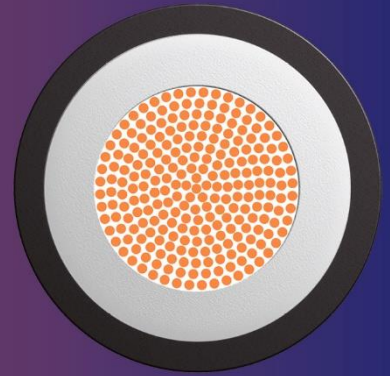
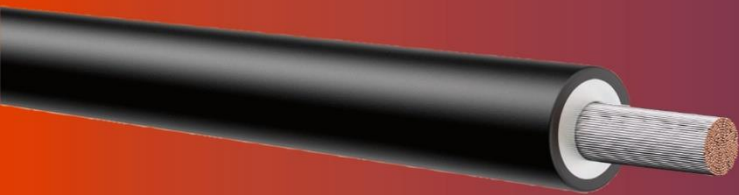


ROLLING STOCK – AUXILIARY - AND MAINPOWER CABLE
BETrans® 4 GKW-ENX EN 50264-3-1 1800 V M
Single core wire based on EN 50264-1


Application

This single core wire is used for fixed and protected installations inside and outside of rail vehicles, buses and other rail vehicles. Due to the double-insulated design, this wire is qualified for short circuit and earth fault-proof applications. It is suitable for the wiring of electric engines, switch and auxiliary boards, converters and distribution boxes. 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

Advantages

- Halogen free
- Electron-beam cross-linked
- Very long lifetime
- Good media resistance
- Short circuit and fault proof
- High dielectric strength
- High level cold resistance
- Low fire load

Electrical properties

Rated value	U ₀ /U	1.8 / 3 kV AC
Maximum voltage	U _{0m}	2.16 kV AC
Maximum voltage	U _m	3.6 kV AC
Maximum voltage	V ₀	2.7 kV DC
Maximum voltage	V _m	5.4 kV DC
Test voltage		6.5 kV, 50 Hz / 5 min.

Thermal properties

Max. operating temperature	fixed installation	+120°C
Max. operating temperature	occasionally moved	+90°C
Min. ambient temperature	fixed installation	-50°C
Max. short circuit temperature		+280°C (max. 5s)

Mechanical properties

Bending radius	fixed installation	Ø < 10 mm: > 3 x Ø (-40°C)
Bending radius	fixed installation	Ø ≥ 10 mm: > 4 x Ø (-40°C)
Bending radius	fixed installation	all cables > 5 x Ø (-50°C)
Bending radius	occasionally moved	all cables > 8 x Ø (-40°C)

Material properties / Standards

Material properties	EN 50264-3-1 hazard level M
Resistance to ozone	EN 60811-403
High resistance to cold	EN 60811-504
High resistance to oil	EN 60811-404
High resistance to fuel	EN 60811-404

Material properties / Standards

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
Fire performance for rolling stock	NFPA130
Vertical flame propagation for bunched wires or cables	FT 4/IEEE 1202
Smoke release	UL 1685
Technical prescriptions concerning the burning behaviour	UN/ECE-R 118
Resistance to flame propagation	ISO 6722-1

Approvals

Swiss Federal Railways

Construction Cross-sec. [mm ²]	Conductor construction [n x mm]	Conductor-Ø [mm]	R ₂₀ [mΩ/m]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
1.5	30 x 0.25	1.45	13.70	5.45 ± 0.10	45	0.127	312899
2.5	50 x 0.25	1.95	8.21	5.95 ± 0.20	58	0.146	312900
4	52 x 0.30	2.55	5.09	6.55 ± 0.20	76	0.169	312901
6	78 x 0.30	3.10	3.39	7.10 ± 0.20	98	0.190	312902
10	74 x 0.40	4.10	1.95	8.10 ± 0.20	141	0.227	312903
16	119 x 0.40	5.00	1.24	9.00 ± 0.30	198	0.261	312904
25	181 x 0.40	6.20	0.80	10.20 ± 0.30	283	0.306	312905
35	257 x 0.40	7.70	0.57	11.70 ± 0.30	390	0.385	312906
50	371 x 0.40	9.70	0.39	13.70 ± 0.30	544	0.492	312907
70	336 x 0.50	11.20	0.28	15.20 ± 0.40	732	0.565	312908
95	444 x 0.50	12.80	0.21	17.20 ± 0.40	959	0.682	312909
120	570 x 0.50	14.60	0.16	19.00 ± 0.40	1190	0.758	312910
150	708 x 0.50	16.40	0.13	20.80 ± 0.40	1474	0.911	312911
185	864 x 0.50	17.90	0.11	22.70 ± 0.50	1767	1.002	312912
240	1147 x 0.50	20.70	0.08	25.50 ± 0.50	2302	1.136	312913
300	1443 x 0.50	23.30	0.07	28.10 ± 0.50	2839	1.212	312914
400	1887 x 0.50	26.30	0.05	31.50 ± 0.50	3696	1.473	312915