Applications for the steel industry

Cables · Temperature measurement
Cable Harnessing

www.sab-worldwide.com

SAB BRÖCKSKES

CONTENT

Cover picture: Stahl-Zentrum

DIN EN ISO 9001

More than 60 years of experience in temperature measurement and control technique as well as in cable production have made a one man business a company with nearly 500 staff members. Our strength is not only the production of standard products but also the development and manufacturing of special products acc. to customers' specifications. Every year we manufacture more than 1500 special products on our customer's request. Every single product is a challenge for our technical team.

We at SAB Bröckskes see ourselves as manufacturer and service provider - in the sense of real partnership and customer oriented work. The quality of our products is known in more than 40 countries of the world. Our customers have tested our products intensively and confirm that they have a longer service life than others. In all product ranges we are certified acc. to ISO 9001:2008. Besides we established an environmental management system for our company acc. to ISO 14001:2004, an occupational health and safety management acc. to NLF/ILO-OSH 2001 and OHSAS 18001:2007 as well as an energy management system acc. to DIN EN16001:2009. And our future slogan is: **We go forward!**

founded:
- 1947 by Peter Bröckskes sen.
- an independent, middle sized company

CEO:
- Peter Bröckskes

plant/location:
- in Viersen (lower Rhine) 110.000 m² company site
- manufacturing from copper conductor to outer sheath,
- own VDE proofed burnchamber and laboratory

employees/workers:
- approx. 420 at the plant in Viersen, 500 worldwide

yearly sales:
- approx. 95 Mio. € worldwide

products:
- Special Cables
- Temperature Measurement
- Cable Harnessing

certificates and approvals:
- quality management system acc. to ISO 9001:2008 for every manufacturing field
- environmental management system acc. to ISO 14001:2004
- occupational health and safety management acc. to NLF/ILO-OSH 2001 and OHSAS 18001:2007
- energy management system acc. to DIN EN 16001:2009

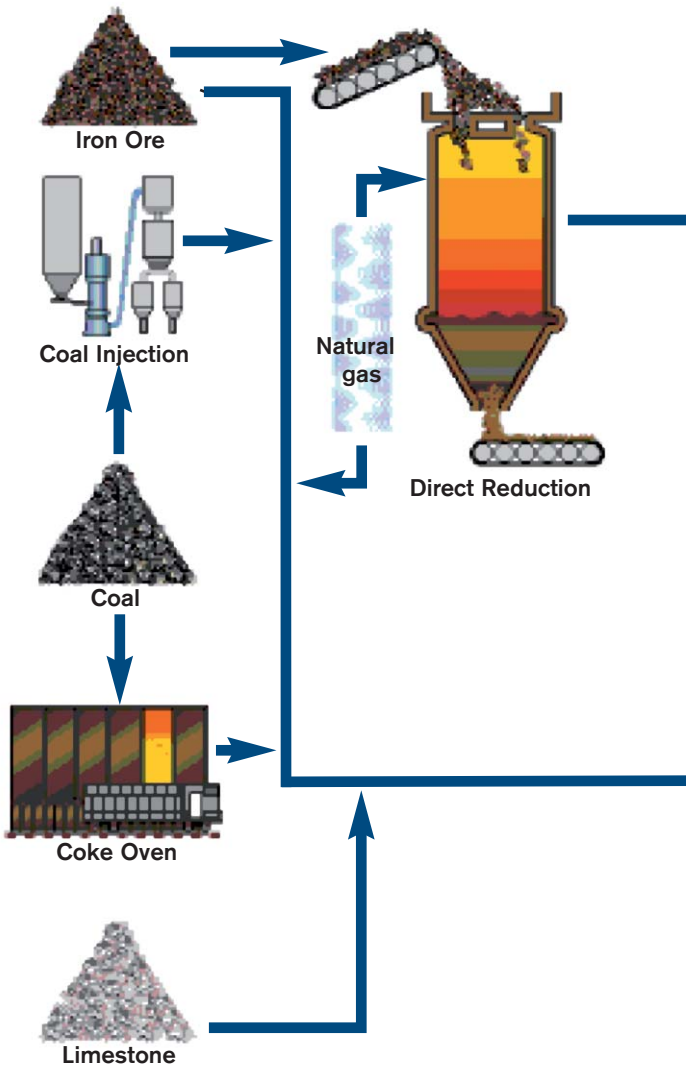
MIL, VDE, HAR, IEC, GL, DNV, BV, KR, ABS, NK, RINA, LR, CE

STEEL

We cannot imagine our modern time without the raw material steel. Steel is used in skyscrapers, bridges or cars and it is responsible for the stability and flexibility of these steel made constructions.
Of a large importance is the high quality of the about 2000 different varieties of steel. The manufacturing processes of the steel production have to be controlled optimally.

For the different production steps in smelting works and rolling mills special cables for optimum energy supply and data transmission are used.
Cable chain cables drive conveyor belts for iron ore, carbon or waste products. At the furnaces and between the different rollers special temperature resistant cables are of greatest importance.

An exact and reliable temperature measurement during the complete production process is of equal importance.
The thermocouples installed at the different points of the casting implements transmit the measuring data via especially harnessed cables to a centre from which the complete production process is controlled.



APPLICATIONS:

Coke Oven
- Reeling Cables
- ETFE, FEP, PFA Cables

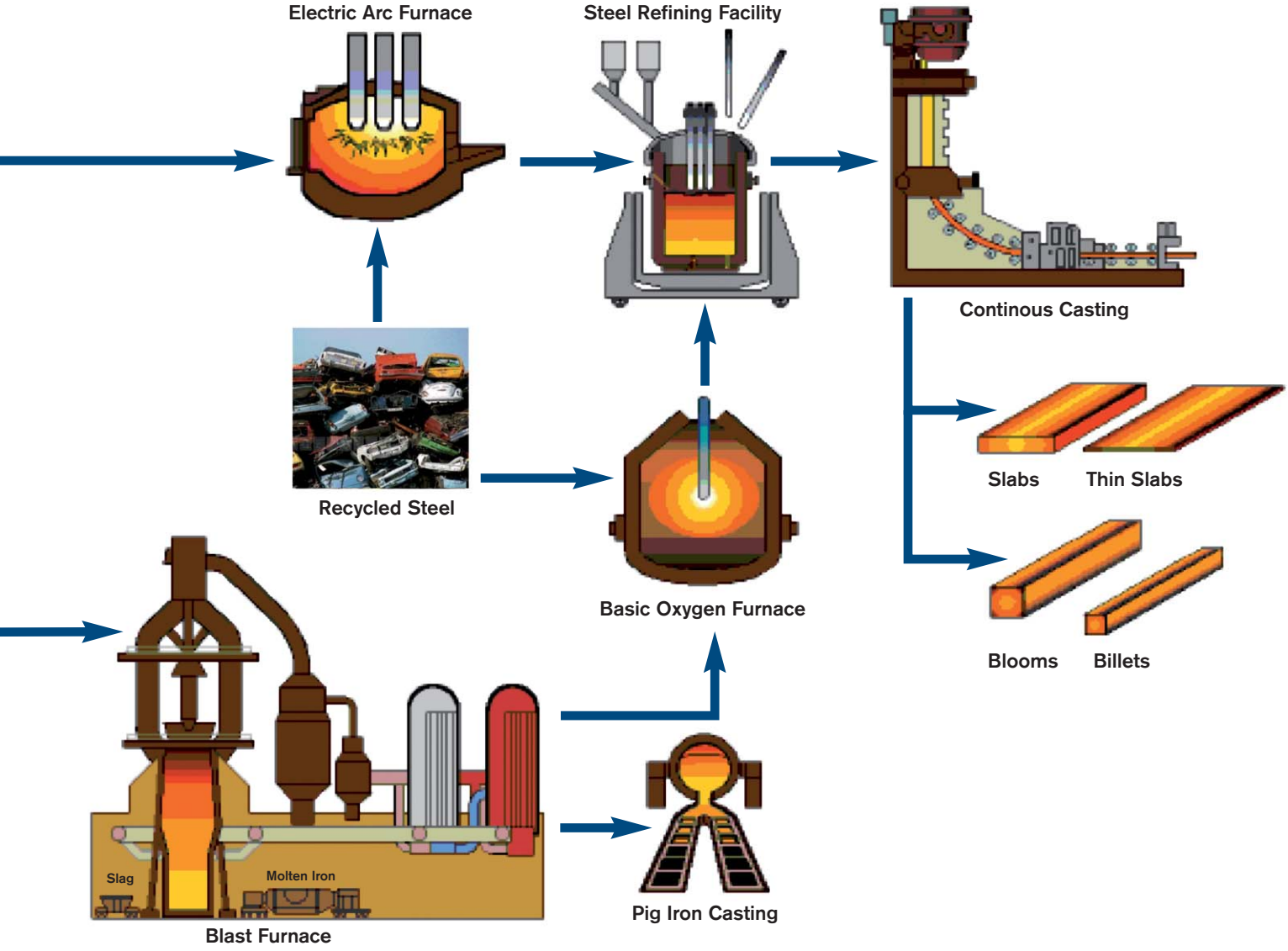
Blast Furnace
- Besilen® (Silicone) Cables
- ETFE, FEP, PFA Cables
- Compensating and Extension Cables
- Cable Track Cables
- Festoon Cables

Direct Reduction
- Cable Track Cables

Electric Arc Furnace
- Besilen® (Silicone) Cables
- Control and Connection Cables

Basic Oxygen Furnace
- Reeling Cables
- Besilen® (Silicone) Cables
- Control and Connection Cables

Steel Refining Facility
- Control and Connection Cables
- Cable Track Cables



Pig Iron Casting
- Cable Track Cables

Continous Casting
- Control and Connection Cables
- Harnessed cables
- Mineral insulated thermocouples
- Festoon Cables

Hot Rolling Mill
- Cable Track Cables
- Besilen® (Silione) Cables
- Reeling Cables

Cold Rolling Mill
- Compensating and Extension Cables
- Besilen® (Silicone) Cables
- Reeling Cables

Transport and Crane Systems / Conveyor Belts
- Control and Connection Cables
- Cable Track Cables
- Festoon Cables
- Smeltery Cables

BiAF Besilen®-insulated strands

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1

Outstanding features:

- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**

Technical data:

Nominal voltage:	Uo/U 300/300 V
Testing voltage:	2000 V
Min. bending radius:	7.5 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:* *short-time use:*	 -40/+180 °C -25/+180 °C +250 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 – no development of corrosive conflagration gases
Chem. resistance:	see page 43
Weather resistance:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	nominal cross section mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
0113002…*	0,25	0,16	1,7	2,4	5
0113003…*	0,34	0,26	1,8	3,3	6
0113005…*	0,50	0,21	1,9	4,8	8
0113007…*	0,75	0,21	2,2	7,2	10
0113010…*	1,00	0,21	2,3	9,6	13
0113015…*	1,50	0,26	2,8	14,4	18
0113025…*	2,50	0,26	3,4	24,0	29
0113040…*	4,00	0,31	4,0	38,4	44
0113060…*	6,00	0,31	4,5	57,6	62
0113100…*	10,00	0,41	6,1	96,0	107
0113160…*	16,00	0,41	7,5	153,6	167

item no.	nominal cross section mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
0113250…*	25,00	0,41	9,3	240,0	271
0113350…*	35,00	0,41	10,7	336,0	376
0113500…*	50,00	0,41	12,3	480,0	523
0113700…*	70,00	0,41	14,6	672,0	713
0113950…*	95,00	0,51	17,5	912,0	961
0113120…*	120,00	0,51	19,0	1152,0	1177
0113150…*	150,00	0,51	20,9	1440,0	1462
0113185…*	185,00	0,51	23,0	1776,0	1785
0113240…*	240,00	0,51	26,9	2304,0	2404
0113300…*	300,00	0,51	30,0	2880,0	2998

Other dimensions and colours are possible on request.

