



河南泰诺电缆有限公司

HENAN TANO CABLE CO.,LTD.



MV POWER CABLE to BS 6622 STANDARD



Henan Tano Cable Co., Ltd.(Tano Cable for short), is a leading and professional manufacturer of cable and wire with more than 20 years' history and manufacturing experience, located in Zhengzhou city which is the capital of Henan province, China.

Tano Cable aims at providing integral power solution for international customers. We are working together as one company to provide products and technologies for building, maintaining and advancing the power and information infrastructures that connect the world. We mainly have the following products with strong competitiveness: All Aluminum Conductors (AAC), All Aluminum Alloy Conductors (AAAC), Aluminum Conductors Steel Reinforcement (ACSR) , Aerial Bundled Cables (ABC), building wire, welding cable, control cable, instrument cable, rubber cable, PVC insulated power cable, XLPE insulated power cable up to 500KV, customer-tailored cable and cable accessories, conforming to many different Country or international standard, such as IEC, HAR, BS, DIN, ICEA, ASTM, SABS, AS/NZS, JIS and so on.

Tano Cable pays great importance on the quality. We have strong teams and equipments for both production and inspection. Moreover, we have been awarded many certificates of ISO, CE, SONCAP, others from China and abroad. We keep improving our quality management system to meet the client's final satisfaction.

Tano Cable has provided services to the global clients who working in all areas of the energy, construction, industrial, specialty and communications market, and obtained the client's trust and compliment.

Welcome your any inquiry! Welcome your any visit! Welcome your any contact! We will take our biggest sincerity to be your long-term friend and partner.





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Single Core MV Power Cable to BS 6622 Standard

APPLICATION

The single core power cable are designed for distribution of electrical power with nominal voltage U_0/U ranging from 3.8/6.6KV to 19/33KV and frequency 50Hz. They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

BS 6622

BS 7835 (LSZH)

CONSTRUCTION




- C PVC/PE/LSZH Separation Sheath (optional)¹
- A Aluminum Wire Armor (optional) and binder¹
- B Inner sheath or bedding¹
- E Metallic Screen¹
- Insulation Screen¹
- XLPE/EPR/HEPR Insulation¹
- Conductor Screen¹
- Copper or aluminum conductor¹

Conductor: Plain annealed copper or aluminum complying with IEC 60228/BS 6360. Copper conductors shall be stranded (class 2) and aluminum conductors shall be either solid or stranded (class 2).

Conductor Screen: Extruded layer of semi-conducting cross-linkable compound is applied over the

conductor and shall cover the surface completely. The minimum thickness is 0.3mm and the maximum resistivity shall not exceed 500 Ohm-m at 90°C.

Insulation: Insulation is of cross-linked polyethylene compound XLPE (GP8) conforming to BS 7655-1.3 or EPR (GP7), conforming to BS 7655-1.2.

Table 1. Insulation Thickness

Nom. Cross Section Area	Insulation Thickness at Nominal Voltage				
	3.8/6.6KV (Um=7.2KV)	6.35/11KV (Um=12KV)	8.7/15KV (Um=17.5KV)	12.7/22KV (Um=24KV)	19/33KV (Um=36KV)
mm ²	mm	mm	mm	mm	mm
70 – 185	2.5	3.4	4.5	5.5	8
240	2.6	3.4	4.5	5.5	8
300	2.8	3.4	4.5	5.5	8
400	3	3.4	4.5	5.5	8
Above 500	3.2	3.4	4.5	5.5	8

Insulation Screen: Extruded layer of semi-conducting cross-linkable compound is applied over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. As an option, a semi-conducting tape may be applied over the extruded semi-conducting layer as a bedding for the metallic layer. The minimum thickness is 0.3 mm and the maximum resistivity is 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site.

Metallic Layer: The metallic layer shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires. The metallic layer provides an earth fault current path, capable of withstanding fault current to earth of 1000A for one second at maximum temperature 160°C. Copper wires are applied over the conducting water blocking layer with a minimum diameter of 0.5mm. And over the copper wires, copper tape with minimum thickness of 0.1mm can be applied helically with overlap. Total cross section of copper wire screen layer is shown in table 2.

Table 2. Minimum Total Cross Section of Copper Wire Screen & DC Resistance of the screen

Nominal Cross-Section of Cables mm ²	Minimum Cross-Section of Copper Wire Screen mm ²	DC Resistance of the Copper Wire Screen at 20°C Ω
up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51

Separation Sheath (for armored cable): The separation sheath comprises a layer of extruded PVC, PE or LSZH. The nominal thickness is calculated by $0.02D_u + 0.6\text{mm}$ where D_u is the fictitious diameter under the sheath in mm. The nominal separation sheath thickness shall not be less than 1.2mm.

Armour (for armored cable): The armor consists of round aluminum wire with diameter specified as in Table 3.

Table 3. Armour Wire Diameter

Fictitious Diameter Under the Armour mm		Armour Wire Diameter mm
>	<	
	25	1.6
25	35	2
35	60	2.5
60	-	3.15

Over Sheath: Overall sheath comprises a layer of extruded either PVC type 9 conforming to BS 7665-4.2 or MDPE type TS2 conforming to BS 7665-10.1. LSZH can be offered as an option. The oversheath is normally black in color. When a DC voltage test is to be performed on the oversheath, a semi-conducting layer such as graphite coating shall be applied over the surface of the extruded oversheath. The nominal oversheath thickness is calculated by $0.035+D$ where D is the diameter immediately under the oversheath in mm. For cable with the oversheath not applied over the armor, the nominal oversheath thickness shall not be less than 1.4mm. And for cable with oversheath applied over the armor, the nominal oversheath thickness shall not be less than 1.8mm.

