	1.50	0.265	0.895	0.0415
400	0.0778	0.102	0.0857	3900	0.613	0.731	11.1	1.39	0.265	0.874	0.0390

6.35/11kV Three Core Ind. Screened & PVC Sheathed

Copper conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
16	4.8	3.4	12.8	17.0	10/0.85	16.1	40.0	150	XJHP15AA003
25	5.8	3.4	13.8	25.5	15/0.85	17.1	42.3	195	XJHP17AA003
35	6.8	3.4	14.8	34.0	20/0.85	18.1	44.7	240	XJHP18AA003
50	8.0	3.4	16.0	49.4	29/0.85	19.3	47.4	295	XJHP19AA003
70	9.6	3.4	17.6	68.1	40/0.85	20.9	51.0	390	XJHP20AA003
95	11.5	3.4	19.4	68.1	40/0.85	22.7	55.3	480	XJHP22AA003
120	13.1	3.4	21.0	68.1	40/0.85	24.3	58.9	575	XJHP23AA003
150	14.5	3.4	22.4	68.1	40/0.85	25.7	62.3	665	XJHP24AA003
185	16.1	3.4	24.1	68.1	40/0.85	27.4	66.0	770	XJHP25AA003
240	18.5	3.4	26.5	68.1	40/0.85	29.8	71.6	965	XJHP26AA003
300	20.7	3.4	28.9	68.1	40/0.85	32.2	76.9	1160	XJHP27AA003
400	23.6	3.4	31.8	68.1	40/0.85	35.3	84.2	1460	XJHP28AA003
500	26.5	3.4	34.7	68.1	40/0.85	38.2	90.9	1790	XJHP30AA003

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air	In ground	In ground	In ground	Conductor kA	Screen kA
16	104	110	78	113	89	2.29	2.52
25	134	143	100	145	114	3.57	3.79
35	162	173	120	173	136	5.00	5.05
50	194	208	145	204	162	7.15	7.32
70	241	259	178	249	199	10.0	10.1
95	295	317	220	299	242	13.6	10.1
120	340	367	252	340	276	17.1	10.1
150	385	415	284	380	310	21.4	10.1
185	440	476	322	429	350	26.4	10.1
240	519	563	389	497	416	34.3	10.1
300	594	645	442	560	470	42.9	10.1
400	685	746	505	635	534	57.2	10.1
500	779	850	569	710	597	71.5	10.1

Installation

Maximum pulling tension kN	Minimum bending radius		Nominal duct dia. mm
	During pulling mm	Set in position mm	
3.4	720	480	65
5.3	760	510	65
7.4	800	540	65
11	850	570	80
15	920	610	80
20	1000	660	100
25	1060	710	100
32	1120	750	100
39	1190	790	100
50	1290	860	125
63	1380	920	125
84	1520	1010	125
105	1640	1090	150

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
16	1.15	1.47	0.142	14000	0.177	0.354	8.98	2.77	1.06	4.34	0.0922
25	0.727	0.927	0.134	12000	0.198	0.394	10.0	2.65	0.707	2.85	0.0845
35	0.524	0.668	0.127	11000	0.219	0.436	11.1	2.55	0.530	2.12	0.0782
50	0.387	0.494	0.121	10000	0.242	0.484	12.3	2.46	0.366	1.48	0.0725
70	0.268	0.342	0.115	8800	0.275	0.549	13.9	2.37	0.265	1.06	0.0663
95	0.193	0.247	0.106	7700	0.314	0.626	15.9	2.30	0.265	0.989	0.0580
120	0.153	0.196	0.102	7000	0.346	0.689	17.5	2.25	0.265	0.950	0.0543
150	0.124	0.160	0.0990	6400	0.374	0.747	19.0	2.21	0.266	0.922	0.0515
185	0.0991	0.128	0.0961	5900	0.407	0.811	20.6	2.17	0.265	0.896	0.0488
240	0.0754	0.0985	0.0926	5300	0.456	0.909	23.1	2.13	0.266	0.875	0.0455
300	0.0601	0.0796	0.0904	4800	0.503	1.00	25.5	2.10	0.265	0.856	0.0434
400	0.0470	0.0638	0.0870	4300	0.561	1.12	28.5	2.07	0.265	0.845	0.0403
500	0.0373	0.0525	0.0847	3900	0.620	1.24	31.4	2.05	0.265	0.835	0.0381



6.35/11kV Three Core Ind. Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
35	6.9	3.4	14.9	23.8	14/0.85	18.2	44.6	165	XJHA18AA003
50	8.1	3.4	16.0	32.3	19/0.85	19.3	47.5	195	XJHA19AA003
70	9.6	3.4	17.6	46.0	27/0.85	20.9	51.1	245	XJHA20AA003
95	11.4	3.4	19.3	61.3	36/0.85	22.6	55.0	295	XJHA22AA003
120	12.8	3.4	20.7	68.1	40/0.85	24.0	58.2	340	XJHA23AA003
150	14.2	3.4	22.1	68.1	40/0.85	25.4	61.5	375	XJHA24AA003
185	15.7	3.4	23.6	68.1	40/0.85	26.9	64.9	420	XJHA25AA003
240	18.0	3.4	25.9	68.1	40/0.85	29.2	70.3	490	XJHA26AA003
300	20.1	3.4	28.3	68.1	40/0.85	31.6	75.5	570	XJHA27AA003
400	23.0	3.4	31.1	68.1	40/0.85	34.6	82.8	690	XJHA28AA003
500	26.5	3.4	34.7	68.1	40/0.85	38.2	90.9	845	XJHA30AA003

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air	In ground	In ground	In ground	Conductor kA	Screen kA
35	126	135	93	134	106	3.31	3.53
50	151	161	112	158	126	4.73	4.80
70	187	201	138	193	154	6.62	6.82
95	228	245	171	231	188	8.99	9.09
120	263	283	195	263	214	11.4	10.1
150	298	321	220	295	240	14.2	10.1
185	341	368	250	333	272	17.5	10.1
240	403	436	292	387	316	22.7	10.1
300	462	501	344	437	366	28.4	10.1
400	538	585	397	500	420	37.8	10.1
500	622	679	454	567	477	47.3	10.1

Installation

Maximum pulling tension kN	Minimum bending radius		Nominal duct dia. mm
	During pulling mm	Set in position mm	
5.3	800	540	65
7.5	850	570	80
11	920	610	80
14	990	660	100
18	1050	700	100
23	1110	740	100
28	1170	780	100
36	1270	840	100
45	1360	910	125
60	1490	990	125
75	1640	1090	150

Electrical Characteristics

Nominal conductor area mm ²	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance µF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress at 20°C kV/mm	DC resistance of screens at 50°C Ohm/km	Zero sequence resistance at 50Hz Ohm/km	Zero seq. react. Ohm/km
35	0.868	1.11	0.127	11000	0.220	0.439	11.1	2.54	0.758	3.14	0.0779
50	0.641	0.821	0.121	9900	0.243	0.486	12.3	2.46	0.559	2.32	0.0723
70	0.443	0.569	0.112	8700	0.276	0.551	14.0	2.37	0.393	1.62	0.0634
95	0.320	0.410	0.106	7800	0.311	0.620	15.8	2.30	0.295	1.21	0.0583
120	0.253	0.325	0.103	7100	0.339	0.677	17.2	2.25	0.265	1.05	0.0549
150	0.206	0.265	0.0996	6600	0.368	0.734	18.6	2.22	0.265	1.00	0.0520
185	0.164	0.211	0.0968	6100	0.398	0.794	20.2	2.18	0.265	0.959	0.0494
240	0.125	0.161	0.0933	5400	0.445	0.887	22.5	2.14	0.266	0.923	0.0461
300	0.100	0.130	0.0910	4900	0.491	0.980	24.9	2.11	0.266	0.898	0.0441
400	0.0778	0.102	0.0876	4400	0.548	1.09	27.8	2.08	0.266	0.876	0.0409
500	0.0617	0.0823	0.0847	3900	0.620	1.24	31.4	2.05	0.265	0.859	0.0381

12.7/22kV Three Core Ind. Screened & PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
35	6.8	5.5	19.1	34.0	20/0.85	22.4	54.6	300	XLHP18AA003
50	8.0	5.5	20.3	49.4	29/0.85	23.6	57.3	360	XLHP19AA003
70	9.6	5.5	21.9	68.1	40/0.85	25.2	60.9	460	XLHP20AA003
95	11.5	5.5	23.8	68.1	40/0.85	27.1	65.2	560	XLHP22AA003
120	13.1	5.5	25.3	68.1	40/0.85	28.6	68.9	650	XLHP23AA003
150	14.5	5.5	26.8	68.1	40/0.85	30.1	72.2	750	XLHP24AA003
185	16.1	5.5	28.4	68.1	40/0.85	31.7	75.9	855	XLHP25AA003
240	18.5	5.5	30.8	68.1	40/0.85	34.1	81.5	1060	XLHP26AA003
300	20.7	5.5	33.2	68.1	40/0.85	36.7	87.5	1270	XLHP27AA003
400	23.6	5.5	36.1	68.1	40/0.85	39.6	94.1	1570	XLHP28AA003
500	26.5	5.5	39.0	68.1	40/0.85	42.5	100.8	1910	XLHP30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air	In ground	In ground	In ground	Conductor kA	Screen kA
35	167	178	126	173	140	5.00	5.05
50	199	213	152	204	168	7.15	7.32
70	247	265	187	250	205	10.0	10.1
95	301	323	225	299	246	13.6	10.1
120	346	373	258	340	280	17.1	10.1
150	392	422	299	381	321	21.4	10.1
185	448	483	339	430	363	26.4	10.1
240	527	570	396	498	421	34.3	10.1
300	602	652	449	562	474	42.9	10.1
400	694	754	513	638	539	57.2	10.1
500	789	859	601	714	624	71.5	10.1

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.
	During pulling	Set in position	
kN	mm	mm	mm
7.4	980	660	80
11	1030	690	100
15	1100	730	100
20	1170	780	100
25	1240	830	100
32	1300	870	125
39	1370	910	125
50	1470	980	125
63	1570	1050	125
84	1690	1130	150
105	1810	1210	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
35	0.524	0.668	0.141	16000	0.156	0.622	31.6	3.63	0.531	2.12	0.0923
50	0.387	0.494	0.134	14000	0.171	0.682	34.7	3.48	0.367	1.49	0.0858
70	0.268	0.342	0.127	13000	0.192	0.765	38.9	3.31	0.265	1.06	0.0786
95	0.193	0.247	0.117	11000	0.216	0.862	43.8	3.16	0.265	0.988	0.0693
120	0.153	0.196	0.112	10000	0.236	0.942	47.8	3.07	0.265	0.949	0.0648
150	0.124	0.160	0.109	9500	0.254	1.01	51.5	3.00	0.266	0.924	0.0615
185	0.0991	0.128	0.105	8800	0.274	1.09	55.6	2.93	0.266	0.897	0.0582
240	0.0754	0.0981	0.101	7900	0.305	1.22	61.8	2.85	0.265	0.872	0.0542
300	0.0601	0.0792	0.0988	7200	0.334	1.33	67.8	2.79	0.265	0.857	0.0519
400	0.0470	0.0633	0.0944	6500	0.371	1.48	75.1	2.73	0.265	0.844	0.0477
500	0.0373	0.0518	0.0915	5900	0.407	1.62	82.4	2.69	0.265	0.835	0.0450



12.7/22kV Three Core Ind. Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core no/mm	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	kg/100m	
35	6.9	5.5	19.2	23.8	14/0.85	22.5	54.7	225	XLHA18AA003
50	8.1	5.5	20.3	32.3	19/0.85	23.6	57.4	260	XLHA19AA003
70	9.6	5.5	21.9	46.0	27/0.85	25.2	61.0	310	XLHA20AA003
95	11.4	5.5	23.6	61.3	36/0.85	26.9	64.9	370	XLHA22AA003
120	12.8	5.5	25.0	68.1	40/0.85	28.3	68.1	415	XLHA23AA003
150	14.2	5.5	26.4	68.1	40/0.85	29.7	71.4	460	XLHA24AA003
185	15.7	5.5	27.9	68.1	40/0.85	31.2	74.8	505	XLHA25AA003
240	18.0	5.5	30.3	68.1	40/0.85	33.6	80.2	585	XLHA26AA003
300	20.1	5.5	32.6	68.1	40/0.85	36.1	86.0	685	XLHA27AA003
400	23.0	5.5	35.4	68.1	40/0.85	38.9	92.7	800	XLHA28AA003
500	26.5	5.5	39.0	68.1	40/0.85	42.5	100.8	960	XLHA30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air	In ground	In ground	In ground	Conductor kA	Screen kA
35	130	138	97	134	109	3.31	3.53
50	155	165	118	158	130	4.73	4.80
70	192	205	145	194	159	6.62	6.82
95	233	250	175	232	191	8.99	9.09
120	268	288	199	264	217	11.4	10.1
150	303	326	232	295	249	14.2	10.1
185	346	374	263	334	281	17.5	10.1
240	408	441	307	388	327	22.7	10.1
300	467	506	349	437	369	28.4	10.1
400	543	590	403	501	423	37.8	10.1
500	628	683	478	568	497	47.3	10.1

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.
	During pulling mm	Set in position mm	
5.3	980	660	80
7.5	1030	690	100
11	1100	730	100
14	1170	780	100
18	1230	820	100
23	1280	860	125
28	1350	900	125
36	1440	960	125
45	1550	1030	125
60	1670	1110	150
75	1810	1210	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero seq. react. at 50Hz Ohm/km
35	0.868	1.11	0.140	15000	0.157	0.626	31.8	3.62	0.759	3.15	0.0919
50	0.641	0.821	0.134	14000	0.172	0.685	34.8	3.47	0.560	2.32	0.0855
70	0.443	0.568	0.124	13000	0.192	0.768	39.0	3.30	0.393	1.62	0.0757
95	0.320	0.410	0.117	11000	0.214	0.855	43.4	3.17	0.294	1.20	0.0697
120	0.253	0.325	0.113	10000	0.232	0.926	47.0	3.08	0.265	1.05	0.0657
150	0.206	0.265	0.110	9700	0.250	0.997	50.7	3.01	0.266	1.00	0.0622
185	0.164	0.211	0.106	9000	0.269	1.07	54.5	2.95	0.265	0.961	0.0591
240	0.125	0.161	0.102	8100	0.298	1.19	60.4	2.87	0.265	0.920	0.0550
300	0.100	0.130	0.0996	7400	0.327	1.30	66.3	2.81	0.265	0.896	0.0527
400	0.0778	0.102	0.0951	6700	0.363	1.45	73.5	2.75	0.266	0.876	0.0484
500	0.0617	0.0819	0.0915	5900	0.407	1.62	82.4	2.69	0.265	0.858	0.0450

