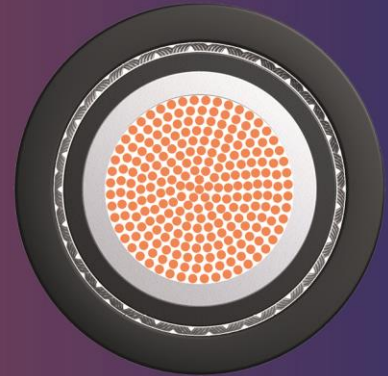
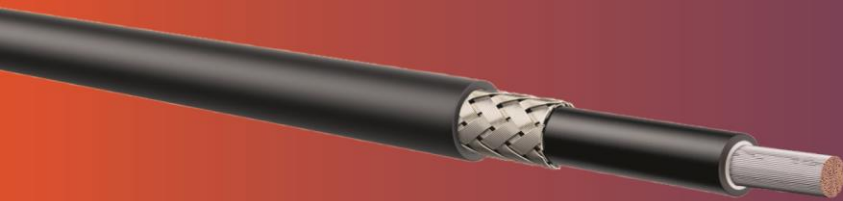


ROLLING STOCK – AUXILIARY - AND MAINPOWER CABLE
BETrans® 9 GKW-ENX C-flex R 3600 V MM S
Screened sheathed cable based on EN 50264-1


Application

This screened sheathed cable is meant for fixed and protected installations inside and outside of rail vehicles and other vehicles. It is used for wiring of switchboards, converters and distribution boxes. Due to the double-insulated design, this cable is qualified for short circuit and earth fault-proof applications. The thin outer sheath protects against the influence of mineral oil fuels and ozone. For installation the guidelines of EN 50355 and EN 50343 must be considered.

Construction

Conductor	Tinned fine copper strand acc. to VDE 0295 / IEC 60228, class 5
Insulation	Polyolefin Copolymer, Comp 752, electronbeam cross-linked
Colour	White
Outer sheath	Polyolefin Copolymer, Comp 752, electronbeam cross-linked
Colour	Black, further colours upon request
Shield	Tinned copper braid
Sheath	Polyolefin Copolymer, Comp 752, electronbeam cross-linked
Colour	Black, further colours upon request

Advantages

- Halogen free
- Electron-beam cross-linked
- Weight and volume-optimised
- Very long lifetime
- Good media resistance
- EMC-optimised braided shield
- High level cold resistance
- Low fire load

Electrical properties

Rated value	U ₀ /U	3.6 / 6 kV AC
Maximum voltage	U _{0m}	4.32 kV AC
Maximum voltage	U _m	7.2 kV AC
Maximum voltage	V ₀	5.4 kV DC
Maximum voltage	V _m	10.8 kV DC
Test voltage		11 kV, 50 Hz / 5 min.

Thermal properties

Max. operating temperature	fixed installation	+120°C
Min. ambient temperature	fixed installation	-50°C
Max. short circuit temperature		+280°C (max. 5s)

Mechanical properties

Bending radius	fixed installation	∅ < 10 mm: > 3 x ∅ (-40°C)
Bending radius	fixed installation	∅ ≥ 10 mm: > 4 x ∅ (-40°C)
Bending radius	fixed installation	all cables > 5 x ∅ (-50°C)

Material properties / Standards

Material properties	EN 50264-3-2 hazard level MM
Resistance to ozone	EN 60811-403
High resistance to cold	EN 60811-504
High resistance to oil	EN 60811-404

Material properties / Standards

High resistance to fuel	EN 60811-404
Resistance to acid	EN 60811-404
Resistance to alkaline	EN 60811-404
Low fire load	DIN 51900
Limiting oxygen index (LOI)	ISO 4589-2 ASTM D 2863
Resistance to UV	EN 50618
Fire performance for rolling stock	EN 45545-2 HL1 - HL3
Fire performance for rolling stock	EN 50264-1
Vertical flame propagation for a single insulated wire or cable	EN 60332-1-2
Vertical flame spread of bunched wires or cables ≥ 12 mm	EN 60332-3-24
Vertical flame spread of bunched wires or cables > 6 < 12 mm	EN 60332-3-25
Vertical flame spread of bunched wires or cables ≤ 6 mm	EN 50305
Smoke density	EN 61034-2
Toxicity of gases	EN 50305
Absence of halogens	EN 60754-1 EN 60684-2
Corrosivity of gases	EN 60754-2

Approvals

Swiss Federal Railways

Construction Cross-sec. [mm ²]	Conductor-Ø [mm]	Shield-Ø [mm]	Cross-section shielding [mm ²]	R ₂₀ [mΩ/m]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
1 x 1.5	1.45	4.8	1.26	13.7	6.10 ± 0.20	62	0.145	313708
1 x 2.5	1.95	5.3	1.51	8.21	6.70 ± 0.20	79	0.171	313709
1 x 4	2.55	6.2	1.76	5.09	7.70 ± 0.20	107	0.222	313710
1 x 6	3.10	6.85	1.76	3.39	8.45 ± 0.20	135	0.261	313711
1 x 10	4.10	8.1	1.76	1.95	9.80 ± 0.20	191	0.338	313717
1 x 16	5.00	9.3	2.64	1.24	11.10 ± 0.30	265	0.421	313718
1 x 25	6.20	10.9	2.64	0.795	12.80 ± 0.30	372	0.541	313719
1 x 35	7.70	12.6	2.64	0.565	14.60 ± 0.30	502	0.688	313720
1 x 50	9.70	14.8	4.46	0.393	16.90 ± 0.30	694	0.874	313721
1 x 70	11.20	16.3	4.46	0.277	18.50 ± 0.30	901	1.001	313722
1 x 95	12.80	18.5	5.94	0.21	20.70 ± 0.40	1163	1.190	313723
1 x 120	14.60	20.5	5.94	0.164	22.90 ± 0.40	1435	1.396	313724
1 x 150	16.40	22.5	7.92	0.132	24.90 ± 0.40	1753	1.648	313725
1 x 185	17.90	24.2	7.92	0.108	26.60 ± 0.40	2057	1.752	313726
1 x 240	20.70	27.6	11.4	0.0817	30.00 ± 0.40	2684	2.106	313727
2 x 1.5	1.45	9.3	2.64	13.7	11.20 ± 0.30	159	0.426	*
3 x 1.5	1.45	10	2.64	13.7	11.90 ± 0.30	191	0.504	*
4 x 1.5	1.45	11.1	2.64	13.7	13.10 ± 0.30	241	0.637	*
4 x 6	3.10	16.1	4.46	3.39	17.70 ± 0.30	477	0.853	316015
3 x 10	4.10	17.2	4.46	1.95	19.60 ± 0.30	627	1.240	316016
4 x 10	4.10	19.3	5.94	1.95	22.70 ± 0.40	855	1.754	316017
6 x 10	4.10	23.9	7.92	1.95	27.10 ± 0.40	1168	2.230	316018
4 x 25	6.20	26.2	11.4	0.795	30.20 ± 0.50	1679	2.835	316019
3 x 35	7.70	27.1	11.4	0.565	30.90 ± 0.50	1735	2.812	316020
4 x 35	7.70	30.7	14.07	0.565	34.90 ± 0.50	2294	3.710	316021
4 x 70	11.20	39.1	14.07	0.277	43.90 ± 0.60	3989	5.456	316022
4 x 95	12.80	44.1	14.07	0.21	49.80 ± 0.60	5139	6.722	316023

Note:

* Upon request