*** Colour code for single conductors:**

…0 = green-yellow
…1 = blue
…2 = black
…3 = brown
…4 = grey
…5 = white
…6 = reddish brown
…7 = red

Flexible application for the internal wiring of heating devices, switchboards, distributors in steel works and rolling mills

Picture: Stahl-Zentrum

also possible with extremely notch resistant sheath

BiHF-J Besilen®-insulated strands with Besilen® outer sheath

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1
Colour code:	up to 5 cores coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with consecutive numbers acc. to EN 50334; from 3 cores a green-yellow earth wire
Stranding:	in layers
Sheath material:	Besilen® EM9 acc. to DIN VDE 0282 part 1 + HD 22.1
Sheath colour:	reddish brown (similar RAL 3016)

Outstanding features:

- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	2000 V
Min. bending radius	
fixed laying:	4 x d
flexible application:	6 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range	
fixed laying:	-40/+180 °C
flexible application:	-25/+180 °C
short-time use:	+250 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 – no development of corrosive conflagration gases
Chem. resistance:	see page 43
Weather resistance:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01410202	2 x 0,25	0,15	4,3	4,8	23
01410402	4 x 0,25	0,15	4,9	9,6	32
01410205	2 x 0,50	0,20	4,8	9,6	31
01410305	3 x 0,50	0,20	5,1	14,4	37
01410405	4 x 0,50	0,20	5,5	19,2	45
01410505	5 x 0,50	0,20	6,1	24,0	53
01410705	7 x 0,50	0,20	6,6	33,6	69
01411205	12 x 0,50	0,20	8,9	57,6	113
01411805	18 x 0,50	0,20	10,6	86,4	164
01412505	25 x 0,50	0,20	12,9	120,0	225
01410207	2 x 0,75	0,20	5,4	14,4	41
01410307	3 x 0,75	0,20	5,7	21,6	49
01410407	4 x 0,75	0,20	6,2	28,8	60
01410507	5 x 0,75	0,20	6,9	36,0	72
01410607	6 x 0,75	0,20	7,7	43,2	86
01410707	7 x 0,75	0,20	7,7	50,4	96
01411007	10 x 0,75	0,20	10,0	57,6	136
01411207	12 x 0,75	0,20	10,3	86,4	157
01411607	16 x 0,75	0,20	11,5	115,2	201
01411807	18 x 0,75	0,20	13,2	129,6	228
01412507	25 x 0,75	0,20	14,9	180,0	314
01410210	2 x 1,00	0,20	5,6	19,2	46
01410310	3 x 1,00	0,20	5,9	28,8	57
01410410	4 x 1,00	0,20	6,5	38,4	70
01410510	5 x 1,00	0,20	7,1	48,0	84
01410610	6 x 1,00	0,20	8,0	57,6	101
01410710	7 x 1,00	0,20	8,0	67,2	113
01410810	8 x 1,00	0,20	9,3	76,8	129
01411010	10 x 1,00	0,20	10,4	96,0	160
01411210	12 x 1,00	0,20	10,7	115,2	185
01411410	14 x 1,00	0,20	11,3	134,4	211
01411610	16 x 1,00	0,20	11,9	153,6	242
01411810	18 x 1,00	0,20	12,8	172,8	270
01412010	20 x 1,00	0,20	13,5	192,0	296
01412510	25 x 1,00	0,20	15,5	240,0	369
01410215	2 x 1,50	0,25	6,6	28,8	62

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01410315	3 x 1,50	0,25	7,0	43,2	80
01410415	4 x 1,50	0,25	7,8	57,6	102
01410515	5 x 1,50	0,25	8,6	72,0	121
01410615	6 x 1,50	0,25	9,4	86,4	142
01410715	7 x 1,50	0,25	9,4	100,8	158
01410815	8 x 1,50	0,25	11,2	115,2	187
01411215	12 x 1,50	0,25	12,8	172,8	265
01411615	16 x 1,50	0,25	14,6	230,4	352
01411815	18 x 1,50	0,25	15,4	259,2	391
01412015	20 x 1,50	0,25	16,2	288,0	429
01412415	24 x 1,50	0,25	18,2	345,6	520
01412515	25 x 1,50	0,25	18,6	360,0	539
01410225	2 x 2,50	0,25	8,0	48,0	99
01410325	3 x 2,50	0,25	8,5	72,0	123
01410425	4 x 2,50	0,25	9,3	96,0	153
01410525	5 x 2,50	0,25	10,6	120,0	192
01410625	6 x 2,50	0,25	11,6	144,0	224
01410725	7 x 2,50	0,25	11,6	168,0	251
01410925	9 x 2,50	0,25	15,2	216,0	333
01411225	12 x 2,50	0,25	15,7	288,0	417
01412425	24 x 2,50	0,25	22,4	576,0	813
01410240	2 x 4,00	0,31	9,6	76,8	148
01410340	3 x 4,00	0,31	10,2	115,2	186
01410440	4 x 4,00	0,31	11,1	153,6	230
01410540	5 x 4,00	0,31	12,5	192,0	282
01410740	7 x 4,00	0,31	13,6	230,4	371
01410260	2 x 6,00	0,31	10,8	115,2	201
01410360	3 x 6,00	0,31	11,4	172,8	254
01410460	4 x 6,00	0,31	12,5	230,4	317
01410560	5 x 6,00	0,31	13,8	288,0	383
01410461	4 x 10,0	0,41	16,8	384,0	556
01410561	5 x 10,0	0,41	18,7	480,0	679
01410462	4 x 16,0	0,41	20,3	614,4	820
01410463	4 x 25,0	0,41	25,4	960,0	1330
01410464	4 x 35,0	0,41	28,8	1344,0	1800

Other dimensions and colours are possible on request.

also possible with extremely notch resistant sheath

BiHF/Cu/Bi-J BiHF with overall copper screen and Besilen® outer sheath

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1
Colour code:	up to 5 cores coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with consecutive numbers acc. to EN 50334; from 3 cores a green-yellow earth wire
Stranding:	in layers
Inner sheath:	Besilen® EM9 acc. to DIN VDE 0282 part 1 + HD 22.1
Screen:	tinned copper braiding
Sheath material:	Besilen® EM9 acc. to DIN VDE 0282 part 1 + HD 22.1
Sheath colour:	reddish brown (similar RAL 3016)

Outstanding features:

- **good EMC characteristics**
- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**
- **increased mechanical protection**

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage U:	2000 V core/screen 1000 V
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 10 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:* *short-time use:*	 -40/+180 °C -25/+180 °C +250 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 – no development of corrosive conflagration gases
Chem. resistance:	see page 43
Weather resistance:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01900205	2 x 0,50	0,21	7,6	29,9	83
01900305	3 x 0,50	0,21	7,9	35,0	90
01900405	4 x 0,50	0,21	8,3	41,9	100
01900505	5 x 0,50	0,21	8,9	50,1	115
01900705	7 x 0,50	0,21	9,4	60,1	132
01901005	10 x 0,50	0,21	11,6	100,3	190
01901205	12 x 0,50	0,21	11,9	110,4	211
01901605	16 x 0,50	0,21	13,5	138,2	266
01901805	18 x 0,50	0,21	14,0	148,7	291
01900207	2 x 0,75	0,21	8,2	37,0	99
01900307	3 x 0,75	0,21	8,5	44,4	108
01900407	4 x 0,75	0,21	9,0	55,0	123
01900507	5 x 0,75	0,21	9,7	62,9	139
01900707	7 x 0,75	0,21	10,7	97,1	181
01901007	10 x 0,75	0,21	13,4	133,2	254
01901207	12 x 0,75	0,21	13,7	148,1	281
01901607	16 x 0,75	0,21	14,9	183,2	334
01901807	18 x 0,75	0,21	16,3	228,8	401
01900210	2 x 1,00	0,21	8,4	42,0	107
01900310	3 x 1,00	0,21	8,7	54,7	119
01900410	4 x 1,00	0,21	9,3	64,8	135

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01900510	5 x 1,00	0,21	10,1	93,8	158
01900710	7 x 1,00	0,21	11,0	114,3	201
01901010	10 x 1,00	0,21	14,0	157,9	283
01901210	12 x 1,00	0,21	14,1	177,6	310
01901610	16 x 1,00	0,21	16,1	252,3	404
01901810	18 x 1,00	0,21	16,8	273,3	448
01900215	2 x 1,50	0,26	9,4	55,3	137
01900315	3 x 1,50	0,26	10,1	88,8	165
01900415	4 x 1,50	0,26	10,8	104,4	191
01900515	5 x 1,50	0,26	11,6	124,3	219
01900715	7 x 1,50	0,26	12,8	154,3	271
01901015	10 x 1,50	0,26	16,4	243,5	406
01901215	12 x 1,50	0,26	16,8	273,3	446
01901615	16 x 1,50	0,26	18,6	344,5	539
01901815	18 x 1,50	0,26	19,4	375,5	601
01900225	2 x 2,50	0,26	11,0	95,1	200
01900325	3 x 2,50	0,26	11,5	124,2	226
01900425	4 x 2,50	0,26	12,7	156,0	274
01900525	5 x 2,50	0,26	14,0	182,3	327
01900725	7 x 2,50	0,26	15,0	236,2	392

Other dimensions and colours are possible on request.