19/33kV Three Core Ind. Screened & PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
50	8.0	8.0	25.5	49.4	29/0.85	28.8	69.4	460	XNHP19AA003
70	9.6	8.0	27.1	68.1	40/0.85	30.4	73.0	560	XNHP20AA003
95	11.5	8.0	29.0	68.1	40/0.85	32.3	77.3	665	XNHP22AA003
120	13.1	8.0	30.6	68.1	40/0.85	33.9	81.1	765	XNHP23AA003
150	14.5	8.0	32.0	68.1	40/0.85	35.5	84.8	875	XNHP24AA003
185	16.1	8.0	33.6	68.1	40/0.85	37.1	88.4	990	XNHP25AA003
240	18.5	8.0	36.0	68.1	40/0.85	39.5	94.1	1190	XNHP26AA003
300	20.7	8.0	38.4	68.1	40/0.85	41.9	99.4	1410	XNHP27AA003
400	23.6	8.0	41.3	68.1	40/0.85	44.8	106.2	1730	XNHP28AA003
500	26.5	8.0	44.2	68.1	40/0.85	47.7	112.9	2070	XNHP30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air		In ground		Conductor	Screen
mm ²						kA	kA
50	204	217	156	205	170	7.15	7.32
70	252	269	198	250	213	10.0	10.1
95	306	328	238	299	255	13.6	10.1
120	352	377	271	341	290	17.1	10.1
150	397	427	304	381	324	21.4	10.1
185	454	488	345	431	366	26.4	10.1
240	533	575	402	499	424	34.3	10.1
300	609	658	456	563	478	42.9	10.1
400	701	759	542	640	562	57.2	10.1
500	797	864	610	718	630	71.5	10.1

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.
	During pulling	Set in position	
kN	mm	mm	mm
11	1250	830	100
15	1310	880	125
20	1390	930	125
25	1460	970	125
32	1530	1020	125
39	1590	1060	150
50	1690	1130	150
63	1790	1190	150
84	1910	1270	200
105	2030	1350	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
50	0.387	0.494	0.147	18000	0.133	0.796	60.5	4.05	0.366	1.49	0.0988
70	0.268	0.342	0.139	16000	0.148	0.883	67.1	3.82	0.265	1.06	0.0909
95	0.193	0.247	0.128	15000	0.165	0.984	74.8	3.61	0.265	0.989	0.0807
120	0.153	0.196	0.123	14000	0.179	1.07	81.1	3.48	0.265	0.949	0.0757
150	0.124	0.159	0.120	13000	0.191	1.14	86.8	3.38	0.266	0.922	0.0722
185	0.0991	0.128	0.116	12000	0.205	1.23	93.2	3.29	0.266	0.897	0.0685
240	0.0754	0.0978	0.111	11000	0.227	1.35	103	3.17	0.265	0.872	0.0637
300	0.0601	0.0788	0.107	9800	0.247	1.48	112	3.09	0.266	0.858	0.0605
400	0.0470	0.0628	0.102	8900	0.272	1.62	123	3.00	0.266	0.845	0.0557
500	0.0373	0.0513	0.0990	8100	0.297	1.77	135	2.93	0.265	0.835	0.0524



19/33kV Three Core Ind. Screened & PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core no/mm	Nominal diameter over wire screen	Nominal overall diameter	Approximate mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	kg/100m	
50	8.1	8.0	25.6	32.3	19/0.85	28.9	69.5	355	XNHA19AA003
70	9.6	8.0	27.2	46.0	27/0.85	30.5	73.1	415	XNHA20AA003
95	11.4	8.0	28.9	61.3	36/0.85	32.2	77.0	480	XNHA22AA003
120	12.8	8.0	30.3	68.1	40/0.85	33.6	80.2	525	XNHA23AA003
150	14.2	8.0	31.7	68.1	40/0.85	35.2	83.9	580	XNHA24AA003
185	15.7	8.0	33.2	68.1	40/0.85	36.7	87.3	635	XNHA25AA003
240	18.0	8.0	35.5	68.1	40/0.85	39.0	92.9	730	XNHA26AA003
300	20.1	8.0	37.8	68.1	40/0.85	41.3	98.1	820	XNHA27AA003
400	23.0	8.0	40.7	68.1	40/0.85	44.2	104.8	955	XNHA28AA003
500	26.5	8.0	44.2	68.1	40/0.85	47.7	112.9	1120	XNHA30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air		In ground		Conductor kA	Screen kA
mm ²							
50	158	168	121	159	132	4.73	4.80
70	196	209	153	194	165	6.62	6.82
95	237	254	184	232	197	8.99	9.09
120	272	292	210	264	224	11.4	10.1
150	307	330	236	295	251	14.2	10.1
185	351	378	268	334	284	17.5	10.1
240	413	445	312	388	330	22.7	10.1
300	472	509	354	438	372	28.4	10.1
400	548	593	424	502	440	37.8	10.1
500	632	686	484	570	499	47.3	10.1

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.
	During pulling	Set in position	
kN	mm	mm	mm
7.5	1250	830	100
11	1320	880	125
14	1390	920	125
18	1440	960	125
23	1510	1010	125
28	1570	1050	125
36	1670	1110	150
45	1770	1180	150
60	1890	1260	200
75	2030	1350	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
50	0.641	0.821	0.147	18000	0.134	0.798	60.7	4.04	0.559	2.32	0.0985
70	0.443	0.568	0.136	16000	0.148	0.885	67.3	3.81	0.392	1.62	0.0879
95	0.320	0.410	0.129	15000	0.164	0.977	74.3	3.62	0.294	1.20	0.0812
120	0.253	0.325	0.124	14000	0.176	1.05	79.9	3.50	0.265	1.05	0.0766
150	0.206	0.264	0.120	13000	0.189	1.13	85.5	3.40	0.265	1.00	0.0731
185	0.164	0.211	0.117	12000	0.202	1.20	91.5	3.31	0.265	0.961	0.0694
240	0.125	0.161	0.112	11000	0.222	1.32	101	3.20	0.266	0.923	0.0647
300	0.100	0.130	0.108	10000	0.242	1.44	110	3.11	0.265	0.897	0.0614
400	0.0778	0.102	0.103	9100	0.267	1.59	121	3.02	0.265	0.874	0.0565
500	0.0617	0.0815	0.0990	8100	0.297	1.77	135	2.93	0.265	0.858	0.0524

6.35/11kV Three Core Ind. Screened PVC/HDPE Sheathed URD

Aluminium Conductors, 3kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
35	6.9	3.4	14.9	20.4	12/0.85	18.2	44.7	155	XJMA18AA003
95	11.4	3.4	19.3	23.8	14/0.85	22.6	55.1	250	XJMA22AA003
185	15.7	3.4	23.6	28.9	17/0.85	26.9	65.0	370	XJMA25AA003
240	18.0	3.4	25.9	30.6	18/0.85	29.2	70.4	440	XJMA26AA003
300	20.1	3.4	28.3	32.3	19/0.85	31.6	75.6	515	XJMA27AA003

Screen Electrical Characteristics

Screen Fault current carrying capacity for 1 second kA	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero sequence reactance at 50Hz Ohm/km
3.03	0.884	3.52	0.0779
3.53	0.760	2.60	0.0583
4.29	0.623	2.03	0.0494
4.54	0.590	1.90	0.0461
4.80	0.559	1.78	0.0441

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
35	6.9	3.4	14.9	23.8	14/0.85	18.2	44.7	155	XJNA18AA003
95	11.4	3.4	19.3	61.3	36/0.85	22.6	55.1	285	XJNA22AA003
185	15.7	3.4	23.6	68.1	40/0.85	26.9	65.0	405	XJNA25AA003
240	18.0	3.4	25.9	68.1	40/0.85	29.2	70.4	475	XJNA26AA003
300	20.1	3.4	28.3	68.1	40/0.85	31.6	75.6	550	XJNA27AA003

Screen Electrical Characteristics

Screen Fault current carrying capacity for 1 second kA	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero sequence reactance at 50Hz Ohm/km
3.53	0.758	3.14	0.0779
9.09	0.295	1.21	0.0583
10.1	0.265	0.959	0.0494
10.1	0.266	0.923	0.0461
10.1	0.266	0.898	0.0441

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A				Conductor fault current carrying capacity for 1 second kA	
	In air		In ground			
mm ²						
35	127	136	94	135	106	3.31
95	230	248	171	233	189	8.99
185	344	373	251	335	273	17.5
240	407	441	294	389	318	22.7
300	467	508	346	440	368	28.4

Installation

Maximum pulling tension kN	Minimum bending radius	Set in position mm	Nominal duct dia. mm
	During pulling mm		
5.3	1120	670	65
14	1380	830	80
28	1630	980	100
36	1760	1060	100
45	1890	1130	125

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm
mm ²								
35	0.868	1.11	0.127	11000	0.220	0.439	11.1	2.54
95	0.320	0.410	0.106	7800	0.311	0.620	15.8	2.30
185	0.164	0.211	0.0968	6100	0.398	0.794	20.2	2.18
240	0.125	0.161	0.0933	5400	0.445	0.887	22.5	2.14
300	0.100	0.130	0.0910	4900	0.491	0.980	24.9	2.11



12.7/22kV Three Core Ind. Screened PVC/HDPE Sheathed URD

Aluminium Conductors, 3kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
35	6.9	5.5	19.2	23.8	14/0.85	22.5	54.8	215	XLMA18AA003
95	11.4	5.5	23.6	28.9	17/0.85	26.9	65.0	330	XLMA22AA003
185	15.7	5.5	27.9	32.3	19/0.85	31.2	74.9	450	XLMA25AA003
240	18.0	5.5	30.3	35.7	21/0.85	33.6	80.3	535	XLMA26AA003

Screen Electrical Characteristics

Screen Fault current carrying capacity for 1 second kA	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero sequence reactance at 50Hz Ohm/km
3.53	0.759	3.15	0.0919
4.29	0.623	2.19	0.0697
4.80	0.559	1.84	0.0591
5.30	0.505	1.64	0.0550

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires on each core	Nominal diameter over wire screen	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	kg/100m	
35	6.9	5.5	19.2	23.8	14/0.85	22.5	54.8	215	XLNA18AA003
95	11.4	5.5	23.6	61.3	36/0.85	26.9	65.0	360	XLNA22AA003
185	15.7	5.5	27.9	68.1	40/0.85	31.2	74.9	485	XLNA25AA003
240	18.0	5.5	30.3	68.1	40/0.85	33.6	80.3	565	XLNA26AA003

Screen Electrical Characteristics

Screen Fault current carrying capacity for 1 second kA	DC resistance of screens at 20°C Ohm/km	Zero sequence resistance at 20°C Ohm/km	Zero sequence reactance at 50Hz Ohm/km
3.53	0.759	3.15	0.0919
9.09	0.294	1.20	0.0697
10.1	0.265	0.961	0.0591
10.1	0.265	0.920	0.0550

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A						Conductor fault current carrying capacity for 1 second kA
	In air			In ground			
35	131	139	98	135	109	3.31	
95	235	252	175	233	191	8.99	
185	350	378	264	336	283	17.5	
240	412	447	309	390	329	22.7	

Installation

Maximum pulling tension kN	Minimum bending radius		Nominal duct dia. mm
	During pulling mm	Set in position mm	
5.3	1370	820	80
14	1630	980	100
28	1870	1120	125
36	2010	1200	125

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C Ohm/km	Conductor AC resistance at 50Hz and 90°C Ohm/km	Inductive reactance at 50Hz Ohm/km	Insulation resistance at 20°C MegOhm.km	Conductor to screen capacitance µF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm
35	0.868	1.11	0.140	15000	0.157	0.626	31.8	3.62
95	0.320	0.410	0.117	11000	0.214	0.855	43.4	3.17
185	0.164	0.211	0.106	9000	0.269	1.07	54.5	2.95
240	0.125	0.161	0.102	8100	0.298	1.19	60.4	2.87



High Voltage Three Co

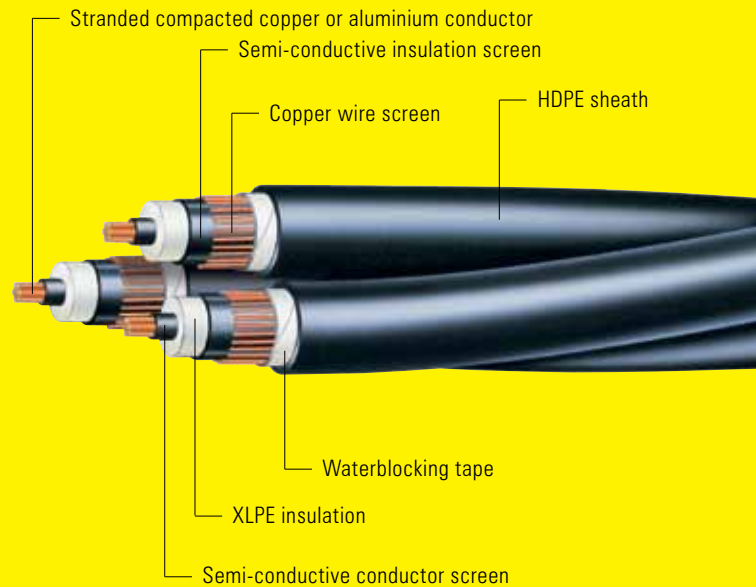
Construction Stranded compacted copper or aluminium conductor, triple extruded conductor screen, insulation and insulation screen, copper wire screened, water blocking taped, HDPE sheathed, laid up “Triplex” cables.





