

## BETrans® 9 GKW-AXplus Cable Family

3,6/6,0 V AC

5,4 kV DC

The BETAtrans® 9 GKW-AXplus Cable Family is a robust, compact dual wall halogen free and electron-beam cross-linked cable type with improved fire and temperature performance. With a voltage rating up to 3,6/6 kV and high corona resistance. The cable is weight optimised with reduced outer diameter and withstand high (+120 °C) and low (–60 °C) operating temperature. The BETAtrans® 9 GKW-AXplus Cable Family possesses excellent electrical and mechanical characteristics as well as a excellent resistant to mineral oil and detergents and has an outstanding fire performance.

### The BETAtrans® 9 GKW-AXplus Cable Family consists of:

- \_ **BETAtrans® 9 GKW-AXplus**  
as single core version, non screened
- \_ **BETAtrans® 9 GKW-AXplus C-flex**  
as single core version, screened,  
with optimized EMC screening

### Cross sections

1,5–400 mm<sup>2</sup>

### Advantages

- \_ Resistance to cold up to –60 °C
- \_ Resistance to corona effect
- \_ Saves volume, optimized cable volume
- \_ Saves weight, optimized cable weight
- \_ Saves space, limited space required
- \_ High performance to short circuit and earth fault
- \_ High operating temperature up to +120 °C
- \_ meets highest requirements in fire performance
- \_ Easy to work
- \_ Easy to install
- \_ Easy to strip
- \_ Excellent flexibility
- \_ Halogen free
- \_ Low smoke density
- \_ Flame retardant
- \_ Low fire load
- \_ Ozone and weathering resistance
- \_ Fluorine free
- \_ Excellent resistance to oil
- \_ Excellent resistance to fuel
- \_ Soldering iron resistant
- \_ Tight bending radius

### Application

- \_ The BETAtrans® 9 GKW-AXplus is designed as power and control cable for protected installations both inside and outside of rolling stock, underground railway systems, buses and other transport systems.
- \_ BETAtrans® 9 GKW-AXplus cables are used in control-, auxiliary- and main power circuit wiring applications such as in cable harnesses, cable looms, switchboards and control panels, electrical cabinets, power converters, resistor- and braking blocks and many other applications.

## BETrans® 9 GW-AXplus

STUDERCABLES.COM SWITZERLAND BETATRANS 9 GW-AXPLUS 3,6/6 kV 4 MM<sup>2</sup> 222933-500438



### Specification

#### Product properties

Nominal voltage	U <sub>0</sub> /U(U <sub>m</sub> )	3,6/6 (7,2) kV AC 5,4 kV DC
Testing voltage		11 kV AC
Max. conductor temperature	fixed installations	+120 °C
	sporadically moved	+ 90 °C
	short circuit	+200 °C
Min. ambient temperature	fixed installations	- 60 °C
	sporadically moved	- 35 °C

#### Fire performance for rolling stock

BS 6853	interior use	Ia, Ib, II
	exterior use	Ia, Ib, II
DIN 5510	level of protection	1, 2, 3, 4
EN 50264-1	*all hazard levels	
NF F 16-101	classification	C / FO
	interior use	A1, A2, B
	exterior use	A1, A2, B

#### Fire performance in generally

Vertical flame propagation for a single insulated wire or cable	EN 50265-2-1, IEC 60332-1
Vertical flame spread of bunched wires and cables	EN 50266-2-4, IEC 60332-3-24
Halogen free	EN 50267-2-1, IEC 60754-1
Corrosivity of gases	EN 50267-2-3, IEC 60754-2
Toxicity of gases	EN 50305
Smoke density	EN 50268-2, IEC 61034-2

#### Approvals

Swiss Federal Railway (SBB)

#### Material properties

No fluorine	EN 60684-2
Resistance to oil	EN 50305, EN 60811-2-1
Resistance to fuel	EN 50305, EN 60811-2-1
Resistance to ozone	EN 50305
Low fire load	DIN 51900