Temperature range up to +200°C

SC 600 C HDTR SABIX® 772 insulated strands with overall copper screen and Besilen® outer sheath

RoHS

Marking for SC 600 C HDTR 01240410:
SAB BRÖCKSKES · D-VIERSEN · SC 600 C HDTR AWM Style 4511 200°C 600V c AWM I/II A/B 200°C 600V FT1 FT2 CE

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	SABIX® 722
Colour code:	up to 5 cores coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with consecutive numbers acc. to EN 50334; from 3 cores a green-yellow earth wire
Stranding:	in layers
Inner sheath:	Besilen® EM9 acc. to DIN VDE 0282 part 1 + HD 22.1
Screen:	tinned copper braiding
Sheath material:	Besilen® better than EM9 acc. to DIN VDE 0282 part 1 + HD 22.1
Sheath colour:	black (similar RAL 9011)

Outstanding features:

- **good EMC characteristics**
- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**
- **protection against mechanical damage**

Technical data:

Voltage:	UL + cUL: 600 V
Nominal voltage:	DIN VDE: Uo/U 300/500 V
Testing voltage:	2000 V acc. to DIN VDE 0282 part 2 + HD 22.2 core/screen 2000 V
Min. bending radius *fixed laying:* *flexible application:*	5 x d 10 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:* *short-time use:*	**UL:** up to +200 °C **cUL:** up to +200 °C **DIN VDE:** -40/+180 °C -25/+180 °C +250 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 + IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, cUL FT1 and FT2
Corrosiveness of conflagration gases:	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 – no development of corrosive conflagration gases
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01240207	2 x 0,75	0,21	8,2	37,0	93
01240307	3 x 0,75	0,21	8,5	44,4	101
01240407	4 x 0,75	0,21	9,0	55,0	123
01240507	5 x 0,75	0,21	9,7	62,9	139
01240210	2 x 1,00	0,21	8,4	42,0	101
01240310	3 x 1,00	0,21	8,7	54,7	120
01240410	4 x 1,00	0,21	9,3	64,8	136
01240510	5 x 1,00	0,21	10,1	93,8	167
01240710	7 x 1,00	0,21	11,0	114,3	202
01240215	2 x 1,50	0,26	9,4	55,3	129
01240315	3 x 1,50	0,26	10,0	88,8	164
01240415	4 x 1,50	0,26	10,8	104,4	192

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01240515	5 x 1,50	0,26	11,6	125,5	235
01240715	7 x 1,50	0,26	12,8	161,0	277
01240225	2 x 2,50	0,26	11,2	99,8	210
01240325	3 x 2,50	0,26	11,7	124,5	233
01240425	4 x 2,50	0,26	12,9	156,3	282
01240525	5 x 2,50	0,26	14,3	187,0	336
01240340	3 x 4,00	0,31	13,8	177,1	329
01240440	4 x 4,00	0,31	14,8	221,5	384
01240540	5 x 4,00	0,31	16,7	292,3	481
01240360	3 x 6,00	0,31	15,1	241,2	396
01240460	4 x 6,00	0,31	16,8	330,9	524
01240560	5 x 6,00	0,31	18,1	400,8	581

Other dimensions and colours are possible on request.

H05SJ-K Besilen® insulated strands with glass fibre braiding acc. to DIN VDE 0282

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1
Standard colour:	nature
Braiding:	glass fibre
Impregnation:	impregnating lacquer

Outstanding features:

- **flexible**
- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**
- **harmonized**

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage U:	2000 V
Min. bending radius:	7.5 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:* *short-time use:*	 -40/+180 °C -25/+180 °C +250 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 – no development of corrosive conflagration gases
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	nominal cross section mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01550059	0,50	0,21	2,7	4,8	14
01550079	0,75	0,21	3,0	7,2	17
01550109	1,00	0,21	3,1	9,6	19
01550159	1,50	0,26	3,5	14,4	25
01550259	2,50	0,26	4,2	24,0	35
01550409	4,00	0,31	4,8	38,4	50
01550609	6,00	0,31	5,3	57,6	60
01551009	10,00	0,41	6,4	96,0	120
01551609	16,00	0,41	8,3	153,6	178
01552509	25,00	0,41	10,1	240,0	281
01553509	35,00	0,41	11,5	336,0	388
01555009	50,00	0,41	13,1	480,0	537
01557009	70,00	0,41	15,4	672,0	721
01559509	95,00	0,51	18,0	912,0	963

Other dimensions and colours are possible on request.

For use in converters, furnaces and cold rolling mills

Picture: Stahl-Zentrum

Glass fibre insulated extension cables for thermocouples

Th LGS with glass fibre braiding and steel wire armouring
Th LRS with special glass fibre braiding and steel wire armouring

RoHS

Th LGS · Th LRS

Construction:

Core insulation:	**Th LGS:** glass fibre **Th LRS:** special glass fibre
Stranding:	cores together
Braiding:	**Th LGS:** glass fibre **Th LRS:** special glass fibre
Armouring:	galvanized steel wire armouring with tracer
Shape:	round

Technical data:

Min. bending radius:	12 x d
Temperature range of insulation:	**Th LGS:** max. 250 °C **Th LRS:** max. 400 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	no flame propagation acc. to IEC 60332 + EN 60332 Cat. C resp. D. Flame retardant and self-extinguishing IEC 60332-1-2 + EN 60332-1-2.
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Type:	**Th LGS**	**Th LRS**
Conductor construction:	0,22 mm² = 7 x 0,20 mm ø 0,50 mm² = 16 x 0,20 mm ø 1,00 mm² = 32 x 0,20 mm ø	0,22 mm² = 7 x 0,20 mm ø 0,50 mm² = 16 x 0,20 mm ø 1,00 mm² = 32 x 0,20 mm ø

Th LGS

item no.	type	no. of cores x cross section n x mm²	for thermo-couple	approx. outer-ø mm	approx. cable weight kg/100 m
047110...*	Th 20 LGS	2 x 0,22	Fe-CuNi	3,1	2,0
047111...*	Th 50 LGS	2 x 0,50	Fe-CuNi	3,7	3,9
047112...*	Th 100 LGS	2 x 1,00	Fe-CuNi	4,5	4,3
047113...*	Th 20-4 LGS	4 x 0,22	Fe-CuNi	3,5	2,9
047114...*	Th 50-4 LGS	4 x 0,50	Fe-CuNi	4,2	4,3
047115...*	Th 100-4 LGS	4 x 1,00	Fe-CuNi	5,4	7,0
047110...*	Th 20 LGS	2 x 0,22	NiCr-Ni	3,1	2,0
047111...*	Th 50 LGS	2 x 0,50	NiCr-Ni	3,7	3,2
047112...*	Th 100 LGS	2 x 1,00	NiCr-Ni	4,5	4,3
047113...*	Th 20-4 LGS	4 x 0,22	NiCr-Ni	3,5	2,9
047114...*	Th 50-4 LGS	4 x 0,50	NiCr-Ni	4,2	4,3
047115...*	Th 100-4 LGS	4 x 1,00	NiCr-Ni	5,4	7,0

Th LRS

item no.	type	no. of cores x cross section n x mm²	for thermo-couple	approx. outer-ø mm	approx. cable weight kg/100 m
047210...*	Th 20 LRS	2 x 0,22	Fe-CuNi	3,1	1,9
047211...*	Th 50 LRS	2 x 0,50	Fe-CuNi	3,7	3,9
047212...*	Th 100 LRS	2 x 1,00	Fe-CuNi	4,5	5,2
047213...*	Th 20 -4 LRS	4 x 0,22	Fe-CuNi	3,5	2,9
047214...*	Th 50 -4 LRS	4 x 0,50	Fe-CuNi	4,2	5,1
047215...*	Th 100-4 LRS	4 x 1,00	Fe-CuNi	5,4	7,5
047210...*	Th 20 LRS	2 x 0,22	NiCr-Ni	3,1	1,9
047211...*	Th 50 LRS	2 x 0,50	NiCr-Ni	3,7	3,9
047212...*	Th 100 LRS	2 x 1,00	NiCr-Ni	4,5	5,2
047213...*	Th 20 -4 LRS	4 x 0,22	NiCr-Ni	3,5	2,9
047214...*	Th 50 -4 LRS	4 x 0,50	NiCr-Ni	4,2	5,1
047215...*	Th 100-4 LRS	4 x 1,00	NiCr-Ni	5,4	7,5

FEP insulated cables

A 18 L · A 18-022 L
A 19 L · A 19-022 L with overall copper screen

RoHS

A 18 L · A 18-022 L

A 19 L · A 19-022 L

Construction:

Insulation:	FEP
Stranding:	2 cores together
Wrapping:	**A 18 L, A 18-022 L:** PETP foil
Screen:	**A 19 L, A 19-022 L:** tinned copper braiding
Sheath:	FEP
Shape:	round
Leiteraufbau:	Litze
Conductor construction:	strand

Technical data:

Min. bending radius:	12 x d
Radiation resistance:	1 x 10^7 cJ/kg
Temperature range of insulation:	fixed laying: -90/+180 °C flexible application: -55/+180 °C
Insulation resistance:	> 1MΩ x km
Fire performance:	no flame propagation acc. to IEC 60332 + EN 60332 Cat. C resp. D (see page N/20). Flame retardant and self-extinguishing IEC 60332-1-2 + EN 60332-1-2.
Chem. resistance:	very good against fats, oils, salts and acids
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Type:	**A 18 L**	**A 18-022 L**	**A 19 L**	**A 19-022 L**
Conductor cross section:	1,5 mm^2	0,22 mm^2	1,5 mm^2	0,22 mm^2
Outer diameter:	approx. 4,8 mm	approx. 2,5 mm	approx. 5,4 mm	approx. 3,0 mm
Weight/100m:	approx. 4,2 kg	approx. 1,0 kg	approx. 5,6 kg	approx. 1,9 kg

DIN IEC 584

for thermocouple	EMK at 100 °C in mV	cable type	**A 18 L** item no.	**A 18-022 L** item no.	**A 19 L** item no.	**A 19-022 L** item no.
Type T	4,28	TX	04338958	04331958	04358958	04351958
Type J	5,27	JX	04338952	04331952	04358952	04351952
Type K	4,10	KCA	04338995	04331995	04358995	04351995
Type K	4,10	KCB	04338999	04331999	04358999	04351999
Type K	4,10	KX	04338954	04331954	04358954	04351954
Type E	6,32	EX	04338953	04331953	04358953	04351953
Type R/S	0,65	R/SCB	04338997	04331997	04358997	04351997
Type N	2,77	NC	04338991	04331991	04358991	04351991

We also manufacture compensating and extension cables colour coded to DIN VDE 43714 – 06/79 and the basic values laid down in DIN VDE 43710 which was withdrawn in April 1994.