re Triplex

6.35/11 to 12.7/22kV



6.35/11kV Triplex

Ind. Screened, Water Blocking Taped/HDPE Sheathed

Copper Conductors, up to 10kA fault level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area on each core	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal overall diameter of each phase cable mm	Nominal overall diameter of Triplex	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm		mm	kg/100m	
16	4.8	3.4	12.8	15.9	28/0.85	16.1	20.6	44.5	165	XJZP15TH003
25	5.8	3.4	13.8	24.4	43/0.85	17.1	21.6	46.6	220	XJZP17TH003
35	6.8	3.4	14.8	34.4	24/1.35	19.1	23.6	50.9	280	XJZP18TH003
50	8.0	3.4	16.0	48.7	34/1.35	20.3	24.8	53.4	360	XJZP19TH003
70	9.6	3.4	17.6	68.1	30/1.70	22.6	27.1	58.4	480	XJZP20TH003
95	11.5	3.4	19.4	68.7	48/1.35	23.7	28.3	60.9	565	XJZP22TH003
120	13.1	3.4	21.0	68.7	48/1.35	25.3	29.9	64.3	650	XJZP23TH003
150	14.5	3.4	22.4	68.7	48/1.35	26.7	31.5	67.8	735	XJZP24TH003
185	16.1	3.4	24.1	68.7	48/1.35	28.4	33.1	71.3	830	XJZP25TH003
240	18.5	3.4	26.5	68.7	48/1.35	30.8	35.7	77.0	1010	XJZP26TH003
300	20.7	3.4	28.9	68.7	48/1.35	33.2	38.3	82.5	1200	XJZP27TH003
400	23.6	3.4	31.8	68.7	48/1.35	36.3	41.6	89.7	1480	XJZP28TH003
500	26.5	3.4	34.7	68.7	48/1.35	39.2	44.7	96.4	1780	XJZP30TH003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor kA	Screen kA
mm ²	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
16	106	112	81	113	92	2.29	2.36
25	137	145	104	145	117	3.57	3.62
35	168	178	125	173	141	5.0	5.09
50	201	213	150	204	167	7.15	7.22
70	251	266	184	249	204	10.0	10.1
95	302	321	226	296	246	13.6	10.2
120	348	370	257	335	279	17.1	10.2
150	393	419	288	373	311	21.4	10.2
185	448	478	325	419	350	26.4	10.2
240	525	561	376	481	402	34.3	10.2
300	598	638	438	537	461	42.9	10.2
400	687	734	497	603	519	57.2	10.2
500	776	830	554	668	575	71.5	10.2

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.
	Phase cable	Cable bundle	
kN	During pulling mm	Set in position mm	mm
3.4	520	310	65
5.3	540	320	65
7.4	590	350	65
11	620	370	80
15	680	410	80
20	710	420	80
25	750	450	100
32	790	470	100
39	830	500	100
50	890	540	100
63	960	570	125
84	1040	620	125
105	1120	670	125

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screen at 20°C	Zero sequence resistance at 20°C	Zero seq. react.
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
16	1.15	1.47	0.155	14000	0.177	0.354	8.98	2.77	1.14	2.29	0.0922
25	0.727	0.927	0.145	12000	0.198	0.394	10.0	2.65	0.740	1.47	0.0845
35	0.524	0.668	0.140	11000	0.219	0.436	11.1	2.55	0.527	1.05	0.0800
50	0.387	0.494	0.134	10000	0.242	0.484	12.3	2.46	0.371	0.758	0.0742
70	0.268	0.342	0.128	8800	0.275	0.549	13.9	2.37	0.266	0.534	0.0689
95	0.193	0.247	0.117	7700	0.314	0.626	15.9	2.30	0.263	0.457	0.0594
120	0.153	0.196	0.112	7000	0.346	0.689	17.5	2.25	0.264	0.417	0.0556
150	0.124	0.160	0.109	6400	0.374	0.747	19.0	2.21	0.263	0.388	0.0527
185	0.0991	0.128	0.105	5900	0.407	0.811	20.6	2.17	0.263	0.363	0.0499
240	0.0754	0.0980	0.101	5300	0.456	0.909	23.1	2.13	0.262	0.339	0.0465
300	0.0601	0.0791	0.0988	4800	0.503	1.00	25.5	2.10	0.263	0.324	0.0444
400	0.0470	0.0631	0.0951	4300	0.561	1.12	28.5	2.07	0.263	0.312	0.0412
500	0.0373	0.0516	0.0923	3900	0.620	1.24	31.4	2.05	0.263	0.303	0.0390



6.35/11kV Triplex

Ind. Screened, Water Blocking Taped/HDPE Sheathed

Aluminium Conductors, up to 10kA fault level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area on each core	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal overall diameter of each phase cable mm	Nominal overall diameter of Triplex	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	kg/100m	
35	6.9	3.4	14.9	22.7	40/0.85	18.2	22.7	48.9	180	XJZA18TH003
50	8.1	3.4	16.0	32.9	23/1.35	20.3	24.8	53.5	230	XJZA19TH003
70	9.6	3.4	17.6	45.8	32/1.7	21.9	26.4	57.0	290	XJZA20TH003
95	11.4	3.4	19.3	61.5	43/1.35	23.6	28.2	60.7	365	XJZA22TH003
120	12.8	3.4	20.7	68.7	48/1.35	25.0	29.6	63.7	415	XJZA23TH003
150	14.2	3.4	22.1	68.7	48/1.35	26.4	31.2	67.2	450	XJZA24TH003
185	15.7	3.4	23.6	68.7	48/1.35	27.9	32.7	70.4	485	XJZA25TH003
240	18.0	3.4	25.9	68.7	48/1.35	30.2	35.2	75.8	550	XJZA26TH003
300	20.1	3.4	28.3	68.7	48/1.35	32.6	37.7	81.2	615	XJZA27TH003
400	23.0	3.4	31.1	68.7	48/1.35	35.6	41.0	88.3	710	XJZA28TH003
500	26.5	3.4	34.7	68.7	48/1.35	39.2	44.7	96.4	840	XJZA30TH003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor kA	Screen kA
mm ²	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	129	137	96	134	108	3.31	3.37
50	157	166	117	159	130	4.73	4.88
70	194	206	143	194	159	6.62	6.79
95	236	251	176	231	192	8.99	9.13
120	271	288	201	262	218	11.4	10.2
150	307	327	225	292	244	14.2	10.2
185	350	373	255	329	275	17.5	10.2
240	413	440	296	380	317	22.7	10.2
300	472	503	347	426	366	28.4	10.2
400	548	586	398	484	417	37.8	10.2
500	632	676	452	545	469	47.3	10.2

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.	
	Phase cable	Cable bundle	mm	mm
kN	During pulling mm	Set in position mm	During pulling mm	Set in position mm
5.3	570	340	730	490
7.5	620	370	800	540
11	660	400	850	570
14	700	420	910	610
18	740	440	960	640
23	780	470	1010	670
28	820	490	1060	700
36	880	530	1140	760
45	940	570	1220	810
60	1020	610	1320	880
75	1120	670	1450	960

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screen at 20°C	Zero sequence resistance at 20°C	Zero seq. react.
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.138	11000	0.220	0.439	11.1	2.54	0.796	1.66	0.0779
50	0.641	0.821	0.134	9900	0.243	0.486	12.3	2.46	0.548	1.19	0.0740
70	0.443	0.568	0.124	8700	0.276	0.551	14.0	2.37	0.395	0.839	0.0650
95	0.320	0.410	0.118	7800	0.311	0.620	15.8	2.30	0.294	0.614	0.0597
120	0.253	0.325	0.114	7100	0.339	0.677	17.2	2.25	0.263	0.517	0.0563
150	0.206	0.265	0.110	6600	0.368	0.734	18.6	2.22	0.263	0.469	0.0533
185	0.164	0.211	0.107	6100	0.398	0.794	20.2	2.18	0.263	0.428	0.0506
240	0.125	0.161	0.103	5400	0.445	0.887	22.5	2.14	0.264	0.389	0.0472
300	0.100	0.130	0.100	4900	0.491	0.980	24.9	2.11	0.263	0.363	0.0451
400	0.0778	0.102	0.0965	4400	0.548	1.09	27.8	2.08	0.263	0.342	0.0418
500	0.0617	0.0817	0.0929	3900	0.620	1.24	31.4	2.05	0.263	0.326	0.0390

12.7/22kV Triplex

Ind. Screened, Water Blocking Taped/HDPE Sheathed

Copper Conductors, up to 10kA fault level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area on each core	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal overall diameter of each phase cable	Nominal overall diameter of Triplex	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	kg/100m	
35	6.8	5.5	19.1	34.4	24/1.35	23.4	28.0	60.2	325	XLZP18TH003
50	8.0	5.5	20.3	48.7	34/1.35	24.6	29.1	62.7	405	XLZP19TH003
70	9.6	5.5	21.9	68.7	48/1.35	26.2	30.9	66.6	535	XLZP20TH003
95	11.5	5.5	23.8	68.7	48/1.35	28.1	32.8	70.7	620	XLZP22TH003
120	13.1	5.5	25.3	68.7	48/1.35	29.6	34.6	74.5	710	XLZP23TH003
150	14.5	5.5	26.8	68.7	48/1.35	31.1	36.0	77.6	800	XLZP24TH003
185	16.1	5.5	28.4	68.7	48/1.35	32.7	37.8	81.5	900	XLZP25TH003
240	18.5	5.5	30.8	68.7	48/1.35	35.1	40.5	87.2	1080	XLZP26TH003
300	20.7	5.5	33.2	68.7	48/1.35	37.7	43.0	92.7	1280	XLZP27TH003
400	23.6	5.5	36.1	68.7	48/1.35	40.6	46.3	99.8	1570	XLZP28TH003
500	26.5	5.5	39.0	68.7	48/1.35	43.5	49.2	106.1	1870	XLZP30TH003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A						Fault current carrying capacity for 1 second	
	In air		In ground				Conductor kA	Screen kA
mm ²	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	173	182	130	174	144	5.00	5.09	
50	206	217	157	204	172	7.15	7.22	
70	254	269	192	248	209	10.0	10.2	
95	309	327	230	296	249	13.6	10.2	
120	355	376	262	335	282	17.1	10.2	
150	400	425	293	374	314	21.4	10.2	
185	456	484	342	420	362	26.4	10.2	
240	534	568	396	482	416	34.3	10.2	
300	608	647	445	539	466	42.9	10.2	
400	697	742	504	606	523	57.2	10.2	
500	787	840	562	673	580	71.5	10.2	

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.		
	Phase cable	Cable bundle	Cable bundle	Nominal duct dia.	
kN	During pulling mm	Set in position mm	During pulling mm	Set in position mm	
7.4	700	420	900	600	80
11	730	440	940	630	100
15	770	460	1000	670	100
20	820	490	1060	710	100
25	860	520	1120	750	100
32	900	540	1160	780	100
39	950	570	1220	810	125
50	1010	610	1310	870	125
63	1080	650	1390	930	125
84	1160	690	1500	1000	150
105	1230	740	1590	1060	150

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screen at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
35	0.524	0.668	0.151	16000	0.156	0.622	31.6	3.63	0.526	1.05	0.0937
50	0.387	0.494	0.144	14000	0.171	0.682	34.7	3.48	0.371	0.758	0.0871
70	0.268	0.342	0.136	13000	0.192	0.765	38.9	3.31	0.263	0.531	0.0799
95	0.193	0.247	0.126	11000	0.216	0.862	43.8	3.16	0.263	0.457	0.0705
120	0.153	0.196	0.121	10000	0.236	0.942	47.8	3.07	0.263	0.417	0.0660
150	0.124	0.159	0.117	9500	0.254	1.01	51.5	3.00	0.262	0.387	0.0626
185	0.0991	0.128	0.114	8800	0.274	1.09	55.6	2.93	0.263	0.363	0.0593
240	0.0754	0.0978	0.109	7900	0.305	1.22	61.8	2.85	0.263	0.340	0.0551
300	0.0601	0.0788	0.106	7200	0.334	1.33	67.8	2.79	0.263	0.325	0.0528
400	0.0470	0.0628	0.102	6500	0.371	1.48	75.1	2.73	0.263	0.312	0.0485
500	0.0373	0.0512	0.0987	5900	0.407	1.62	82.4	2.69	0.263	0.302	0.0457



12.7/22kV Triplex

Ind. Screened, Water Blocking Taped/HDPE Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area on each core	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal overall diameter of each phase cable mm	Nominal overall diameter of Triplex	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	kg/100m	
35	6.9	5.5	19.2	22.7	40/0.85	22.5	27.0	58.2	225	XLZA18TH003
50	8.1	5.5	20.3	32.9	23/1.35	24.6	29.2	62.8	275	XLZA19TH003
70	9.6	5.5	21.9	45.8	32/1.35	26.2	31.0	66.7	345	XLZA20TH003
95	11.4	5.5	23.6	61.5	43/1.35	27.9	32.7	70.4	420	XLZA22TH003
120	12.8	5.5	25.0	68.7	48/1.35	29.3	34.3	73.8	475	XLZA23TH003
150	14.2	5.5	26.4	68.7	48/1.35	30.7	35.7	76.9	510	XLZA24TH003
185	15.7	5.5	27.9	68.7	48/1.35	32.2	37.4	80.5	550	XLZA25TH003
240	18.0	5.5	30.3	68.7	48/1.35	34.6	39.9	86.0	620	XLZA26TH003
300	20.1	5.5	32.6	68.7	48/1.35	37.1	42.4	91.4	695	XLZA27TH003
400	23.0	5.5	35.4	68.7	48/1.35	39.9	45.7	98.4	795	XLZA28TH003
500	26.5	5.5	39.0	68.7	48/1.35	43.5	49.2	106.1	930	XLZA30TH003

Current Ratings

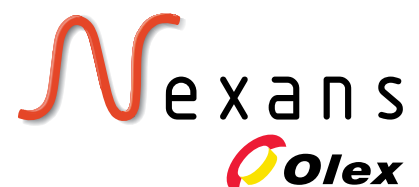
Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor kA	Screen kA
mm ²	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	133	140	100	134	111	3.31	3.37
50	160	169	123	159	134	4.73	4.88
70	199	210	150	194	163	6.62	6.79
95	241	255	180	231	194	8.99	9.13
120	276	293	204	262	220	11.4	10.2
150	312	331	229	292	246	14.2	10.2
185	356	378	268	329	284	17.5	10.2
240	419	445	312	380	328	22.7	10.2
300	478	509	352	427	369	28.4	10.2
400	555	590	403	485	419	37.8	10.2
500	639	681	457	547	472	47.3	10.2

