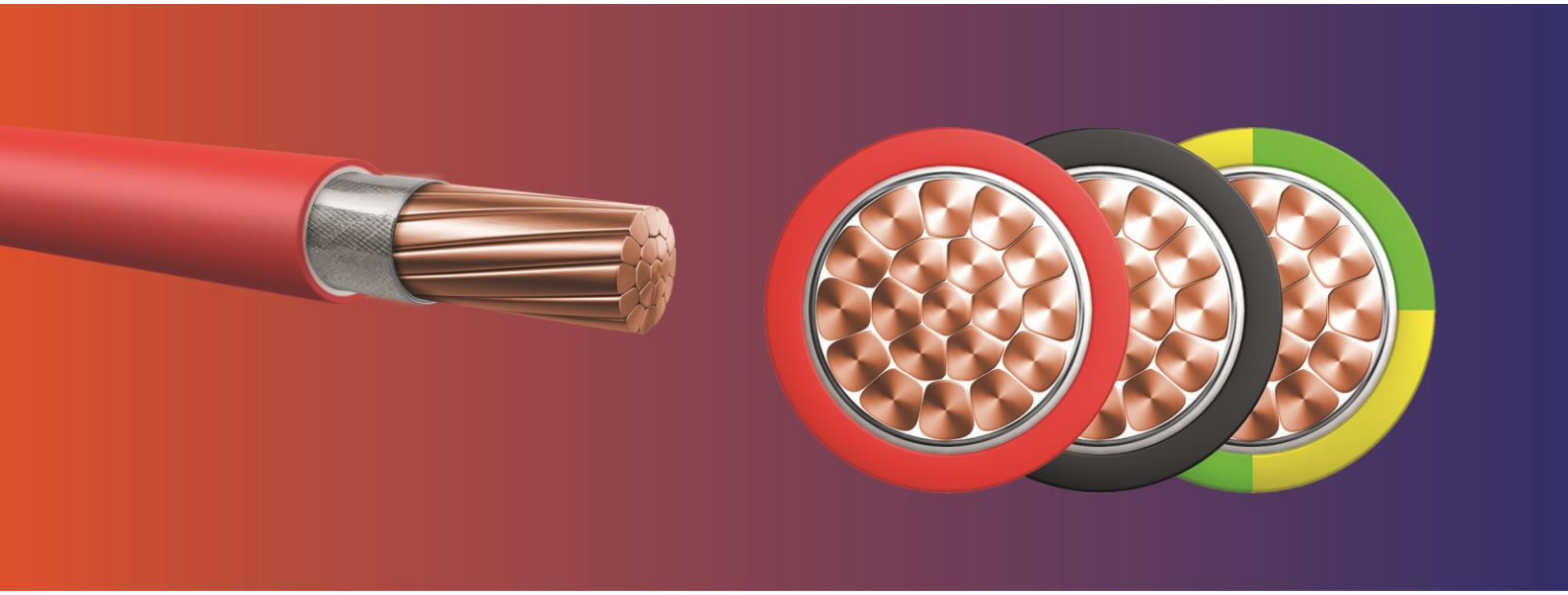
CIRCUIT INTEGRITY CABLES

FR-MI 110 SCSI / Single-core single insulated

BETAflam® Fire resistant power cables 0.6/1 kV, circuit integrity acc. to BS 6387, LSOH



Application

Single core wires 0.6/1 kV for cable wiring systems with the highest fire performance and circuit integrity requirements. For high temperature conditions and extra long expected lifetime.
Typical applications:
- Fire alarm circuits
- Fire detection circuits
- Emergency signal/control circuits
- Fire fighting systems (water pumps)
- Smoke exhaust systems etc.

Especially recommended in areas where human and animal life as well as valuable property are exposed to high risk in case of fire.