DIN 43710 / 43714 (not valid for type B)

for thermocouple	EMK at 100 °C in mV	cable type	**A 18 L** item no.	**A 18-022 L** item no.	**A 19 L** item no.	**A 19-022 L** item no.
Type L	5,37	LX	04338992	04331992	04358992	04351992
Type K	4,10	KCA	04338994	04331994	04358994	04351994
Type R/S	0,65	R/SCB	04338996	04331996	04358996	04351996
Type U	4,25	UX	04338998	04331998	04358998	04351998
*Type B	0,00	BC-100	04338901	04331901	04358901	04351901
*Type B	0,033	BC-200	04338902	04331902	04358902	04351902

*Not standardized compensating cable for thermocouples type B with application temperatures up to 100°C resp. 200 °C.
C = compensating cables · X = extension cables

Besilen®- insulated cables A 3 Ln · A 4 Ln with steel wire armouring

RoHS

A 3 Ln

A 4 Ln

Construction:

Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 + HD 22.1
Stranding:	2 cores parallel
Sheath:	Besilen® EM9 acc. to DIN VDE 0282 part 1 + HD 22.1
Armouring:	**A 4 Ln:** tinned steel wire armouring with tracer
Shape:	oval

Technical data:

Min. bending radius:	**A 3 Ln:** 10 x d · **A 4 Ln:** 12 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range of insulation:	fixed laying: -40/+180 °C flexible application: -25/+180 °C short-time use: +250 °C
Insulation resistance:	> 1MΩ x km
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	in compliance with IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Type:	**A 3 Ln**	**A 4 Ln**
Conductor cross section:	1,5 mm^2	1,5 mm^2
Conductor construction:	48 x 0,20 mm ø	48 x 0,20 mm ø
Outer dimension:	approx. 4,3 x 7,0 mm	approx. 5,1 x 7,8 mm
Weight/100m:	approx. 6,0 kg	approx. 8,6 kg

DIN IEC 584

for thermocouple	EMF at 100 °C in mV	cable type	**A 3 Ln** item no.	**A 4 Ln** item no.
Type T	4,28	TX	04138958	04168958
Type J	5,27	JX	04138952	04168952
Type K	4,10	KCA	04138995	04168995
Type K	4,10	KCB	04138999	04168999
Type K	4,10	KX	04138954	04168954
Type E	6,32	EX	04138953	04168953
Type R/S	0,65	R/SCB	04138997	04168997
Type N	2,77	NC	04138991	04168991

We also manufacture compensating and extension cables colour coded to DIN VDE 43714 – 06/79 and the basic values laid down in DIN VDE 43710 which was withdrawn in April 1994 .

DIN 43710 / 43714 (not valid for *type B)

for thermocouple	EMF at 100 °C in mV	cable type	**A 3 Ln** item no.	**A 4 Ln** item no.
Type L	5,37	LX	04138992	04168992
Type K	4,10	KCA	04138994	04168994
Type R/S	0,65	R/SCB	04138996	04168996
Type U	4,25	UX	04138998	04168998
*Type B	0,00	BC-100	04138901	04168901
*Type B	0,033	BC-200	04138902	04168902

*Not standardized compensating cable for thermocouples type B with application temperatures up to 100°C resp. 200 °C.
C = compensating cables · X = extension cables

Besilen®- insulated cables

A 11 Lr · A 11-4 Lr · A 11 Dr
with glass fibre braiding and steel wire armouring

RoHS

A 11 Lr · A 11-4 Lr

A 11 Dr

Construction:

Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 + HD 22.1
Stranding:	2 or 4 cores together
Braiding:	glass fibre with tracer
Armouring:	galvanized steel wire armouring with tracer
Shape:	round

Technical data:

Min. bending radius:	**A 11 Lr, A11-4 Lr:** 10 x d **A 11 Dr:** 12 x d
Temperature range of insulation:	fixed laying: -40/+180 °C flexible application: -25/+180 °C short-time use: +250 °C
Insulation resistance:	> 1MΩ x km
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	in compliance with IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Type:	**A 11 Lr**	**A 11-4 Lr**	**A 11 Dr**
Conductor cross section:	1,5 mm²	1,5 mm²	1,5 mm²
Conductor construction:	48 x 0,20 mm ø	48 x 0,20 mm ø	1 x 1,38 mm ø
Outer diameter:	approx. 6,7 mm	approx. 7,8 mm	approx. 6,5 mm
Weight/100m:	approx. 8,3 kg	approx. 11,7 kg	approx. 8,3 kg

DIN IEC 584

for thermocouple	EMF at 100 °C in mV	cable type	**A 11 Lr** item no.	**A 11- 4 Lr** item no.	**A 11 Dr** item no.
Type T	4,28	TX	04218958	04210458	04238988
Type J	5,27	JX	04218952	04210452	04238982
Type K	4,10	KCA	04218995	04210495	04238915
Type K	4,10	KCB	04218999	04210499	04238919
Type K	4,10	KX	04218954	04210454	04238984
Type E	6,32	EX	04218953	04210453	04238983
Type R/S	0,65	R/SCB	04218997	04210497	04238917
Type N	2,77	NC	04218991	04210491	04238911

We also manufacture compensating and extension cables colour coded to DIN VDE 43714 – 06/79 and the basic values laid down in DIN VDE 43710 which was withdrawn in April 1994 .

DIN 43710 / 43714 (not valid for *type B)

for thermocouple	EMF at 100 °C in mV	cable type	**A 11 Lr** item no.	**A 11- 4 Lr** item no.	**A 11 Dr** item no.
Type L	5,37	LX	04218992	04210492	04238912
Type K	4,10	KCA	04218994	04210494	04238914
Type R/S	0,65	R/SCB	04218996	04210496	04238916
Type U	4,25	UX	04218998	04210498	04238918
*Type B	0,00	BC-100	04218901	04210401	04238921
*Type B	0,033	BC-200	04218902	04210402	04238922

*Not standardized compensating cable for thermocouples type B with application temperatures up to 100°C resp. 200 °C.
C = compensating cables · X = extension cables

S 90 Continuously flexible PUR control cable with numbered cores

RoHS

Marking for S 90 07780715:
SAB BRÖCKSKES · D-VIERSEN · S 90 7 x 1,5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 6
Insulation:	PVC, TI2 acc. to DIN VDE 0281 part 1 + HD 21.1
Colour code:	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding:	specially adjusted layering with non-woven tape over each layer
Wrapping:	non-woven tape
Sheath material:	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface
Sheath colour:	grey (RAL 7000)

Outstanding features:

- **oil resistant**
- **improved abrasion resistance**
- **high tear resistance**
- **good chemical resistance**
- **increased efficiency**

Technical data:

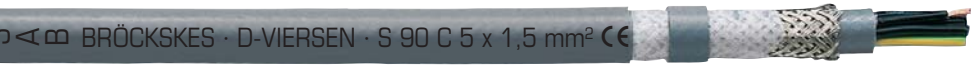
Nominal voltage:	Uo/U 300/500 V
Testing voltage U:	3000 V acc. to DIN VDE 0281 part 2 + HD 21.2
Min. bending radius *continuously flexible:*	7,5 x d
Radiation resistance:	5 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:*	-40/+70 °C +5/+70 °C
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
Chem. resistance:	good against acids, alkalines, solvents, hydraulic liquids etc.
Flexibility:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07780205	2 x 0,50	0,16	5,3	9,6	32
07780305	3 x 0,50	0,16	5,6	14,4	40
07780405	4 x 0,50	0,16	6,0	19,2	48
07780505	5 x 0,50	0,16	6,5	24,0	58
07780705	7 x 0,50	0,16	7,6	33,6	81
07781205	12 x 0,50	0,16	9,2	57,6	115
07781805	18 x 0,50	0,16	11,1	86,4	175
07782505	25 x 0,50	0,16	13,2	120,0	230
07783605	36 x 0,50	0,16	14,7	172,8	319
07785005	50 x 0,50	0,16	18,0	240,0	452
07786505	65 x 0,50	0,16	20,2	312,0	583
07780207	2 x 0,75	0,16	5,8	14,4	40
07780307	3 x 0,75	0,16	6,1	21,6	51
07780407	4 x 0,75	0,16	6,6	28,8	61
07780507	5 x 0,75	0,16	7,2	36,0	76
07780707	7 x 0,75	0,16	8,5	50,4	106
07781207	12 x 0,75	0,16	10,6	86,4	160
07781807	18 x 0,75	0,16	12,4	129,6	233
07782507	25 x 0,75	0,16	14,7	180,0	305
07783607	36 x 0,75	0,16	16,9	259,2	441
07785007	50 x 0,75	0,16	20,1	360,0	602
07786507	65 x 0,75	0,16	22,6	468,0	778
07780210	2 x 1,00	0,16	6,0	19,2	46
07780310	3 x 1,00	0,16	6,3	28,8	59
07780410	4 x 1,00	0,16	6,9	38,4	73
07780510	5 x 1,00	0,16	7,5	48,0	90
07780710	7 x 1,00	0,16	8,8	67,2	126
07781210	12 x 1,00	0,16	11,0	115,2	191
07781810	18 x 1,00	0,16	12,8	172,8	275
07782510	25 x 1,00	0,16	15,7	240,0	382
07783610	36 x 1,00	0,16	18,0	345,6	547
07785010	50 x 1,00	0,16	21,0	480,0	732
07786510	65 x 1,00	0,16	23,7	624,0	963
07780215	2 x 1,50	0,16	6,6	28,8	58
07780315	3 x 1,50	0,16	7,0	43,2	78
07780415	4 x 1,50	0,16	7,6	57,6	97
07780515	5 x 1,50	0,16	8,3	72,0	120
07780715	7 x 1,50	0,16	10,2	100,8	175

