JIANGNAN CABLE

Currant-carrying capacity and influencing factors

Currant-carrying capacity for cables with copper conductor,XLPE insulation under max.operating temperature (Unit:A)

Nominal cross sectional area mm²	Voltage level KV											
	66				110				220			
	Trefoil Laying		Parallel Laying		Trefoil Laying		Parallel Laying		Trefoil Laying		Parallel Laying	
	In Air	Buried	In Air	Buried	In Air	Buried	In Air	Buried	In Air	Buried	In Air	Buried
240	625	545	650	570	615	535	650	555	-	-	-	-
300	715	615	750	645	710	605	745	635	-	-	-	-
400	820	695	865	735	810	685	860	720	805	670	850	680
500	950	790	1010	835	935	780	1000	825	920	750	958	775
630	1090	890	1170	950	1075	860	1155	935	965	850	1130	880
800	1330	1060	1435	1120	1295	1035	1395	1090	1280	985	1385	1010
1000	1515	1185	1640	1250	1470	1150	1585	1225	1455	1080	1560	1130
1200	1650	1275	1800	1360	1600	1235	1730	1320	1585	1140	1710	1215
1400	1780	1360	1955	1460	1735	1325	1890	1415	1730	1205	1880	1290
1600	1930	1445	2135	1560	1860	1405	2025	1505	1845	1260	2005	1350
2000	-	-	-	-	-	-	-	-	2050	1310	2265	1450
2500	-	-	-	-	-	-	-	-	2305	1410	2530	1580

JIANGNAN CABLE

Current-carrying capacity for cables with aluminum conductor, XLPE insulation under max.operating temperature(Unit:A)

Nominal cross sectional area mm²	Voltage level KV											
	66				110				220			
	Trefoil Laying		Parallel Laying		Trefoil Laying		Parallel Laying		Trefoil Laying		Parallel Laying	
	In Air	Buried	In Air	Buried	In Air	Buried	In Air	Buried	In Air	Buried	In Air	Buried
240	485	425	510	445	460	420	505	435	-	-	-	-
300	555	480	585	505	550	475	580	496	_	_	_	_
400	650	550	680	575	640	540	660	570	625	530	645	550
500	750	625	795	660	740	620	790	650	605	605	775	625
630	875	715	925	755	860	705	920	745	690	690	905	735
800	1000	805	1065	850	985	795	1105	850	780	780	1090	835
1000	1130	895	1220	955	1115	885	1205	940	870	870	1190	925
1200	1240	965	1340	1030	1215	955	1315	1015	935	935	1305	1005
1400	1335	1025	1455	1105	1305	1015	1425	1085	1005	1005	1400	1065
1600	1420	1080	1555	1170	1390	1070	1520	1150	1035	1035	1505	1130
2000	-	-	-	-	-	-	-	-	1130	1130	1665	1215
2500	-	-	-	-	-	-	-	-	1695	1235	1840	1370

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Assumed conditions for calculating current-carrying capacity	● Max.operating temperature of conductor is 90℃, and max.short circuit temperature of conductor is 250℃; ● Single circuit space between phases is cable diameter plus 70mm , ● Ambient temperature is 35'; ● Soil thermal resistance of direct buried is 1.0k "m/W; depth of buried is 1000mm; ● Earthing method:single point grounding or cross type bonding

Direct buried ambient temperature is influence on current-carrying capacity

Ambient temp	10	15	20	25	30	35	40	45
Influence factor	1.07	1.03	1.00	0.96	0.93	0.89	0.84	0.80

Soil thermal resistance coefficient influence to current rating

Thermal resistance Coefficient	0.7	1.0	1.2	1.5	2.0	2.5	3.0	-
Influence factor	1.14	1.00	0.93	0.84	0.74	0.67	0.61	-

Direct buried depth is influence on current-carrying capacity

Depth of direct buried	500	700	900	1000	1200	1500	-	-
Influence factor	1.10	1.05	1.01	1.00	0.98	0.95	-	-

Influence of Air Temperature on Carrying Capacity

Air temperature	5	10	15	20	25	30	35	40	45	50	55
Influence factor	1.24	1.21	1.16	1.13	1.08	1.04	1.00	0.95	0.90	0.85	0.80