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.		
	Phase cable	Cable bundle	Cable bundle	Nominal duct dia.	
kN	During pulling mm	Set in position mm	During pulling mm	Set in position mm	
5.3	680	410	870	580	80
7.5	730	440	940	630	100
11	770	460	1000	670	100
14	820	490	1060	700	100
18	860	510	1110	740	100
23	890	540	1150	770	100
28	930	560	1210	810	125
36	1000	600	1290	860	125
45	1060	640	1370	910	125
60	1140	690	1480	980	150
75	1230	740	1590	1060	150

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screen at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.148	15000	0.157	0.626	31.8	3.62	0.797	1.67	0.0919
50	0.641	0.821	0.144	14000	0.172	0.685	34.8	3.47	0.549	1.19	0.0869
70	0.443	0.568	0.133	13000	0.192	0.768	39.0	3.30	0.395	0.838	0.0769
95	0.320	0.410	0.126	11000	0.214	0.855	43.4	3.17	0.293	0.613	0.0709
120	0.253	0.325	0.122	10000	0.232	0.926	47.0	3.08	0.263	0.516	0.0668
150	0.206	0.264	0.118	9700	0.250	0.997	50.7	3.01	0.262	0.469	0.0633
185	0.164	0.211	0.115	9000	0.269	1.07	54.5	2.95	0.263	0.428	0.0601
240	0.125	0.161	0.110	8100	0.298	1.19	60.4	2.87	0.263	0.388	0.0560
300	0.100	0.129	0.107	7400	0.327	1.30	66.3	2.81	0.263	0.364	0.0536
400	0.0778	0.102	0.103	6700	0.363	1.45	73.5	2.75	0.263	0.342	0.0492
500	0.0617	0.0815	0.0987	5900	0.407	1.62	82.4	2.69	0.263	0.326	0.0457



6.35/11kV, URD Triplex Ind. Screened, Water Blocking Taped/HDPE Sheathed

Aluminium Conductors, 3kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area on each core	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal overall diameter of each phase cable mm	Nominal overall diameter of Triplex	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	kg/100m	
35	6.9	3.4	14.9	20.4	36/0.85	18.2	22.7	48.9	175	XJZA18TJ003
95	11.4	3.4	19.3	20.4	36/0.85	22.6	27.2	58.5	250	XJZA22TJ003
185	15.7	3.4	23.6	20.4	36/0.85	26.9	31.7	68.2	345	XJZA25TJ003
240	18.0	3.4	25.9	20.4	36/0.85	29.2	34.2	73.6	410	XJZA26TJ003
300	20.1	3.4	28.3	20.4	36/0.85	31.6	36.7	79.1	480	XJZA27TJ003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor kA	Screen kA
mm ²	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	131	139	97	136	109	3.31	3.03
95	237	252	172	234	190	8.99	3.03
185	355	379	258	336	279	17.5	3.03
240	421	449	302	389	324	22.7	3.03
300	483	516	355	439	375	28.4	3.03

Installation

Maximum pulling tension	Minimum bending radius		Minimum bending radius		Nominal duct dia.
	Phase cable	Cable bundle	Phase cable	Cable bundle	
kN	During pulling mm	Set in position mm	During pulling mm	Set in position mm	mm
5.3	570	340	730	490	65
14	680	410	880	590	80
28	790	470	1020	680	100
36	850	510	1100	740	100
45	920	550	1190	790	100

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screen at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.138	11000	0.220	0.439	11.1	2.54	0.884	1.75	0.0779
95	0.320	0.410	0.116	7800	0.311	0.620	15.8	2.30	0.886	1.21	0.0583
185	0.164	0.211	0.105	6100	0.398	0.794	20.2	2.18	0.883	1.05	0.0494
240	0.125	0.161	0.101	5400	0.445	0.887	22.5	2.14	0.886	1.01	0.0461
300	0.100	0.130	0.0987	4900	0.491	0.980	24.9	2.11	0.885	0.986	0.0441



12.7/22kV URD Triplex Ind. Screened, Water Blocking Taped/HDPE Sheathed

Aluminium Conductors, 3kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area on each core	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal overall diameter of each phase cable mm	Nominal overall diameter of Triplex	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	kg/100m	
35	6.9	5.5	19.2	20.4	36/0.85	22.5	27.0	58.2	220	XLZA18TJ003
95	11.4	5.5	23.6	20.4	36/0.85	26.9	31.7	68.2	305	XLZA22TJ003
185	15.7	5.5	27.9	20.4	36/0.85	31.2	36.4	78.4	415	XLZA25TJ003
240	18.0	5.5	30.3	20.4	36/0.85	33.6	38.7	83.4	480	XLZA26TJ003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor kA	Screen kA
mm ²	Solid Bond	Solid Bond	Solid Bond	Solid Bond	Solid Bond		
35	134	142	101	136	112	3.31	3.03
95	242	257	181	234	196	8.99	3.03
185	362	384	272	336	288	17.5	3.03
240	427	454	317	390	335	22.7	3.03

Installation

Maximum pulling tension	Minimum bending radius		Nominal duct dia.	
	Phase cable	Cable bundle	mm	mm
kN	During pulling mm	Set in position mm	During pulling mm	Set in position mm
5.3	680	410	870	580
14	790	470	1020	680
28	910	550	1180	780
36	970	580	1250	830

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screen at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.149	15000	0.157	0.626	31.8	3.62	0.886	1.75	0.0919
95	0.320	0.410	0.125	11000	0.214	0.855	43.4	3.17	0.883	1.20	0.0697
185	0.164	0.211	0.114	9000	0.269	1.07	54.5	2.95	0.885	1.05	0.0591
240	0.125	0.161	0.109	8100	0.298	1.19	60.4	2.87	0.883	1.01	0.0550



High Voltage XLPE Thr

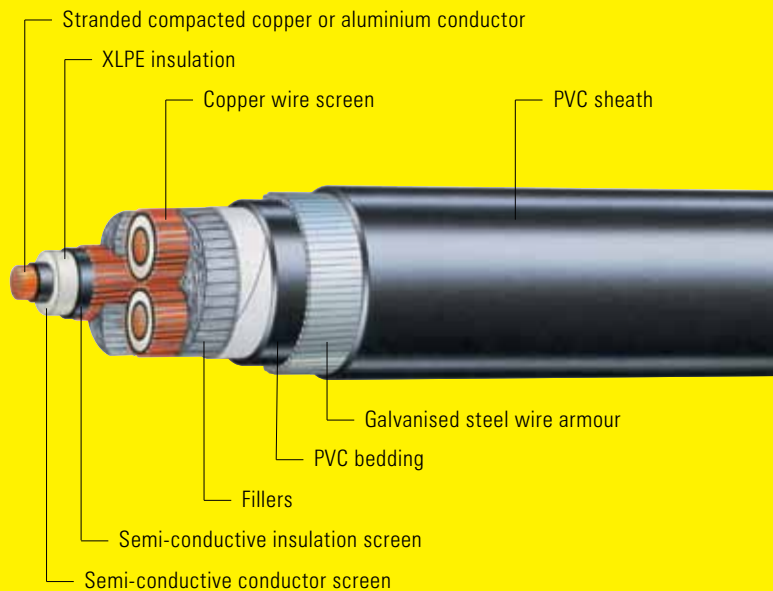
Construction Stranded compacted copper or aluminium conductor, triple extruded conductor screen, insulation and insulation screen, copper wire screened, steel wire armoured, PVC sheathed.





ee Core

3.8/6.6 to 19/33kV SWA



3.8/6.6kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour Wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	mm	mm	mm	kg/100m	
16	4.8	2.5	11.0	17.0	10/0.85	14.3	34.0	2.0	38.0	42.6	295	XHJP15AA003
25	5.8	2.5	12.0	25.5	15/0.85	15.3	36.1	2.0	40.1	44.9	345	XHJP17AA003
35	6.8	2.5	13.0	34.0	20/0.85	16.3	38.5	2.5	43.5	48.7	440	XHJP18AA003
50	8.0	2.5	14.1	49.4	29/0.85	17.4	41.0	2.5	46.0	51.4	515	XHJP19AA003
70	9.6	2.5	15.7	68.1	40/0.85	19.0	44.6	2.5	49.6	55.2	630	XHJP20AA003
95	11.5	2.5	17.6	68.1	40/0.85	20.9	48.9	2.5	53.9	59.7	745	XHJP22AA003
120	13.1	2.5	19.2	68.1	40/0.85	22.5	52.3	2.5	57.3	63.3	850	XHJP23AA003
150	14.5	2.5	20.6	68.1	40/0.85	23.9	55.7	2.5	60.7	66.9	960	XHJP24AA003
185	16.1	2.5	22.2	68.1	40/0.85	25.5	59.4	2.5	64.4	70.8	1090	XHJP25AA003
240	18.5	2.6	24.9	68.1	40/0.85	28.2	65.3	3.15	71.6	78.6	1410	XHJP26AA003
300	20.7	2.8	27.6	68.1	40/0.85	30.9	71.4	3.15	77.7	85.2	1660	XHJP27AA003
400	23.6	3.0	30.9	68.1	40/0.85	34.2	78.8	3.15	85.1	92.9	2030	XHJP28AA003

Note: For larger sizes use 6.35/11kV cables

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor	Screen
mm ²						kA	kA
16	103	110	78	112	89	2.29	2.52
25	134	142	100	143	114	3.57	3.79
35	162	173	122	171	137	5.00	5.05
50	193	206	145	201	162	7.15	7.32
70	238	255	181	245	200	10.0	10.1
95	289	310	218	292	239	13.6	10.1
120	332	357	248	330	271	17.1	10.1
150	373	401	277	367	301	21.4	10.1
185	423	456	312	411	338	26.4	10.1
240	492	532	371	469	395	34.3	10.1
300	555	600	415	521	440	42.9	10.1
400	628	682	466	579	489	57.2	10.1

Installation

Maximum pulling tension		Minimum bending radius		Nominal duct dia.
Conductor	Armour	During pulling	Set in position	
kN	kN	mm	mm	mm
3.4	22	770	510	65
5.3	23	810	540	65
7.4	29	880	580	80
11	31	920	620	80
15	34	990	660	100
20	37	1070	720	100
25	40	1140	760	100
32	42	1200	800	100
39	45	1270	850	100
50	63	1410	940	125
63	68	1530	1020	125
84	75	1670	1120	150

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
16	1.15	1.47	0.134	11000	0.221	0.263	4.00	2.06	1.06	0.857	2.58	0.0842
25	0.727	0.927	0.127	9700	0.248	0.296	4.50	1.99	0.706	0.811	1.86	0.0770
35	0.524	0.668	0.120	8700	0.276	0.330	5.01	1.93	0.533	0.657	1.41	0.0712
50	0.387	0.494	0.115	7800	0.308	0.368	5.59	1.87	0.366	0.616	1.08	0.0660
70	0.268	0.342	0.109	6900	0.352	0.420	6.39	1.82	0.265	0.559	0.807	0.0603
95	0.193	0.247	0.101	6000	0.404	0.482	7.33	1.77	0.265	0.521	0.721	0.0525
120	0.153	0.196	0.0969	5400	0.447	0.534	8.11	1.74	0.266	0.487	0.669	0.0491
150	0.124	0.160	0.0942	5000	0.486	0.580	8.81	1.72	0.265	0.458	0.629	0.0467
185	0.0991	0.128	0.0917	4600	0.530	0.632	9.61	1.69	0.265	0.431	0.593	0.0443
240	0.0754	0.0986	0.0890	4200	0.576	0.687	10.4	1.61	0.266	0.307	0.504	0.0418
300	0.0601	0.0798	0.0879	4000	0.597	0.713	10.8	1.49	0.265	0.284	0.473	0.0409
400	0.0470	0.0640	0.0852	3800	0.627	0.749	11.4	1.38	0.265	0.257	0.440	0.0384



3.8/6.6kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour Wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	mm	mm	mm	kg/100m	
35	6.9	2.5	13.0	23.8	14/0.85	16.3	38.6	2.5	43.6	48.6	370	XHJA18AA003
50	8.1	2.5	14.2	32.3	19/0.85	17.5	41.1	2.5	46.1	51.5	410	XHJA19AA003
70	9.6	2.5	15.8	46.0	27/0.85	19.1	44.7	2.5	49.7	55.3	480	XHJA20AA003
95	11.4	2.5	17.5	61.3	36/0.85	20.8	48.6	2.5	53.6	59.4	555	XHJA22AA003
120	12.8	2.5	18.9	68.1	40/0.85	22.2	51.6	2.5	56.6	62.6	615	XHJA23AA003
150	14.2	2.5	20.3	68.1	40/0.85	23.6	54.9	2.5	59.9	66.1	665	XHJA24AA003
185	15.7	2.5	21.8	68.1	40/0.85	25.1	58.3	2.5	63.3	69.7	735	XHJA25AA003
240	18.0	2.6	24.3	68.1	40/0.85	27.6	63.9	3.15	70.2	77.3	940	XHJA26AA003
300	20.1	2.8	27.0	68.1	40/0.85	30.3	70.0	3.15	76.3	83.7	1070	XHJA27AA003
400	23.0	3.0	30.3	68.1	40/0.85	33.6	77.2	3.15	83.5	91.4	1240	XHJA28AA003

Note: For larger sizes use 6.35/11kV cables

Current Ratings

Nominal conductor	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor	Screen
mm ²						kA	kA
35	126	134	95	133	107	3.31	3.53
50	150	160	113	156	126	4.73	4.80
70	186	199	141	191	156	6.62	6.82
95	225	241	170	227	186	8.99	9.09
120	258	277	193	258	211	11.4	10.1
150	291	313	217	287	236	14.2	10.1
185	331	357	245	323	266	17.5	10.1
240	389	420	294	372	314	22.7	10.1
300	441	477	331	416	351	28.4	10.1
400	507	550	377	470	397	37.8	10.1