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07781215	12 x 1,50	0,16	12,3	172,8	259
07781815	18 x 1,50	0,16	14,4	259,2	380
07782515	25 x 1,50	0,16	18,0	360,0	533
07783615	36 x 1,50	0,16	20,1	518,4	746
07785015	50 x 1,50	0,16	23,9	720,0	1021
07786515	65 x 1,50	0,16	26,8	936,0	1321
07780225	2 x 2,50	0,16	8,4	48,0	93
07780325	3 x 2,50	0,16	8,9	72,0	125
07780425	4 x 2,50	0,16	10,1	96,0	163
07780525	5 x 2,50	0,16	11,1	120,0	201
07780725	7 x 2,50	0,16	13,2	168,0	285
07781225	12 x 2,50	0,16	16,4	288,0	431
07781825	18 x 2,50	0,16	19,7	432,0	650
07782525	25 x 2,50	0,16	23,9	600,0	879
07783625	36 x 2,50	0,16	27,2	864,0	1255
07780240	2 x 4,00	0,16	10,2	76,8	145
07780340	3 x 4,00	0,16	10,8	115,2	190
07780440	4 x 4,00	0,16	11,6	153,6	238
07780540	5 x 4,00	0,16	12,9	192,0	305
07780740	7 x 4,00	0,16	15,2	268,8	426
07781240	12 x 4,00	0,16	18,9	460,8	657
07780260	2 x 6,00	0,21	12,5	115,2	218
07780360	3 x 6,00	0,21	13,2	172,8	286
07780460	4 x 6,00	0,21	14,4	230,4	364
07780560	5 x 6,00	0,21	15,9	288,0	461
07780760	7 x 6,00	0,21	18,7	403,2	642
07780361	3 x 10,0	0,21	15,9	288,0	416
07780461	4 x 10,0	0,21	17,3	384,0	570
07780561	5 x 10,0	0,21	19,1	480,0	724
07780362	3 x 16,0	0,21	18,6	460,8	664
07780462	4 x 16,0	0,21	20,3	614,4	849
07780562	5 x 16,0	0,21	22,4	768,0	1081
07780463	4 x 25,0	0,21	24,1	960,0	1247
07780563	5 x 25,0	0,21	26,7	1200,0	1601
07780464	4 x 35,0	0,21	27,5	1344,0	1665
07780564	5 x 35,0	0,21	30,4	1680,0	2140
07780465	4 x 50,0	0,30	32,5	1920,0	2354
07780565	5 x 50,0	0,30	36,5	2400,0	3066

Other dimensions and colours are possible on request.

S 90 C Continuously flexible PUR control cable with numbered cores and overall copper screen



RoHS

Marking for S 90 C 07880515:
SAB BRÖCKSKES · D-VIERSEN · S 90 C 5 x 1,5 mm²

Construction:

Conductor:	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 6
Insulation:	PVC, TI2 acc. to DIN VDE 0281 part 1 + HD 21.1
Colour code:	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding:	specially adjusted layering with non-woven tape over each layer
Inner sheath:	PVC, TM2 acc. to DIN VDE 0281 part 1 + HD 21.1
Screen:	tinned copper braiding
Wrapping:	non-woven tape
Sheath material:	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface
Sheath colour:	grey (RAL 7000)

Outstanding features:

- **very good EMC characteristics**
- **improved abrasion resistance**
- **high tear resistance**
- **good chemical resistance**
- **increased efficiency**

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage U:	3000 V acc. to DIN VDE 0281 part 2 + HD 21.2 core/screen 2000 V
Min. bending radius *continuously flexible:*	7,5 x d
Radiation resistance:	5 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:*	 -40/+70 °C +5/+70 °C
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
Chem. resistance:	good against acids, alkalines, solvents, hydraulic liquids etc..
Flexibility:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07880205	2 x 0,50	0,16	7,6	41,5	85
07880305	3 x 0,50	0,16	7,9	46,8	91
07880405	4 x 0,50	0,16	8,3	56,9	103
07880505	5 x 0,50	0,16	8,9	62,4	117
07880705	7 x 0,50	0,16	10,3	83,6	157
07881205	12 x 0,50	0,16	12,1	114,0	207
07881805	18 x 0,50	0,16	13,6	154,4	274
07882505	25 x 0,50	0,16	16,3	222,8	273
07883605	36 x 0,50	0,16	18,4	300,3	507
07884405	44 x 0,50	0,16	20,2	344,6	583
07885205	52 x 0,50	0,16	20,9	385,5	650
07886505	65 x 0,50	0,16	23,5	466,4	805
07880207	2 x 0,75	0,16	8,1	51,4	101
07880307	3 x 0,75	0,16	8,4	59,4	108
07880407	4 x 0,75	0,16	8,9	67,2	120
07880507	5 x 0,75	0,16	9,5	77,3	138
07880707	7 x 0,75	0,16	11,2	101,5	188
07881207	12 x 0,75	0,16	13,1	145,0	251
07881807	18 x 0,75	0,16	14,9	200,1	340
07882507	25 x 0,75	0,16	18,4	294,8	486
07883607	36 x 0,75	0,16	20,2	392,6	632
07884407	44 x 0,75	0,16	22,2	457,3	731
07885207	52 x 0,75	0,16	23,4	528,4	845
07886507	65 x 0,75	0,16	26,1	632,6	1032
07880210	2 x 1,00	0,16	8,1	56,9	108
07880310	3 x 1,00	0,16	8,6	66,9	118
07880410	4 x 1,00	0,16	9,2	79,2	135
07880510	5 x 1,00	0,16	10,2	97,9	167
07880710	7 x 1,00	0,16	11,5	118,7	208
07881210	12 x 1,00	0,16	13,5	183,0	291
07881810	18 x 1,00	0,16	15,8	244,3	401
07882510	25 x 1,00	0,16	19,0	356,5	556
07883610	36 x 1,00	0,16	20,9	481,5	731
07884410	44 x 1,00	0,16	23,4	565,8	868
07885210	52 x 1,00	0,16	24,5	657,4	998
07886510	65 x 1,00	0,16	26,4	807,5	1216
07880215	2 x 1,50	0,16	8,9	67,2	129

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07880315	3 x 1,50	0,16	9,3	84,2	144
07880415	4 x 1,50	0,16	10,3	107,6	177
07880515	5 x 1,50	0,16	11,0	122,8	203
07880715	7 x 1,50	0,16	12,7	158,5	267
07881215	12 x 1,50	0,16	14,8	243,1	368
07881815	18 x 1,50	0,16	17,9	365,7	548
07882515	25 x 1,50	0,16	20,9	495,9	719
07883615	36 x 1,50	0,16	23,4	672,4	976
07884415	44 x 1,50	0,16	26,0	827,6	1167
07885215	52 x 1,50	0,16	27,0	947,6	1323
07886515	65 x 1,50	0,16	30,5	1133,7	1637
07880225	2 x 2,50	0,16	11,1	99,0	199
07880325	3 x 2,50	0,16	11,6	127,4	223
07880425	4 x 2,50	0,16	12,6	153,5	261
07880525	5 x 2,50	0,16	13,6	188,0	309
07880725	7 x 2,50	0,16	16,3	270,8	437
07881225	12 x 2,50	0,16	20,1	419,8	640
07881825	18 x 2,50	0,16	22,6	573,9	852
07882525	25 x 2,50	0,16	27,0	783,5	1141
07883625	36 x 2,50	0,16	30,5	1061,7	1556
07880240	2 x 4,00	0,16	12,7	133,7	242
07880340	3 x 4,00	0,16	13,3	173,3	289
07880440	4 x 4,00	0,16	14,2	221,9	345
07880540	5 x 4,00	0,16	15,4	262,7	428
07880740	7 x 4,00	0,16	18,5	383,8	613
07880260	2 x 6,00	0,21	15,6	184,3	340
07880360	3 x 6,00	0,21	15,7	243,3	408
07880460	4 x 6,00	0,21	17,1	334,4	506
07880560	5 x 6,00	0,21	18,8	403,9	643
07880760	7 x 6,00	0,21	21,6	541,5	850
07880461	4 x 10,0	0,21	20,2	516,1	756
07880561	5 x 10,0	0,21	22,0	618,3	948
07880462	4 x 16,0	0,21	23,2	757,1	1065
07880562	5 x 16,0	0,21	25,6	945,3	1376
07880463	4 x 25,0	0,21	27,2	1142,6	1534
07880464	4 x 35,0	0,21	30,8	1543,1	2006

Other dimensions and colours are possible on request.

S 200 Extremely flexible TPE/PUR control cable with numbered cores for continuous movement

RoHS

Marking for S 200 07440161:
SAB BRÖCKSKES · D-VIERSEN · S 200 1 x 10,0 mm² CE

Marking for S 200 07741215:
SAB BRÖCKSKES · D-VIERSEN · S 200 12 x 1,5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 6
Insulation:	TPE 510
Colour code from 2 conductors	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding:	specially adjusted layering with non-woven tape over each layer
Wrapping:	non-woven tape
Sheath material:	PUR, TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface
Sheath colour:	grey (RAL 7000)

Outstanding features:

- **labs uncritical**
  (labs = enamel moisturing interfering substances)
- **flexible at low temperatures**
- **halogen-free**
- **travel > 10 m is possible**
- **high abrasion resistance**
- **min. bending radius**
- **small outer diameter**

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage U:	2000 V acc. to DIN VDE 0281 part 2 + HD 21.2
Min. bending radius *continuously flexible:*	7,5 x d
Radiation resistance:	5 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:*	-50/+90 °C -40/+90 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 + IEC 60754-1
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
Chem. resistance:	good against acids, alkalines, solvents, hydraulic liquids etc..
Continuous flexibility:	very good
Weather resistance:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07740205	2 x 0,50	0,16	4,9	9,6	27
07740305	3 x 0,50	0,16	5,1	14,4	34
07740405	4 x 0,50	0,16	5,5	19,2	41
07740505	5 x 0,50	0,16	6,0	24,0	50
07740705	7 x 0,50	0,16	6,9	33,6	67
07741205	12 x 0,50	0,16	8,3	57,6	98
07741805	18 x 0,50	0,16	9,9	86,4	145
07742505	25 x 0,50	0,16	11,9	120,0	196
07743605	36 x 0,50	0,16	13,7	172,8	280
07745005	50 x 0,50	0,16	16,1	240,0	379
07746505	65 x 0,50	0,16	18,2	312,0	492
07740207	2 x 0,75	0,16	5,4	14,4	35
07740307	3 x 0,75	0,16	5,7	21,6	45
07740407	4 x 0,75	0,16	6,1	28,8	54
07740507	5 x 0,75	0,16	6,7	36,0	66
07740707	7 x 0,75	0,16	7,7	50,4	90
07741207	12 x 0,75	0,16	9,6	86,4	137