Single circuit parallel laying is influence on current carrying capacity

Laying distance	D	D+70	200	250	300	350	400	Note:D is cable is overall diameter
Influence factor	0.93	1.00	1.03	1.05	1.07	1.08	1.10	

JIANGNAN CABLE

Short Circuit Current **Unit: kA/1s**

Nominal cross sectional area mm²	Conductor Short circuit current	
	Copper Conductor	Aluminium conductor
240	34.3	22.7
300	42.9	28.3
400	57.2	37.8
500	71.5	47.2
630	90.1	59.5
800	114.5	75.6
1000	143.0	94.5
1200	171.7	113.3
1400	200.3	132.2
1600	228.9	151.1
1800	257.5	170.0
2000	286.2	188.9
2200	314.8	207.8
2500	357.7	236.2

JIANGNAN CABLE

XLPE insulation corrugated aluminum sheath non-metallic outer sheath for rated voltage of 50/66kV

Structure Size and Performance Parameters

Conductor			Nominal Insulation Thickness mm	Aluminium sheath thickness mm	Non-metallic sheath thickness mm
Nominal cross-sectional area mm²	Shape	Approx.diameter mm			
240	Circular compacted	18.3	14.0	2.0	4.0
300		20.6	14.0	2.0	4.0
400		23.1	14.0	2.0	4.0
500		26.4	14.0	2.0	4.0
630		30.1	14.0	2.0	4.0
800	Millikan conductor	35.2	14.0	2.0	4.0
1000		39.5	14.0	2.3	4.0
1200		42.6	14.0	2.3	4.0
1400		46.0	14.0	2.3	4.0
1600		49.2	14.0	2.3	4.0

JIANGNAN CABLE

Structure Size and Performance Parameters

Approx. Overall diameter mm	Approx. Weight of completed cable Copper		Approx. Weight of completed cable Aluminium		Conductor D.C resistance at 20℃ Ω/km		Cable Capacity μF/km
	YJLW02 YJLW02-Z	YJLW03 YJLW03-Z	YJLLW02 YJLLW02-Z	YJLLW03 YJLLW03-Z	Copper conductor	Aluminium conductor	
81.0	7308	6721	5819	5233	0.0754	0.125	0.169
83.3	8078	7473	6213	5609	0.0601	0.100	0.181
85.8	9077	8453	6725	6101	0.0470	0.0778	0.194
90.4	10435	9777	7405	6744	0.0366	0.605	0.213
94.1	12056	11370	8737	7450	0.0283	0.0469	0.232
100.4	14399	13664	9278	8544	0.0221	0.0367	0.259
105.3	16742	15970	10493	9721	0.0176	0.0291	0.281
108.4	18713	17918	11319	10524	0.0151	0.0247	0.296
111.8	20848	20027	12217	11396	0.0129	0.0212	0.313
116.0	23112	22259	13151	12298	0.0113	0.0186	0.329

JIANGNAN CABLE

XLPE insulation corrugated aluminum sheath non-metallic outer sheath for rated voltage of 64/110kV

Structure Size and Performance Parameters

Conductor			Nominal Insulation Thickness mm	Aluminium sheath thickness mm	Non-metallic sheath thickness mm
Nominal cross-sectional area mm²	Shape	Approx.diameter mm			
240	Circular compacted	18.3	19.0	2.0	4.0
300		20.6	18.5	2.0	4.0
400		23.1	17.5	2.0	4.0
500		26.4	17.0	2.0	4.0
630		30.1	16.5	2.0	4.5
800	Millikan conductor	35.2	16.0	2.0	4.5
1000		39.5	16.0	2.3	4.5
1200		42.6	16.0	2.3	5.0
1400		46.0	16.0	2.3	5.0
1600		49.2	16.0	2.3	5.0

JIANGNAN CABLE

Structure Size and Performance Parameters

Approx. Overall diameter mm	Approx. Weight of completed cable Copper		Approx. Weight of completed cable Aluminium		Conductor D.C resistance at 20℃ Ω/km		Cable Capacity μF/km
	YJLW02 YJLW02-Z	YJLW03 YJLW03-Z	YJLLW02 YJLLW02-Z	YJLLW03 YJLLW03-Z	Copper conductor	Aluminium conductor	
92.0	8635	6721	5819	5233	0.0754	0.125	0.169
93.3	8078	7473	6213	5609	0.0601	0.100	0.181
93.8	9077	8453	6725	6101	0.0470	0.0778	0.194
96.4	10435	9777	7405	6744	0.0366	0.605	0.213
100.1	12056	11370	8737	7450	0.0283	0.0469	0.232
105.4	14399	13664	9278	8544	0.0221	0.0367	0.259
110.3	16742	15970	10493	9721	0.0176	0.0291	0.281
115.4	18713	17918	11319	10524	0.0151	0.0247	0.296
118.8	20848	20027	12217	11396	0.0129	0.0212	0.313
123.0	23112	22259	13151	12298	0.0113	0.0186	0.329