Construction

Conductor	Copper stranded wire, compacted, based on DIN VDE 0295 / IEC 60228, class 2
Taping	Glass MICA tape
Insulation	BETAflam® mineral copolymer, cross-linked
Core colour	See below

Advantages

- High safety standard: BS 6387 C.W.Z, fully tested and certified by LPCB
- TÜV SÜD PSB tested and certified
- Fire tested by Electrosuisse
- Low Smoke Zero Halogen (LSOH)
- Operation temperature 110°C
- RoHS and REACH compliant
- Lead free - below 100 ppm
- Mineral filled fire resist. Materials
- High LOI
- Space saving installation due to small outer diameter
- Very long lifetime
- Made in Switzerland

0000057 V04 © Studer Cables AG / Technical modifications reserved

Electrical properties

Values referring		IEC 60502-1
Rated value	U_0 / U	0.6 / 1 kV AC
Test voltage		4 kV, 50 Hz / 5 min.

Thermal properties

Max. operating temperature	fixed installation	+110°C 20'000 h / IEC 60216
Min. ambient temperature	fixed installation	-30°C
Max. ambient temperature	during laying	+70°C
Min. ambient temperature	during laying	-5°C
Max. short circuit temperature		+280°C (max. 5s)

Mechanical properties

Bending radius	during laying	≥ 10 x Ø
Bending radius	fixed installation	≥ 6 x Ø

Material properties / Standards

Halogen free	IEC 60754-1; BS EN 60754-1
No corrosive gases	IEC 60754-2; BS EN 60754-2
No Toxicity of gases	NFX 70-100, Def Stan 02-713, NFC 20-454,
Minimal smoke density	IEC 61034-1 & -2; BS EN 61034-1 & -2
Flame retardant	IEC 60332-1; BS EN 60332-1
No flame spread on bunched cables	IEC 60332-3-22, -23, -24 (Cat. A, B, C); BS EN 60332-3-22, -23, -24 (Cat. A, B, C)
Limiting oxygen index (LOI)	ASTM D2863; ≥ 38
Minimal Light absobation	ASTM D2843; 7 %
Circuit integrity FE180	IEC 60331-21
Circuit integrity	BS 6387 C.W.Z.; BS 7846 Category F2 - (Amendment 1 & 2, - Annex L.1 / cable Ø >20mm)
Circuit integrity	SS 299-1/A1

Approvals

LPCB - BRE Group - www.redbooklive.com

PSB Listed - TÜV SÜD

Additional information

Laying conditions:

	For electrical installations in control cabinets, switchboards or other closed cable wiring systems.
	Not recommended for permanently high humid ambient.

0000057 V04© Studer Cables AG / Technical modifications reserved

Construction Cross-sec.	Conductor-Ø	R_{20}	Outer-Ø	Weight	Fire load	Part no.	Part no.	Part no.	Part no.	Part no.
[mm²]	[mm]	[mΩ/m]	[mm]	[kg/km]	[kWh/m]	Red	Black	Brown	Blue	Green-yellow
1.5	1.60	12.1	3.7	28	0.040	218945	218946	303590	303589	301742
2.5	2.10	7.41	4.0	38	0.040	218947	218948	303592	303591	220893
4	2.60	4.61	4.7	55	0.050	215212	215544	303593	*	215142
6	3.00	3.08	5.2	75	0.060	215889	215214	*	*	219233
10	4.00	1.83	6.7	122	0.110	215800	217300	*	*	220894
16	4.80	1.15	7.5	178	0.120	215801	301743	*	*	301744
25	6.10	0.727	9.1	274	0.170	216106	301745	*	*	301746
35	7.20	0.524	10.2	364	0.190	216758	301747	*	*	301748
50	8.40	0.387	11.9	500	0.260	216759	301749	*	*	301750
70	10.10	0.268	13.6	698	0.310	301751	301752	*	*	301753
95	12.00	0.193	15.8	974	0.410	216760	*	*	*	301754
120	13.70	0.153	17.5	1176	0.460	219394	*	*	*	301755
150	15.20	0.124	19.5	1458	0.570	219395	*	*	*	301756
185	17.00	0.0991	21.7	1812	0.710	219396	*	*	*	301760
240	19.50	0.0754	24.4	2358	0.880	219397	*	*	*	301761
300	22.70	0.0601	28.3	3109	1.140	300945	*	*	*	301762
400	25.70	0.047	31.7	3947	1.380	301763	*	*	*	*
500	28.80	0.0366	35.2	4950	1.650	301764	*	*	*	*
630	32.80	0.0283	39.6	6379	2.000	301765	*	*	*	*

* upon request

0000057 V04© Studer Cables AG / Technical modifications reserved