Installation

Maximum pulling tension		Minimum bending radius		Nominal duct dia.
Conductor	Armour	During pulling	Set in position	
kN	kN	mm	mm	mm
5.3	30	880	580	80
7.5	31	930	620	80
11	34	1000	660	100
14	37	1070	710	100
18	40	1130	750	100
23	41	1190	790	100
28	44	1260	840	100
36	62	1390	930	125
45	67	1510	1000	125
60	74	1640	1100	150

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	μF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.120	8700	0.278	0.332	5.04	1.92	0.761	0.643	1.91	0.0709
50	0.641	0.822	0.115	7800	0.309	0.369	5.61	1.87	0.559	0.616	1.52	0.0658
70	0.443	0.569	0.106	6800	0.353	0.422	6.41	1.82	0.393	0.559	1.14	0.0574
95	0.320	0.410	0.101	6000	0.400	0.478	7.26	1.77	0.295	0.521	0.884	0.0528
120	0.253	0.325	0.0976	5500	0.439	0.524	7.96	1.74	0.265	0.487	0.769	0.0497
150	0.206	0.265	0.0948	5100	0.477	0.569	8.66	1.72	0.266	0.465	0.714	0.0472
185	0.164	0.211	0.0923	4700	0.518	0.618	9.40	1.70	0.265	0.438	0.660	0.0449
240	0.125	0.162	0.0896	4300	0.561	0.670	10.2	1.62	0.265	0.312	0.556	0.0424
300	0.100	0.130	0.0885	4100	0.582	0.695	10.6	1.50	0.265	0.288	0.515	0.0415
400	0.0778	0.102	0.0857	3900	0.613	0.731	11.1	1.39	0.265	0.261	0.473	0.0390

6.35/11kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	mm	mm	mm	kg/100m	
16	4.8	3.4	12.8	17.0	10/0.85	16.1	37.9	2.0	41.9	46.9	330	XJJP15AA003
25	5.8	3.4	13.8	25.5	15/0.85	17.1	40.2	2.5	45.2	50.4	430	XJJP17AA003
35	6.8	3.4	14.8	34.0	20/0.85	18.1	42.6	2.5	47.6	53.0	490	XJJP18AA003
50	8.0	3.4	16.0	49.4	29/0.85	19.3	45.1	2.5	50.1	55.7	565	XJJP19AA003
70	9.6	3.4	17.6	68.1	40/0.85	20.9	48.8	2.5	53.8	59.6	680	XJJP20AA003
95	11.5	3.4	19.4	68.1	40/0.85	22.7	53.0	2.5	58.0	64.1	795	XJJP22AA003
120	13.1	3.4	21.0	68.1	40/0.85	24.3	56.4	2.5	61.4	67.9	910	XJJP23AA003
150	14.5	3.4	22.4	68.1	40/0.85	25.7	59.9	2.5	64.9	71.5	1020	XJJP24AA003
185	16.1	3.4	24.1	68.1	40/0.85	27.4	63.3	2.5	68.3	75.2	1150	XJJP25AA003
240	18.5	3.4	26.5	68.1	40/0.85	29.8	68.8	3.15	75.1	82.3	1470	XJJP26AA003
300	20.7	3.4	28.9	68.1	40/0.85	32.2	74.1	3.15	80.4	88.0	1710	XJJP27AA003
400	23.6	3.4	31.8	68.1	40/0.85	35.3	81.2	3.15	87.5	95.5	2070	XJJP28AA003
500	26.5	3.4	34.7	68.1	40/0.85	38.2	87.6	3.15	93.9	102.4	2450	XJJP30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor	Screen
mm ²						kA	kA
16	105	111	79	112	90	2.29	2.52
25	136	145	104	143	116	3.57	3.79
35	164	174	124	171	138	5.00	5.05
50	195	208	150	201	165	7.15	7.32
70	241	257	183	245	201	10.0	10.1
95	291	312	220	292	240	13.6	10.1
120	334	359	250	330	272	17.1	10.1
150	375	403	288	367	309	21.4	10.1
185	426	458	324	412	347	26.4	10.1
240	495	534	373	469	396	34.3	10.1
300	556	602	416	521	440	42.9	10.1
400	629	682	467	579	490	57.2	10.1
500	699	760	535	634	555	71.5	10.1

Installation

Conductor	Armour	Minimum bending radius		Nominal duct dia.
		During pulling	Set in position	
kN	kN	mm	mm	mm
3.4	24	840	560	65
5.3	31	910	610	80
7.4	33	950	640	80
11	34	1000	670	100
15	37	1070	710	100
20	40	1150	770	100
25	43	1220	810	100
32	45	1290	860	125
39	48	1350	900	125
50	66	1480	990	125
63	71	1580	1060	150
84	77	1720	1150	150
105	83	1840	1230	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	μF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
16	1.15	1.47	0.142	14000	0.177	0.354	8.98	2.77	1.06	0.770	2.49	0.0922
25	0.727	0.927	0.134	12000	0.198	0.394	10.0	2.65	0.707	0.629	1.73	0.0845
35	0.524	0.668	0.127	11000	0.219	0.436	11.1	2.55	0.530	0.592	1.36	0.0782
50	0.387	0.494	0.121	10000	0.242	0.484	12.3	2.46	0.366	0.559	1.05	0.0725
70	0.268	0.342	0.115	8800	0.275	0.549	13.9	2.37	0.265	0.521	0.795	0.0663
95	0.193	0.247	0.106	7700	0.314	0.626	15.9	2.30	0.265	0.479	0.706	0.0580
120	0.153	0.196	0.102	7000	0.346	0.689	17.5	2.25	0.265	0.451	0.655	0.0543
150	0.124	0.160	0.0990	6400	0.374	0.747	19.0	2.21	0.266	0.425	0.616	0.0515
185	0.0991	0.128	0.0961	5900	0.407	0.811	20.6	2.17	0.265	0.403	0.580	0.0488
240	0.0754	0.0985	0.0926	5300	0.456	0.909	23.1	2.13	0.266	0.293	0.495	0.0455
300	0.0601	0.0796	0.0904	4800	0.503	1.00	25.5	2.10	0.265	0.272	0.464	0.0434
400	0.0470	0.0638	0.0870	4300	0.561	1.12	28.5	2.07	0.265	0.250	0.435	0.0403
500	0.0373	0.0525	0.0847	3900	0.620	1.24	31.4	2.05	0.265	0.232	0.411	0.0381



6.35/11kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	mm	mm	kg/100m	
35	6.9	3.4	14.9	23.8	14/0.85	18.2	42.6	2.5	47.6	53.0	415	XJJA18AA003
50	8.1	3.4	16.0	32.3	19/0.85	19.3	45.2	2.5	50.2	55.8	460	XJJA19AA003
70	9.6	3.4	17.6	46.0	27/0.85	20.9	48.9	2.5	53.9	59.7	530	XJJA20AA003
95	11.4	3.4	19.3	61.3	36/0.85	22.6	52.8	2.5	57.8	63.8	610	XJJA22AA003
120	12.8	3.4	20.7	68.1	40/0.85	24.0	55.8	2.5	60.8	67.2	675	XJJA23AA003
150	14.2	3.4	22.1	68.1	40/0.85	25.4	59.0	2.5	64.0	70.7	730	XJJA24AA003
185	15.7	3.4	23.6	68.1	40/0.85	26.9	62.3	2.5	67.3	74.1	800	XJJA25AA003
240	18.0	3.4	25.9	68.1	40/0.85	29.2	67.4	3.15	73.7	81.0	990	XJJA26AA003
300	20.1	3.4	28.3	68.1	40/0.85	31.6	72.6	3.15	78.9	86.6	1110	XJJA27AA003
400	23.0	3.4	31.1	68.1	40/0.85	34.6	79.8	3.15	86.1	94.1	1290	XJJA28AA003
500	26.5	3.4	34.7	68.1	40/0.85	38.2	87.6	3.15	93.9	102.4	1500	XJJA30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor	Screen
mm ²						kA	kA
35	127	136	96	133	107	3.31	3.53
50	152	162	117	157	129	4.73	4.80
70	188	201	143	191	157	6.62	6.82
95	227	243	171	227	187	8.99	9.09
120	260	279	195	258	212	11.4	10.1
150	293	315	218	287	237	14.2	10.1
185	333	359	255	323	273	17.5	10.1
240	391	422	296	372	315	22.7	10.1
300	442	478	332	416	352	28.4	10.1
400	507	549	378	469	397	37.8	10.1
500	576	626	442	524	458	47.3	10.1

Installation

Maximum pulling tension		Minimum bending radius		Nominal duct dia.
Conductor	Armour	During pulling	Set in position	
kN	kN	mm	mm	mm
5.3	33	950	640	80
7.5	34	1010	670	100
11	37	1070	720	100
14	40	1150	770	100
18	42	1210	810	100
23	45	1270	850	100
28	47	1330	890	125
36	65	1460	970	125
45	69	1560	1040	125
60	76	1690	1130	150
75	83	1840	1230	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	μF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.127	11000	0.220	0.439	11.1	2.54	0.758	0.592	1.87	0.0779
50	0.641	0.821	0.121	9900	0.243	0.486	12.3	2.46	0.559	0.559	1.48	0.0723
70	0.443	0.569	0.112	8700	0.276	0.551	14.0	2.37	0.393	0.521	1.12	0.0634
95	0.320	0.410	0.106	7800	0.311	0.620	15.8	2.30	0.295	0.479	0.868	0.0583
120	0.253	0.325	0.103	7100	0.339	0.677	17.2	2.25	0.265	0.458	0.757	0.0549
150	0.206	0.265	0.0996	6600	0.368	0.734	18.6	2.22	0.265	0.431	0.699	0.0520
185	0.164	0.211	0.0968	6100	0.398	0.794	20.2	2.18	0.265	0.408	0.646	0.0494
240	0.125	0.161	0.0933	5400	0.445	0.887	22.5	2.14	0.266	0.297	0.546	0.0461
300	0.100	0.130	0.0910	4900	0.491	0.980	24.9	2.11	0.266	0.280	0.510	0.0441
400	0.0778	0.102	0.0876	4400	0.548	1.09	27.8	2.08	0.266	0.254	0.468	0.0409
500	0.0617	0.0823	0.0847	3900	0.620	1.24	31.4	2.05	0.265	0.232	0.434	0.0381

12.7/22kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	mm	mm	mm	kg/100m	
35	6.8	5.5	19.1	34.0	20/0.85	22.4	52.1	2.5	57.1	63.2	610	XLJP18AA003
50	8.0	5.5	20.3	49.4	29/0.85	23.6	54.8	2.5	59.8	66.0	685	XLJP19AA003
70	9.6	5.5	21.9	68.1	40/0.85	25.2	58.5	2.5	63.5	70.1	810	XLJP20AA003
95	11.5	5.5	23.8	68.1	40/0.85	27.1	62.6	2.5	67.6	74.4	935	XLJP22AA003
120	13.1	5.5	25.3	68.1	40/0.85	28.6	66.3	3.15	72.6	79.6	1140	XLJP23AA003
150	14.5	5.5	26.8	68.1	40/0.85	30.1	69.6	3.15	75.9	83.1	1270	XLJP24AA003
185	16.1	5.5	28.4	68.1	40/0.85	31.7	73.0	3.15	79.3	87.0	1400	XLJP25AA003
240	18.5	5.5	30.8	68.1	40/0.85	34.1	78.5	3.15	84.8	92.6	1640	XLJP26AA003
300	20.7	5.5	33.2	68.1	40/0.85	36.7	84.2	3.15	90.5	98.8	1900	XLJP27AA003
400	23.6	5.5	36.1	68.1	40/0.85	39.6	90.7	3.15	97.0	105.6	2260	XLJP28AA003
500	26.5	5.5	39.0	68.1	40/0.85	42.5	97.1	3.15	103.4	112.5	2640	XLJP30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In air		In ground		Conductor	Screen
mm ²						kA	kA
35	167	178	130	171	142	5.00	5.05
50	199	212	153	201	167	7.15	7.32
70	245	261	187	245	203	10.0	10.1
95	296	316	231	292	248	13.6	10.1
120	339	363	262	330	280	17.1	10.1
150	380	408	292	366	311	21.4	10.1
185	430	462	328	410	349	26.4	10.1
240	499	538	377	469	398	34.3	10.1
300	561	606	421	521	442	42.9	10.1
400	634	687	490	580	508	57.2	10.1
500	705	766	539	635	556	71.5	10.1

Installation

Conductor	Armour	Minimum bending radius		Nominal duct dia.
		During pulling	Set in position	
kN	kN	mm	mm	mm
7.4	40	1140	760	100
11	41	1190	790	100
15	44	1260	840	100
20	47	1340	890	125
25	64	1430	960	125
32	67	1500	1000	125
39	70	1570	1040	125
50	75	1670	1110	150
63	80	1780	1190	150
84	86	1900	1270	200
105	92	2020	1350	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	μF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
35	0.524	0.668	0.141	16000	0.156	0.622	31.6	3.63	0.531	0.487	1.29	0.0923
50	0.387	0.494	0.134	14000	0.171	0.682	34.7	3.48	0.367	0.465	1.00	0.0858
70	0.268	0.342	0.127	13000	0.192	0.765	38.9	3.31	0.265	0.438	0.763	0.0786
95	0.193	0.247	0.117	11000	0.216	0.862	43.8	3.16	0.265	0.408	0.675	0.0693
120	0.153	0.196	0.112	10000	0.236	0.942	47.8	3.07	0.265	0.302	0.577	0.0648
150	0.124	0.160	0.109	9500	0.254	1.01	51.5	3.00	0.266	0.288	0.540	0.0615
185	0.0991	0.128	0.105	8800	0.274	1.09	55.6	2.93	0.266	0.276	0.506	0.0582
240	0.0754	0.0981	0.101	7900	0.305	1.22	61.8	2.85	0.265	0.257	0.468	0.0542
300	0.0601	0.0792	0.0988	7200	0.334	1.33	67.8	2.79	0.265	0.241	0.440	0.0519
400	0.0470	0.0633	0.0944	6500	0.371	1.48	75.1	2.73	0.265	0.224	0.413	0.0477
500	0.0373	0.0518	0.0915	5900	0.407	1.62	82.4	2.69	0.265	0.209	0.390	0.0450



