

XLPE Insulated Cables

0.6/1kV Single-Core

XLPE Insulated, Unarmoured & Armoured, PVC Sheathed Cable

Description: CU/XLPE/PVC or CU/XLPE/PVC/AWA/PVC-AT

Model Code: XP or XPAP-AT



Application :	This cable is primarily used for main power supply. It can be installed on cable trays, in cable ducts, cable ladders, cable trunking, and switch gears.
Voltage rating :	0.6/1kV
Construction :	Plain annealed copper (IEC 60228 Class 2), XLPE insulated, unarmoured or aluminium wires armoured, PVC or anti-termite PVC (for armoured cable only) compound sheathed cable
Insulation colour :	Natural
Sheath colour :	Black
Specification :	IEC 60502-1, IEC 60332-1-2
Operating temperature :	90°C

Conductor			Insulation	Unarmoured Cable			Armoured Cable		
Nominal Area	No./Diam. of Strand	Approx Diam.	Thickness	Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm ²)	(no./mm)	(mm)	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	7/0.53	1.59	0.7	07018541	6.1	50	-	-	-
2.5	7/0.67	2.01	0.7	08018541	6.5	62	-	-	-
4	7/0.85	2.55	0.7	09018541	7.0	81	-	-	-
6	7/1.04	3.12	0.7	10018541	7.5	100	-	-	-
10	7/1.35	4.05	0.7	11018541	8.5	150	-	-	-
16	7/1.70	5.10	0.7	12018541	9.5	200	-	-	-
25 (cs)	7/2.14	6.20	0.9	13018541	11.2	310	-	-	-
35 (cs)	19/1.53	7.30	0.9	14018541	12.3	420	14018544	19.4	680
50 (cs)	19/1.78	8.20	1.0	15018541	13.5	550	15018544	20.5	815
70 (cs)	19/2.14	10.00	1.1	16018541	15.3	770	16018544	22.2	1065
95 (cs)	19/2.52	11.80	1.1	17018541	17.4	1040	17018544	24.3	1355
120 (cs)	37/2.03	13.00	1.2	18018541	18.8	1300	18018544	26.3	1680
150 (cs)	37/2.25	14.40	1.4	19018541	20.8	1580	19018544	28.3	1990
185 (cs)	37/2.52	16.20	1.6	20018541	23.1	1970	20018544	30.5	2400
240 (cs)	61/2.25	18.80	1.7	21018541	26.3	2520	21018544	33.6	3005
300 (cs)	61/2.52	21.20	1.8	22018541	29.1	3150	22018544	36.2	3600
400 (cs)	61/2.85	24.30	2.0	23018541	32.9	4000	23018544	41.4	4765
500 (cs)	61/3.20	27.40	2.2	24018541	36.7	5000	24018544	45.3	5865
630	127/2.52	32.76	2.4	25018541	42.8	6500	25018544	51.4	7410
800	127/2.85	37.05	2.6	26018541	48.0	8200	26018544	57.5	9460
1000	127/3.20	41.60	2.8	27018541	53.0	10300	27018544	62.3	11750

Current rating and voltage drop

For Unarmoured Cable, please refer to Table 8 & 9 (Page 54)
For Armoured Cable, please refer to Table 10 & 11 (Page 55)

(cs) : Circular Compact Stranded Conductor

Current Rating and Voltage Drop

XLPE (or LSZH) Insulated Cables
Single-Core, Unarmoured



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Single-Core Cables with XLPE (or LSZH) Insulation, with or without PVC (or LSZH) Outersheath 450/750V or 0.6/1kV

Table 8 : Current-Carrying Capacities (Amp)
[CU/LSZH, CU/XLPE/PVC, CU/XLPE/LSZH, CU/MT/LSZH or CU/MT/XLPE/LSZH Cables]

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

BS EN 50525-3-41 (BS 7211)
BS 8592
IEC 60502-1

Conductor Cross-sectional Area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (in free air)		
	2 cables, 1-phase a.c. or d.c.		3 or 4 cables, 3-phase a.c.		2 cables, 1-phase a.c. or d.c. flat and touching		3 or 4 cables, 3-phase a.c. flat and touching or trefoil		Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, 1-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, 1-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, 1-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, 1-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, 1-phase a.c. or d.c. or 3 cables 3-phase a.c.	2 cables, 1-phase a.c. or d.c. or 3 cables 3-phase a.c.	3 cables trefoil, 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm ²	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	124	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	239	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	683	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936
630	-	-	900	764	1130	1033	1191	1115	1423	1338	1069
800	-	-	-	-	1288	1179	1358	1275	1581	1485	1214
1000	-	-	-	-	1443	1323	1520	1436	1775	1671	1349

