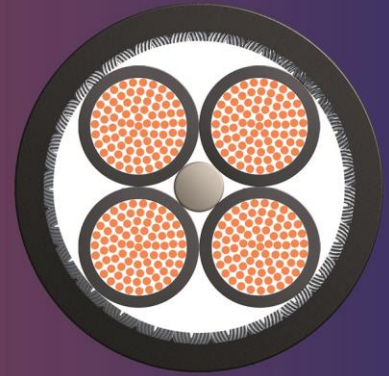
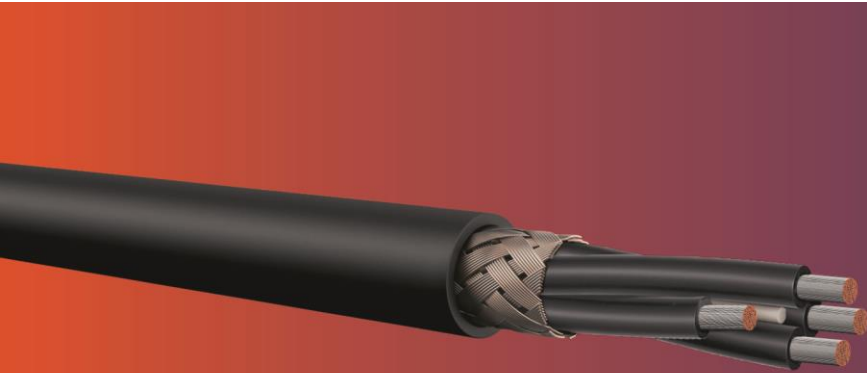


**ROLLING STOCK - POWER CABLES**
**BETrans® 3 GKW-ENX C-flex EN 50264-3-2 600 V MM S**  
Screened sheathed multicore cable


## Application

This screened sheathed cable is designed for protected installations inside and outside of rail vehicles and buses. It is used for the connection of fixed and moved parts, lamps, heating and electrical appliances. 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, electron beam cross-linked
Colour	Black, further colours upon request
Shield	Tinned copper braid
Sheath	Polyolefin Copolymer, Comp 752, electron beam cross-linked
Colour	Black

## Advantages

- Halogen free
- Electron beam cross-linked
- Very long lifetime
- Infusible
- Good media resistance
- High level cold resistance
- Low fire load

## Electrical properties

Rated value	U <sub>0</sub> /U	0.6 / 1 kV AC
Maximum voltage	U <sub>0m</sub>	0.72 kV AC
Maximum voltage	U <sub>m</sub>	1.2 kV AC
Maximum voltage	V <sub>0</sub>	0.9 kV DC
Maximum voltage	V <sub>m</sub>	1.8 kV DC
Test voltage		3.5 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 > 10 x Ø (-40°C)

## Material properties / Standards

Material properties	EN 50264-3-2 hazard level MM
Resistance to ozone	EN 50305
High resistance to cold	EN 60811-504
High resistance to oil	EN 60811-404
High resistance to fuel	EN 60811-404
Resistance to acid	EN 60811-404

## Material properties / Standards

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 14572

## Approvals

Swiss Federal Railways

Construction Cross-sec. [mm <sup>2</sup> ]	Color code	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 0.5	NR	0.85	1.26	4.4	40.1	5.80 ± 0.20	52	0.108	316430
3 x 0.5	NR	0.85	1.26	4.7	40.1	6.10 ± 0.20	58	0.112	316431
3 x 0.5	rd, bk, wh	0.85	1.26	4.7	40.1	6.10 ± 0.20	58	0.112	317311
7 x 0.5	bl, rd, yl, wh, or, br, gy	0.85	1.76	7	40.1	8.60 ± 0.20	119	0.245	316449
2 x 0.75	NR	1.10	4.9	1.26	26.7	6.40 ± 0.20	60	0.137	313759
3 x 0.75	NR	1.10	5.2	1.51	26.7	6.70 ± 0.20	69	0.138	313760
4 x 0.75	NR	1.10	5.8	1.51	26.7	7.30 ± 0.20	83	0.171	313761
5 x 0.75	NR	1.10	6.5	1.76	26.7	8.00 ± 0.20	102	0.203	313762
7 x 0.75	NR	1.10	7.9	1.76	26.7	9.40 ± 0.20	141	0.298	313763
8 x 0.75	NR	1.10	8.6	1.76	26.7	10.10 ± 0.30	162	0.346	313764
2 x 1	NR	1.20	5.4	1.51	20	6.90 ± 0.20	72	0.156	313765
3 x 1	NR	1.20	5.8	1.51	20	7.30 ± 0.20	82	0.159	313766
4 x 1	NR	1.20	6.4	1.76	20	7.90 ± 0.20	101	0.198	313767
5 x 1	NR	1.20	7.1	1.76	20	8.60 ± 0.20	120	0.247	313768
6 x 1	NR	1.20	7.9	1.76	20	9.40 ± 0.20	144	0.281	313769
1 x 1.5	bk	1.45	3.4	1.01	13.7	4.80 ± 0.20	44	0.084	317181
2 x 1.5	NR	1.45	6.2	1.51	13.7	8.10 ± 0.20	98	0.219	313770
3 x 1.5	NR	1.45	6.6	1.76	13.7	8.60 ± 0.20	115	0.230	313771
3 G 1.5	NRPE	1.45	6.6	1.76	13.7	8.60 ± 0.20	115	0.230	313772
4 x 1.5	NR	1.45	7.4	1.76	13.7	9.30 ± 0.20	139	0.272	313773
4 G 1.5	NRPE	1.45	7.4	1.76	13.7	9.30 ± 0.20	139	0.272	313774
5 G 1.5	NRPE	1.45	8.2	1.76	13.7	9.70 ± 0.20	159	0.292	313775
7 x 1.5	NR	1.45	10	2.64	13.7	11.90 ± 0.30	235	0.471	313776
13 G 1.5	NR	1.45	12.9	2.64	13.7	15.00 ± 0.30	378	0.708	313778
16 x 1.5	NR	1.45	13.8	4.46	13.7	16.00 ± 0.30	453	0.801	313779
24 x 1.5	NR	1.45	17.3	2.46	13.7	19.70 ± 0.30	650	1.122	313780
2 x 2.5	NR	1.95	7.2	1.76	8.21	8.90 ± 0.20	124	0.251	313781
3 x 2.5	NR	1.95	7.7	1.76	8.21	9.40 ± 0.20	146	0.246	313782
3 G 2.5	NRPE	1.95	7.7	1.76	8.21	9.40 ± 0.20	146	0.246	313783
4 x 2.5	NR	1.95	8.6	1.76	8.21	10.70 ± 0.30	195	0.345	313784
5 x 2.5	NR	1.95	9.6	2.64	8.21	11.50 ± 0.30	232	0.398	313785
5 G 2.5	NR	1.95	9.6	2.64	8.21	11.50 ± 0.30	232	0.398	313786
2 x 4	NR	2.55	8.4	1.76	5.09	10.50 ± 0.30	176	0.345	313787

