

BETAtans® 600 V TW Cable Family

600/1000 V AC

900 V DC

The BETAtans® 600 V TW Cable Family is an electron-beam cross-linked thin wall cable type with light weight, compact design and reduced outer cable diameter suited for compact system wiring applications where space and weight savings are important as well as for high (+120 °C) and low (-40 °C) operating temperature. The BETAtans® 600 V TW Cable Family possesses excellent electrical and mechanical characteristics and an outstanding fire performance.

The BETAtans® 600 V TW Cable Family consists of:

- _ **BETAtans® 600 V TW**
as single core version
- _ **BETAtans® 600 V TW flex**
as multi-core version, non screened
- _ **BETAtans® 600 V TW C-flex**
as multi-core version, screened,
with optimized EMC screening

Cross sections

0,5–2,5 mm², other cross sections available on demand

Advantages

- _ Easy to work
- _ Easy to install
- _ Easy to strip
- _ Excellent flexibility
- _ Saves volume, optimized cable volume
- _ Saves weight, optimized cable weight
- _ Saves space, limited space required
- _ Operating temperature -40 °C to +120 °C
- _ meets highest requirements in fire performance
- _ Halogen free
- _ Low smoke density
- _ Flame retardant
- _ Low fire load
- _ Ozone and weathering resistance
- _ Fluorine free
- _ Resistance to oil
- _ Resistance to fuel
- _ Soldering iron resistant
- _ Tight bending radius by fixed installation

Application

- _ As Signal and Control cable for protected installations inside and outside of rail vehicles, buses and other transport vehicles. For applications where space and weight are an important factor, where process ability is important and costs for work and installation have to be low.
- _ BETAtans® 600 V TW cables are used in applications such as in cable harnesses, cable looms, switchboards and control panels, electrical cabinets, driver desks and many other applications.

BETAtrens® 600 V TW

STUDERCABLES.COM SWITZERLAND BETATRANS 600 V TW 600/1000 V 2,5 MM²

Specification

Product properties

Nominal voltage	U ₀ /U(Um)	0,3/0,5 (0,55) kV AC 0,45 kV DC
Testing voltage		4 kV AC
Max. conductor temperature	fixed installations	+120 °C
	sporadically moved	+ 90 °C
	short circuit	+200 °C
Min. ambient temperature	fixed installations	- 45 °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 50306-2	*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

Material properties

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

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

Technical data

cross-section	part no.	colour	conductor	outer-Ø	R ₂₀	weight
[mm ²]		code	n x mm [mm]	approx. [mm]	[mΩ/m]	approx. [kg/km]
0,50		white	16 x 0,20	1,45	40,10	6
0,75		white	24 x 0,20	1,70	26,70	8
1,0		white	32 x 0,20	1,90	20,00	11
1,5		white	30 x 0,25	2,30	13,70	16
2,5		white	50 x 0,25	2,80	8,21	26

BETrans® 600 V TW flex

STUDERCABLES.COM SWITZERLAND BETATRANS 600 TW flex 18x1 MM2



Specification

Product properties

Nominal voltage	$U_0/U(U_m)$	0,3/0,5 (0,55) kV AC 0,45 kV DC
Testing voltage		3 kV AC
Max. conductor temperature	fixed installations	+120 °C
	sporadically moved	+ 90 °C
	short circuit	+200 °C
Min. ambient temperature	fixed installations	- 45 °C
	sporadically moved	- 35 °C

Fire performance for rolling stock

DIN 5510	level of protection	1, 2, 3, 4
EN 50306-4	*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







