12.7/22kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	mm	mm	mm	kg/100m	
35	6.9	5.5	19.2	23.8	14/0.85	22.5	52.3	2.5	57.3	63.3	535	XLJA18AA003
50	8.1	5.5	20.3	32.3	19/0.85	23.6	54.9	2.5	59.9	66.1	585	XLJA19AA003
70	9.6	5.5	21.9	46.0	27/0.85	25.2	58.6	2.5	63.6	70.0	665	XLJA20AA003
95	11.4	5.5	23.6	61.3	36/0.85	26.9	62.3	2.5	67.3	74.1	750	XLJA22AA003
120	12.8	5.5	25.0	68.1	40/0.85	28.3	65.5	3.15	71.8	78.8	900	XLJA23AA003
150	14.2	5.5	26.4	68.1	40/0.85	29.7	68.7	3.15	75.0	82.3	975	XLJA24AA003
185	15.7	5.5	27.9	68.1	40/0.85	31.2	72.0	3.15	78.3	85.9	1040	XLJA25AA003
240	18.0	5.5	30.3	68.1	40/0.85	33.6	77.1	3.15	83.4	91.3	1160	XLJA26AA003
300	20.1	5.5	32.6	68.1	40/0.85	36.1	82.8	3.15	89.1	97.3	1300	XLJA27AA003
400	23.0	5.5	35.4	68.1	40/0.85	38.9	89.3	3.15	95.6	104.2	1480	XLJA28AA003
500	26.5	5.5	39.0	68.1	40/0.85	42.5	97.1	3.15	103.4	112.5	1700	XLJA30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air	In ground		In ground		Conductor	Screen
mm ²						kA	kA
35	130	138	101	133	111	3.31	3.53
50	155	165	119	157	130	4.73	4.80
70	191	204	146	191	159	6.62	6.82
95	230	246	180	227	193	8.99	9.09
120	264	283	205	258	219	11.4	10.1
150	297	319	229	287	244	14.2	10.1
185	337	362	258	323	275	17.5	10.1
240	394	424	299	372	316	22.7	10.1
300	446	481	336	416	353	28.4	10.1
400	510	552	396	469	412	37.8	10.1
500	579	628	445	524	459	47.3	10.1

Installation

Maximum pulling tension		Minimum bending radius		Nominal duct dia.
Conductor	Armour	During pulling	Set in position	
kN	kN	mm	mm	mm
5.3	40	1140	760	100
7.5	41	1190	790	100
11	45	1260	840	100
14	47	1330	890	125
18	63	1420	950	125
23	66	1480	990	125
28	69	1550	1030	125
36	74	1640	1100	150
45	79	1750	1170	150
60	85	1880	1250	200
75	92	2020	1350	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	µF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
35	0.868	1.11	0.140	15000	0.157	0.626	31.8	3.62	0.759	0.487	1.76	0.0919
50	0.641	0.821	0.134	14000	0.172	0.685	34.8	3.47	0.560	0.465	1.40	0.0855
70	0.443	0.568	0.124	13000	0.192	0.768	39.0	3.30	0.393	0.431	1.06	0.0757
95	0.320	0.410	0.117	11000	0.214	0.855	43.4	3.17	0.294	0.408	0.833	0.0697
120	0.253	0.325	0.113	10000	0.232	0.926	47.0	3.08	0.265	0.307	0.680	0.0657
150	0.206	0.265	0.110	9700	0.250	0.997	50.7	3.01	0.266	0.293	0.624	0.0622
185	0.164	0.211	0.106	9000	0.269	1.07	54.5	2.95	0.265	0.280	0.573	0.0591
240	0.125	0.161	0.102	8100	0.298	1.19	60.4	2.87	0.265	0.261	0.520	0.0550
300	0.100	0.130	0.0996	7400	0.327	1.30	66.3	2.81	0.265	0.244	0.482	0.0527
400	0.0778	0.102	0.0951	6700	0.363	1.45	73.5	2.75	0.266	0.226	0.446	0.0484
500	0.0617	0.0819	0.0915	5900	0.407	1.62	82.4	2.69	0.265	0.209	0.414	0.0450

19/33kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Copper Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²	no/mm	mm	mm	mm	mm	mm	kg/100m	
50	8.0	8.0	25.5	49.4	29/0.85	28.8	66.5	3.15	72.8	80.1	950	XNJP19AA003
70	9.6	8.0	27.1	68.1	40/0.85	30.4	70.2	3.15	76.5	83.9	1080	XNJP20AA003
95	11.5	8.0	29.0	68.1	40/0.85	32.3	74.2	3.15	80.5	88.2	1220	XNJP22AA003
120	13.1	8.0	30.6	68.1	40/0.85	33.9	78.0	3.15	84.3	92.1	1340	XNJP23AA003
150	14.5	8.0	32.0	68.1	40/0.85	35.5	81.7	3.15	88.0	96.0	1490	XNJP24AA003
185	16.1	8.0	33.6	68.1	40/0.85	37.1	85.2	3.15	91.5	99.9	1630	XNJP25AA003
240	18.5	8.0	36.0	68.1	40/0.85	39.5	90.6	3.15	96.9	105.6	1880	XNJP26AA003
300	20.7	8.0	38.4	68.1	40/0.85	41.9	95.9	3.15	102.2	111.3	2140	XNJP27AA003
400	23.6	8.0	41.3	68.1	40/0.85	44.8	102.4	3.15	108.7	118.1	2510	XNJP28AA003
500	26.5	8.0	44.2	68.1	40/0.85	47.7	109.0	3.15	115.3	125.2	2900	XNJP30AA003

Current Ratings

Nominal conductor area	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor	Screen
mm ²						kA	kA
50	202	215	161	201	173	7.15	7.32
70	249	265	196	245	210	10.0	10.1
95	300	320	234	291	250	13.6	10.1
120	342	366	265	329	282	17.1	10.1
150	383	411	295	366	313	21.4	10.1
185	433	465	332	410	350	26.4	10.1
240	502	540	395	468	412	34.3	10.1
300	564	608	441	520	457	42.9	10.1
400	637	689	493	579	509	57.2	10.1
500	713	772	547	640	561	71.5	10.1

Installation

Maximum pulling tension		Minimum bending radius		Nominal duct dia.
Conductor	Armour	During pulling	Set in position	
kN	kN	mm	mm	mm
11	64	1440	960	125
15	67	1510	1010	125
20	71	1590	1060	150
25	74	1660	1110	150
32	78	1730	1150	150
39	81	1800	1200	150
50	86	1900	1270	200
63	91	2000	1340	200
84	97	2130	1420	200
105	96	2250	1500	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	μF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
50	0.387	0.494	0.147	18000	0.133	0.796	60.5	4.05	0.366	0.302	0.884	0.0988
70	0.268	0.342	0.139	16000	0.148	0.883	67.1	3.82	0.265	0.288	0.682	0.0909
95	0.193	0.247	0.128	15000	0.165	0.984	74.8	3.61	0.265	0.272	0.596	0.0807
120	0.153	0.196	0.123	14000	0.179	1.07	81.1	3.48	0.265	0.261	0.548	0.0757
150	0.124	0.159	0.120	13000	0.191	1.14	86.8	3.38	0.266	0.247	0.509	0.0722
185	0.0991	0.128	0.116	12000	0.205	1.23	93.2	3.29	0.266	0.238	0.476	0.0685
240	0.0754	0.0978	0.111	11000	0.227	1.35	103	3.17	0.265	0.224	0.441	0.0637
300	0.0601	0.0788	0.107	9800	0.247	1.48	112	3.09	0.266	0.211	0.415	0.0605
400	0.0470	0.0628	0.102	8900	0.272	1.62	123	3.00	0.266	0.198	0.389	0.0557
500	0.0373	0.0513	0.0990	8100	0.297	1.77	135	2.93	0.265	0.215	0.395	0.0524



19/33kV Three Core Ind. Screened PVC/SWA/PVC Sheathed

Aluminium Conductors, up to 10kA Fault Level

Nominal conductor area	Nominal conductor diameter	Nominal insulation thickness	Nominal diameter over insulation	Nominal screen area	Number and nominal diameter of screen wires no/mm	Nominal diameter over wire screen	Nominal diameter over armour bedding	Normal Armour wire diameter	Nominal diameter over armour	Nominal overall diameter	Approx. mass	Product code
mm ²	mm	mm	mm	mm ²		mm	mm	mm	mm	mm	kg/100m	
50	8.1	8.0	25.6	32.3	19/0.85	28.9	66.6	3.15	72.9	80.2	850	XNJA19AA003
70	9.6	8.0	27.2	46.0	27/0.85	30.5	70.3	3.15	76.6	84.0	935	XNJA20AA003
95	11.4	8.0	28.9	61.3	36/0.85	32.2	74.0	3.15	80.3	87.9	1030	XNJA22AA003
120	12.8	8.0	30.3	68.1	40/0.85	33.6	77.2	3.15	83.5	91.3	1100	XNJA23AA003
150	14.2	8.0	31.7	68.1	40/0.85	35.2	80.9	3.15	87.2	95.2	1190	XNJA24AA003
185	15.7	8.0	33.2	68.1	40/0.85	36.7	84.1	3.15	90.4	98.8	1270	XNJA25AA003
240	18.0	8.0	35.5	68.1	40/0.85	39.0	89.4	3.15	95.7	104.4	1400	XNJA26AA003
300	20.1	8.0	37.8	68.1	40/0.85	41.3	94.6	3.15	100.9	110.0	1540	XNJA27AA003
400	23.0	8.0	40.7	68.1	40/0.85	44.2	101.0	3.15	107.3	116.7	1720	XNJA28AA003
500	26.5	8.0	44.2	68.1	40/0.85	47.7	109.0	3.15	115.3	125.2	1960	XNJA30AA003

Current Ratings

Nominal conductor area mm ²	Continuous current-carrying capacity, A					Fault current carrying capacity for 1 second	
	In air		In ground			Conductor kA	Screen kA
50	157	167	125	157	135	4.73	4.80
70	194	206	153	191	164	6.62	6.82
95	234	249	183	228	195	8.99	9.09
120	267	285	207	258	221	11.4	10.1
150	300	321	232	287	246	14.2	10.1
185	340	365	261	323	276	17.5	10.1
240	396	426	313	371	327	22.7	10.1
300	448	482	352	415	366	28.4	10.1
400	513	553	399	469	412	37.8	10.1
500	583	631	449	526	462	47.3	10.1

Installation

Maximum pulling tension		Minimum bending radius		Nominal duct dia. mm
Conductor kN	Armour kN	During pulling mm	Set in position mm	
7.5	64	1440	960	125
11	67	1510	1010	125
14	71	1580	1050	125
18	74	1640	1100	150
23	77	1710	1140	150
28	80	1780	1190	150
36	85	1880	1250	200
45	89	1980	1320	200
60	95	2100	1400	200
75	96	2250	1500	200

Electrical Characteristics

Nominal conductor area	Maximum Conductor DC resistance at 20°C	Conductor AC resistance at 50Hz and 90°C	Inductive reactance at 50Hz	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	DC resistance of screens at 20°C	Armour DC resistance at 20°C	Zero sequence resistance at 20°C	Zero seq. react. at 50Hz
mm ²	Ohm/km	Ohm/km	Ohm/km	MegOhm.km	μF/km	A/km	W/km	kV/mm	Ohm/km	Ohm/km	Ohm/km	Ohm/km
50	0.641	0.821	0.147	18000	0.134	0.798	60.7	4.04	0.559	0.302	1.23	0.0985
70	0.443	0.568	0.136	16000	0.148	0.885	67.3	3.81	0.392	0.288	0.942	0.0879
95	0.320	0.410	0.129	15000	0.164	0.977	74.3	3.62	0.294	0.272	0.744	0.0812
120	0.253	0.325	0.124	14000	0.176	1.05	79.9	3.50	0.265	0.264	0.647	0.0766
150	0.206	0.264	0.120	13000	0.189	1.13	85.5	3.40	0.265	0.250	0.593	0.0731
185	0.164	0.211	0.117	12000	0.202	1.20	91.5	3.31	0.265	0.241	0.543	0.0694
240	0.125	0.161	0.112	11000	0.222	1.32	101	3.20	0.266	0.226	0.492	0.0647
300	0.100	0.130	0.108	10000	0.242	1.44	110	3.11	0.265	0.216	0.458	0.0614
400	0.0778	0.102	0.103	9100	0.267	1.59	121	3.02	0.265	0.202	0.423	0.0565
500	0.0617	0.0815	0.0990	8100	0.297	1.77	135	2.93	0.265	0.215	0.419	0.0524

Technical Information – Current Ratings

Continuous Current Ratings

The continuous current ratings given in this catalogue have been calculated in accordance with the International Electrotechnical Commission Publication IEC 60287 – “Electric Cables – Calculations of the Current Rating,” based on the following standard operating conditions:

Maximum conductor temperature	90°C
Ambient air temperature	40°C
Ambient soil temperature	25°C
Soil thermal resistivity	1.2K.m/W

The ratings are also based on the following standard installation conditions:

- In air, shaded, no wind
- Buried direct with a depth of laying of 0.8m to centre of cable or cable group
- In duct with a depth of laying of 0.8m to centre of duct

Single core cables are laid in the configurations indicated in the current rating tables and the screens are bonded to the earth at both ends.

Emergency Rating

XLPE insulated cables can operate under emergency conditions with a conductor temperature of 130°C for periods of up to 36 hours, not more than three times per year.

In practice, however, due to the difficulty in ensuring compatibility with terminations and the high volume expansion of XLPE above 100°C, a limit of 105°C for emergency rating has become widely accepted and is specified in AS/NZS 1429, IEC, Japanese and European specifications. A further restriction is evident where metal tape screens are specified; here the overload temperature may have to be limited to 100°C. The 105°C emergency limit represents the following approximate percentage increase over the normal continuous ratings: Cables in air: +14%

Cables in ground (laid direct or in ducts): +11%

Rating Factors

Where it is desired to depart from the standard conditions, the rating correction factors given in the following tables should be applied.

