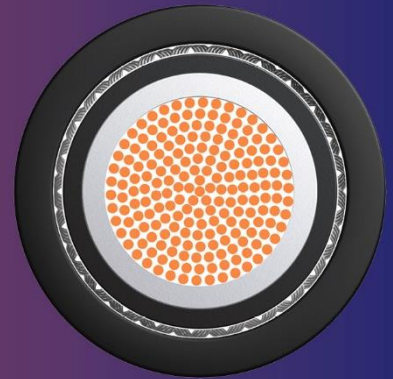


**ROLLING STOCK – AUXILIARY - AND MAINPOWER CABLE**
**BETrans® 4 GKW-ENX C-flex R 1800 V MM S**  
Screened sheathed cable based on EN 50264-1


## Application

This screened sheathed cable is meant for fixed and protected installations inside and outside of rail vehicles and buses. 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 layer 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 <sub>0</sub> /U	1.8 / 3 kV AC
Maximum voltage	U <sub>0m</sub>	2.16 kV AC
Maximum voltage	U <sub>m</sub>	3.6 kV AC
Maximum voltage	V <sub>0</sub>	2.7 kV DC
Maximum voltage	V <sub>m</sub>	5.4 kV DC
Test voltage		6.5 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
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
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 <sup>2</sup> ]	Conductor-Ø [mm]	Shield-Ø [mm]	Cross-sec shield [mm <sup>2</sup> ]	R <sub>20</sub> [mΩ/m]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
1 x 1	1.20	3.2	0.75	20	4.50 ± 0.20	36	0.076	315131
1 x 1.5	1.45	3.6	1.01	13.7	4.90 ± 0.20	45	0.088	315132
1 x 2.5	1.95	4.1	1.01	8.21	5.50 ± 0.20	59	0.108	315133
1 x 4	2.55	5.25	1.51	5.09	6.75 ± 0.20	90	0.163	315134
1 x 6	3.10	5.9	1.51	3.39	7.50 ± 0.20	115	0.195	315135
1 x 10	4.10	7.1	1.76	1.95	8.80 ± 0.20	167	0.256	315136
1 x 16	5.00	8.2	1.76	1.24	10.00 ± 0.30	235	0.318	315137
1 x 25	6.20	10.6	2.64	0.795	12.50 ± 0.30	362	0.507	315138
1 x 35	7.70	12.1	2.64	0.565	14.10 ± 0.30	484	0.625	315139
1 x 50	9.70	14.2	4.46	0.393	16.30 ± 0.30	669	0.786	315140
1 x 70	11.20	15.7	4.46	0.277	17.90 ± 0.40	870	0.888	315141
1 x 95	12.80	17.8	5.94	0.21	20.00 ± 0.40	1128	1.063	315142
1 x 120	14.60	19.6	5.94	0.164	22.00 ± 0.40	1386	1.216	315143
1 x 150	16.40	21.4	7.92	0.132	23.80 ± 0.50	1687	1.408	315144
1 x 185	17.90	23.3	7.92	0.108	25.70 ± 0.50	1999	1.541	315145
1 x 240	20.70	26.2	11.4	0.0817	28.90 ± 0.50	2590	1.779	315146
1 x 300	23.50	28.8	11.4	0.0654	31.90 ± 0.50	3184	2.029	*
3 x 1.5	1.45	7.4	1.76	13.7	9.00 ± 0.20	127	0.276	*
8 x 1.5	1.45	12.3	2.64	13.7	14.50 ± 0.30	319	0.727	316000
3 x 2.5	1.95	8.5	1.76	8.21	10.30 ± 0.30	175	0.351	*
4 x 4	2.55	12.2	2.64	5.09	14.40 ± 0.30	346	0.714	316001
2 x 6	3.10	11.5	2.64	3.39	13.60 ± 0.30	280	0.587	316602
3 x 6	3.10	12.4	2.64	3.39	14.50 ± 0.30	354	0.675	316002
4 x 6	3.10	14	4.46	3.39	16.20 ± 0.30	462	0.847	316003
2 x 10	4.10	14	4.46	1.95	16.10 ± 0.30	431	0.853	316604
3 x 10	4.10	15	4.46	1.95	17.40 ± 0.30	539	0.935	316605
4 x 10	4.10	16.8	4.46	1.95	19.20 ± 0.30	684	1.150	316421
6 x 10	4.10	20.9	7.92	1.95	24.00 ± 0.40	1015	1.677	*
4 x 16	5.00	19.6	5.94	1.24	23.00 ± 0.40	1022	1.629	316004
6 x 16	5.00	24.3	7.92	1.24	27.90 ± 0.40	1444	2.146	*
2 x 25	6.20	21.1	7.92	0.795	24.20 ± 0.40	984	1.913	316005
3 x 25	6.20	22.7	7.92	0.795	26.10 ± 0.40	1244	2.081	317037
4 x 25	6.20	25.7	11.4	0.795	29.30 ± 0.40	1623	2.627	*

Construction Cross-sec. [mm <sup>2</sup> ]	Conductor-Ø [mm]	Shield-Ø [mm]	Cross-sec shield [mm <sup>2</sup> ]	R <sub>20</sub> [mΩ/m]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
2 x 35	7.70	24.1	7.92	0.565	27.50 ± 0.40	1203	2.023	316006
3 x 35	7.70	26	11.4	0.565	30.00 ± 0.50	1689	2.656	316007
4 x 35	7.70	29.1	11.4	0.565	33.20 ± 0.50	2158	3.271	316008
3 x 50	9.70	30.4	14.07	0.393	34.40 ± 0.50	2292	3.352	317106
3 x 50 + 10	9.70	30.4	14.07	0.393 1.95	34.40 ± 0.50	2357	3.280	317105
4 x 50	9.70	34	14.07	0.393	38.80 ± 0.50	3016	4.447	316009
6 x 50	9.70	42.3	14.07	0.393	47.50 ± 0.60	4437	6.507	315766
2 x 70	11.20	31.3	14.07	0.277	35.50 ± 0.50	2174	3.192	316010
3 x 70	11.20	33.7	14.07	0.277	38.10 ± 0.50	2924	3.742	316011
3 x 70 + 10	11.20	33.7	14.07	0.277 1.95	38.10 ± 0.50	2997	3.702	317111
4 x 70	11.20	37.90	14.07	0.277	42.70 ± 0.60	3880	5.056	316012
3 x 95	12.80	38.00	14.07	0.210	42.80 ± 0.60	3766	4.596	316013
3 x 95 + 10	12.80 4.10	38.00	14.07	0.210 1.95	42.80 ± 0.60	3871	4.677	317112
4 x 95	12.80	42.50	14.07	0.210	47.90 ± 0.60	4962	6.057	316014
4 x 95 + 4 x 10	12.80 4.10	42.50	14.07	0.210 1.95	47.90 ± 0.60	5233	5.806	316709
4 x 120	14.60	46.90	14.07	0.164	52.70 ± 0.70	6135	7.205	*
4 X 150	16.40	51.30	17.81	0.132	57.50 ± 0.70	7492	8.302	*
4 x 185	17.90	55.90	17.81	0.108	63.10 ± 0.80	9087	9.823	*

Note:

\* Upon request