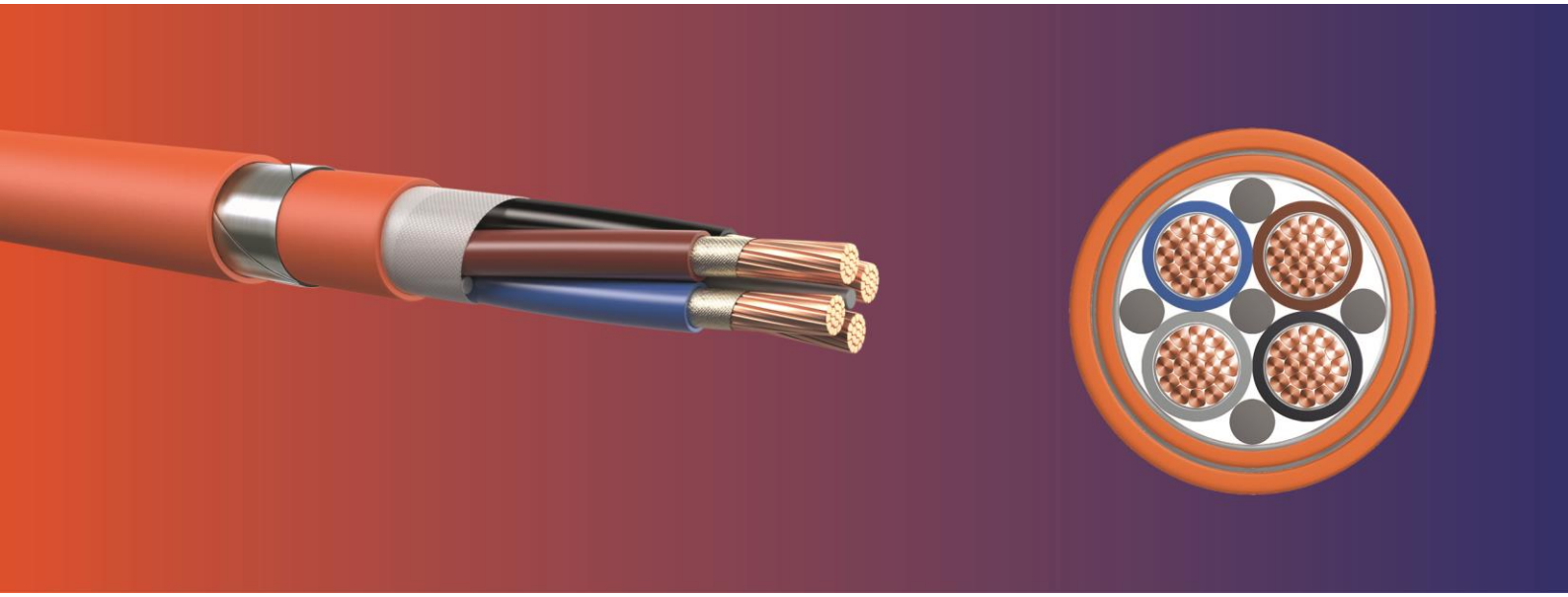
CIRCUIT INTEGRITY CABLES

FR-MI 110 MC STA / Multi-core steel tape armour

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



Application

Armoured power cable 0.6 /1 kV for fixed installation in areas with increased demand to mechanical stress, 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	Bare annealed copper strand, fine-wire, acc. to VDE 0295 / IEC 60228, class 2
Taping	Mica tape
Insulation	BETAflam® mineral copolymer, cross-linked
Core colour	See below
Shared inner covering	Glas fiber tape
Sheath	BETAflam® mineral copolymer
Armouring	Steel tape armour, galvanized
Sheath	BETAflam® mineral copolymer
Sheath colour	Orange

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 compliant
- Robust cable with increased resistance to mechanical impact
- Mineral filled fire resist. Materials
- High LOI
- Very long lifetime
- Flame test on insulation without sheath
- Made in Switzerland

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Electrical properties

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
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	≥ 15 x Ø
Bending radius	fixed installation	≥ 9 x Ø

Material properties / Standards

Halogen free	IEC 60754-1; BS EN 60754-1
No corrosive gases	IEC 60754-2; BS EN 60754-2
Toxicity of gases	NFX 70-100, NES 02-713, NFC 20-454
Smoke density	IEC 61034-1 & -2; BS EN 61034-1 & -2
Flame retardant	IEC 60332-1; BS EN 60332-1

Material properties / Standards

No flame spread on bunched cables	IEC 60332-3-22, -23, -24 (Cat. A, B, C); BS EN 60332-22, -23, -24 (Cat. A, B, C)
No flame propagation on insulation	IEC 60332-1-2
Limiting oxygen index (LOI)	ASTM D2863 ≥38
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:

	Also for electrical installations outside of cable ducts.
	Laying in earth or water, only in water-proof dry tubes/ducts
	Outdoor use only when protected from direct sunlight and other external impacts
	Special designs with additional UV- or termite-resistance are available upon request