Ambient Air Temperature Variation

Air temp. (°C)	20	25	35	40	45	50	55
Rating factor	1.18	1.14	1.05	1.00	0.95	0.89	0.84

Ground Temperature Variation

Cables laid direct in ground or in ducts

Ground temp. (°C)	10	15	20	25	30	35	40
Rating factor	1.11	1.07	1.04	1.00	0.96	0.92	0.88

Depth of Burial Variation*

Depth of burial (m)	Cables laid Direct in Ground		Cables laid Direct in Ducts	
	Rating factor up to 300mm ²	Rating factor above 300mm ²	Rating factor (single core)	Rating factor (three core)
0.80	1.00	1.00	1.00	1.00
1.00	0.98	0.97	0.98	0.99
1.25	0.96	0.95	0.95	0.97
1.50	0.95	0.93	0.94	0.96
1.75	0.94	0.91	0.92	0.96
2.00	0.92	0.89	0.91	0.95
2.50	0.91	0.88	0.89	0.94
3.00	0.90	0.86	0.88	0.93



* ERA Report 69–30 Part 3

Thermal Resistivity of Soil Variation

Single Core Cable Laid in Single Way Ducts

Nominal conductor area mm ²	Thermal resistivity (°C m/W)									
	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	3.5	4.0
50	1.08	1.06	1.04	1.03	0.96	0.90	0.85	0.81	0.77	0.74
70	1.08	1.06	1.05	1.03	0.96	0.90	0.84	0.80	0.76	0.73
95	1.08	1.07	1.05	1.03	0.95	0.89	0.84	0.80	0.75	0.72
120	1.09	1.07	1.05	1.03	0.95	0.89	0.83	0.79	0.75	0.71
150	1.09	1.07	1.05	1.03	0.95	0.88	0.83	0.79	0.74	0.71
185	1.09	1.07	1.05	1.03	0.95	0.88	0.83	0.78	0.74	0.70
240	1.10	1.08	1.05	1.04	0.95	0.88	0.82	0.78	0.73	0.70
300	1.10	1.08	1.06	1.04	0.95	0.87	0.82	0.77	0.72	0.69
400	1.11	1.08	1.06	1.04	0.94	0.87	0.82	0.77	0.72	0.68
500	1.12	1.08	1.06	1.04	0.94	0.87	0.81	0.76	0.71	0.68
630	1.12	1.09	1.06	1.04	0.94	0.87	0.81	0.76	0.71	0.67
800	1.13	1.10	1.07	1.04	0.94	0.86	0.80	0.75	0.71	0.67
1000	1.13	1.10	1.07	1.04	0.94	0.86	0.80	0.75	0.70	0.66
1200	1.13	1.10	1.07	1.05	0.94	0.86	0.80	0.75	0.70	0.66

Single Core Cable Laid Direct in Ground

Nominal conductor area mm ²	Thermal resistivity (°C m/W)									
	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	3.5	4.0
50	1.21	1.16	1.11	1.07	0.91	0.81	0.73	0.68	0.63	0.59
70	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
95	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
120	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
150	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
185	1.22	1.17	1.12	1.07	0.91	0.81	0.73	0.68	0.62	0.59
240	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.68	0.62	0.59
300	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.68	0.62	0.59
400	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.67	0.62	0.58
500	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.67	0.62	0.58
630	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.67	0.61	0.58
800	1.23	1.17	1.12	1.07	0.91	0.80	0.72	0.66	0.61	0.58
1000	1.24	1.18	1.12	1.07	0.91	0.80	0.72	0.66	0.61	0.58
1200	1.24	1.18	1.12	1.08	0.90	0.80	0.72	0.66	0.61	0.58

Three Core Cables Laid in Duct

Nominal conductor area mm ²	Thermal resistivity (°C m/W)									
	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	3.5	4.0
16	1.06	1.04	1.03	1.02	0.97	0.92	0.88	0.85	0.82	0.79
25	1.06	1.05	1.03	1.02	0.96	0.92	0.88	0.84	0.82	0.78
35	1.06	1.05	1.03	1.02	0.96	0.92	0.87	0.83	0.81	0.77
50	1.07	1.05	1.03	1.02	0.96	0.91	0.87	0.83	0.80	0.77
70	1.07	1.05	1.04	1.02	0.96	0.91	0.86	0.82	0.79	0.76
95	1.07	1.06	1.04	1.02	0.96	0.91	0.86	0.82	0.78	0.75
120	1.08	1.06	1.04	1.03	0.95	0.90	0.85	0.81	0.78	0.74
150	1.09	1.06	1.04	1.03	0.95	0.90	0.85	0.80	0.77	0.73
185	1.09	1.07	1.05	1.03	0.95	0.89	0.84	0.80	0.76	0.72
240	1.09	1.07	1.05	1.03	0.95	0.89	0.84	0.79	0.76	0.72
300	1.10	1.07	1.05	1.03	0.95	0.88	0.83	0.78	0.75	0.71
400	1.10	1.07	1.05	1.03	0.95	0.88	0.83	0.78	0.75	0.71

Three Core Cables Laid Direct in Ground

Nominal conductor area mm ²	Thermal resistivity (°C m/W)									
	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	3.5	4.0
16	1.16	1.12	1.08	1.05	0.93	0.84	0.77	0.72	0.66	0.62
25	1.17	1.13	1.09	1.05	0.93	0.83	0.77	0.71	0.65	0.61
35	1.17	1.13	1.09	1.06	0.92	0.83	0.76	0.71	0.65	0.61
50	1.17	1.13	1.09	1.06	0.92	0.83	0.76	0.71	0.65	0.61
70	1.18	1.14	1.09	1.06	0.92	0.83	0.75	0.70	0.64	0.60
95	1.18	1.14	1.09	1.06	0.92	0.83	0.75	0.70	0.64	0.60
120	1.19	1.14	1.10	1.06	0.92	0.82	0.75	0.69	0.64	0.60
150	1.19	1.14	1.10	1.06	0.92	0.82	0.75	0.69	0.63	0.59
185	1.19	1.14	1.10	1.06	0.92	0.82	0.74	0.69	0.63	0.59
240	1.20	1.15	1.10	1.07	0.92	0.81	0.74	0.69	0.63	0.59
300	1.20	1.15	1.10	1.07	0.92	0.81	0.74	0.69	0.63	0.59
400	1.20	1.15	1.10	1.07	0.92	0.81	0.74	0.69	0.63	0.59

Installation Factors Affecting Current Ratings

Screen Bonding

Current ratings are given for both single core cables and three core Triplex cables with the copper wire screens solidly bonded to earth at both ends.

Solid bonding reduces the current rating of a cable due to the heating effects of circulating currents caused by the induced voltage in the screens, however its impact is minimal if the cables are installed in a close configuration, such as trefoil or flat touching. Conversely, the current rating of cables installed in a spaced formation such as flat spaced can be severely impacted due to high circulating currents in the screens. The overall reduction is dependent on cable spacing, screen size, conductor size and can be as much as 40%.

The heating effects of circulating currents in the screens of single core cables and Triplex cables can be eliminated by utilising special screen bonding techniques, eg:

- In short runs of cable, by earthing the screen at one end only (in which case the screens cannot be used for earthing and an external earth continuity conductor is required),
- This is called "single point bonding," where higher current ratings may be used, however, under some conditions, a high standing voltage may occur at the open end of the screens and attention must be paid to the safety aspects.
- In long runs of cable, by transposing or "cross-bonding" screens at every joint position so that the voltages induced by the three phases cancel one another.

Generally, it is considered practical to use special bonding arrangements only on transmission class cables (66kV and above) as the extra equipment (link boxes, etc.) required must also be considered in the total project cost.

Current ratings of single core and Triplex cables utilising special bonding techniques can be provided, please consult Olex if required.

(Note: the current ratings for single core cables in flat formation with screens solidly bonded are also provided, however the increase in the current rating due to the improved heat dissipation efficiency of spaced cables is not fully seen as it is offset by the extra heat produced by the circulating current in the screens. Spaced cable installations should only be considered in conjunction with the use of special screen bonding methods designed to eliminate circulating currents.)

Grouping of Cables

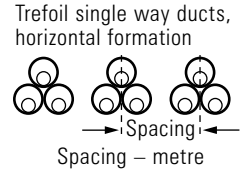
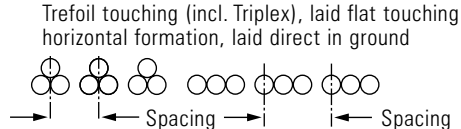
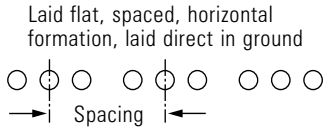
Where a number of circuits are installed in close proximity to one another, consideration must be given to the mutual heating effect. With cables in ground, a derating factor must be applied when the spacing between circuits is less than 1.0m. Cable installations in air must be derated when the spacing is less than 3 times the cable diameter.

Allowance must also be made for other heat sources (steam pipes etc.) laid close to cables and in cases where cables of different temperature ratings are installed in close proximity.

This catalogue provides group derating factors for underground cables. For group derating factors for cables installed in air references may be made to AS/NZS 3008.1.1.

Derating Factors for Grouping of Cables

Single Core Cables



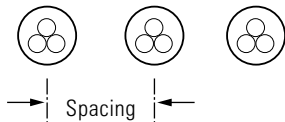
Number of circuits	Spacing of circuits – metre			
	0.15	0.30	0.45	0.60
2	0.80	0.84	0.87	0.89
3	0.69	0.75	0.79	0.82
4	0.63	0.70	0.75	0.79
5	0.59	0.66	0.72	0.76
6	0.56	0.64	0.70	0.74
7	0.53	0.62	0.68	0.73
8	0.52	0.60	0.67	0.72
9	0.50	0.59	0.66	0.71
10	0.49	0.58	0.65	0.71
11	0.48	0.57	0.65	0.70
12	0.47	0.57	0.64	0.70

Touching	Spacing of circuits – metre					
	Trefoil	Laid flat	0.15	0.30	0.45	0.60
0.78	0.80	0.82	0.86	0.89	0.91	
0.66	0.68	0.71	0.77	0.80	0.83	
0.59	0.62	0.65	0.72	0.77	0.80	
0.55	0.58	0.61	0.68	0.74	0.78	
0.52	0.55	0.58	0.66	0.72	0.76	
0.49	0.52	0.56	0.64	0.70	0.75	
0.47	0.50	0.54	0.63	0.69	0.74	
0.45	0.48	0.52	0.61	0.68	0.74	
0.44	0.47	0.51	0.61	0.68	0.73	
0.43	0.46	0.50	0.60	0.67	0.73	
0.41	0.45	0.49	0.59	0.67	0.72	

Touching	Spacing – metre		
	0.45	0.60	
0.85	0.88	0.90	
0.75	0.80	0.83	
0.70	0.77	0.80	
0.67	0.74	0.78	
0.64	0.72	0.76	
0.62	0.70	0.75	
0.61	0.69	0.74	
0.59	0.68	0.73	
0.58	0.67	0.73	
0.57	0.67	0.72	
0.57	0.66	0.72	

Three Core Cables

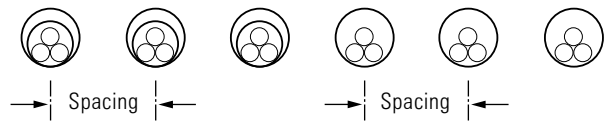
Horizontal formation laid direct in ground



Number of cables in group	Spacing – metre				
	Touching	0.15	0.30	0.45	0.60
2	0.80	0.85	0.89	0.91	0.93
3	0.68	0.76	0.81	0.84	0.87
4	0.62	0.71	0.77	0.81	0.84
5	0.57	0.66	0.73	0.78	0.82
6	0.54	0.64	0.71	0.77	0.81
7	0.51	0.61	0.69	0.75	0.79
8	0.49	0.59	0.68	0.74	0.79
9	0.47	0.58	0.67	0.73	0.78
10	0.45	0.57	0.66	0.73	0.78
11	0.44	0.55	0.65	0.72	0.77
12	0.43	0.54	0.64	0.72	0.77

Single Core, Three Core or Triplex Cables

Horizontal formation in single way ducts



Number of ducts in group	Spacing – metre			
	Touching	0.30	0.45	0.60
2	0.88	0.91	0.93	0.94
3	0.80	0.85	0.88	0.90
4	0.76	0.81	0.85	0.88
5	0.72	0.78	0.83	0.86
6	0.69	0.76	0.81	0.85
7	0.67	0.75	0.80	0.84
8	0.65	0.74	0.79	0.83
9	0.63	0.72	0.78	0.83
10	0.62	0.72	0.78	0.82
11	0.61	0.71	0.77	0.82
12	0.60	0.70	0.77	0.81

Short Circuit Ratings

Conductors

The short circuit current ratings given in the tables are calculated in accordance with IEC 60986 and are the symmetrical currents which will cause the conductor temperature to rise from the normal operating value of 90°C to the maximum short circuit temperature of 250°C in the time stated, assuming adiabatic conditions (i.e. neglecting heat loss).

Where high fault currents are anticipated in single core cables, consideration should be given to the electromechanical forces which will cause the cables to move apart if adequate restraint is not provided.

Screens – General

The screen short circuit current ratings given in the tables are calculated in accordance with IEC 60986 and are the currents which will cause the screen temperature to rise from the normal operating value of 80°C to the maximum short circuit temperature, assuming adiabatic conditions. The final temperature used in the calculation varies depending upon the nature of the screen material itself and also on the other materials in direct contact with the screen.

The screen constructions detailed represent the commonly used sizes but can be tailored to meet the specific fault requirements of any operating system.

This catalogue details cables rated up to and including 33kV (distribution class cables) with screen design equal to the conductor fault rating but not higher than 10kA for 1 second. This level of fault rating is the most common used by the Electricity Supply Industry (ESI) over the last 10–15 years and is one of the adopted fault levels for AS/NZS 4026.

There have been two other commonly used screen ratings, although the terminology used to describe them has varied over the years. These are described in the following paragraphs.