JIANGNAN CABLE

XLPE insulation corrugated aluminum sheath non-metallic outer sheath for rated voltage of 127/220kV

Structure Size and Performance Parameters

Conductor			Nominal Insulation Thickness mm	Aluminium sheath thickness mm	Non-metallic sheath thickness mm
Nominal cross-sectional area mm²	Shape	Approx.diameter mm			
400	Circular Compacted	23.1	27.0	2.4	5.0
500		26.4	27.0	2.4	5.0
630		30.1	26.0	2.4	5.0
800	Millikan Conductor	35.2	25.0	2.4	5.0
1000		39.5	24.0	2.0	5.0
1200		42.6	24.0	2.0	5.0
1400		46.0	24.0	2.6	5.0
1600		49.2	24.0	2.6	5.0
2000		54.4	24.0	2.8	5.0
2500		61.0	24.0	2.8	5.0

JIANGNAN CABLE

Structure Size and Performance Parameters

Approx. Overall diameter mm	Approx. Weight of completed cable Copper		Approx. Weight of completed cable Aluminium		Conductor D.C resistance at 20℃ Ω/km		Cable Capacity μF/km
	YJLW02 YJLW02-Z	YJLW03 YJLW03-Z	YJLLW02 YJLLW02-Z	YJLLW03 YJLLW03-Z	Copper conductor	Aluminium conductor	
92.0	8635	6721	5819	5233	0.0754	0.125	0.169
93.3	8078	7473	6213	5609	0.0601	0.100	0.181
93.8	9077	8453	6725	6101	0.0470	0.0778	0.194
96.4	10435	9777	7405	6744	0.0366	0.605	0.213
100.1	12056	11370	8737	7450	0.0283	0.0469	0.232
105.4	14399	13664	9278	8544	0.0221	0.0367	0.259
110.3	16742	15970	10493	9721	0.0176	0.0291	0.281
115.4	18713	17918	11319	10524	0.0151	0.0247	0.296
118.8	20848	20027	12217	11396	0.0129	0.0212	0.313
123.0	23112	22259	13151	12298	0.0113	0.0186	0.329

JIANGNAN CABLE

Power cables with copper conductor, XLPE insulation corrugated aluminum sheath non-metallic outer sheath for rated voltage of 290/500kV

Structure Size and Performance Parameters

Conductor			Nominal Insulation Thickness mm	Aluminium sheath thickness mm	Non-metallic sheath thickness mm
Nominal cross-sectional area mm²	Shape	Approx.diameter mm			
800	Millikan Conductor	35.2	34.0	2.9	6.0
1000		39.5	33.0	3.0	6.0
1200		42.6	33.0	3.0	6.0
1400		46.0	32.0	3.0	6.0
1600		49.2	32.0	3.1	6.0
1800		50.8	31.0	3.2	6.0
2000		54.4	31.0	3.2	6.0
2200		57.4	31.0	3.2	6.0
2500		61.0	31.0	3.2	6.0

JIANGNAN CABLE

Structure Size and Performance Parameters

Approx. Overall diameter mm	Approx. Weight of completed cable Copper		Conductor D.C resistance at 20℃ Ω/km	Cable Capacity μ F/km
	YJLW02 YJLW02-Z	YJLW03 YJLW03-Z	Copper conductor	
150.0	24395	23666	0.0221	0.142
152.0	26828	25342	00176	0.153
154.0	28542	27748	0.0151	0.161
158.0	30352	30102	0.0129	0.171
161.0	32815	32443	0.0113	0.178
164.0	35069	34030	0.0101	0.188
167.0	36998	35780	0.0090	0.196
170.0	39362	38161	0.0083	0.204
173.0	42603	41384	0.0072	0.212

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