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Power and Wiring Cables

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Single-Core XLPE/LSF 6181B

600/1000 V

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Application

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XLPE insulated and LSF sheathed cable for fixed installation. Not suitable for direct burial.

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Specifications

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- Generally in accordance with BS7889
- **Conductors:** Stranded Class 2 copper conductors to BS EN 60228
- **Insulation:** Brown XLPE insulation Type GP8 to BS7655
- **Sheath:** Black LSF sheath Type LTS1 to BS7655
- Flame retardant to BS EN 60332-3-24
- Other colours are available. (Details upon request)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V

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Single-Core XLPE/LSF 6181B

600/1000 V

Anixter Number	Nominal Conductor Area mm ²	Insulation Thickness mm	Nominal O/D mm	Approx Weight kg/km	Minimum Bending Radius (fixed bend) mm
6181B-0500-07-02	50	1.0	14.2	540	60
6181B-0700-07-02	70	1.1	16.2	750	70
6181B-0950-07-02	95	1.1	18.3	1010	80
6181B-1200-07-02	120	1.2	20.2	1250	90
6181B-1500-07-02	150	1.4	22.4	1530	90
6181B-1850-07-02	185	1.6	24.7	1900	100
6181B-2400-07-02	240	1.7	27.7	2470	170
6181B-3000-07-02	300	1.8	30.6	3080	190
6181B-4000-07-02	400	2.0	34.2	3890	210
6181B-5000-07-02	500	2.2	38.0	4970	230
6181B-6300-07-02	630	2.4	42.9	6370	260
6181B-8000-07-02	800	2.6	47.8	8300	290
6181B-1000-07-02	1000	2.8	53.0	10341	320

Other colours available upon request.

All dimensions are nominal unless otherwise stated.

For further technical information see page 1:58.

For conductor short-circuit ratings refer to page 19:28 for XLPE insulated cable.

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Technical Information

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- Single-core LSF
- Single-core XLPE/PVC, XLPE/LSF (6181) Types 600/1000 V

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CURRENT - CARRYING CAPACITY (Amperes):

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Conductor Cross Sectional Area	Reference Method A (enclosed in conduit in thermally insulating wall etc)		Reference Method B (enclosed in conduit on a wall or in trunking etc)		Reference Method C ("clipped direct")	
	2 Cables, Single Phase a.c. or d.c.	3 or 4 Cables Three Phase a.c.	2 Cables, Single Phase a.c. or d.c.	3 or 4 Cables Three Phase a.c.	2 Cables, Single Phase a.c. or d.c. Flat and Touching or Trefoil	3 or 4 Cables Three Phase a.c. Flat and Touching or Trefoil
1	2	3	4	5	6	7
mm ²	A	A	A	A	A	A
1	14	13	17	15	19	17.5
1.5	19	17	23	20	25	23
2.5	26	23	31	28	34	31
4	35	31	42	37	46	41
6	45	40	54	48	59	54
10	61	54	75	66	81	74
16	81	73	100	88	109	99
25	106	95	133	117	143	130
35	131	117	164	144	176	161
50	158	141	198	175	228	209
70	200	179	253	222	293	268
95	241	216	306	269	355	326
120	278	249	354	312	413	379
150	318	285	393	342	476	436
185	362	324	449	384	545	500
240	424	380	528	450	644	590
300	486	435	603	514	743	681
400	-	-	683	584	868	793
500	-	-	783	666	990	904
630	-	-	900	764	1130	1033
800	-	-	-	-	1288	1179
1000	-	-	-	-	1443	1323

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Technical Information

For ambient air temperatures other than 30°C, the following rating factors should be applied:

Ambient air temp °C	25	30	35	40	45	50	55	60	65	70	75	80	85
Rating factor	1.04	1.0	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41	0.29

Reference Method F (on a perforated cable tray horizontal or vertical)		Reference Method G (Free air)		
		Horizontal Flat Spaced	Vertical Flat Spaced	Trefoil
2 Cables, Single Phase a.c. or d.c. Flat and Touching	3 or 4 Cables Three Phase a.c. Flat and Touching	2 Cables, Single Phase a.c. or d.c. or 3 Cables Three Phase a.c.	2 Cables, Single Phase a.c. or d.c. or 3 Cables Three Phase a.c.	3 Cables Trefoil Three Phase a.c.
8	9	10	11	12
A	A	A	A	A
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
161	141	182	161	135
200	176	226	201	169
242	216	275	246	207
310	279	353	318	268
377	342	430	389	328
437	400	500	454	383
504	464	577	527	444
575	533	661	605	510
679	634	781	719	607
783	736	902	833	703
940	868	1085	1008	823
1083	998	1253	1169	946
1254	1151	1454	1362	1088
1358	1275	1581	1485	1214
1520	1436	1775	1671	1349

Ratings shown in Column 12, also apply to cables in trefoil formation on a perforated cable tray, Reference Method F.