High Fault Level

A high level of fault screen rating, as adopted by many industrial sites, is equal to the conductor fault rating but not higher than 13.1kA for 1 second. This has also been identified for use in “coarse fault protection” systems and corresponds to the following MVA ratings:

Phase/phase voltage rating kV	Phase/earth 3 phase fault rating MVA for 1 second
6.6	150
11	250
22	500
33	750

Low Fault Level

Olex offers an optional light duty screen design which can be utilised where fast acting fault protection devices or current limited protection equipment is employed. This is the second fault level adopted by AS/NZS 4026 for the ESI. It corresponds to a fault rating equal to the conductor fault rating but not higher than 3kA for 1 second.

This has also been identified for use in “close fault protection” systems and corresponds to the following MVA ratings for 2 cycles:

Phase/phase voltage rating kV	Phase/earth 3 phase fault rating MVA for 0.04 seconds
6.6	150
11	250
22	500
33	750

Impedance earthed systems

Cables with light duty screens can often be used on impedance earthed systems (e.g. IT systems as defined in AS 3007) since the fault current is limited to a relatively low value.

It should, of course, be appreciated that under fault conditions on impedance earthed systems, the phase to screen voltage on the cable will exceed the normal phase to earth voltage of the system. If the time of fault duration is up to 8h (but not exceeding 125h per year), then AS/NZS 1429.1 and IEC 60502.2 allow the standard rated cables to be used. This is shown in the table below. In the case of cable operating frequently under fault conditions or for longer periods, the next higher rated cable must be used, also shown in the table below:

Selection of Cable Voltage Rating

System rating kV	Fault duration less than 8h kV	Fault duration over 8h kV
6.6/6.6	3.8/6.6	6.35/11
11/11	6.35/11	12.7/22
22/22	12.7/22	19/33

Installation Issues

Olex high voltage XLPE cables may be buried direct, laid in exposed locations, in ducts or on ladders, subject to constraints which may be related to current ratings.

Moisture

HV cables are manufactured in conditions that exclude moisture. It is important that precautions are taken during installation to ensure that moisture or water is not permitted to enter the cable.

- Cut ends or opened sheath must be protected and sealed from moisture.
- After cutting the cable, the ends must be re-sealed for storage by an effective method such as a heat shrinkable cable cap.
- Cable ends must be kept dry during pulling by the use of a pulling eye on the conductors, by sealing against the cable sheath.
- When using a pulling stocking, any cable end seal must be checked for integrity before the pull and replaced when broken or torn.

Single Core Cables

The following points should be noted relating to single core cables –

1. Single core cables carrying the phase currents of a single circuit must be installed as closely as possible together, to minimise inductive reactance. The preferred formation for three phase conductors is a “trefoil” or cloverleaf pattern although flat formation is also acceptable. Sheaths should be in contact with one another in either case.
2. A single core cable generates an alternating magnetic field around itself which can cause large increases in voltage drop and power loss due to “transformer effect” when ferrous metal (iron and steel) is allowed to encircle the cable. Steel racking or ladder will not induce this effect, but the following must be observed:
 - Cable cleats may be of wood, plastic, or non-ferrous metal but steel saddles should not be used, unless fixed to a non-conductive surface.

- Where three single phase cables pass through a steel bulkhead all must pass through the same hole. Where glanding is required it is usual to cut out a panel and replace this with a non-ferrous (metal or plastic) plate in which the three or four glands are mounted.

3. Under fault conditions, single core cables may be subjected to large electromechanical forces which tend to drive them apart, depending on installation geometry. Generally, properly designed cleats spaced at 1500mm intervals will provide adequate support to the cable, however, special consideration may be required if fault currents in excess of 15kA are anticipated. Contact Olex for further advice.

Outer Sheath

As high voltage XLPE cables are lighter than paper insulated cables they are generally supplied in longer lengths and therefore it is often necessary to provide a tougher outer sheath to assist in installation. High density polyethylene (HDPE) is a tough, rigid material and has been proven to be effective for the outer sheathing layer. Because this material is so rigid, it may be subject to stress cracking if applied over an uneven surface. For three core cables, Olex therefore recommends a bedding layer of orange PVC be provided for the black HDPE sheath. This method retains the advantages of HDPE and provides improved flexibility as well as an immediately identifiable damage indicator. Where termites are known to be a problem, a thin extruded layer of nylon is recommended. The nylon layer may be applied between the PVC and the HDPE or be applied over the cable sheath followed by a sacrificial covering.

Bending Radius and Duct Sizes

The safe bending radius for an electric cable is limited by the flexibility of the insulation and sheathing material used. Olex XLPE insulation will withstand high elongation without sustaining damage which might impair its electrical performance, and the semi-conductive screening material has both the flexibility and adhesion to ensure that it will not delaminate even during severe bends.

Olex PVC sheathing stands up very well to bending, but HDPE sheathing and nylon termite barriers both have to be treated with caution because, being hard and brittle materials, they are subject to damage if bent too severely.

Fire retardant and halogen free sheathing materials, some being soft materials, must be treated with caution during the pulling operation as they could be torn or ripped. An additional issue must be considered in that a cable being installed may be pulled around several curves in different directions and subjected to dynamic stresses which could cause damage. Consequently the bending radius around which a cable may be pulled is greater than that at which it can be set into its final position.

The following recommended minimum bending radii are expressed as a function of the cable diameter and refer to the inside of the curve.

In all cases, bending radii should be as large as practicable.

Recommended Bending Radius Factors for HV XLPE Cables

Cable type	Minimum bending radius factor, (F)	
	During installation	Set
All cables (other than HDPE sheathed or nylon covered)	18	12
HDPE sheathed	25	15
Nylon covered	30	20

Recommended Bending Radius Factors for Triplex HV XLPE Cables

Cable type	Minimum bending radius factor, (F)	
	During installation	Set
All cables (other than HDPE sheathed or Nylon covered)	Bundled Cable	8
	Phase Cable	12
		18
HDPE sheathed	Bundled Cable	10
	Phase Cable	15
		25
Nylon covered	Bundled Cable	15
	Phase Cable	20
		30

Minimum Bending Radius

$$R = F \times D \text{ mm}$$

Where R = Bending Radius (mm)

D = Cable Diameter* (mm)

F = Factor from above table

*In the case of nylon covered cables D = Diameter over nylon.

Duct Sizes

Ducts are another important consideration affecting the pulling operation. Selection of the appropriate duct should be based on internal duct diameter to suit a cable size, and wall thickness to prevent deformation during duct installation. Duct manufactured to the requirements of AS/NZS 2053.2 is recommended.

The internal finish of the installed ducting should be smooth to prevent cable sheath damage during installation. The use of graphite or other commercially available pulling lubricants can also prevent sheath damage and reduce pulling tensions. The following duct sizes are recommended:

Duct Selection Chart

Nominal heavy duty rigid PVC conduit Size (mm)	Maximum cable diameter	
	Single cable (mm)	Three cables (mm)
50	Up to 30	–
63	30 up to 38	–
65	38 up to 47	Up to 24
80	47 up to 55	24 up to 29
100	55 up to 71	29 up to 37
125	71 up to 88	37 up to 45
150	88 up to 100	45 up to 52
200	100 up to 143	52 up to 74

Pulling Tension

Where a cable is to be pulled using a winch and steel wire rope, the rope may be secured to the cable by either:

- A cable stocking of steel wire braid
- A pulling eye attached to the cable conductors
- A pulling eye over the complete cable end
- A pulling eye formed from the armour wires.

The maximum tension which may be used is limited by the tensile strength of the conductors or armour wires, or by the gripping capability of the cable stocking, depending on the method used.

Both copper and aluminium are extremely ductile metals which, in their annealed state, have no clearly defined yield point so that elongation can commence at stresses substantially less than the yield stress for the material. Galvanised mild steel, as used for cable armouring, has a more clearly defined yield stress below which negligible elongation will occur.

In the calculation of pulling tensions it is not usual to allow for the tensile strength of the insulating and sheathing materials, which in the case of XLPE power cables, can be considerable. Reliance on these materials, which have high elongation factors, may result in some elongation of the conductors and a consequent increase in the conductor resistance.

Method of Calculation

Maximum tensions are calculated using values of S from the table below by the methods listed (right), depending on the chosen pulling method.

Material	Maximum safe tensile stress (S) N/mm ²
Stranded Copper Conductor	70
Stranded Aluminium Conductor	50
Solid Aluminium Conductor	30
Galvanised Mild Steel Armour	130
Hard Drawn Aluminium Wire Armour	60

Stress Limits

1 Pulling by Conductor

Maximum pulling tension $T_c = N \times A_c \times S \div 1000$

Where T_c = Maximum pulling tension (kN)

N = Number of conductors

A_c = Cross-sectional area of one conductor (mm²)

S = Maximum safe tensile stress (N/mm²)

2 Pulling by Armour

This formula is simplified for use when the number of wires in the armour is not known, but the result is valid.

Maximum pulling tension $T_a = 2.47d_a (D_a - d_a) \times S \div 1000$

Where T_a = Maximum pulling tension (kN)

S = Maximum safe tensile stress for armour (N/mm²)

d_a = Nominal diameter of armour wire (mm)

D_a = Nominal diameter over armour (mm)

(Values of d_a and D_a can be found in the appropriate page of the catalogue.)

3 Overriding Maximum

At no time should the pulling tension exceed 25kN. Olex is to be consulted when the installation tension is expected to exceed 25kN.

4 Sidewall Bearing Pressure

Sidewall bearing pressure (SWBP) is defined as the ratio of cable tension at the exit of a bend to the radius of the bend and can limit the maximum tension that a cable can withstand. The maximum recommended SWBP for Olex HV XLPE cables is 1450kg/m.

The following example demonstrates how SWBP is taken into account.

Consider a three core 240mm² copper 11kV XLPE cable, which has a maximum conductor tension limit given by:

$$T_c = 3 \times 240 \times 70 \div 1000 = 50.4\text{kN}$$

This is subject to the overriding maximum of 25kN.

If the cable was to be pulled around a bend of 1.5m radius it will be subject to the following limit due to SWBP:

$$T_{\text{SWBP}} = 1450 \times 9.8 \times 1.5 \div 1000 = 21.3\text{kN}$$

Taking the lowest of these three values, the cable must be limited to a maximum tension of 21.3kN.

Testing of Cables

Factory Tests – Voltage Withstand

Rated voltage kV	Type tests			Routine test
	Impulse kV	High voltage 15 min@50Hz (after impulse test) kV	High voltage 4h@50Hz kV	High voltage 5 min@50Hz kV
3.8/6.6	60	12.5	15	12.5
6.35/11	95	21	25	21
12.7/22	150	42	50	42
19/33	200	63	75	63

Partial Discharge Voltage Levels

Rated voltage kV	200 percent U_0 kV	150 percent U_0 kV
3.8/6.6	7.6	5.7
6.35/11	13	10
12.7/22	25	19
19/33	38	29

Permitted maximum discharge:

20pC at 200 percent U_0

5pC at 150 percent U_0 .

Where U_0 is the phase to earth voltage rating of the cable, ie for cable rated 6.35 (11kV, $U_0=6.35$ kV).

After-installation tests

The traditionally used DC test is no longer recommended. It has been proven that DC testing of aged XLPE insulation causes early breakdown. On new installations, the effect is almost undetectable, but the older the cable and joints, the more rapid and severe is the damage. Cable and joints with moisture or water within the cable or joint are often failing in service within two weeks of the DC test.

The recommended test is the power frequency high voltage test.

Due to the difficulty of getting AC test sets, the first level compromise is to test at AC at working voltage, no load, for 24 hours. Yet, it must be recognised that many contractors and installers have objected to the inconvenience of the 24 hour test. Under circumstances of urgency, it is possible to apply the 'old' procedure of using DC, but this should only be done on relatively new cables.

The contractor/installer must take the decision and responsibility to test with DC. Olex recommends that the following test voltages be applied after examination of the cable and the cable history by the testing agent. For new cables, DC test levels in the table may be used to check the integrity of the cable system. This should be done for a period of 15 minutes. For older cables known to have no moisture in the insulation or history of water in the cable, a reduced DC test level must be used as shown in the table. Again a test duration of 15 minutes applies.

For cables where it is known that water exists in the cable, DO NOT USE DC TEST VOLTAGES. Test using the preferred AC test procedure.

After-installation tests – DC

Rated voltage kV	New cable kV	Older cable (no moisture) kV
3.8/6.6	15	10
6.35/11	25	15
12.7/22	50	30
19/33	75	45

Alternative tests that are valid and useful are the insulation resistance test and the sheath integrity test. Each is done with an IR test set for 60 seconds. The IR test on the insulation is done using at least 1000V for cables up to 6.6kV and 5000V for cables 11kV and above. The sheath integrity test is done using at least 1000V.

A record of the reading is kept so it can be compared to the reading at the next test. Either gradual decrease of values or sudden drops of more than an order of magnitude indicate that water is penetrating the cable or physical damage has taken place.

After-installation tests – VLF

Very Low Frequency (VLF) testing of high voltage power systems was developed to fill the gap between DC testing, which has been proven inadequate for high voltage systems, and 50Hz AC testing, which requires large and bulky test equipment. The generation of a test voltage at very low frequencies (0.1Hz pure sinusoid) significantly reduces the current needed to charge the cable system. The VLF system of testing has led to the development of portable test equipment and over the last 10 years has gained world wide acceptance.

A good reference standard for VLF (0.1Hz pure sinusoid) testing is the European VDE 0276.620, which specifies a test level of $3U_0$ (rms) for 60 minutes. For older cable a reduced test level of $2U_0$ (rms) is recommended. Again a test duration of 60 minutes applies.

Diagnostics of installed systems

Considerable research has occurred over the years and systems are now being offered which show promising results.

There are still a number of methods being applied, each claiming advantages. Methods of analysis using relaxation currents, recovery voltage, partial discharge and measurement of dissipation factors at 50Hz and at lower frequencies, are being used.

Contact your nearest Olex office for information on progress with these developments.



The future is our favourite place

At Olex, the future always looks incredibly bright. That's because we spend most of our time there. Over the decades, Olex has consistently led the cable market in technological innovation. For more than 65 years Olex has stood for the highest quality and the most innovative technology, from design, through manufacture to installation and service. The following range of standards approved cables is proudly designed and produced in Australia by Olex: Versolex® and Flexolex™



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Olex Australia Pty Limited A.B.N. 61 087 542 863 Printed in Australia 03/2009 Disegno OLC2170

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