BS 6387, IEC 60331-21
Cert No. 1354b, 1354d

FLAME-X 950 SERIES 3

600/1000V

Based on BS 7846, BS 6387

Fire resistant security power cable having low emission of smoke and corrosive gases when affected by fire

APPLICATIONS

Fire resistant cables for use in fixed installations in industrial areas, public buildings (as for example power plants, hospitals, shopping centres, theatres) and similar applications where maintenance of power supply during a fire is required for a defined period of time.

Standard length cable packing	500 or 1,000 m on drums. Other forms of packing and delivery are available on request.

CONSTRUCTION

Conductors:	Circular, circular compacted or shaped, stranded, annealed copper conductor, class 2 acc. to BS EN 60228
Primary insulation:	A suitable wrapping of mica tape with a glass cloth
Insulation:	Cable 1 to 16 mm^2 - special thermosetting low smoke zero halogen compound type EI5 acc. to BS 50363-5 Cable 25 to 1,000 mm^2 - cross-linked polyethylene (XLPE) of GP8 type acc. to BS 7655-1.3
Bedding:	Special low smoke zero halogen filling compound (only 2, 3, 4 cores)
Outer sheath:	Thermoplastic LSOH compound of LTS1 type acc. to BS 7655-6.1

CHARACTERISTICS

Nominal voltage:	0.6/1kV	
Colour of sheath:	Black. Other colours are available on special request.	
Core identification:	with green-yellow	without green-yellow
	1 core: green-yellow	black
	2 core: -	brown, blue
	3 core: green-yellow, blue, brown	brown, black, grey
	4 core: green-yellow, brown, black, grey	blue, brown, black, grey

Maximum conductor operating temperature:	+90°C
Lowest installation temperature:	0°C
Minimum operating temperature after installation without movement:	-40°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D for cables with circular copper conductors and 8 × D for cables with shaped copper conductors; D – overall diameter of the cable

Fire performance

Fire resistance: (additional TF test)	BS 7846 p. 17.4.2	Category **F2**
	IEC 60331-21	Circuit integrity - tested 90 min. at 950°C
	BS 6387[1)]	Category **C** – resistance to fire: 3 h at 950°C
		Category **W** – resistance to fire with water: 15 min at 650°C plus 15 min with water spray
		Category **Z** – resistance to fire with mechanical shock: 15 min at 950°C
Flame propagation:	BS EN 60332-1-2	
	BS EN 60332-3-24	
Smoke density:	BS EN 61034-2	
Corrosive and acid gases emission:	BS EN 60754-1[2)]	HCl content < 0.5%
	BS EN 60754-2[2)]	pH ≥ 4.3 & conductivity ≤ 10 µSmm^{-1}

1) Category C, W, Z for cables up to and including 500 mm^2.
2) BS EN 60754-1 & BS EN 60754-2 standards replace BS EN 50267-2-1