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07741807	18 x 0,75	0,16	11,3	129,6	201
07742507	25 x 0,75	0,16	13,9	180,0	277
07743607	36 x 0,75	0,16	15,4	259,2	382
07745007	50 x 0,75	0,16	18,4	360,0	526
07746507	65 x 0,75	0,16	20,8	468,0	683
07740210	2 x 1,00	0,16	5,8	19,2	43
07740310	3 x 1,00	0,16	6,1	28,8	55
07740410	4 x 1,00	0,16	6,6	38,4	67
07740510	5 x 1,00	0,16	7,2	48,0	83
07740710	7 x 1,00	0,16	8,4	67,2	114
07741210	12 x 1,00	0,16	10,4	115,2	173
07741810	18 x 1,00	0,16	12,3	172,8	256
07742510	25 x 1,00	0,16	15,1	240,0	353
07743610	36 x 1,00	0,16	17,0	345,6	497
07745010	50 x 1,00	0,16	20,2	480,0	682
07746510	65 x 1,00	0,16	22,9	624,0	886

Continued on next page

Singlecore on request with green-yellow insulation, black outer sheath and 0,6/1 kV.

S 200 Extremely flexible TPE/PUR control cable with numbered cores for continuous movement

RoHS

Marking for S 200 07440161:
SAB BRÖCKSKES · D-VIERSEN · S 200 1 x 10,0 mm² CE

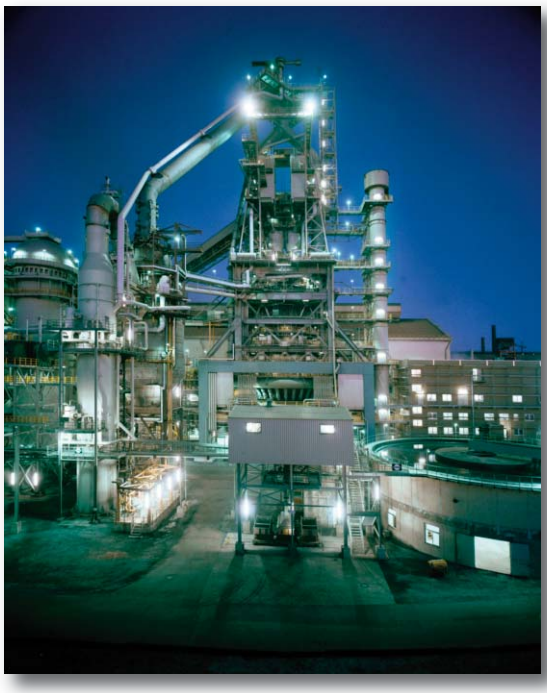
Marking for S 200 07741215:
SAB BRÖCKSKES · D-VIERSEN · S 200 12 x 1,5 mm² CE

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07740115	1 x 1,50	0,16	4,0	14,4	25
07740215	2 x 1,50	0,16	6,4	28,8	55
07740315	3 x 1,50	0,16	6,7	43,2	73
07740415	4 x 1,50	0,16	7,3	57,6	91
07740515	5 x 1,50	0,16	8,0	72,0	112
07740715	7 x 1,50	0,16	9,6	100,8	157
07741215	12 x 1,50	0,16	11,9	172,8	243
07741815	18 x 1,50	0,16	14,2	259,2	364
07742515	25 x 1,50	0,16	17,1	360,0	493
07743615	36 x 1,50	0,16	19,2	518,4	695
07745015	50 x 1,50	0,16	23,0	720,0	955
07746515	65 x 1,50	0,16	26,0	936,0	1241
07740125	1 x 2,50	0,16	4,6	24,0	37
07740225	2 x 2,50	0,16	8,0	48,0	86
07740325	3 x 2,50	0,16	8,5	72,0	116
07740425	4 x 2,50	0,16	9,4	96,0	147
07740525	5 x 2,50	0,16	10,4	120,0	182
07740725	7 x 2,50	0,16	12,4	168,0	255
07741225	12 x 2,50	0,16	15,8	288,0	405
07741825	18 x 2,50	0,16	18,6	432,0	596
07742525	25 x 2,50	0,16	22,7	600,0	814
07743625	36 x 2,50	0,16	25,5	864,0	1146
07740140	1 x 4,00	0,16	5,4	38,4	54
07740240	2 x 4,00	0,16	9,3	76,8	127
07740340	3 x 4,00	0,16	9,8	115,2	169
07740440	4 x 4,00	0,16	10,8	153,6	210
07740540	5 x 4,00	0,16	12,1	192,0	272
07740740	7 x 4,00	0,16	14,6	268,8	389
07740160	1 x 6,00	0,21	6,1	57,6	76

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07740260	2 x 6,00	0,21	10,8	115,2	183
07740360	3 x 6,00	0,21	11,7	172,8	246
07740460	4 x 6,00	0,21	12,8	230,4	310
07740560	5 x 6,00	0,21	14,5	288,0	400
07740760	7 x 6,00	0,21	17,3	403,2	561
07740161	1 x 10,0	0,21	7,1	96,0	117
07740361	3 x 10,0	0,21	14,5	288,0	407
07740461	4 x 10,0	0,21	15,8	384,0	506
07740561	5 x 10,0	0,21	17,2	480,0	627
07740162	1 x 16,0	0,21	8,3	153,6	177
07740362	3 x 16,0	0,21	17,2	460,8	604
07740462	4 x 16,0	0,21	19,0	614,4	780
07740562	5 x 16,0	0,21	21,2	768,0	978
07740163	1 x 25,0	0,21	9,9	240,0	270
07740363	3 x 25,0	0,21	20,6	720,0	920
07740463	4 x 25,0	0,21	22,8	960,0	1182
07740563	5 x 25,0	0,21	25,4	1200,0	1485
07740164	1 x 35,0	0,21	11,5	336,0	362
07740464	4 x 35,0	0,21	26,4	1344,0	1598
07740564	5 x 35,0	0,21	29,4	1680,0	2010
07740165	1 x 50,0	0,31	14,0	480,0	531
07740465	4 x 50,0	0,31	31,8	1920,0	2259
07740166	1 x 70,0	0,31	16,7	672,0	744
07740167	1 x 95,0	0,31	20,5	912,0	1020
07740168	1 x 120,0	0,31	21,5	1152,0	1244
07740169	1 x 150,0	0,31	24,6	1440,0	1584
07740170	1 x 185,0	0,41	26,7	1776,0	1920
07740171	1 x 240,0	0,41	30,1	2304,0	2458

Other dimensions and colours are possible on request.

The S 200 is applied in furnaces in cleaning equipment and is particularly suitable for the application in cable chains, transport and crane systems as well as for conveyor belts.



Picture: Stahl-Zentrum

S 200 C Continuously flexible TPE/PUR single conductor with overall copper screen

RoHS

Marking for S 200 C 07840161:
SAB BRÖCKSKES · D-VIERSEN · S 200 C 1 x 10,0 mm² CE

Marking for S 200 C 07840515:
SAB BRÖCKSKES · D-VIERSEN · S 200 C 5 x 1,5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 6
Insulation:	TPE 510
Colour code from 2 conductors	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding:	specially adjusted layering with einem non-woven tape over each layer
Inner sheath:	SABIX® 322
Wrapping:	non-woven tape
Screen:	tinned copper braiding
Wrapping:	non-woven tape
Sheath material:	PUR, TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface
Sheath colour:	grey (RAL 7000)

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage U:	2000 V acc. to DIN VDE 0281 part 2 + HD 21.2 core/screen 2000 V
Min. bending radius *continuously flexible:*	7,5 x d
Radiation resistance:	5 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:*	-50/+90 °C -40/+90 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 + IEC 60754-1
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
Chem. resistance:	good against acids, alkalines, solvents, hydraulic liquids etc..
Continuous flexibility:	very good
Weather resistance:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **labs uncritical**
  (labs = enamel moisturing interfering substances)
- **flexible at low temperatures**
- **halogen-free**
- **travel > 10 m is possible**
- **good EMC characteristics**
- **high abrasion resistance**
- **min. bending radius**
- **small outer diameter**

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07840205	2 x 0,50	0,16	6,8	38,4	51
07840305	3 x 0,50	0,16	7,0	43,6	58
07840405	4 x 0,50	0,16	7,4	51,1	67
07840505	5 x 0,50	0,16	7,9	61,5	77
07840705	7 x 0,50	0,16	9,0	74,1	101
07841205	12 x 0,50	0,16	10,6	108,2	151
07841805	18 x 0,50	0,16	12,2	143,0	203
07842505	25 x 0,50	0,16	14,8	217,0	299
07843605	36 x 0,50	0,16	16,4	275,3	379
07845205	52 x 0,50	0,16	19,2	379,7	524
07846505	65 x 0,50	0,16	21,7	451,5	647

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07840207	2 x 0,75	0,16	7,3	46,3	59
07840307	3 x 0,75	0,16	7,6	54,1	70
07840407	4 x 0,75	0,16	8,0	64,0	82
07840507	5 x 0,75	0,16	8,8	74,3	98
07840707	7 x 0,75	0,16	9,8	92,3	123
07841207	12 x 0,75	0,16	11,9	142,4	192
07841807	18 x 0,75	0,16	14,2	215,3	294
07842507	25 x 0,75	0,16	16,6	289,7	386
07843607	36 x 0,75	0,16	18,7	387,7	520
07845207	52 x 0,75	0,16	21,9	514,3	722
07846507	65 x 0,75	0,16	24,5	639,8	868

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S 200 C Continuously flexible TPE/PUR single conductor with overall copper screen

RoHS

Marking for S 200 C 07840161:
SAB BRÖCKSKES · D-VIERSEN · S 200 C 1 x 10,0 mm² CE