Service Life: 30years

PHYSICAL PROPERTIES

Operating Temperature: up to 90°C

Temperature Range: -5°C (PVC sheath); -20°C (PE sheath)

Short Circuit Temperature: 250°C (short circuit duration up to 5 seconds)

Bending Radius: 12 x OD

Table 4. Nominal/Operating/Test Voltages

Rated Voltage Uo/U	Operating Voltage (Um)	Testing Voltage (rms)
3.8/6.6KV	7.2KV	15KV
6.35/11KV	12KV	25.5KV
8.7/15KV	17.5KV	35KV
12.7/22KV	24KV	51KV
19/33KV	36KV	76KV

TECHNICAL DATA

Single Core 3.8/6.6KV (Um=7.2KV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Unarmoured Cables					Aluminium Wire Armoured Cables						
		Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					Cu	AL						Cu	AL
mm²	mm	mm²	mm	mm	kg/km	mm²	mm	mm	mm	mm	kg / km		
25	2.5	16	1.5	20.3	750	580	3.4	1.2	1.6	1.8	26.3	1150	1000
35	2.5	16	1.6	21.3	870	650	3.6	1.2	1.6	1.8	27.3	1250	1050
50	2.5	16	1.6	22.4	1090	770	3.9	1.2	1.6	1.8	28.4	1500	1190
70	2.5	16	1.7	24.2	1310	870	4.3	1.2	1.6	1.8	30	1740	1300
95	2.5	16	1.7	25.8	1560	960	4.7	1.2	1.6	1.9	31.8	2030	1430
120	2.5	16	1.8	27.4	1830	1070	5	1.2	1.6	1.9	33.2	2310	1550
150	2.5	25	1.8	29.1	2130	1190	5.3	1.2	1.6	2	35.1	2660	1720
185	2.5	25	1.9	30.8	2490	1320	5.8	1.2	2	2	37.4	3120	1950
240	2.6	25	1.9	33.5	3040	1520	6.3	1.2	2	2.1	40.3	3740	2200
300	2.8	25	2	36.1	3650	1770	7	1.2	2	2.2	42.9	4400	2520
400	3	35	2.2	40.6	4680	2170	7.7	1.2	2	2.3	47.2	5490	2960
500	3.2	35	2.3	43.6	5670	2570	8.5	1.3	2.5	2.5	51.6	6760	3660
630	3.2	35	2.4	48.8	6980	2990	9.5	1.4	2.5	2.6	57	8200	4160

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Unarmoured Cables	Aluminium Wire Armoured Cables	Reactance	Inductance	Impedance					
						Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec								
						Trefoil Flat Spaced				Trefoil Flat Spaced		Trefoil Flat Spaced		Trefoil Flat Spaced	
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	kA	µΩ/m	µΩ/m	nH/m	nH/m	µΩ/ m		µΩ/m	
25	727/1200	927/1538	3.6/2.3	263	0.32	2.6	0.4	136	194	400	590	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	291	0.35	2.6	0.5	127	185	390	580	679	1121	695	1131
50	387/641	494/822	6.8/4.4	321	0.39	2.6	0.5	121	179	380	570	511	834	527	844
70	268/443	343/568	9.8/6.3	371	0.45	2.6	0.6	115	173	370	550	364	583	386	597
95	193/320	248/410	13.3/8.5	417	0.5	2.6	0.6	110	168	350	540	272	427	300	446
120	153/253	196/325	17.2/11.0	459	0.55	2.6	0.7	107	165	340	520	225	345	257	367
150	124/206	159/265	21.2/13.5	494	0.59	4.3	0.7	103	161	330	510	193	287	229	313
185	99.1/164	128/211	26.6/17.0	543	0.65	4.3	0.8	100	158	320	500	165	237	206	267
240	75.4/125	98/161	34.9/22.3	583	0.7	4.3	0.9	97	155	310	490	140	191	185	226
300	60.1/100	80/130	43.8/28.0	602	0.72	4.3	1	95	153	300	490	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	627	0.75	5.8	1.1	92	150	290	480	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	654	0.79	5.8	1.2	90	149	290	470	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	726	0.87	5.8	1.3	87	145	280	460	97	110	151	160

Single Core 6.35/11KV (Um=12KV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Unarmoured Cables					Aluminium Wire Armoured Cables						
		Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					Cu	AL						Cu	AL
mm²	mm	mm²	mm	mm	kg/km		mm²	mm	mm	mm	mm	kg/km	
25	3.4	16	1.5	22.1	960	740	3.8	1.2	1.6	1.8	28.1	1300	780
35	3.4	16	1.6	23.3	1060	790	4.1	1.2	1.6	1.8	29.1	1400	1180
50	3.4	16	1.7	24.4	1160	840	4.4	1.2	1.6	1.8	30.2	1600	1280

70	3.4	16	1.7	26	1370	930	4.7	1.2	1.6	1.9	32	1840	1400
95	3.4	16	1.8	27.8	1640	1040	5.2	1.2	1.6	1.9	33.6	2130	1530
120	3.4	16	1.8	29.2	1900	1140	5.5	1.2	1.6	2	35.2	2430	1670
150	3.4	25	1.9	31.1	2220	1280	5.8	1.2	1.6	2.1	37.9	2870	1930
185	3.4	25	1.9	32.6	2570	1410	6.2	1.2	2	2.1	39.4	3240	2080
240	3.4	25	2	35.3	3130	1610	6.8	1.2	2	2.2	42.1	3490	2330
300	3.4	25	2.1	37.5	3730	1850	7.3	1.2	2	2.2	44.1	4490	2560
400	3.4	35	2.2	41.4	4730	2200	8	1.2	2	2.4	48.2	5589	3040
500	3.4	35	2.3	44	5700	2600	8.6	1.3	2.5	2.5	52	6780	3680
630	3.4	35	2.4	49.2	7010	3020	9.5	1.4	2.5	2.6	57.4	8230	4200