\*acc. HL4 as to today's version EN 45545

## BETrans® 9 GKW-AXplus

### Technical data

cross-section	part no.	colour	conductor	outer-Ø	R <sub>20</sub>	weight
[mm <sup>2</sup> ]		code	n x mm [mm]	approx. [mm]	[mΩ/m]	approx. [kg/km]
1,5	222931	black	30 x 0,25	4,40	13,70	34
2,5	222932	black	50 x 0,25	4,90	8,21	47
4	222933	black	56 x 0,30	5,70	5,09	68
6	222934	black	84 x 0,30	6,30	3,39	91
10	222935	black	80 x 0,40	7,50	1,95	141
16	222936	black	119 x 0,40	9,40	1,24	205
25	222937	black	182 x 0,40	10,90	0,795	297
35	222938	black	259 x 0,40	12,20	0,565	402
50	222939	black	380 x 0,40	14,50	0,393	567
70	222940	black	342 x 0,50	16,50	0,277	764
95	222941	black	456 x 0,50	18,30	0,210	1003
120	222942	black	570 x 0,50	20,30	0,164	1236
150	222943	black	703 x 0,50	22,80	0,132	1512
185	222944	black	874 x 0,50	24,60	0,108	1848
240	222945	black	1147 x 0,50	27,60	0,0817	2400
300	222946	black	1443 x 0,50	30,10	0,0654	2984
400	222947	black	1887 x 0,50	34,70	0,0495	3883

Further dimensions on request

## BETrans® 9 GKW-AXplus C-flex

### Specification

#### Product properties

Nominal voltage	U <sub>0</sub> /U(U <sub>m</sub> )	3,6/6 (7,2) kV AC 5,4 kV DC
Testing voltage		11 kV AC
Max. conductor temperature	fixed installations	+120 °C
	sporadically moved	+ 90 °C
	short circuit	+200 °C
Min. ambient temperature	fixed installations	- 60 °C
	sporadically moved	- 35 °C

#### Fire performance for rolling stock

BS 6853	interior use	la, lb, II
	exterior use	la, lb, II
DIN 5510	level of protection	1, 2, 3, 4
EN 50264-1	*all hazard levels	
NF F 16-101	classification	C / FO
	interior use	A1, A2, B
	exterior use	A1, A2, B

#### Fire performance in generally

Vertical flame propagation for a single insulated wire or cable	EN 50265-2-1, IEC 60332-1
Vertical flame spread of bunched wires and cables	EN 50266-2-4, IEC 60332-3-24
Halogen free	EN 50267-2-1, IEC 60754-1
Corrosivity of gases	EN 50267-2-3, IEC 60754-2
Toxicity of gases	EN 50305
Smoke density	EN 50268-2, IEC 61034-2

#### Approvals

Swiss Federal Railway (SBB)



#### Material properties

No fluorine	EN 60684-2
Resistance to oil	EN 50305, EN 60811-2-1
Resistance to fuel	EN 50305, EN 60811-2-1
Resistance to ozone	EN 50305
Low fire load	DIN 51900

\*acc. HL4 as to today's version EN 45545

## BETrans® 9 GKW-AXplus C-flex

### Technical data

cross-section	part no.	colour	conductor	outer- $\emptyset$	$R_{20}$	weight
[mm <sup>2</sup> ]		code	n x mm [mm]	approx. [mm]	[m $\Omega$ /m]	approx. [kg/km]
1,5	223353	black	30 x 0,25	6,30	13,70	72
2,5	223354	black	50 x 0,25	6,90	8,21	91
4	223355	black	56 x 0,30	7,80	5,09	119
6	223356	black	84 x 0,30	8,50	3,39	150
10	223357	black	80 x 0,40	9,80	1,95	211
16	223358	black	119 x 0,40	11,80	1,24	296
25	223359	black	182 x 0,40	13,40	0,795	402
35	223360	black	259 x 0,40	14,80	0,565	522
50	223361	black	380 x 0,40	17,40	0,393	733
70	223362	black	342 x 0,50	19,50	0,277	965
95	223363	black	456 x 0,50	21,30	0,210	1216
120	223364	black	570 x 0,50	23,50	0,164	1484
150	223365	black	703 x 0,50	26,00	0,132	1788
185	223366	black	874 x 0,50	28,00	0,10	2195
240	223367	black	1147 x 0,50	31,00	0,0817	2769
300	223368	black	1443 x 0,50	33,60	0,0654	3396
400	223369	black	1887 x 0,50	38,30	0,0495	4364
185		black	1520 x 0,40	26,00	0,108	2460
240		black	1920 x 0,40	30,00	0,0817	3050

Further dimensions on request



# Databus- and Coaxial Cables

62	BETAtrans® Databus	
63	MVB Databus	(Multifunction Vehicle Bus)
64	WTB Databus	(Wired Train Bus (120 Ohm))
65	Databus	(acc. customer requirements, on request)
68	CAT 5 Databus	