Marking for S 200 C 07840515:
SAB BRÖCKSKES · D-VIERSEN · S 200 C 5 x 1,5 mm² CE

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07840210	2 x 1,00	0,16	7,7	56,5	68
07840310	3 x 1,00	0,16	8,0	66,4	82
07840410	4 x 1,00	0,16	8,5	77,3	97
07840510	5 x 1,00	0,16	9,3	89,0	114
07840710	7 x 1,00	0,16	10,7	117,9	159
07841210	12 x 1,00	0,16	12,8	174,9	239
07841810	18 x 1,00	0,16	15,2	270,2	353
07842510	25 x 1,00	0,16	18,4	367,5	481
07843610	36 x 1,00	0,16	20,3	478,7	633
07845210	52 x 1,00	0,16	23,8	668,9	884
07846510	65 x 1,00	0,16	26,8	805,7	1081
07840115	1 x 1,50	0,16	4,6	24,8	35
07840215	2 x 1,50	0,16	8,3	66,8	82
07840315	3 x 1,50	0,16	8,8	81,5	104
07840415	4 x 1,50	0,16	9,4	101,2	125
07840515	5 x 1,50	0,16	10,1	122,2	145
07840715	7 x 1,50	0,16	11,9	156,8	206
07841215	12 x 1,50	0,16	14,7	269,7	341
07841815	18 x 1,50	0,16	16,9	369,2	465
07842515	25 x 1,50	0,16	20,4	493,4	633
07843615	36 x 1,50	0,16	23,0	660,3	856
07845215	52 x 1,50	0,16	26,9	931,0	1056
07846515	65 x 1,50	0,16	29,9	1132,8	1450
07840125	1 x 2,50	0,16	5,3	38,0	49
07840225	2 x 2,50	0,16	9,9	98,2	117
07840325	3 x 2,50	0,16	10,6	122,8	159
07840425	4 x 2,50	0,16	11,5	150,1	197
07840525	5 x 2,50	0,16	12,6	179,6	236
07840725	7 x 2,50	0,16	15,0	265,2	335
07841225	12 x 2,50	0,16	18,5	417,1	525
07841825	18 x 2,50	0,16	21,8	571,4	739
07842525	25 x 2,50	0,16	26,0	780,8	1004
07843625	36 x 2,50	0,16	28,7	1058,0	1341
07845225	52 x 2,50	0,16	33,0	1479,3	1817
07840140	1 x 4,00	0,16	6,0	54,4	68

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07840240	2 x 4,00	0,16	11,9	132,8	179
07840340	3 x 4,00	0,16	12,1	172,9	224
07840440	4 x 4,00	0,16	13,7	216,5	287
07840540	5 x 4,00	0,16	15,0	289,2	357
07840740	7 x 4,00	0,16	18,0	396,3	486
07840160	1 x 6,00	0,21	6,6	75,3	90
07840260	2 x 6,00	0,21	13,7	182,6	251
07840360	3 x 6,00	0,21	14,6	258,8	334
07840460	4 x 6,00	0,21	15,9	328,3	414
07840560	5 x 6,00	0,21	17,2	398,4	485
07840760	7 x 6,00	0,21	20,6	537,3	615
07840161	1 x 10,0	0,21	7,7	117,5	135
07840361	3 x 10,0	0,21	17,4	392,9	502
07840461	4 x 10,0	0,21	18,7	507,4	624
07840561	5 x 10,0	0,21	20,5	615,5	731
07840162	1 x 16,0	0,21	9,1	179,9	206
07840362	3 x 16,0	0,21	20,7	598,4	724
07840462	4 x 16,0	0,21	22,5	758,2	915
07840562	5 x 16,0	0,21	24,7	947,1	1101
07840163	1 x 25,0	0,21	10,7	287,7	306
07840363	3 x 25,0	0,21	23,9	898,2	1047
07840463	4 x 25,0	0,21	25,8	1148,0	1312
07840563	5 x 25,0	0,21	29,1	1400,1	1610
07840164	1 x 35,0	0,21	12,5	390,6	408
07840464	4 x 35,0	0,21	30,1	1546,4	1765
07840564	5 x 35,0	0,21	33,1	1915,1	2119
07840165	1 x 50,0	0,31	14,9	577,2	601
07840465	4 x 50,0	0,31	35,5	2165,3	2471
07840166	1 x 70,0	0,31	17,7	783,1	826
07840167	1 x 95,0	0,31	21,5	1051,2	1122
07840168	1 x 120,0	0,31	22,7	1293,1	1356
07840169	1 x 150,0	0,31	26,2	1611,0	1712
07840170	1 x 185,0	0,41	27,9	1952,4	2059
07840171	1 x 240,0	0,41	31,3	2507,0	2617

Other dimensions and colours are possible on request.

Single core on request with green-yellow insulation, black outer sheath and 0,6/1 kV.

+180 °C

S 180 HT / S 180 C HT

Continuously flexible high temperature control cable with numbered cores and Besilen® outer sheath - with or without overall copper screen

RoHS

Marking for S 180 HT 31800440:
SAB BRÖCKSKES · D-VIERSEN · S 180 HT CE

Marking for S 180 C HT 31850440:
SAB BRÖCKSKES · D-VIERSEN · S 180 C HT CE

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 6
Insulation:	FEP
Colour code:	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding:	specially adjusted layering with non-woven tape over each layer
Wrapping:	tape
S 180 C HT Screen:	tinned copper braiding
Sheath material:	special Besilen®
Sheath colour:	grey (similar RAL 7000)

Technical data:

Nominal voltage:	Uo/U 0,6/1 kV
Testing voltage U:	4000 V acc. to EN 50264
Min. bending radius *continuously flexible:*	15 x d
Temperature range *fixed laying:* *flexible application:* *short-time use:*	-25/+180 °C -25/+180 °C +200 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Flexibility:	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **extreme temperature resistance**
- **high notch resistance**
- **very good flexibility**
- **very good EMC characteristics (S 180 C HT)**

S 180 HT

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
31800315	3 x 1,50	0,16	7,7	43,2	94
31800415	4 x 1,50	0,16	8,3	57,6	116
31800515	5 x 1,50	0,16	9,2	72,0	147
31800715	7 x 1,50	0,16	10,6	100,8	200
31800325	3 x 2,50	0,16	9,4	72,0	144
31800425	4 x 2,50	0,16	10,1	96,0	177
31800525	5 x 2,50	0,16	11,5	120,0	228
31800725	7 x 2,50	0,16	13,5	168,0	320
31800440	4 x 4,00	0,16	12,1	153,6	265
31800540	5 x 4,00	0,16	13,4	192,0	333
31800740	7 x 4,00	0,16	15,9	268,8	469
31800460	4 x 6,00	0,21	14,6	230,4	408
31800560	5 x 6,00	0,21	16,4	288,0	495
31800760	7 x 6,00	0,21	19,4	403,2	697
31800461	4 x 10,0	0,21	17,0	384,0	609
31800561	5 x 10,0	0,21	18,9	480,0	745
31800462	4 x 16,0	0,21	20,7	614,4	912
31800562	5 x 16,0	0,21	23,2	768,0	1146
31800463	4 x 25,0	0,21	24,0	960,0	1312
31800464	4 x 35,0	0,21	28,2	1344,0	1800

Other dimensions and colours are possible on request.

S 180 C HT

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
31850315	3 x 1,50	0,15	8,1	63,8	110
31850415	4 x 1,50	0,15	8,9	80,4	137
31850515	5 x 1,50	0,15	9,6	98,3	166
31850715	7 x 1,50	0,15	11,4	147,6	240
31850325	3 x 2,50	0,15	9,8	98,5	163
31850425	4 x 2,50	0,15	11,1	142,1	221
31850525	5 x 2,50	0,15	12,1	171,9	268
31850725	7 x 2,50	0,15	14,0	229,2	364
31850440	4 x 4,00	0,15	12,7	206,4	304
31850540	5 x 4,00	0,15	14,0	253,2	378
31850740	7 x 4,00	0,15	16,7	368,0	541
31850460	4 x 6,00	0,20	15,2	297,9	457
31850560	5 x 6,00	0,20	17,2	388,0	568
31850760	7 x 6,00	0,20	20,2	519,5	780
31850461	4 x 10,0	0,20	17,8	485,6	683
31850561	5 x 10,0	0,20	19,7	594,9	828
31850462	4 x 16,0	0,20	21,5	747,7	1007
31850562	5 x 16,0	0,20	24,0	922,4	1256
31850463	4 x 25,0	0,20	25,2	1117,5	1444
31850464	4 x 35,0	0,20	29,0	1532,5	1934

Other dimensions and colours are possible on request.

Application:

e.g. for use in cable tracks with extremely ambient temperature

S GE 696 HT CAT 6 Gigabit Ethernet cable, high temperature, continuously flexible

RoHS

Marking for S GE 696 HT:
SAB BRÖCKSKES · D-VIERSEN · S GE 696 HT CAT6 Gigabit Ethernet Cable 4 x 2 x 26 AWG CE

Construction:	S GE 696 HT
Dimension:	4 x 2 x 26 AWG
Conductor:	tinned copper strands, extra fine wires
Core insulation:	PFA
Colour code:	white cores with consecutive numbers 1 - 4 (+ blue, orange, green, brown)
Stranding:	pairs wrapped with alu foil
Wrapping:	PTFE foil
Screen:	alu foil + tinned copper braiding
Outer sheath:	special Besilen®
Sheath colour:	green (similar RAL 6017)

Technical data:	S GE 696 HT
Item number:	3696-2604
Peak operating voltage VDE:	max. 350 V
Testing voltage:	core/core 1500 V, core/screen 1200 V
Temperature range VDE fixed laying: flexible application: short time use:	 - 40°C / + 180°C - 25°C / + 180°C + 250°C
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d 15 x d
Characteristic impedance (1-100 MHz):	100Ω ± 10Ω, accomplishes the electrical and transmission requirements with high frequency with reference to EN 50288-5-2
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	type	no. of pairs	cross section AWG	max. core-ø mm	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to EN 50288-5-2 max.Ω/km
3696-2604	S GE 696 HT	4	26	1,50	9,4	40,4	105	145

Other dimensions and colours are possible on request.