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Unarmoured Cables	Aluminium Wire Armoured Cables	Reactance		Inductance		Impedance				
						Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec									
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced		
													CU	AL	CU	AL
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	kA	µΩ/m	µΩ/m	nH/m	nH/m		µΩ/m		µΩ/m	
25	727/1200	927/1538	3.6/2.3	208	0.42	2.6	0.5	146	206	440	640	936	1544	952	1554	
35	524/868	668/1113	5.0/3.2	229	0.46	2.6	0.6	138	201	440	640	679	1121	695	1131	
50	387/641	494/822	6.8/4.4	252	0.5	2.6	0.6	132	195	420	620	511	834	527	844	
70	268/443	343/568	9.8/6.3	288	0.58	2.6	0.7	122	188	390	600	364	583	386	597	
95	193/320	248/410	13.3/8.5	323	0.65	2.6	0.7	122	182	390	580	272	427	300	446	
120	153/253	196/325	17.2/11.0	353	0.71	2.6	0.8	116	172	370	550	225	345	257	367	
150	124/206	159/265	21.2/13.5	380	0.76	4.3	0.8	110	166	350	530	193	287	229	313	
185	99.1/164	128/211	26.6/17.0	416	0.83	4.3	0.9	107	166	340	530	165	237	206	267	
240	75.4/125	98/161	34.9/22.3	460	0.92	4.3	0.9	104	163	330	520	140	191	185	226	
300	60.1/100	80/130	43.8/28.0	506	1.01	4.3	1	100	157	320	500	126	163	174	203	
400	47/77.8	64/102	57.3/36.6	561	1.12	5.8	1.1	94	154	300	490	113	141	164	184	
500	36.6/60.5	51/81	72.3/46.2	619	1.24	5.8	1.2	91	151	290	480	105	124	158	171	
630	28.3/46.9	42/64	91.2/58.3	698	1.37	5.8	1.3	91	148	290	470	97	110	151	160	

Single Core 8.7/15KV (Um=17.5kV)

Dimensional Data

Nom. Cross- Section Area		Unarmoured Cables					Aluminium Wire Armoured Cables							
		Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL						CU	AL
						kg/km							kg/km	
mm²	mm	mm²	mm	mm	kg/km		mm²	mm	mm	mm	mm	kg/km		
25	4.5	16	1.6	23.7	940	820	4.4	1.2	1.6	1.8	30.3	1430	1210	
35	4.5	16	1.7	24.9	1140	870	4.7	1.2	1.6	1.9	31.5	1630	1310	
50	4.5	16	1.7	26.6	1240	920	4.9	1.2	1.6	1.9	32.6	1730	1410	
70	4.5	16	1.8	28.4	1470	1030	5.3	1.2	1.6	1.9	34.2	1970	1520	
95	4.5	16	1.9	30.2	1750	1160	5.7	1.2	2	2	36.8	2370	1770	
120	4.5	16	1.9	31.6	2100	1250	6.1	1.2	2	2.1	38.4	2670	1910	
150	4.5	25	2	33.5	2340	1400	6.4	1.2	2	2.1	40.1	3020	2080	
185	4.5	25	2	35	2690	1520	6.8	1.2	2	2.2	41.8	3420	2240	
240	4.5	25	2.1	36.8	3270	1740	7.4	1.2	2	2.3	44.5	4050	2500	
300	4.5	25	2.2	39.9	3870	1990	7.9	1.2	2	2.3	46.5	4680	2780	
400	4.5	35	2.3	43.8	4890	2370	8.5	1.3	2.5	2.5	51.8	5970	3430	
500	4.5	35	2.4	46.4	5860	2760	9.2	1.3	2.5	2.6	54.4	7010	3910	
630	4.5	35	2.5	51.6	7190	3190	10	1.4	2.5	2.7	59.8	8480	4420	

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Unarmoured Cables	Aluminium Wire Armoured Cables	Reactance		Inductance		Impedance			
						Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec								
						Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced			
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	kA	µΩ/m	µΩ/m	nH/m	nH/m	µΩ/m		µΩ/m	
25	727/1200	927/1538	3.6/2.3	171	0.47	2.6	0.6	154	217	480	680	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	187	0.51	2.6	0.6	145	208	460	660	679	1121	695	1131
50	387/641	494/822	6.8/4.4	204	0.56	2.6	0.7	138	201	440	640	511	834	527	844
70	268/443	343/568	9.8/6.3	232	0.63	2.6	0.7	132	188	420	600	364	583	386	597
95	193/320	248/410	13.3/8.5	258	0.7	2.6	0.8	126	182	400	580	272	427	300	446
120	153/253	196/325	17.2/11.0	281	0.77	2.6	0.8	119	179	380	570	225	345	257	367
150	124/206	159/265	21.2/13.5	301	0.82	4.3	0.9	113	176	360	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	329	0.9	4.3	0.9	110	170	350	540	165	237	206	267

240	75.4/125	98/161	34.9/22.3	363	0.99	4.3	1	107	166	340	530	140	191	185	226
300	60.1/100	80/130	43.8/28.0	396	1.09	4.3	1.1	104	160	330	510	126	163	174	203
400	47/77.8	64/102	57.3/36.6	439	1.2	5.8	1.2	97	157	310	500	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	483	1.32	5.8	1.3	94	154	300	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	534	1.46	5.8	1.4	91	151	290	480	97	110	151	160

Single Core 12.7/22KV (Um=24kV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Unarmoured Cables					Aluminium Wire Armoured Cables						
		Copper Wire Screen	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
		Area			CU	AL	Area					CU	AL
		mm²	mm	mm	kg/km		mm²	mm	mm	mm	mm	kg/km	
35	5.5	16	1.7	27.4	1100	800	5.2	1.2	1.6	1.9	31.4	1400	1200
50	5.5	16	1.8	28.8	1330	1010	5.4	1.2	1.6	2	34.8	1850	1540
70	5.5	16	1.9	30.6	1570	1130	5.9	1.2	2	2	37.2	2190	1750
95	5.5	16	1.9	32.2	1840	1240	6.2	1.2	2	2.1	39	2510	1900
120	5.5	16	2	33.8	2120	1360	6.6	1.2	2	2.1	40.4	2810	2040
150	5.5	25	2	35.5	2440	1500	6.9	1.2	2	2.2	42.3	3180	2240
185	5.5	25	2.1	37.2	2810	1640	7.4	1.2	2	2.2	43.8	3560	2380
240	5.5	25	2.2	39.9	3390	1860	7.8	1.2	2	2.3	46.5	4200	2640
300	5.5	25	2.2	41.9	3990	2110	8.4	1.3	2.5	2.4	49.9	5030	3130
400	5.5	35	2.3	45.8	5100	2490	9	1.3	2.5	2.5	53.8	6140	3600
500	5.5	35	2.4	48.4	6000	2900	9.7	1.4	2.5	2.6	56.6	7210	4100
630	5.5	35	2.5	53.6	7340	3340	10.4	1.4	2.5	2.8	62	8700	4650

