LSZH Flame Retardant Prefabricated Branch Cables

KEYSTONE CABLE
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0.6/1kV Single-Core
XLPE Insulated, Unarmoured, LSZH Sheathed Cable
Description: AL/XLPE/LSZH-AT-UV
Model Code: AXL-AT-UV

Application :	This cable is used in power supply and distribution system for high-rise residential, commercial buildings, hotels, and factories.
Voltage rating :	0.6/1kV
Construction :	Aluminium conductor (IEC 60228 Class 2), XLPE insulated, unarmoured, anti-termite and UV resistant LSZH compound sheathed cable
Insulation colour :	Natural
Sheath colour :	Black
Specification :	IEC 60502-1, BS 6724, IEC 60332-1-2, IEC 60332-3, IEC 60754, IEC 61034
Operating temperature :	90˚C

Conductor			Insulation	Part No.	Unarmoured Cable	
Nominal Area	No./Diam. of Strand	Approx. Diam.	Thickness		Approx. Overall Diam.	Approx. Weight
(mm^2)	(no./mm)	(mm)	(mm)		(mm)	(kg/km)
25 (cs)	7/2.16	6.0	0.9	**1301B******	11.2	170
35 (cs)	7/2.50	7.0	0.9	**1401B******	12.1	215
50 (cs)	7/2.90	8.3	1.0	**1501B******	13.6	265
70 (cs)	19/2.16	10.0	1.1	**1601B******	15.6	345
95 (cs)	19/2.50	11.5	1.1	**1701B******	17.6	440
120 (cs)	19/2.80	13.0	1.2	**1801B******	19.3	530
150 (cs)	19/3.15	14.5	1.4	**1901B******	21.3	650
185 (cs)	36/2.54	16.2	1.6	**2001B******	23.6	785
240 (cs)	36/2.90	18.3	1.7	**2101B******	26.0	980
300 (cs)	36/3.30	20.6	1.8	**2201B******	28.7	1200
400 (cs)	60/2.92	23.7	2.0	**2301B******	32.4	1520
500 (cs)	60/3.30	26.7	2.2	**2401B******	36.1	1890
630 (cs)	60/3.75	30.3	2.4	**2501B******	40.5	2395
800 (cs)	60/4.30	34.0	2.6	**2601B******	44.8	2980
1000 (cs)	60/4.70	37.8	2.8	**2701B******	49.2	3690

**** Stands for branch size, please contact us for more information.

Current rating and voltage drop
Please refer to Table 1 & 2 (Page 25)

(cs) : Circular Compact Stranded Conductor

Current Rating and Voltage Drop

XLPE Insulated Cables
Single-Core, Aluminium Conductors

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Single-Core Cables with XLPE Insulation, with PVC (or LSZH) Outersheath 0.6/1kV

Table 1 : Current-Carrying Capacities (Amp)
[AL/XLPE/PVC or AL/XLPE/LSZH Cables]

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

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)		
									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
50	125	113	157	140	169	149	180	165	210	188	159
70	158	142	200	179	215	189	231	211	271	244	206
95	191	171	242	217	265	234	281	258	332	300	253
120	220	197	281	251	308	273	326	300	387	351	296
150	253	226	-	-	353	314	376	346	448	408	343
185	288	256	-	-	340	366	430	396	515	470	395
240	338	300	-	-	489	438	509	469	611	561	471
300	387	344	-	-	564	507	586	541	708	652	544
380 (400)	-	-	-	-	658	594	679	628	798	742	638
480 (500)	-	-	-	-	765	692	786	728	927	865	743
600 (630)	-	-	-	-	871	791	903	836	1058	990	849
740 (800)	-	-	-	-	1001	911	1025	951	1218	1143	979
960 (1000)	-	-	-	-	1176	1072	1191	1108	1440	1355	1151

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 9 (Page 29)

Table 2 : Voltage Drop (Per Amp Per Meter)
[AL/XLPE/PVC or AL/XLPE/LSZH Cables]