Construction Cross-sec. [mm <sup>2</sup> ]	Color code	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.
3 x 4	NR	2.55	9	2.64	5.09	11.10 ± 0.30	223	0.384	316026
3 G 4	NRPE	2.55	9	2.64	5.09	11.10 ± 0.30	223	0.384	315445
4 x 4	NR	2.55	10.2	2.64	5.09	12.10 ± 0.30	274	0.398	313788
4 G 4	NRPE	2.55	10.2	2.64	5.09	12.10 ± 0.30	274	0.398	313793
5 G 4	NRPE	2.55	11.2	2.64	5.09	13.20 ± 0.30	323	0.495	313794
2 x 6	NR	3.10	9.5	2.64	3.39	11.20 ± 0.30	219	0.372	313798
3 x 6	NR	3.10	10.2	2.64	3.39	11.90 ± 0.30	283	0.419	313799
4 x 6	NR	3.10	11.5	2.64	3.39	13.50 ± 0.30	346	0.446	316027
3 x 10	NR	4.10	12.4	2.64	1.95	14.70 ± 0.30	437	0.607	313800
4 x 10	NR	4.10	14	4.46	1.95	16.30 ± 0.30	572	0.751	313801
4 G 10	NRPE	4.10	14	4.46	1.95	16.30 ± 0.30	572	0.751	313802
5 x 10	NR	4.10	15.6	4.46	1.95	18.00 ± 0.30	677	0.803	313803
5 G 10	NRPE	4.10	15.6	4.46	1.95	18.00 ± 0.30	677	0.803	313804
3 x 16	NR	5.00	14.4	4.46	1.24	17.70 ± 0.30	670	0.881	313805
4 x 16	NR	5.00	15.7	4.46	1.24	19.60 ± 0.30	858	1.073	313806
5 x 16	NR	5.00	18.1	4.46	1.24	21.50 ± 0.40	1027	1.141	313807
2 x 25	NR	6.20	16.6	4.46	0.795	20.20 ± 0.40	758	1.122	313808
3 x 25	NR	6.20	18	5.94	0.795	21.70 ± 0.40	1017	1.273	313809
1 x 95	bk	12.80	15.6	4.46	0.21	18.60 ± 0.30	1053	0.840	313812
1 x 120	bk	14.60	17.6	4.46	0.164	20.70 ± 0.40	1308	0.984	*

Note:

\* Upon request

## Cables with orange sheath

Construction Cross-sec. [mm <sup>2</sup> ]	Color code	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.
3 x 2.5	NR	1.95	7.7	1.76	8.21	9.40 ± 0.20	146	0.246	313813
1 x 6	bk	3.10	5	1.26	3.39	6.60 ± 0.20	98	0.140	313796
1 x 25	bk	6.20	8.5	1.76	0.795	10.30 ± 0.30	299	0.284	316153
1 x 50	bk	9.70	12.2	2.64	0.393	14.30 ± 0.30	584	0.523	314757
1 x 70	bk	11.20	14	4.46	0.277	16.80 ± 0.30	823	0.734	313810
1 x 95	bk	12.80	15.6	4.46	0.21	18.60 ± 0.30	1053	0.840	313811
1 x 120	bk	14.60	17.6	4.46	0.164	20.70 ± 0.40	1308	0.984	317681