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Unarmoured Cables	Aluminium Wire Armoured Cables	Reactance		Inductance		Impedance			
						Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec								
						Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced			
												CU	AL	CU	AL

mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	μΩ/m	nH/m	nH/m	μΩ/m	μΩ/m
35	524/868	668/1113	5.0/3.2	162	0.7	2.6	0.7	147	207	470	620	679	1121
50	387/641	494/822	6.8/4.4	177	0.8	2.6	0.8	141	201	450	640	511	834
70	268/443	343/568	9.8/6.3	200	0.8	2.6	0.8	135	195	430	620	364	583
95	193/320	248/410	13.3/8.5	222	0.9	2.6	0.9	129	188	410	600	272	427
120	153/253	196/325	17.2/11.0	241	0.9	2.6	0.9	122	182	390	580	225	345
150	124/206	159/265	21.2/13.5	257	1	4.3	1	116	176	370	560	193	287
185	99.1/164	128/211	26.6/17.0	280	1	4.3	1	116	173	370	550	165	237
240	75.4/125	98/161	34.9/22.3	307	1.1	4.3	1.1	110	170	350	540	140	191
300	60.1/100	80/130	43.8/28.0	336	1.2	4.3	1.2	107	166	340	530	126	163
400	470/77.8	64/102	57.3/36.6	370	1.3	5.8	1.3	100	160	320	510	113	141
500	36.6/60.5	51/81	72.3/46.2	406	1.4	5.8	1.4	97	154	310	490	105	124
630	28.3/46.9	42/64	91.2/58.3	449	1.5	5.8	1.5	94	151	300	480	97	110

Single Core 19/33KV (Um=36kV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Unarmoured Cables					Aluminium Wire Armoured Cables						
		Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
					mm²	mm						mm²	mm
50	8	16	2	34.2	1580	1270	6.7	1.2	2	2.2	41	2300	1980
70	8	16	2	35.8	1820	1380	7.1	1.2	2	2.2	42.6	2560	2120
95	8	16	2.1	37.6	2120	1510	7.5	1.2	2	2.3	44.4	2890	2290
120	8	16	2.1	39	2400	1630	7.9	1.2	2	2.3	45.8	3200	2430
150	8	25	2.2	40.9	2740	1810	8.2	1.3	2.5	2.4	48.9	3760	2830
185	8	25	2.2	42.4	3110	1950	8.6	1.3	2.5	2.5	50.6	4180	3010
240	8	25	2.3	45.1	3720	2180	9.2	1.3	2.5	2.5	53.1	4830	3270
300	8	25	2.4	47.3	4350	2460	9.7	1.4	2.5	2.6	55.5	5540	3630
400	8	35	2.5	51.2	5410	2880	10.3	1.4	2.5	2.7	59.4	6680	4130
500	8	35	2.6	53.8	6420	3320	11	1.5	2.5	2.8	62.2	7790	4690
630	8	35	2.7	59	7800	3780	11.8	1.5	2.5	2.9	67.4	9290	5220

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Unarmoured Cables	Aluminium Wire Armoured Cables	Reactance		Inductance		Impedance			
						Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec								
						Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced			
												CU	AL	CU	AL
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	kA	µΩ/m	µΩ/m	nH/m	nH/m	µΩ/m		µΩ/m	
50	387/641	494/822	6.8/4.4	138	0.83	2.6	1	151	214	480	680	511	834	527	844
70	268/443	343/568	9.8/6.3	154	0.92	2.6	1	144	201	460	640	364	583	386	597
95	193/320	248/410	13.3/8.5	169	1.01	2.6	1.1	138	195	440	620	272	427	300	446
120	153/253	196/325	17.2/11.0	183	1.1	2.6	1.1	132	188	420	600	225	345	257	367
150	124/206	159/265	21.2/13.5	194	1.16	4.3	1.2	126	182	400	580	193	287	229	313
185	99.1/164	128/211	26.6/17.0	210	1.26	4.3	1.2	122	182	390	580	165	237	206	267
240	75.4/125	98/161	34.9/22.3	229	1.37	4.3	1.3	119	176	380	560	140	191	185	226
300	60.1/100	80/130	43.8/28.0	249	1.49	4.3	1.4	113	173	360	550	126	163	174	203
400	47/77.8	64/102	57.3/36.6	273	1.64	5.8	1.5	107	163	340	520	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	298	1.79	5.8	1.6	104	163	330	520	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	327	1.96	5.8	1.7	100	160	320	510	97	110	151	160

C A B L E

Current Rating for 3.8/6.6kV(Um=7.2kV),

6.35/11kV(Um=12kV)&8.7/15kV(Um=17.5kV)

Nom. Cross- Section Area	Ground				Duct				Air			
	Trefoil		Flat Spaced		Trefoil		Flat Touching		Trefoil		Flat Spaced	
	Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm ²	A		A		A		A		A		A	
25	160/160	120/120	170/170	125/125	165/165	125/125	165/165	125/125	170/170	130/130	230/235	180/180
35	180/180	150/150	190/190	155/155	185/185	155/155	185/185	155/155	200/200	160/160	260/265	210/210
50	220/220	170/170	230/230	175/175	225/220	175/170	220/220	170/170	235/250	180/195	295/300	230/230
70	270/270	210/210	280/280	215/215	270/260	215/210	270/270	210/210	285/310	225/240	370/370	290/290
95	320/320	250/250	335/335	260/260	320/305	255/245	325/325	250/250	360/375	280/295	455/460	350/355
120	360/360	280/280	380/380	295/295	360/340	285/275	370/370	285/285	415/430	320/355	520/530	410/410
150	410/410	320/315	430/430	330/330	400/375	315/300	415/410	320/320	470/490	365/380	600/600	465/465
185	460/455	360/355	485/485	375/375	440/410	350/335	465/460	360/360	540/550	425/435	690/690	530/530

240	530/520	415/405	560/560	440/440	505/460	405/380	540/540	420/420	640/650	500/510	820/820	640/630
300	600/580	475/455	640/640	495/495	560/500	455/420	610/610	475/470	740/740	580/580	940/940	730/730
400	680/650	540/510	730/730	570/570	610/530	510/455	690/690	540/540	840/840	670/670	1100/1100	860/860
500	750/710	610/570	830/830	650/650	680/570	570/500	790/780	620/620	940/930	790/770	1280/1280	1010/1010
630	830/760	680/640	940/940	750/750	750/620	640/550	890/890	710/700	1110/1040	910/880	1500/1480	1190/1180