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 23 (Page 62)

Table 9 : Voltage Drop (Per Amp Per Meter)
[CU/LSZH, CU/XLPE/PVC, CU/XLPE/LSZH, CU/MT/LSZH or CU/MT/XLPE/LSZH Cables]

Conductor Operating Temperature : 90°C

BS EN 50525-3-41 (BS 7211)
BS 8592
IEC 60502-1

Conductor Cross-sectional Area	2 cables, d.c.	2 cables, 1-phase a.c.						3 or 4 cables, 3-phase a.c.								
		Reference Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Reference Methods 1 and 11 (clipped direct or on trays touching)			Reference Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Reference Methods 1, 11 and 12 (trefoil)			Reference Methods 1 and 11 (flat and touching)		
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
mm ²	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	27	27	27	27	27	27	27	27	27	27	27	27	27
2.5	19	19	16	16	16	16	16	16	16	16	16	16	16	16	16	16
4	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6	7.9	7.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
10	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
16	2.9	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.190	1.60
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.180	1.15
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.180	0.87
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.60	0.24	0.65	0.59	0.150	0.61	0.59	0.175	0.62
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.170	0.46
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.34	0.140	0.37	0.34	0.165	0.38
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.28	0.140	0.31	0.28	0.165	0.32
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.23	0.23	0.32	0.22	0.140	0.26	0.22	0.165	0.28
240	0.190	0.21	0.26	0.33	0.20	0.160	0.25	0.185	0.22	0.29	0.170	0.140	0.22	0.170	0.165	0.24
300	0.155	0.175	0.25	0.31	0.160	0.160	0.22	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.21
400	0.12	0.140	0.25	0.29	0.130	0.155	0.20	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.100	0.22	0.24	0.090	0.135	0.160	0.088	0.160	0.180
630	0.072	0.100	0.25	0.27	0.086	0.155	0.175	0.088	0.21	0.23	0.074	0.135	0.150	0.071	0.160	0.170
800	0.056	-	-	-	0.072	0.150	0.170	-	-	-	0.062	0.130	0.145	0.059	0.155	0.165
1000	0.045	-	-	-	0.063	0.150	0.165	-	-	-	0.055	0.130	0.140	0.050	0.155	0.165

Note : r = resistive component; x = reactive component; z = impedance value

Current Rating and Voltage Drop

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Table 10 : Current-Carrying Capacities (Amp)
[CU/XLPE/PVC/AWA/PVC, CU/XLPE/LSZH/AWA/LSZH, CU/MT/XLPE/LSZH/AWA/LSZH Cables]

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Ground Temperature : 15°C

Depth of Laying : 0.5m

Soil Thermal Resistivity : 1.2 k•m/W

BS 6724

IEC 60502-1

Conductor Cross-sectional Area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray)		Reference Method 12 (in free air)	In single-way ducts		Laid direct in ground	
	2 cables, 1-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching	2 cables, 1-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching	3 cables, 3-phase a.c. trefoil touching	2 cables, 1-phase a.c. or d.c. ducts touching	3 cables, 3-phase a.c. trefoil touching	2 cables, 1-phase a.c. or d.c. touching	3 cables, 3-phase a.c. trefoil touching
1	2	3	4	5	6	7	8	9	10
mm ²	A	A	A	A	A	A	A	A	A
50	237	220	253	232	222	255	235	275	235
70	303	277	322	293	285	310	280	340	290
95	367	333	389	352	346	365	330	405	345
120	425	383	449	405	402	410	370	460	389
150	488	437	516	462	463	445	405	510	435
185	557	496	587	524	529	485	440	580	490
240	656	579	689	612	625	550	500	670	560
300	755	662	792	700	720	610	550	750	630
400	853	717	899	767	815	640	580	830	700
500	962	791	1016	851	918	690	620	910	770
630	1082	861	1146	935	1027	750	670	1000	840
800	1170	904	1246	987	1119	828	735	1117	931
1000	1261	961	1345	1055	1214	919	811	1254	1038

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 23 (Page 62)
For rating factors of ground temperature other than 15°C, please refer to Table 24 (Page 62)

Table 11 : Voltage Drop (Per Amp Per Meter)
[CU/XLPE/PVC/AWA/PVC, CU/XLPE/LSZH/AWA/LSZH, CU/MT/XLPE/LSZH/AWA/LSZH Cables]

