



# FLAME-X 950 SERIES 2 300/500 V

BS 7629-1, BS 6387, BS 5839-1, BS 5266-1, BS 8519

— Fire resistant screened cables having low emission of smoke and corrosive gases when affected by fire



**Applications:** Installations emergency lighting and evacuation systems, fire and smoke detection systems, air-conditioning and alarm systems, automatic elevator doors, computer control rooms, offshore and marine emergency systems, emergency evacuation communicators

Standard length cable packing: 500 or 1000m on drums. Other forms of packing and delivery are available on request

## Construction

<b>Conductors</b>	Plain annealed copper solid class 1 or stranded class 2 acc. to BS EN 60228
<b>Insulation</b>	Special cross-linked heat resistant compound type EI2 acc. to BS EN 50363-1
<b>Screen</b>	Aluminium tape and uninsulated circuit protective conductor
<b>Uninsulated circuit protective conductor</b>	Tinned annealed copper conductor of the same nominal cross-sectional area and of the same class as the insulated conductors
<b>Outer sheath</b>	Thermoplastic zero halogen low smoke compound type LTS 3 acc. to BS 7655-6.1
<b>Colour of sheath</b>	Red or white (other colours are permissible when agreed with the manufacturer)
<b>Core identification</b>	2 core + ECC: brown, blue 3 core + ECC: brown, black, grey 4 core + ECC: blue, brown, black, grey

## Characteristics

<b>Core identification</b>	+70°C
<b>Maximum conductor operating temperature</b>	-40°C
<b>Lowest installation temperature</b>	0°C
<b>Maximum short-circuit conductor temperature</b>	+250°C
<b>Minimum bending radius</b>	6 × D (D – overall diameter of the cable)

## Fire performance

<b>Fire resistance</b>	BS 7629-1	Standard 30
	BS 6387	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
	BS EN 50200	Class PH120 (resistance to fire, with mechanical shock and with water: 120 min)
	BS 8519	Clause 11: Category 1
<b>Flame propagation</b>	BS EN 60332-1-2 (IEC 60332-1-2) and BS EN 60332-3-24 (IEC 60332-3-24)	
<b>Smoke density</b>	BS EN 61034-2 (IEC 61034-2)	
<b>Gases evolved during combustion</b>	BS EN 60754-1:2014 (IEC 60754-1): HCl content < 0.5% BS EN 60754-2:2014 (IEC 60754-2): pH ≥ 4.3; conductivity ≤ 10 μSmm-1	

## Technical and Electrical Characteristic

Number and cross-sectional area of conductor	Conductor class	Nominal cross-sectional area of protective conductor ECC	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C	Maximum ECC conductor resistance at 20°C
<b>n × mm<sup>2</sup></b>		<b>mm<sup>2</sup></b>	<b>mm</b>	<b>kg/km</b>	<b>Ω/km</b>	<b>Ω/km</b>
2x1RE+ECC	1	1	7.0	68	18.1	18.2
2x1.5RE+ECC	1	1.5	7.9	89	12.1	12.2
2x1.5RM+ECC	2	1.5	8.3	93	12.1	12.2
2x2.5RE+ECC	1	2.5	9.2	130	7.41	7.56
2x2.5RM+ECC	2	2.5	9.7	137	7.41	7.56
2x4RM+ECC	2	4	11.0	191	4.61	4.70
3x1.5RE+ECC	1	1.5	8.3	111	12.1	12.2
3x1.5RM+ECC	2	1.5	8.8	117	12.1	12.2
3x2.5RE+ECC	1	2.5	9.8	164	7.41	7.56
3x2.5RM+ECC	2	2.5	10.3	173	7.41	7.56
3x4RM+ECC	2	4	11.6	244	4.61	4.70
4x1.5RE+ECC	1	1.5	9.6	141	12.1	12.2
4x1.5RM+ECC	2	1.5	10.2	151	12.1	12.2
4x2.5RE+ECC	1	2.5	11.5	210	7.41	7.56
4x2.5RM+ECC	2	2.5	12.4	222	7.41	7.56
4x4RM+ECC	2	4	14.6	315	4.61	4.70

## Current Ratings and Voltage Drop

Ambient air temperature: 30°C. Conductor operating temperature: 70°C. Installation as specified in Appendix 4 of BS 7671 IEE Wiring Regulations

### Reference Method 1

(clipped direct)

Nominal area of conductor	1 two core cable* single phase A.C. or D.C.		1 three-core or 1 four-core cable*. three-phase A.C.	
	Current rating	Volts drop per ampere par metre	Current rating	Volts drop per ampere par metre
mm <sup>2</sup>	A	mV/m	A	mV/m
1.0	15	44	13.5	38
1.5	19.5	29	17.5	25
2.5	27	18	24	15
4.0	36	11	32	9.5

\*with protective conductor

### Reference Method 3

(enclosed in conduit on a wall or ceiling, or in trunking)

Nominal area of conductor	1 two core cable* single phase A.C. or D.C.		1 three-core or 1 four-core cable*. three-phase A.C.	
	Current rating	Volts drop per ampere par metre	Current rating	Volts drop per ampere par metre
mm <sup>2</sup>	A	mV/m	A	mV/m
1.0	13	44	11.5	38
1.5	16.5	29	15	25
2.5	23	18	20	15
4.0	30	11	27	9.5

### Rating factors for ambient temperature

Ambient temperature, °C	25	30	35	40	45	50
Rating factor	1.03	1.00	0.94	0.87	0.79	0.71