Current Rating for 12.7/22kV(Um=24kV)

Nom. Cross- Section Area mm²	Ground				Duct				Air			
	Trefoil		Flat Spaced		Trefoil		Flat Touching		Trefoil		Flat Spaced	
	Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm²	A		A		A		A		A		A	
35	180/180	130/130	200/200	135/135	180/170	130/125	180/175	130/125	190/175	145/135	225/230	175/175
50	220/220	170/170	230/230	175/175	225/210	175/170	225/220	175/170	245/260	190/200	295/300	230/230
70	270/270	210/210	280/280	215/215	270/260	210/205	270/270	210/210	300/320	235/245	365/370	285/285
95	320/320	250/245	335/335	260/260	320/300	250/245	320/325	250/250	360/380	280/295	450/450	345/350
120	360/360	280/280	380/380	295/295	360/340	280/275	365/365	285/285	425/440	330/340	520/520	400/400
150	410/410	320/310	430/430	330/330	405/370	320/300	410/410	320/315	485/490	375/385	590/590	455/455
185	460/450	360/350	485/485	375/375	445/400	350/335	460/460	360/360	550/560	430/440	670/670	520/520
240	530/510	415/405	560/560	440/440	520/450	415/380	530/530	415/415	650/650	510/510	800/800	620/620
300	600/570	475/455	640/640	495/495	570/490	460/415	600/600	470/470	740/730	580/580	920/910	710/710
400	690/640	550/510	730/730	570/570	630/530	520/460	690/680	540/530	850/830	680/670	1070/1060	840/830
500	760/700	610/570	830/830	650/650	700/570	570/510	780/770	610/610	980/940	790/770	1250/1230	980/970
630	850/760	690/640	940/940	750/750	780/610	650/560	890/880	700/700	1130/1050	920/880	1450/1430	1060/1140

Current Rating for 19/33kV(Um=36kV)

Nom. Cross- Section Area mm²	Ground				Duct				Air			
	Trefoil		Flat Spaced		Trefoil		Flat Touching		Trefoil		Flat Spaced	
	Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd		Unarm'd/Arm'd	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm²	A		A		A		A		A		A	
50	220/220	170/170	230/230	175/175	225/220	175/170	225/220	175/170	245/260	190/200	295/300	230/230
70	270/270	210/210	280/280	215/215	270/260	210/205	270/270	210/210	300/320	235/245	365/370	285/285
95	320/320	250/245	335/335	260/260	320/300	250/245	320/325	250/250	360/380	280/295	450/450	345/350
120	360/360	280/280	380/380	295/295	360/340	280/275	365/365	285/285	425/440	330/340	520/520	400/400
150	410/410	320/310	430/430	330/330	405/370	320/300	410/410	320/315	485/490	375/385	590/590	455/455
185	460/450	360/350	485/485	375/375	445/400	350/335	460/460	360/360	550/560	430/440	670/670	520/520
240	530/510	415/405	560/560	440/440	520/450	415/380	530/530	415/415	650/650	510/510	800/800	620/620

300	600/570	475/450	640/640	495/495	570/490	460/415	600/600	470/470	740/730	580/580	920/910	710/710
400	690/640	550/510	730/730	570/570	630/530	520/460	690/680	540/530	850/830	680/670	1070/1060	840/830
500	760/700	610/570	830/830	650/650	700/570	570/510	780/770	610/610	980/940	790/770	1250/1230	980/970
630	850/760	690/640	940/940	750/750	780/610	650/560	890/880	700/700	1130/1050	920/880	1450/1430	1060/1140

CURRENT RATING CONDITIONS

Ground Temperature: 20°C

Ambient Temperature (air): 30°C

Depth of Soil: 0.8m

Thermal Resistance of Soil: 1.5Km/W

Three Core MV Power Cable to BS 6622 Standard

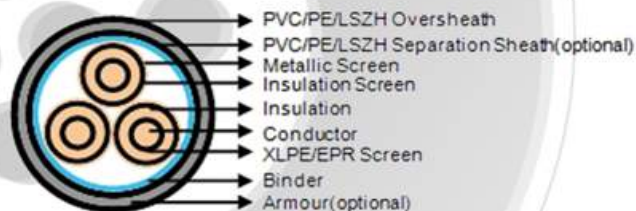
APPLICATION

The three core power cable are designed for distribution of electrical power with nominal voltage U_0/U ranging from 3.6/6.6KV to 19/33KV and frequency 50Hz. They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

BS 6622

CONSTRUCTION



Conductor: Plain annealed copper or aluminum complying with IEC 60228/BS 6360. Copper conductors shall be stranded (class 2) and aluminum conductors shall be either solid or stranded (class 2).

Conductor Screen: Extruded layer of semi-conducting cross-linkable compound is applied over the conductor and shall cover the surface completely. The minimum thickness is 0.3mm and the maximum resistivity shall not exceed 500 Ohm-m at 90°C.

Insulation: Insulation is of cross-linked polyethylene compound XLPE (GP8) conforming to BS 7655-1.3 or EPR (GP7), conforming to BS 7655-1.2.

Table 1. Insulation Thickness

Nom. Cross Section Area	Insulation Thickness at Nom. Voltage				
	3.8/6.6KV (Um=7.2KV)	6.35/11KV (Um=12KV)	8.7/15KV (Um=17.5KV)	12.7/22KV (Um=24KV)	19/33KV (Um=36KV)
mm ²	mm	mm	mm	mm	mm
70 – 185	2.5	3.4	4.5	5.5	8
240	2.6	3.4	4.5	5.5	8
300	2.8	3.4	4.5	5.5	8
400	3	3.4	4.5	5.5	8
Above 500	3.2	3.4	4.5	5.5	8

Insulation Screen: Extruded layer of semi-conducting cross-linkable compound is applied over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. As an option, a semi-conducting tape may be applied over the extruded semi-conducting layer as a bedding for the metallic layer. The minimum thickness is 0.3 mm and the maximum resistivity is 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site.