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Technical Information

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- Single-core LSF
- Single-core XLPE/PVC, XLPE/LSF (6181) Types 600/1000 V

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Continued...

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VOLTAGE DROP (per Ampere per metre):

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2 Cables - Single Phase a.c.

Conductor Cross Sectional Area	2 cables d.c.	Reference Methods A & B (enclosed in conduit etc in or on a wall)			Reference Methods C, F & G (clipped direct or on trays, touching)			Reference Method C, F & G (spaced*)			
		1	2	3	4	5	6	7	8	9	10
mm ²	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
1	46	46			46				46		
1.5	31	31			31				31		
2.5	19	19			19				19		
4	12	12			12				12		
6	7.9	7.9			7.9				7.9		
10	4.7	4.7			4.7				4.7		
16	2.9	2.9			2.9				2.9		
		r	x	z	r	x	z	r	x	z	
25	1.85	1.85	0.31	1.90	1.85	0.19	1.85	1.85	0.28	1.85	
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.35	0.27	1.35	
50	0.99	1.00	0.29	1.05	0.99	0.18	1.00	0.99	0.27	1.00	
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.49	0.26	0.56	
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.195	0.25	0.31	
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.155	0.25	0.29	
400	0.120	0.140	0.25	0.29	0.13	0.155	0.20	0.125	0.24	0.27	
500	0.093	0.12	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	
630	0.072	0.10	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	
800	0.056		-		0.072	0.150	0.170	0.064	0.24	0.25	
1000	0.045		-		0.063	0.150	0.165	0.054	0.24	0.24	

*Spaced by one cable diameter.

Technical Information

3 or 4 Cables - Three Phase a.c.											
Reference Methods A & B (enclosed in conduit etc in or on wall)			Reference Methods C, F & G (in trefoil)			Reference Methods C, F & G (flat touching)			Reference Methods C, F & G (flat spaced*)		
6			7			8			9		
mV			mV			mV			mV		
40			40			40			40		
27			27			27			27		
16			16			16			16		
10			10			10			10		
6.8			6.8			6.8			6.8		
4			4			4			4		
2.5			2.5			2.5			2.5		
r	x	z	r	x	z	r	x	z	r	x	z
1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.19	1.60	1.60	0.27	1.65
1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.18	1.15	1.15	0.26	1.20
0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.18	0.87	0.86	0.26	0.89
0.60	0.24	0.65	0.59	0.150	0.61	0.59	0.175	0.62	0.59	0.25	0.65
0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.170	0.46	0.43	0.25	0.49
0.35	0.23	0.42	0.34	0.140	0.37	0.34	0.165	0.38	0.34	0.24	0.42
0.29	0.23	0.37	0.28	0.140	0.31	0.28	0.165	0.32	0.28	0.24	0.37
0.23	0.23	0.32	0.22	0.140	0.26	0.22	0.165	0.28	0.22	0.24	0.33
0.185	0.22	0.29	0.17	0.140	0.22	0.17	0.165	0.24	0.17	0.24	0.29
0.15	0.22	0.27	0.14	0.140	0.195	0.135	0.160	0.21	0.135	0.24	0.27
0.125	0.22	0.25	0.11	0.135	0.175	0.11	0.160	0.195	0.11	0.24	0.26
0.10	0.22	0.24	0.09	0.135	0.16	0.088	0.160	0.180	0.085	0.24	0.25
0.088	0.21	0.23	0.074	0.135	0.150	0.071	0.160	0.170	0.068	0.23	0.24
	-		0.062	0.130	0.145	0.059	0.155	0.165	0.055	0.23	0.24
	-		0.055	0.130	0.140	0.050	0.155	0.165	0.047	0.23	0.24

For further guidance refer to the BS7671 (IEE Wiring Regulations - latest edition).

Conductor Short-Circuit Ratings

XLPE Insulated Cables

Short-Circuit Ratings

Conductor Size mm ²	0.2s duration kA	1.0s duration kA	3.0s duration kA
1.5	0.479	0.214	0.123
2.5	0.799	0.357	0.206
4.0	1.27	0.572	0.330
6.0	1.91	0.858	0.495
10	3.19	1.43	0.825
16	5.11	2.28	1.32
25	7.99	3.57	2.06
35	11.1	5.0	2.88
50	15.9	7.15	4.12
70	22.3	10.0	5.77
95	30.3	13.5	7.84
120	38.3	17.1	9.9
150	47.9	21.4	12.3
185	59.1	26.4	15.2
240	76.7	34.3	19.8
300	95.9	42.9	24.7
400	127	57.2	33.0
500	159	71.5	41.2
630	201	90.0	52.0

N.B: The above ratings assume an adiabatic temperature rise and are based on a conductor temperature of 90°C at start of short-circuit and 250°C at end of shortcircuit.