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Cross-sec. [mm2]	No. of cores	Conductor-Ø [mm]	Core-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	former UK conductor colour code	conductor colour code: IEC 60446 and HD308 S2
							BK+RD	BU+BN
1.5	2C	1.6	3.7	14.1	390	0.680	301924	311053
2.5	2C	2.1	4	15.3	468	0.790	301932	311054
4	2C	2.6	4.7	16.8	573	0.940	301938	311055
6	2C	3	5.2	18.3	692	1.090	*	*
10	2C	4	6.7	21.8	1004	1.650	*	*
							BK+RD+GNYE	GNYE+BU+BK
1.5	2C+E	1.6	3.7	15.4	397	0.710	301925	311056
2.5	2C+E	2.1	4	15.9	410	0.830	301933	311057
4	2C+E	2.6	4.7	17.5	507	0.980	301939	311058
6	2C+E	3	5.2	18.8	581	1.070	*	*
10	2C+E	4	6.7	22.8	911	1.700	*	*
16	2C+E	4.8	7.5	24.8	1156	1.920	*	*
25	2C+E	6.1	9.1	28.0	1557	2.360	*	*
35	2C+E	7.2	10.2	30.5	1927	2.710	*	*
50	2C+E	8.4	11.9	34.3	2492	3.430	*	*
70	2C+E	10.1	13.6	38.4	3275	4.110	*	*
95	2C+E	12	15.8	44.3	4365	5.360	*	*
120	2C+E	13.7	17.5	48.0	5238	5.810	*	*
150	2C+E	15.2	19.5	52.6	6290	6.820	*	*
185	2C+E	17	21.7	58.5	7766	8.460	*	*
240	2C+E	19.5	24.5	64.9	9851	10.060	*	*
300	2C+E	22.7	28.3	74.5	12701	13.710	*	*
400	2C+E	25.7	31.7	83.1			*	*
							RD+BU+YE	BN+BK+GY
1.5	3C	1.6	3.7	15.4	397	0.710	301926	311059
2.5	3C	2.1	4	15.9	498	0.830	301934	311060
4	3C	2.6	4.7	17.5	507	0.980	301940	311061
6	3C	3	5.2	18.8	581	1.070	301944	311062
10	3C	4	6.7	22.8	911	1.700	301947	311063
							RD+BU+YE+GNYE	GNYE+BN+BK+GY
1.5	3C+E	1.6	3.7	16.4	440	0.880	301927	311487
2.5	3C+E	2.1	4	17.3	490	0.980	301935	311489
4	3C+E	2.6	4.7	19.0	609	1.160	301941	311490

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6	3C+E	3	5.2	20.4	704	1.270	301945	311491
10	3C+E	4	6.7	24.6	1059	1.830	301948	311492
16	3C+E	4.8	7.5	26.7	1361	2.050	301951	311493
25	3C+E	6.1	9.1	30.6	1924	2.770	301953	311494
35	3C+E	7.2	10.2	33.5	2415	3.230	301955	311495
50	3C+E	8.4	11.9	37.9	3121	4.030	301957	*
70	3C+E	10.1	13.6	42.3	4132	4.850	301959	*
95	3C+E	12	15.8	48.6	5518	6.310	301961	*
120	3C+E	13.7	17.5	53.2	6716	7.050	301963	*
150	3C+E	15.2	19.5	58.9	8192	8.700	301965	*
185	3C+E	17	21.7	64.5	9979	10.280	301967	*
240	3C+E	19.5	24.5	72.5	12856	12.790	301969	*
300	3C+E	22.7	28.3	83.5	16562	17.180	301971	*
400	3C+E	25.7	31.7	94.0			*	*
							BK+RD+BU+YE	BU+BN+BK+GY
1.5	4C	1.6	3.7	16.4	440	0.880	*	*
2.5	4C	2.1	4	17.3	490	0.980	301936	*
4	4C	2.6	4.7	19.0	609	1.160	301942	*
6	4C	3	5.2	20.4	704	1.270	301946	*
10	4C	4	6.7	24.6	1059	1.830	301949	*
16	4C	4.8	7.5	26.7	1361	2.050	301952	*
25	4C	6.1	9.1	30.6	1924	2.770	301954	*
35	4C	7.2	10.2	33.5	2415	3.230	301956	*
50	4C	8.4	11.9	37.9	3121	4.030	301958	*
70	4C	10.1	13.6	42.3	4132	4.850	301960	*
95	4C	12	15.8	48.6	5518	6.310	301962	*
120	4C	13.7	17.5	53.2	6716	7.050	301964	*
150	4C	15.2	19.5	58.9	8192	8.700	301966	*
185	4C	17	21.7	64.5	9979	10.280	301968	*
240	4C	19.5	24.5	72.5	12856	12.790	301970	*
300	4C	22.7	28.3	83.5	16562	17.180	301972	*
400	4C	25.7	31.7	94.0			*	*

BK=black, RD=red, BU=blue, BN=brown, GNYE=green/yellow, YE=yellow, GY=grey

* upon request

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