Inner Covering & Fillers: For Power Cable with a collective metallic layer or Power Cable with a metallic layer over each individual cores with additional collective metallic layers, semi-conducting inner covering and fillers shall be applied over the laid up cores. The inner covering is made of non hygroscopic material, except if the cable is to be made longitudinally watertight. The inner covering shall be extruded or lapped. The approximate thickness of extruded inner coverings is given in Table 2.

Table 2. Approximate Thickness Of Extruded Inner Coverings

Fictitious Diameter Over Laid Up Cores		Approx. Thickness of Extruded Inner Covering
mm		mm
>	<	
-	25	1
25	35	1.2
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2

Metallic Layer: The metallic layer shall be applied over each core or applied as a collective screen. The metallic screen shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires. The metallic layer provides an earth fault current path, capable of withstanding fault current to earth of 1000A for one second at maximum temperature 160°C. Copper wires are applied over the conducting water blocking layer with a minimum diameter of 0.5mm. And over the copper wires, copper tape with minimum thickness of 0.1mm can be applied helically with overlap. Total cross section of copper wire screen is shown in table 3.

Table 3. Minimum Total Cross Section Of Copper Wire Screen & DC Resistance Of The Screen

Nominal Cross-Section Area of Cable	Minimum Cross-Section of Copper Wire Screen Area	DC Resistance of the Copper Wire Screen
mm ²	mm ²	mm
up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51

Separation Sheath (for armored cable): The separation sheath comprises a layer of extruded PVC, PE or LSZH. The nominal thickness is calculated by $0.02D_u + 0.6\text{mm}$ where D_u is the fictitious diameter under the sheath in mm. The nominal separation sheath thickness shall not be less than 1.2mm.

Armour (for armored cable): The armor consists of galvanized steel wire applied over the inner covering with diameter specified as in Table 4.

Table 4. Armour Wire Diameter

Fictitious Diameter Under the Armour		Armour Wire Diameter
mm		mm
>	<	
	25	1.6
25	35	2
35	60	2.5
60	-	3.15

Over Sheath: Overall sheath comprises a layer of extruded either PVC type 9 conforming to BS 7665-4.2 or MDPE type TS2 conforming to BS 7655-10.1; LSZH can be offered as an option. The oversheath is normally black in color. When a DC voltage test is to be performed on the oversheath, a semi-conducting layer such as graphite coating shall be applied over the surface of the extruded oversheath. The nominal oversheath thickness is calculated by $0.035+D$ where D is the diameter immediately under the oversheath in mm. For Power Cable with the oversheath not applied over the armor, the nominal oversheath thickness shall not be less than 1.4mm. And for Power Cable with oversheath applied over the armor, the nominal oversheath thickness shall not be less than 1.8mm.

Service Life: 30years

PHYSICAL PROPERTIES

Operating Temperature: up to 90°C

Temperature Range: -5°C (PVC sheath); -20°C (PE sheath)

Short Circuit Temperature: 250°C (short circuit duration up to 5 seconds)

Bending Radius: 15 x OD

Table 5. Nominal/Operation/Test Voltages

Rated Voltage U_0/U	Operating Voltage (U_m)	Testing Voltage (rms)
3.8/6.6KV	7.2KV	15KV
6.35/11KV	12KV	25.5KV
8.7/15KV	17.5KV	35KV
12.7/22KV	24KV	51KV
19/33KV	36KV	76KV

TECHNICAL DATA

Three Core 3.8/6.6KV (Um=7.2KV)

Dimensional Data

Nom. Cross- Section Area	Insulation Thickness	Unarmoured Cables					Steel Wire Armoured Cables						
		Nom.	Copper Wire Screen	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Copper Tape Screen	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
			Area			CU AL	Area					CU AL	
		mm ²	mm ²	mm	mm	kg/km	mm ²	mm	mm	mm	mm	kg / km	
25	2.5	16	2.1	37.7	2205	1740	3.4	1.2	2	2.2	44.5	3890	3465
35	2.5	16	2.3	41.2	2690	2010	3.6	1.2	2.5	2.3	46.8	4420	3730
50	2.5	16	2.5	44.9	3340	2350	3.8	1.3	2.5	2.5	51.5	5640	4690
70	2.5	16	2.6	48	4050	2730	4.3	1.3	2.5	2.6	55	6570	5240
95	2.5	16	2.7	51.7	5000	3180	4.7	1.4	2.5	2.7	58.9	7760	5890
120	2.5	16	2.8	54.7	5890	3590	5	1.5	2.5	2.8	62.1	8810	6510
150	2.5	25	2.9	58.4	6960	4160	5.3	1.5	2.5	2.9	65.8	10110	7310
185	2.5	25	3	61.9	8160	4650	5.8	1.6	2.5	3	69.5	11520	7960
240	2.6	25	3.2	68.1	10210	5530	6.3	1.7	2.5	3.2	75.9	13920	9140
300	2.8	25	3.5	73.6	12380	6670	7	1.8	3.15	3.5	83.1	17400	11620
400	3	35	3.7	83.8	16190	8430	7.7	2	3.15	3.7	93	21900	13980

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci- tance pF/m	Charging Current mA/m	Unarmoured Cables	Steel Wire Armoured Cables	Reac- tance pΩ/m	Induc- tance nH/m	Current Ratings					
						Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec			Ground		Duct		Air	
										CU	AL	CU	AL	CU	AL
						kA	kA			A		A		A	
25	727/1200	927/1538	3.6/2.3	272	0.33	2.6	0.4	113	370	140	115	125	95	145	115
35	524/868	668/1113	5.0/3.2	301	0.36	2.6	0.5	108	350	170	135	150	115	175	140
50	387/641	494/822	6.8/4.4	332	0.4	2.6	0.5	102	330	210	160	180	135	220	170

