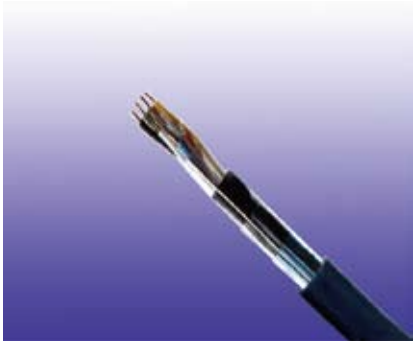
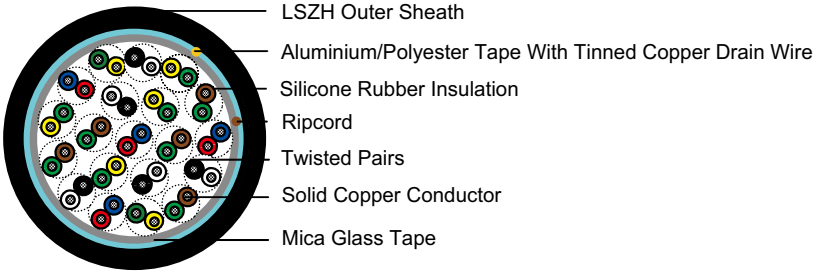
300V Mica+LSZH Insulated & LSZH Sheathed Fire Alarm Cables

JE-H(St)H…Bd FE180 E90. (CU/MICA+LSZH/OSCR/LSZH 300V Class 1)
JE-H(St)H…Bd FE180 E90 BMK* (CU/MICA+LSZH/OSCR/LSZH 300V Class 1)





APPLICATION

The cables are used for the internal wiring of building when the circuit integrity during fire is paramount. The cables are intended for use in fire fighting plants with mica tapes, with and without Aluminum foil and LSZH outer sheath.The fire alarm cables with 30 to 90 minutes circuit integrity should be used for control voltages and data transfer in alarm and fire alarm systems, where a system circuit integrity E30/E60/E90 depending on lay system in accordance with DIN 4102-12 is required. The circuit integrity is guaranteed with a test voltage of 110V.

STANDARDS

Basic design to VDE 0815

FIRE PERFORMANCE

Circuit Integrity	IEC 60331-23; BS 6387 CWZ; DIN VDE 0472-814(FE180); CEI 20-36/2-1; SS229-1; NBN C 30-004 (cat. F3); NF C32-070-2.3(CR1)
System circuit integrity	DIN 4102-12, E90 depending on lay system
Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

CABLE CONSTRUCTION

Conductors: Solid annealed bare or tinned copper sized 0.8mm as per class 1 of VDE 0295/IEC 60228.
Fire Barrier: Mica glass tape.
Insulation: Thermoplastic LSZH compound HI1 as per DIN VDE 0207-23.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two-pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together. In cables with 8 pairs or more, 4 pairs are assembled to form a bunch, the bunches are then cabled together.
Cable Core Assembly: The twisted pairs are stranded to the core in layers.
Core Wrapping: One or more non hygroscopic polyester tapes are helically or longitudinally laid with an overlap prior to sheathing.
Screen: A laminated Aluminum/Polyester tape in contact with solid copper 0.6mm or 0.8mm drain wire.
Ripcord: Nylon ripcord may be placed parallel to the cores to facilitate sheath removal.
Drain Wire: A solid tinned earth/continuity wire shall be laid longitudinally for screened cables.
Outer Sheath: Thermoplastic LSZH compound HM2 as per DIN VDE 0207-24 .

COLOUR CODE

Quad colour in each bundle:
Pair 1: Blue-Red
Pair 2: Green-Yellow
Pair 3: Green-Brown
Pair 4: White-Black
The individual bundles are identified by a numbered helix.

TYPE CODE

JE-	Fire alarm cable	(St)	Static shield of Aluminum tape
H	Halogen free & zero halogen	FE180	Insulation integrity (950°C 180 minutes)
Bd	Unit stranding	E90	90 minutes circuit integrity

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C – +90°C
Temperature range during installation (mobile state): -20°C – +50°C
Minimum bending radius: 8 x Overall Diameter

ELECTRICAL PROPERTIES

Nominal Conductor Diameter	mm	0.8
Conductor Size	mm^2	0.5
Maximum Conductor Resistance @20°C	Ω/km	34.6
Maximum Loop Resistance @20°C	Ω/km	73.2
Minimum Insulation Resistance @500V DC @20°C	MΩ.km	100
Maximum Average Attenuation @0.8KHz	dB/km	1.1
Average Mutual Capacitance	nF/km	120
Capacitance Unbalance K1 @0.8KHz pair-to-pair	pF/100m	200
Working Voltage	V	300

Nominal Insulation Thickness	mm	0.4
Nominal Insulated Conductor Diameter	mm	1.6

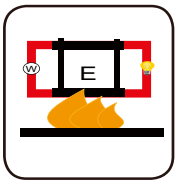
CONSTRUCTION PARAMETERS

VDE CODE: JE-mH(St)H…x2x0.8 Bd FE180 E90 /JE-H(St)H…x2x0.8 Bd FE180/E90 BMK*

Cable Code	No. of Pairs	Nominal Insulation Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Approx. Weight
		mm	mm	mm	kg/km
0.8mm Conductor, 1.6mm Insulated Wire					
JE-H(St)H...2x2x0.8 Bd FE180/E90 BMK*	2	0.4	1.0	12.8	177
JE-H(St)H...4x2x0.8 Bd FE180/E90 BMK*	4	0.4	1.0	16.3	284
JE-H(St)H...8x2x0.8 Bd FE180/E90 BMK*	8	0.4	1.0	20.3	447
JE-H(St)H...12x2x0.8 Bd FE180/E90 BMK*	12	0.4	1.2	23.9	615
JE-H(St)H...16x2x0.8 Bd FE180/E90 BMK*	16	0.4	1.2	26.6	756
JE-H(St)H...20x2x0.8 Bd FE180/E90 BMK*	20	0.4	1.2	29.4	921
JE-H(St)H...32x2x0.8 Bd FE180/E90 BMK*	32	0.4	1.4	30.7	1074
JE-H(St)H...40x2x0.8 Bd FE180/E90 BMK*	40	0.4	1.4	33.6	1278
JE-H(St)H...52x2x0.8 Bd FE180/E90 BMK*	52	0.4	1.6	43.7	2011

Rated Voltage

Standard

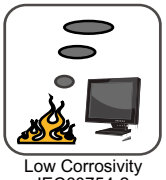


Circuit Integrity
IEC 60331/BS 6387
NF C32-070-2.3(CR1)


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4

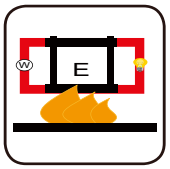

Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Low Toxicity
NES 02-713/NF C 20-454


Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1



Functional Integrity
DIN 4102-12