Conductor Operating Temperature : 90°C

BS 6724

IEC 60502-1

Conductor Cross- sectional Area	2 cables, d.c.	2 cables, 1-phase a.c.			3 or 4 cables, 3-phase a.c.						2 cables, 1-phase a.c.		3 or 4 cables, 3-phase a.c. touching	
		Reference Method 1 & 11 (touching)			Reference Method 1, 11 & 12 (trefoil touching)			Reference Method 1 & 11 (flat touching)			In ducts	In ground	In ducts	In ground
		mV/A/m			mV/A/m			mV/A/m			mV/A/m	mV/A/m	mV/A/m	mV/A/m
1	2	3			4			5						
mm ²	mV/A/m	r	x	z	r	x	z	r	x	z	mV/A/m	mV/A/m	mV/A/m	mV/A/m
50	0.98	0.99	0.21	1.00	0.86	0.180	0.87	0.84	0.25	0.88	1.10	0.99	0.93	0.86
70	0.67	0.68	0.200	0.71	0.59	0.170	0.62	0.60	0.25	0.65	0.80	0.70	0.70	0.61
95	0.49	0.51	0.195	0.55	0.44	0.170	0.47	0.46	0.24	0.52	0.65	0.53	0.56	0.46
120	0.39	0.41	0.190	0.45	0.35	0.165	0.39	0.38	0.24	0.44	0.55	0.43	0.48	0.37
150	0.31	0.33	0.185	0.38	0.29	0.160	0.33	0.31	0.23	0.39	0.50	0.37	0.43	0.32
185	0.25	0.27	0.185	0.33	0.23	0.160	0.28	0.26	0.23	0.34	0.45	0.31	0.39	0.27
240	0.195	0.21	0.180	0.28	0.180	0.155	0.24	0.21	0.22	0.30	0.40	0.26	0.35	0.23
300	0.155	0.170	0.175	0.25	0.145	0.150	0.21	0.170	0.22	0.28	0.37	0.24	0.32	0.21
400	0.115	0.145	0.170	0.22	0.125	0.150	0.195	0.160	0.21	0.27	0.35	0.21	0.30	0.19
500	0.093	0.125	0.170	0.21	0.105	0.145	0.180	0.145	0.20	0.25	0.33	0.20	0.28	0.18
630	0.073	0.105	0.165	0.195	0.092	0.145	0.170	0.135	0.195	0.24	0.30	0.19	0.26	0.17
800	0.056	0.090	0.160	0.190	0.086	0.140	0.165	0.130	0.180	0.23	0.28	0.18	0.24	0.16
1000	0.045	0.092	0.155	0.180	0.080	0.135	0.155	0.125	0.170	0.21	0.26	0.17	0.22	0.15

Note : r = resistive component; x = reactive component; z = impedance value

Table 23 : Correction Factor for Ambient Air Temperature Other Than 30°C to be Applied to the Current-Carrying Capacities for Cables in Free Air

Ambient Temperature (°C)	Insulation				
	PVC (70°C)	XLPE (90°C)	HT-PVC (90°C)	Rubber (85°C)	Rubber (60°C)
10	1.22	1.15	-	-	-
15	1.17	1.12	-	-	-
20	1.12	1.08	-	-	-
25	1.06	1.04	1.03	1.02	-
30	1.00	1.00	1.00	1.00	1.00
35	0.94	0.96	0.97	0.95	0.91
40	0.87	0.91	0.94	0.90	0.82
45	0.79	0.87	0.91	0.85	0.71
50	0.71	0.82	0.87	0.80	0.58
55	0.61	0.76	0.84	0.74	0.41
60	0.50	0.71	0.80	0.67	-
65	0.35	0.65	0.76	0.60	-
70	-	0.58	0.71	0.52	-
75	-	0.50	0.61	0.43	-
80	-	0.41	0.50	0.30	-
85	-	0.29	0.35	-	-

Table 24 : Correction Factor for Ambient Ground Temperature Other Than 15°C to be Applied to the Current-Carrying Capacities for Cables in Ducts or in Ground

Ground Temperature (°C)	Insulation	
	PVC (70°C)	XLPE (90°C)
10	1.04	1.03
15	1.00	1.00
20	0.95	0.97
25	0.90	0.93
30	0.85	0.89
35	0.80	0.86
40	0.74	0.82
45	0.67	0.77
50	0.60	0.73
55	-	0.68
60	-	0.63
65	-	0.58