Material properties

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

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

BETrans® 600 V TW flex

Technical data

cable type			part no.	colour	conductor		outer-Ø	R ₂₀	weight
n	x	mm ² [mm ²]		code	n	x mm [mm]	approx. [mm]	[mΩ/m]	approx. [kg/km]
2	x	0,5		NR	16	x 0,20	4,50	40,10	29
3	x	0,5		NR	16	x 0,20	4,60	40,10	36
4	x	0,5		NR	16	x 0,20	5,00	40,10	44
5	x	0,5		NR	16	x 0,20	5,40	40,10	52
6	x	0,5		NR	16	x 0,20	5,90	40,10	60
7	x	0,5		NR	16	x 0,20	6,40	40,10	71
8	x	0,5		NR	16	x 0,20	6,80	40,10	81
9	x	0,5		NR	16	x 0,20	7,30	40,10	81
10	x	0,5		NR	16	x 0,20	7,10	40,10	88
12	x	0,5		NR	16	x 0,20	7,50	40,10	101
14	x	0,5		NR	16	x 0,20	7,90	40,10	115
16	x	0,5		NR	16	x 0,20	8,30	40,10	128
18	x	0,5		NR	16	x 0,20	8,80	40,10	144
19	x	0,5		NR	16	x 0,20	8,80	40,10	148
20	x	0,5		NR	16	x 0,20	9,30	40,10	161
24	x	0,5		NR	16	x 0,20	10,20	40,10	181
27	x	0,5		NR	16	x 0,20	10,60	40,10	200
36	x	0,5		NR	16	x 0,20	11,90	40,10	261
48	x	0,5		NR	16	x 0,20	13,50	40,10	337
2	x	0,75		NR	24	x 0,20	5,00	26,70	37
3	x	0,75		NR	24	x 0,20	5,20	26,70	48
4	x	0,75		NR	24	x 0,20	5,60	26,70	58
5	x	0,75		NR	24	x 0,20	6,10	26,70	69
6	x	0,75		NR	24	x 0,20	6,70	26,70	81
7	x	0,75		NR	24	x 0,20	7,10	26,70	93
8	x	0,75		NR	24	x 0,20	7,70	26,70	108
9	x	0,75		NR	24	x 0,20	8,30	26,70	108
10	x	0,75		NR	24	x 0,20	8,10	26,70	118
12	x	0,75		NR	24	x 0,20	8,60	26,70	137
14	x	0,75		NR	24	x 0,20	9,00	26,70	156
16	x	0,75		NR	24	x 0,20	9,50	26,70	175
18	x	0,75		NR	24	x 0,20	10,10	26,70	198
19	x	0,75		NR	24	x 0,20	10,00	26,70	202
20	x	0,75		NR	24	x 0,20	10,50	26,70	219
24	x	0,75		NR	24	x 0,20	11,70	26,70	248
27	x	0,75		NR	24	x 0,20	12,20	26,70	275
36	x	0,75		NR	24	x 0,20	13,70	26,70	362
48	x	0,75		NR	24	x 0,20	15,50	26,70	468

Further dimensions on request

BETrans® 600 V TW flex




















Technical data

cable type		part no.	colour	conductor		outer- ϕ	R_{20}	weight	
n	x	mm ² [mm ²]	code	n	x	mm [mm]	approx. [m Ω /m]	approx. [kg/km]	
2	x	1	NR	32	x	0,20	5,40	20,00	45
3	x	1	NR	32	x	0,20	5,60	20,00	59
4	x	1	NR	32	x	0,20	6,20	20,00	73
5	x	1	NR	32	x	0,20	6,70	20,00	87
6	x	1	NR	32	x	0,20	7,30	20,00	102
7	x	1	NR	32	x	0,20	7,90	20,00	119
8	x	1	NR	32	x	0,20	8,40	20,00	135
9	x	1	NR	32	x	0,20	9,10	20,00	137
10	x	1	NR	32	x	0,20	8,90	20,00	150
12	x	1	NR	32	x	0,20	9,40	20,00	174
14	x	1	NR	32	x	0,20	9,90	20,00	199
16	x	1	NR	32	x	0,20	10,40	20,00	223
18	x	1	NR	32	x	0,20	11,10	20,00	254
19	x	1	NR	32	x	0,20	11,00	20,00	259
20	x	1	NR	32	x	0,20	11,70	20,00	282
24	x	1	NR	32	x	0,20	12,90	20,00	319
27	x	1	NR	32	x	0,20	13,40	20,00	354
36	x	1	NR	32	x	0,20	15,10	20,00	467
48	x	1	NR	32	x	0,20	17,20	20,00	607
2	x	1,5	NR	30	x	0,25	6,20	13,70	59
3	x	1,5	NR	30	x	0,25	6,50	13,70	81
4	x	1,5	NR	30	x	0,25	7,10	13,70	99
5	x	1,5	NR	30	x	0,25	7,70	13,70	120
6	x	1,5	NR	30	x	0,25	8,50	13,70	141
7	x	1,5	NR	30	x	0,25	9,10	13,70	163
8	x	1,5	NR	30	x	0,25	9,80	13,70	188
9	x	1,5	NR	30	x	0,25	10,70	13,70	189
10	x	1,5	NR	30	x	0,25	10,50	13,70	209
12	x	1,5	NR	30	x	0,25	11,10	13,70	244
14	x	1,5	NR	30	x	0,25	11,70	13,70	279
16	x	1,5	NR	30	x	0,25	12,30	13,70	314
18	x	1,5	NR	30	x	0,25	13,10	13,70	358
19	x	1,5	NR	30	x	0,25	13,00	13,70	366
20	x	1,5	NR	30	x	0,25	13,70	13,70	396
24	x	1,5	NR	30	x	0,25	15,30	13,70	450
27	x	1,5	NR	30	x	0,25	15,90	13,70	501
36	x	1,5	NR	30	x	0,25	17,90	13,70	663
37	x	1,5	NR	30	x	0,25	18,50	13,70	719
48	x	1,5	NR	30	x	0,25	20,50	13,70	864