Conductor Operating Temperature : 90°C

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)		
1	2	3			4			5			6			7		
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	1.65	1.70	0.30	1.72	1.65	0.190	1.66	1.44	0.26	1.46	1.44	0.165	1.45	1.44	0.24	1.46
70	1.13	1.17	0.30	1.21	1.12	0.185	1.14	1.00	0.26	1.04	0.97	0.160	0.98	0.97	0.24	1.00
95	0.82	0.86	0.29	0.91	0.82	0.185	0.84	0.75	0.25	0.79	0.71	0.160	0.73	0.71	0.23	0.75
120	0.65	0.68	0.29	0.74	0.65	0.180	0.67	0.59	0.25	0.64	0.57	0.155	0.59	0.57	0.23	0.61
150	0.53	0.54	0.28	0.61	0.52	0.175	0.55	0.48	0.24	0.54	0.45	0.155	0.47	0.45	0.23	0.50
185	0.42	0.45	0.28	0.53	0.43	0.175	0.46	0.38	0.24	0.45	0.36	0.150	0.39	0.36	0.23	0.43
240	0.32	0.34	0.27	0.43	0.32	0.170	0.36	0.30	0.24	0.38	0.28	0.150	0.32	0.28	0.22	0.35
300	0.26	0.28	0.27	0.38	0.26	0.170	0.31	0.25	0.23	0.34	0.22	0.145	0.27	0.22	0.22	0.31
380 (400)	0.20	-	-	-	0.21	0.165	0.27	0.20	0.23	0.31	0.180	0.145	0.23	0.180	0.22	0.28
480 (500)	0.160	-	-	-	0.170	0.165	0.23	0.165	0.23	0.28	0.150	0.140	0.20	0.150	0.22	0.27
600 (630)	0.130	-	-	-	0.140	0.160	0.21	0.135	0.22	0.26	0.120	0.140	0.185	0.120	0.22	0.25
740 (800)	0.105	-	-	-	0.115	0.160	0.19	-	-	-	0.100	0.135	0.170	0.100	0.21	0.23
960 (1000)	0.080	-	-	-	0.092	0.155	0.18	-	-	-	0.082	0.135	0.160	0.082	0.21	0.23

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

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Table 9 : Correction Factor for Ambient Air Temperature Other than 30°C to be Applied to the Current-Carrying Capacities for Cables in Free Air

Insulation	Ambient Temperature (°C)															
	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
XLPE (90°C)	1.15	1.12	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41	0.29

Table 10 : 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

Insulation	Ground Temperature (°C)											
	10	15	20	25	30	35	40	45	50	55	60	65
XLPE (90°C)	1.03	1.00	0.97	0.93	0.89	0.86	0.82	0.77	0.73	0.67	0.63	0.58

Table 11 : Correction Factors for Ambient Temperature & Group Installation

Correction for groups of more than one circuit of single-core cables, or more than one multi-core cable

Reference Methods of Installation		Correction Factor (Cg)													
		Number of Circuits or Multi-Core Cables													
		2	3	4	5	6	7	8	9	10	12	14	16	18	20
Enclosed (Method 3 or 4) or bunched and clipped to a non-metallic surface (Method 1)		0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.48	0.45	0.43	0.41	0.39	0.38
Single layer clipped to a non-metallic surface (Method 1)	Touching	0.85	0.79	0.75	0.73	0.72	0.72	0.71	0.70	-	-	-	-	-	-
	Spaced*	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Single layer multi-core on a perforated metal cable tray (Method 11)	Touching	0.86	0.81	0.77	0.75	0.74	0.73	0.73	0.72	0.71	0.70	-	-	-	-
	Spaced*	0.91	0.89	0.88	0.87	0.87	-	-	-	-	-	-	-	-	-
Single layer single-core on a perforated metal cable tray, touching (Method 11)	Horizontal	0.90	0.85	-	-	-	-	-	-	-	-	-	-	-	-
	Vertical	0.85	-	-	-	-	-	-	-	-	-	-	-	-	-
Single layer multi-core touching on ladder supports		0.86	0.82	0.80	0.79	0.78	0.78	0.78	0.77	-	-	-	-	-	-

* Space means a clearance between adjacent surfaces of at least one cable Diam. (D_e). Where the horizontal clearance between adjacent cables exceeds 2 D_e, no correction factor need be applied

Note : 1 The factors in the table are applicable to a group of cables all of the same sizes. The value of the current derived from application of the appropriate factors is the maximum continous current to be carried by any of the cables in the group.

2 If, due to known operating conditions, a cable is expected to carry not more than 30% of its grouped rating, it may be ignored for the purpose of obtaining the rating factor for the rest of the group.

For example, a group of N loaded cables would normally require a group reduction factor of Cg applied to the tabulated Lt. However, if M cables in the group carry loads which are not greater than 0.3Cg Lt amperes, the other cables can be sized by using the group rating factor corresponding to (N-M) cables.