70	268/443	343/568	9.8/6.3	383	0.46	2.6	0.6	97	310	255	195	215	165	270	210
95	193/320	248/410	13.3/8.5	432	0.52	2.6	0.6	92	290	300	230	255	200	330	250
120	153/253	196/325	17.2/11.0	474	0.57	2.6	0.7	89	280	340	265	290	225	375	295
150	124/206	159/265	21.2/13.5	511	0.61	4.3	0.7	87	280	380	295	330	255	430	330
185	99.1/164	128/211	26.6/17.0	562	0.67	4.3	0.8	86	270	430	335	370	290	490	385
240	75.4/125	98/161	34.9/22.3	602	0.72	4.3	0.9	83	260	490	380	425	335	570	450
300	60.1/100	80/130	43.8/28.0	622	0.75	4.3	1	82	260	540	435	470	375	650	510
400	47.0/77.8	64/102	57.3/36.6	648	0.78	5.8	1.1	80	250	590	480	520	420	700	570

Three Core 6.35/11KV (Um=12KV)

Dimensional Data

Nom. Cross- Section Area		Unarmoured Cables					Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
					kg/km							kg / km	
mm²	mm	mm²	mm	mm	kg/km		mm²	mm	mm	mm	mm	kg / km	
25	3.4	16	2.3	42.8	2600	2120	3.8	1.3	2.5	2.4	50	4930	4400
35	3.4	16	2.3	45.3	3000	2320	4.1	1.3	2.5	2.5	52.3	5380	4700
50	3.4	16	2.4	48.5	3630	2690	4.4	1.4	2.5	2.6	55.7	6210	5260
70	3.4	16	2.5	52	4440	3110	4.7	1.4	2.5	2.7	59.2	7200	5870
95	3.4	16	2.7	56	5440	3620	5.2	1.5	2.5	2.8	63.2	8420	6550
120	3.4	16	2.8	59.4	6370	4020	5.5	1.6	2.5	3	67	9580	7190
150	3.4	25	2.9	62.7	7430	4630	5.8	1.6	2.5	3.1	70.3	10830	8030
185	3.4	25	3	66.1	8680	5150	6.2	1.7	2.5	3.2	73.9	12290	8720
240	3.4	25	3.1	71.7	10690	5990	6.8	1.8	3.15	3.4	81.2	15620	10790
300	3.4	25	3.3	76.4	12770	7050	7.3	1.9	3.15	3.6	86.1	18030	12240
400	3.4	35	3.5	85.1	16460	8680	8	2	3.15	3.8	95	22350	14350

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci- tance	Charging Current	Unarmoured Cables	Steel Wire Armoured Cables	Reac- tance	Induc- tance	Current Ratings					
						Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec			Ground		Duct		Air	
CU	AL	CU	AL	CU	AL										

mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A	A	A	A	A	A
25	727/1200	927/1538	3.6/2.3	216	0.43	2.6	0.5	123	390	140	115	125	95	145	115
35	524/868	668/1113	5.0/3.2	237	0.47	2.6	0.6	115	370	170	135	150	115	175	140
50	387/641	494/822	6.8/4.4	260	0.52	2.6	0.6	109	350	210	160	180	135	220	170
70	268/443	343/568	9.8/6.3	298	0.6	2.6	0.7	103	330	255	195	215	165	270	210
95	193/320	248/410	13.3/8.5	334	0.67	2.6	0.7	99	310	300	230	255	200	330	250
120	153/253	196/325	17.2/11.0	365	0.73	2.6	0.8	96	310	340	265	290	225	375	295
150	124/206	159/265	21.2/13.5	392	0.78	4.3	0.8	93	300	380	295	330	255	430	330
185	99.1/164	128/211	26.6/17.0	430	0.86	4.3	0.9	90	290	430	335	370	290	490	385
240	75.4/125	98/161	34.9/22.3	476	0.95	4.3	0.9	87	280	490	380	425	335	570	450
300	60.1/100	80/130	43.8/28.0	524	1.05	4.3	1	85	270	540	435	470	375	650	510
400	47.0/77.8	64/102	57.3/36.6	580	1.16	5.8	1.1	81	260	590	480	520	420	700	570

Three Core 8.7/15KV (Um=17.5KV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Unarmoured Cables					Steel Wire Armoured Cables						
		Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm²	mm	mm²	mm	mm	kg/km		mm²	mm	mm	mm	mm	kg / km	
25	4.5	16	2.4	48.4	3000	2420	4.4	1.4	2.5	2.6	55.2	5600	5100
35	4.5	16	2.5	50.4	3450	2670	4.7	1.4	2.5	2.7	57.6	6130	5440
50	4.5	16	2.6	53.7	4140	3190	4.9	1.5	2.5	2.8	61.1	7010	6060
70	4.5	16	2.7	57.2	4980	3640	5.3	1.5	2.5	2.9	64.6	8030	6700
95	4.5	16	2.8	60.6	5900	4050	5.7	1.6	2.5	3	68.2	9160	7330
120	4.5	16	2.9	63.9	6870	4560	6.1	1.7	2.5	3.1	71.7	10340	8030
150	4.5	25	3	67.9	8030	5230	6.4	1.7	2.5	3.2	75.4	11730	8930
185	4.5	25	3.1	71.1	9310	5770	6.8	1.8	3.15	3.4	80.6	14170	10570
240	4.5	25	3.3	76.9	11390	6680	7.4	1.9	3.15	3.6	86.6	16670	11810
300	4.5	25	3.5	81.6	13510	7790	7.9	2	3.15	3.7	91.3	19140	13340
400	4.5	35	3.7	89.9	17130	9340	8.5	2.1	3.15	4	100	23360	15410

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci- tance	Charging Current	Unarmoured Cables	Steel Wire Armoured Cables	Reac- tance	Induc- tance	Current Ratings					
						Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec			Ground		Duct		Air	
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A	A	A	A	A	A
25	727/1200	927/1538	3.6/2.3	176	0.48	2.6	0.6	138	410	140	115	125	95	145	115
35	524/868	668/1113	5.0/3.2	193	0.53	2.6	0.6	123	390	170	135	150	115	175	140
50	387/641	494/822	6.8/4.4	211	0.58	2.6	0.7	116	370	210	160	180	135	220	170
70	268/443	343/568	9.8/6.3	240	0.65	2.6	0.7	110	350	255	195	215	165	270	210
95	193/320	248/410	13.3/8.5	267	0.73	2.6	0.8	105	330	300	230	255	200	330	250
120	153/253	196/325	17.2/11.0	291	0.79	2.6	0.8	102	320	340	265	290	225	375	295
150	124/206	159/265	21.2/13.5	312	0.85	4.3	0.9	98	310	380	300	330	255	430	330
185	99.1/164	128/211	26.6/17.0	340	0.93	4.3	0.9	95	300	430	335	370	290	490	385
240	75.4/125	98/161	34.9/22.3	375	1.02	4.3	1	91	290	490	380	425	335	570	450
300	60.1/100	80/130	43.8/28.0	411	1.12	4.3	1.1	89	280	540	435	470	375	650	510
400	47.0/77.8	64/102	57.3/36.6	454	1.24	5.8	1.2	84	270	590	480	520	420	700	570