Further dimensions on request

BETrans® 600 V TW flex

Technical data

cable type		part no.	colour	conductor		outer-Ø	R ₂₀	weight
n	x	mm ² [mm ²]	code	n	x	mm [mm]	approx. [mΩ/m]	approx. [kg/km]
2	x	2,5	 NR	50	x	0,25	7,20	89
3	x	2,5	 NR	50	x	0,25	7,50	117
4	x	2,5	 NR	50	x	0,25	8,30	147
5	x	2,5	 NR	50	x	0,25	9,10	180
6	x	2,5	 NR	50	x	0,25	9,90	209
7	x	2,5	 NR	50	x	0,25	10,80	246
8	x	2,5	 NR	50	x	0,25	11,70	285
9	x	2,5	 NR	50	x	0,25	12,70	286
10	x	2,5	 NR	50	x	0,25	12,50	318
12	x	2,5	 NR	50	x	0,25	13,10	372
14	x	2,5	 NR	50	x	0,25	13,90	428
16	x	2,5	 NR	50	x	0,25	14,70	483
18	x	2,5	 NR	50	x	0,25	17,20	613
19	x	2,5	 NR	50	x	0,25	15,50	565
20	x	2,5	 NR	50	x	0,25	16,40	612
24	x	2,5	 NR	50	x	0,25	18,30	695
27	x	2,5	 NR	50	x	0,25	18,90	776
36	x	2,5	 NR	50	x	0,25	21,30	1030
48	x	2,5	 NR	50	x	0,25	24,50	1347

Further dimensions on request

BETrans® 600 V TW C-flex

RCABLES.COM SWITZERLAND BETATRANS 600 V TW 600/1000 V 12x1 MM2



Specification

Product properties

Nominal voltage	$U_0/U(U_m)$	0,3/0,5 (0,55) kV AC 0,45 kV DC
Testing voltage	conductor/conductor	4 kV AC
	conductor/shielding	3 kV AC
Max. conductor temperature	fixed installations	+120 °C
	sporadically moved	+ 90 °C
	short circuit	+200 °C
Min. ambient temperature	fixed installations	- 45 °C
	sporadically moved	- 35 °C