Approvals

LPCB	1 mm^2 to 1,000 mm^2 1-core and 1 mm^2 to 16 mm^2 2-core, 3-core, 4-core

Technical and Electrical Characteristic

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of bedding	Nominal thickness of outer sheath	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C.*		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*	Short circuit rating (1 sec)
							Clipped direct	Free Air			
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**	**kA**
1 × 1 RM	0.7	-	1.4	6.4	53	18.1	19	-	46	46	0.14
1 × 1.5 RM	0.7	-	1.4	6.7	61	12.1	25	-	31	31	0.21
1 × 2.5 RM	0.7	-	1.4	7.2	74	7.41	34	-	19	19	0.35
1 × 4 RM	0.7	-	1.4	7.7	93	4.61	46	-	12	12	0.57
1 × 6 RM	0.7	-	1.4	8	113	3.08	59	-	7.9	7.9	0.85
1 × 10 RM	0.7	-	1.5	9.1	162	1.83	81	-	4.7	4.7	1.4
1 × 16 RM	0.7	-	1.5	10.2	225	1.15	109	-	2.9	2.9	2.2
1 × 25 RM	0.9	-	1.6	12.2	325	0.727	143	135	1.85	1.85	3.5
1 × 35 RM	0.9	-	1.7	13.4	426	0.524	176	169	1.35	1.35	5
1 × 50 RM	0.9	-	1.8	15.1	563	0.387	228	207	0.99	1	7.1
1 × 70 RM	1.1	-	1.9	16.9	777	0.268	298	268	0.68	0.71	10
1 × 95 RM	1.1	-	2	19.1	1042	0.193	355	328	0.49	0.52	13.5
1 × 120 RM	1.2	-	2.1	20.9	1294	0.153	413	383	0.39	0.43	17.1
1 × 150 RM	1.4	-	2.2	23.1	1586	0.124	476	444	0.32	0.36	21.4
1 × 185 RM	1.6	-	2.4	25.4	1971	0.099	545	510	0.25	0.3	26.4
1 × 240 RM	1.7	-	2.6	28.3	2527	0.075	644	607	0.19	0.25	34.3
1 × 300 RM	1.8	-	2.6	30.5	3120	0.060	743	703	0.155	0.22	42.9
1 × 400 RM	2	-	2.8	34	4013	0.047	868	823	0.12	0.2	57.2
1 × 500 RM	2.2	-	3	38	5109	0.037	990	946	0.093	0.185	71.5
1 × 630 RM	2.4	-	3.2	43	6477	0.028	1130	1088	0.072	0.175	90.1
1 × 800 RM	2.6	-	3.4	48.1	8163	0.022	1288	1214	0.056	0.17	114.4
1 × 1000 RM	2.8	-	3.6	52	10100	0.018	1443	1349	0.045	0.165	134
2 × 1 RM	0.7	0.8	1.4	11.7	185	18.1	19	21	46	46	0.14
2 × 1.5 RM	0.7	0.8	1.4	12.2	208	12.1	24	26	31	31	0.21
2 × 2.5 RM	0.7	0.8	1.4	13.1	249	7.41	33	36	19	19	0.35
2 × 4 RM	0.7	0.8	1.4	14.1	304	4.61	45	49	12	12	0.57
2 × 6 RM	0.7	0.8	1.4	14.9	361	3.08	58	63	7-Sep	7.9	0.85

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of bedding	Nominal thickness of outer sheath	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C.*		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*	Short circuit rating (1 sec)
							Clipped direct	Free Air			
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**	**kA**
2 × 10 RM	0.7	0.8	1.5	16.9	497	1.83	80	86	4.7	4.7	1.4
2 × 16 RM	0.7	0.8	1.5	18.9	670	1.15	107	115	2.9	2.9	2.2
3 × 1 RM	0.7	0.8	1.4	12.2	203	18.1	17	18	-	40	0.14
3 × 1.5 RM	0.7	0.8	1.4	12.8	231	12.1	22	23	-	27	0.21
3 × 2.5 RM	0.7	0.8	1.4	13.8	281	7.41	30	32	-	16	0.35
3 × 4 RM	0.7	0.8	1.4	14.9	350	4.61	40	42	-	10	0.57
3 × 6 RM	0.7	0.8	1.4	15.7	423	3.08	52	54	-	6.8	0.85
3 × 10 RM	0.7	0.8	1.5	17.8	593	1.83	71	75	-	4	1.4
3 × 16 RM	0.7	0.8	1.6	20.2	826	1.15	96	100	-	2.5	2.2
4 × 1 RM	0.7	0.8	1.4	13.2	233	18.1	17	18	-	40	0.14
4 × 1.5 RM	0.7	0.8	1.4	13.9	268	12.1	22	23	-	27	0.21
4 × 2.5 RM	0.7	0.8	1.4	14.9	328	7.41	30	32	-	16	0.35
4 × 4 RM	0.7	0.8	1.4	16.2	414	4.61	40	42	-	10	0.57
4 × 6 RM	0.7	0.8	1.5	17.2	513	3.08	52	54	-	6.8	0.85
4 × 10 RM	0.7	0.8	1.5	19.4	718	1.83	71	76	-	4	1.4
4 × 16 RM	0.7	0.8	1.6	22.1	1010	1.15	96	100	-	2.5	2.2

Rating factors for air temperature

Ambient air temperature, °C	25	30	35	40	45	50	55	60
Rating factors	1.02	1.0	0.96	0.91	0.87	0.82	0.76	0.71