Three Core 12.7/22KV (Um=24KV)

A B L E

Dimensional Data

Section Area	Nom. Insulation Thickness	Unarmoured Cables					Steel Wire Armoured Cables						
		Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
					kg/km							kg / km	
35	5.5	16	2.7	51	3750	2880	5.2	1.5	2.5	2.8	62.3	6870	6140
50	5.5	16	2.8	54	4240	3250	5.4	1.5	2.5	2.9	65.6	7710	6810
70	5.5	16	2.9	58	5050	3650	5.9	1.6	2.5	3	69	8710	7370
95	5.5	16	3	62	6010	4110	6.2	1.7	2.5	3.2	73.1	10000	8130
120	5.5	16	3.1	65	6990	4660	6.6	1.7	3.15	3.3	77.7	12040	9730
150	5.5	25	3.2	68	8130	5330	6.9	1.8	3.15	3.4	81.7	13550	10750
185	5.5	25	3.3	72	9410	5870	7.4	1.9	3.15	3.6	85.5	15150	11610
240	5.5	25	3.5	79	11490	6880	7.8	2	3.15	3.7	91.3	17710	12840
300	5.5	25	3.7	84	13710	7890	8.2	2	3.15	3.9	96	20170	14360
400	5.5	35	3.9	91	17230	9440	9	2.2	3.15	4.1	104.8	24520	16480

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance pF/m	Charging Current mA/m	Unarmoured Cables	Steel Wire Armoured Cables	Reactance pΩ/m	Inductance nH/m	Current Ratings					
						Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec			Ground		Duct		Air	
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A	A	A	A	A	A
35	524/868	668/1113	5.0/3.2	168	0.67	2.6	0.7	129	410	170	135	155	120	180	145
50	387/641	494/822	6.8/4.4	183	0.73	2.6	0.8	122	390	210	160	185	140	225	175
70	268/443	343/568	9.8/6.3	207	0.83	2.6	0.8	115	370	255	195	225	170	275	215
95	193/320	248/410	13.3/8.5	229	0.92	2.6	0.9	110	350	295	230	260	205	330	260
120	153/253	196/325	17.2/11.0	249	1	2.6	0.9	106	340	335	260	300	235	380	300
150	124/206	159/265	21.2/13.5	266	1.06	4.3	1	103	330	375	290	335	265	430	335
185	99.1/164	128/211	26.6/17.0	289	1.16	4.3	1	100	320	420	330	380	300	490	390
240	75.4/125	98/161	34.9/22.3	318	1.27	4.3	1.1	95	300	480	380	430	345	570	460
300	60.1/100	80/130	43.8/28.0	348	1.39	4.3	1.2	93	300	530	425	480	385	650	520
400	47.0/77.8	64/102	57.3/36.6	383	1.53	5.8	1.3	87	280	590	480	520	420	700	570

Three Core 19/33KV (Um=36KV)

Dimensional Data

Nom. Cross- Section Area	Unarmoured Cables						Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
					mm²	mm						mm²	mm
35	8	16	3.1	60	3750	2880	6.5	1.7	2.5	3.2	74.9	9460	8700
50	8	16	3.2	65	5240	4260	6.7	1.8	3.15	3.4	79	10620	9680
70	8	16	3.3	70	6120	4730	7.1	1.8	3.15	3.5	82.5	11840	10440
95	8	16	3.4	74	7140	5240	7.5	1.9	3.15	3.6	86.4	13200	11350
120	8	16	3.5	77	8080	5710	7.9	2	3.15	3.7	89.9	14520	12190
150	8	25	3.6	80	9120	6220	8.2	2	3.15	3.8	93.6	16070	13280
185	8	25	3.7	84	10440	6940	8.6	2.1	3.15	3.9	97.3	17710	14090
240	8	25	3.9	91	12620	8010	9.2	2.2	3.15	4.1	103.2	20370	15460

300	8	25	4	95	14690	8800	9.7	2.3	3.15	4.3	108.2	22980	17210
400	8	35	4.3	103	17720	10230	10.3	2.4	3.15	4.5	116.8	27480	19450

Electrical Data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci- tance	Charging Current	Unarmoured Cables	Steel Wire Armoured Cables	Reac- tance	Induc- tance	Current Ratings					
						Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec			Ground		Duct		Air	
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A	A	A			
35	524/868	668/1113	5.0/3.2	132	0.79	2.6	0.9	140	460	170	135	155	120	180	145
50	387/641	494/822	6.8/4.4	142	0.85	2.6	1	134	430	210	160	185	140	225	175
70	268/443	343/568	9.8/6.3	159	0.95	2.6	1	127	400	255	195	225	170	275	215
95	193/320	248/410	13.3/8.5	175	1.05	2.6	1.1	121	390	295	230	260	205	330	260
120	153/253	195/325	17.2/11.0	189	1.13	2.6	1.1	117	370	335	260	300	235	360	300
150	124/206	159/265	21.2/13.5	201	1.21	4.3	1.2	113	360	375	290	335	265	430	335
185	99.1/164	128/211	26.6/17.0	217	1.3	4.3	1.2	109	350	420	330	380	300	490	390
240	75.4/125	98/161	34.9/22.3	237	1.42	4.3	1.3	104	330	480	380	430	345	570	460
300	60.1/100	80/130	43.8/28.0	258	1.55	4.3	1.4	101	320	530	425	480	385	650	520
400	47.0/77.8	64/102	57.3/36.6	282	1.69	5.8	1.5	96	290	590	480	520	420	700	570



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