Fire performance for rolling stock

DIN 5510	level of protection	1, 2, 3, 4
EN 50306-4	*all hazard levels	

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









































Material properties

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

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

BETAtrans® 600 V TW C-flex

Technical data

cable type		part no.	colour	conductor		outer-Ø	R ₂₀	weight		
n	x	mm ² [mm ²]	code	n	x	mm [mm]	approx. [mm]	approx. [kg/km]		
2	x	0,5		NR	16	x	0,20	4,80	40,10	31
3	x	0,5		NR	16	x	0,20	5,00	40,10	36
4	x	0,5		NR	16	x	0,20	5,40	40,10	43
5	x	0,5		NR	16	x	0,20	6,00	40,10	58
6	x	0,5		NR	16	x	0,20	6,50	40,10	68
7	x	0,5		NR	16	x	0,20	7,00	40,10	81
8	x	0,5		NR	16	x	0,20	7,40	40,10	91
9	x	0,5		NR	16	x	0,20	7,70	40,10	93
10	x	0,5		NR	16	x	0,20	7,70	40,10	97
12	x	0,5		NR	16	x	0,20	8,10	40,10	113
14	x	0,5		NR	16	x	0,20	8,50	40,10	126
16	x	0,5		NR	16	x	0,20	8,70	40,10	140
18	x	0,5		NR	16	x	0,20	9,40	40,10	156
22	x	0,5		NR	16	x	0,20	10,30	40,10	192
24	x	0,5		NR	16	x	0,20	10,60	40,10	198
27	x	0,5		NR	16	x	0,20	11,00	40,10	218
36	x	0,5		NR	16	x	0,20	12,30	40,10	282
48	x	0,5		NR	16	x	0,20	13,90	40,10	362
2x2	x	0,5		NR	16	x	0,20	7,10	40,10	89
3x2	x	0,5		NR	16	x	0,20	7,50	40,10	103
4x2	x	0,5		NR	16	x	0,20	8,20	40,10	130
2	x	0,75		NR	24	x	0,20	5,30	26,70	37
3	x	0,75		NR	24	x	0,20	5,60	26,70	45
4	x	0,75		NR	24	x	0,20	6,20	26,70	63
5	x	0,75		NR	24	x	0,20	6,70	26,70	77
6	x	0,75		NR	24	x	0,20	7,30	26,70	90
7	x	0,75		NR	24	x	0,20	7,70	26,70	103
8	x	0,75		NR	24	x	0,20	8,30	26,70	120
9	x	0,75		NR	24	x	0,20	8,70	26,70	122
10	x	0,75		NR	24	x	0,20	8,70	26,70	129
12	x	0,75		NR	24	x	0,20	9,20	26,70	149
14	x	0,75		NR	24	x	0,20	9,60	26,70	168
16	x	0,75		NR	24	x	0,20	9,80	26,70	187
18	x	0,75		NR	24	x	0,20	10,70	26,70	213
22	x	0,75		NR	24	x	0,20	11,70	26,70	259
24	x	0,75		NR	24	x	0,20	12,10	26,70	269
27	x	0,75		NR	24	x	0,20	12,60	26,70	297
36	x	0,75		NR	24	x	0,20	14,10	26,70	387
2x2	x	0,75		NR	24	x	0,20	8,00	26,70	100
6x2	x	0,75		NR	24	x	0,20	11,60	26,70	202

Further dimensions on request

BETrans® 600 V TW C-flex

Technical data

cable type		part no.	colour	conductor		outer- ϕ	R_{20}	weight
n	x	mm ² [mm ²]	code	n	x	mm [mm]	approx. [mm]	approx. [kg/km]
2	x	1	NR	32	x	0,20	5,90	52
3	x	1	NR	32	x	0,20	6,20	62
4	x	1	NR	32	x	0,20	6,80	79
5	x	1	NR	32	x	0,20	7,30	93
6	x	1	NR	32	x	0,20	7,90	114
7	x	1	NR	32	x	0,20	8,50	129
8	x	1	NR	32	x	0,20	9,00	146
9	x	1	NR	32	x	0,20	9,50	152
10	x	1	NR	32	x	0,20	9,50	161
12	x	1	NR	32	x	0,20	10,00	186
24	x	1	NR	32	x	0,20	13,30	342
27	x	1	NR	32	x	0,20	13,80	378
36	x	1	NR	32	x	0,20	15,70	515
2x2	x	1	NR	32	x	0,20	8,90	116
2	x	1,5	NR	30	x	0,25	6,70	69
3	x	1,5	NR	30	x	0,25	7,10	83
4	x	1,5	NR	30	x	0,25	7,70	104
5	x	1,5	NR	30	x	0,25	8,30	127
6	x	1,5	NR	30	x	0,25	9,10	151
7	x	1,5	NR	30	x	0,25	9,70	175
8	x	1,5	NR	30	x	0,25	10,40	201
9	x	1,5	NR	30	x	0,25	11,10	211
10	x	1,5	NR	30	x	0,25	11,10	225
12	x	1,5	NR	30	x	0,25	11,70	259
24	x	1,5	NR	30	x	0,25	15,90	499
27	x	1,5	NR	30	x	0,25	16,50	552
36	x	1,5	NR	30	x	0,25	18,50	720
2	x	2,5	NR	50	x	0,25	7,70	98
3	x	2,5	NR	50	x	0,25	8,10	120
4	x	2,5	NR	50	x	0,25	8,90	150
5	x	2,5	NR	50	x	0,25	9,70	185
6	x	2,5	NR	50	x	0,25	10,50	220
7	x	2,5	NR	50	x	0,25	11,40	261
8	x	2,5	NR	50	x	0,25	12,30	299
9	x	2,5	NR	50	x	0,25	13,10	309
10	x	2,5	NR	50	x	0,25	13,10	331
12	x	2,5	NR	50	x	0,25	13,70	386
24	x	2,5	NR	50	x	0,25	18,90	755
27	x	2,5	NR	50	x	0,25	19,50	837
36	x	2,5	NR	50	x	0,25	21,90	1100

Further dimensions on request