Application:
for use in cable tracks with extremely ambient temperature

S PB 634 HT Profibus-DP cable for the high temperature range, continuously flexible

S PB 634 HT Hybrid combined Profibus-DP cable with supply cores for the high temperature, continuously flexible

RoHS

Marking for S PB 634 HT 36341000:
SAB BRÖCKSKES · D-VIERSEN · S PB 634 HT 2 x 0,34 mm²

Construction:	S PB 634 HT	S PB 634 HT Hybrid
Dimension:	2 x 0,34 mm²	2 x 0,34 mm² + supply cores
Conductor:	tinned copper strands, extra fine wires	
Core insulation:	PFA	
Colour code:	red, green	0,34 mm² red, green supply cores acc. to HD 308
Stranding:	pairs 0,34 mm²	
Wrapping:	PTFE foil	
Inner sheath:	special Besilen®	
Screen 0,34 mm²:	tinned copper braiding	
Inner sheath:	---	FEP
Stranding:	---	element 0,34 mm² together with supply cores
Wrapping:	---	PTFE foil
Outer sheath:	special Besilen®	
Sheath colour:	blue lilac (similar RAL 4005)	

Technical data:	S PB 634 HT	S PB 634 HT Hybrid
Item number:	3634-1000	siehe Tabelle unten
Nominal voltage Uo/U:	---	300/500 V (supply cores)
Peak operating voltage:	max. 350 V (0,34 mm²)	
Testing voltage:	core/core 0,34 mm²: 1500 V / supply cores: 2000 V core/screen 0,34 mm²: 1200 V / supply cores: 2000 V	
Temperature range fixed laying: flexible application: short time use:	 - 40°C / + 180°C - 25°C / + 180°C + 250°C	
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d 15 x d	
Characteristic impedance PB element (3-20 MHz):	150Ω ± 10%	
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2	
Flexibility:	very good	
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43	

Outstanding features:

- extreme temperature resistance
- high notch resistance
- very good flexibility

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km
3634-1000	S BP 634 HT	2 x 0,34 mm²	7,6	27,0	74
3634-1307	S BP 634 HT Hybrid	2 x 0,34 mm² + 3 x 0,75 mm²	10,2	48,6	130
3634-1407	S BP 634 HT Hybrid	2 x 0,34 mm² + 4 x 0,75 mm²	10,2	55,8	139
3634-1510	S BP 634 HT Hybrid	2 x 0,34 mm² + 5 x 1,00 mm²	10,5	75,0	170
3634-1315	S BP 634 HT Hybrid	2 x 0,34 mm² + 3 x 1,50 mm²	10,8	70,2	158
3634-1415	S BP 634 HT Hybrid	2 x 0,34 mm² + 4 x 1,50 mm²	10,8	84,6	175

Other dimensions and colours are possible on request.

450/750 V

(N)7YAbl · (N)7YAvz · (N)7YAvs · (N)7YAvn

ETFE insulated wires with extended temperature range

RoHS

Construction:

Conductor:	bare, tinned, silver-plated or nickel-plated copper wire acc. to IEC 60228, EN 60228, VDE 0295 class 1 < 0.50 mm² acc. to DIN VDE 0250 part 106
Insulation:	ETFE, 7YI1 acc. to VDE 0207 part 6
Colour code:	coloured

Outstanding features:

- **high resistance against chemicals and solvents**
- **low and high temperature resistance**
- **good electrical insulating characteristics with low, nearly frequency-independent dielectric characteristics**

Technical data:

Nominal voltage Uo/U:	450/750 V
Testing voltage:	2500 V
Min. bending radius:	7.5 x d
Radiation resistance:	2 x 10^8 cJ/kg
Temperature range	
fixed laying:	-55/+135 °C
flexible application:	-55/+135 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Chem. resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

ETFE (7Y) bare copper **item no.**	ETFE (7Y) tinned copper **item no.**	dim. mm²	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3374 .. 25	3375 .. 25	0,25	0,57	1,42	2,4	4,6
3374 .. 50	3375 .. 50	0,50	0,80	1,65	4,8	7,4
3374 .. 75	3375 .. 75	0,75	0,98	1,83	7,2	10,0
3374 .. 80	3375 .. 80	1,00	1,13	1,98	9,6	13,0
3374 .. 82	3375 .. 82	1,50	1,38	2,43	14,4	19,0
3374 .. 84	3375 .. 84	2,50	1,78	3,03	24,0	31,0
3374 .. 86	3375 .. 86	4,00	2,26	3,51	38,4	47,0
3374 .. 87	3375 .. 87	6,00	2,76	4,01	57,6	67,0

ETFE (7Y) silver-plated copper **item no.**	ETFE (7Y) nickel-plated copper **item no.**	dim. mm²	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3376 .. 25	3377 .. 25	0,25	0,57	1,42	2,4	4,6
3376 .. 50	3377 .. 50	0,50	0,80	1,65	4,8	7,4
3376 .. 75	3377 .. 75	0,75	0,98	1,83	7,2	10,0
3376 .. 80	3377 .. 80	1,00	1,13	1,98	9,6	13,0
3376 .. 82	3377 .. 82	1,50	1,38	2,43	14,4	19,0
3376 .. 84	3377 .. 84	2,50	1,78	3,03	24,0	31,0
3376 .. 86	3377 .. 86	4,00	2,26	3,51	38,4	47,0
3376 .. 87	3377 .. 87	6,00	2,76	4,01	57,6	67,0

Other dimensions and colours are possible on request.

ETFE, FEP, PFA colour code, figures 5 and 6 of item no.:

01 = black	05 = yellow	09 = orange
02 = blue	06 = green	11 = red
03 = brown	07 = violet	15 = nature
04 = grey	08 = white	

Picture: www.pixelio.de

+180 °C

TD 801 F FEP data cable with extended temperature range

RoHS

Construction:

Conductor:	tinned copper strands acc. to ASTM B 286
Insulation:	FEP, 6YI1 acc. to VDE 0207 part 6
Colour code:	with reference to DIN VDE 47100
Stranding:	in layers
Sheath material:	FEP, 6YM1 acc. to VDE 0207 part 6
Sheath colour:	white (RAL 1013)

Outstanding features:

- **excellent resistance against chemicals and solvents**
- **excellent temperature resistance and flexibility at low temperatures**
- **excellent electrical insulating characteristics with low, nearly frequency-independent dielectric characteristics**

Technical data:

Peak operating voltage:	max. 375 V
Testing voltage:	1500 V
Min. bending radius:	7.5 x d
Radiation resistance:	1 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:* *limited time of use:*	 -90/+180 °C -55/+180 °C +200 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Chem. resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	dimension	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38010228	2 x AWG 28/7	0,127	2,10	1,7	6,4
38010226	2 x AWG 26/7	0,160	2,30	2,7	8,0
38010224	2 x AWG 24/7	0,203	2,65	4,4	10,0
38010222	2 x AWG 22/7	0,254	2,95	6,9	14,0
38010220	2 x AWG 20/7	0,320	3,40	10,8	19,0
38010328	3 x AWG 28/7	0,127	2,20	2,6	8,1
38010326	3 x AWG 26/7	0,160	2,50	4,0	10,0
38010324	3 x AWG 24/7	0,203	2,75	6,6	14,0
38010322	3 x AWG 22/7	0,254	3,10	10,4	18,0
38010320	3 x AWG 20/7	0,320	3,55	16,1	26,0
38010428	4 x AWG 28/7	0,127	2,45	3,5	9,9
38010426	4 x AWG 26/7	0,160	2,70	5,4	13,0
38010424	4 x AWG 24/7	0,203	3,00	8,8	17,0
38010422	4 x AWG 22/7	0,254	3,40	13,8	23,0
38010420	4 x AWG 20/7	0,320	3,90	21,5	33,0
38010528	5 x AWG 28/7	0,127	2,65	4,3	13,0
38010526	5 x AWG 26/7	0,160	2,95	6,7	16,0
38010524	5 x AWG 24/7	0,203	3,35	11,0	22,0

item no.	dimension	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38010522	5 x AWG 22/7	0,254	3,75	17,3	30,0
38010520	5 x AWG 20/7	0,320	4,45	26,9	43,0
38010728	7 x AWG 28/7	0,127	2,90	6,0	15,0
38010726	7 x AWG 26/7	0,160	3,20	9,4	20,0
38010724	7 x AWG 24/7	0,203	3,60	15,5	27,0
38010722	7 x AWG 22/7	0,254	4,15	24,2	39,0
38010720	7 x AWG 20/7	0,320	4,80	37,6	56,0
38011028	10 x AWG 28/7	0,127	3,65	8,6	21,0
38011026	10 x AWG 26/7	0,160	4,15	13,4	29,0
38011024	10 x AWG 24/7	0,203	4,70	22,1	40,0
38011022	10 x AWG 22/7	0,254	5,45	34,6	56,0
38011020	10 x AWG 20/7	0,320	6,25	53,8	80,0
38011228	12 x AWG 28/7	0,127	3,75	10,4	24,0
38011226	12 x AWG 26/7	0,160	4,25	16,1	33,0
38011224	12 x AWG 24/7	0,203	4,85	26,5	46,0
38011222	12 x AWG 22/7	0,254	5,60	41,5	66,0
38011220	12 x AWG 20/7	0,320	6,50	64,5	94,0

Other dimensions and colours are possible on request.

Suitable for the application in coking plants and at furnaces.

+135 °C

TD 832 CE ETFE data cable with extended temperature range and overall copper screen

RoHS

Construction:

Conductor:	tinned copper strands acc. to ASTM B 286
Insulation:	ETFE, 7YI1 acc. to VDE 0207 part 6
Colour code:	with reference to DIN VDE 47100
Stranding:	in layers
Wrapping:	PETP foil
Screen:	tinned copper braiding
Sheath material:	ETFE, 7YM1 acc. to VDE 0207 part 6
Sheath colour:	white (RAL 1013)

Outstanding features:

- **high resistance against chemicals and solvents**
- **low and high temperature resistance**
- **good electrical insulating characteristics with low, nearly frequency-independent dielectric characteristics**

Technical data:

Peak operating voltage:	max. 375 V
Testing voltage:	1500 V
Min. bending radius:	7.5 x d
Radiation resistance:	2 x 10^8 cJ/kg
Temperature range *fixed laying:* *flexible application:* *limited time of use:*	 -90/+135 °C -55/+135 °C +150 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Chem. resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	dimension	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38320228	2 x AWG 28/7	0,127	2,65	10,2	12,0
38320226	2 x AWG 26/7	0,160	2,85	11,2	14,0
38320224	2 x AWG 24/7	0,203	3,15	13,0	16,0
38320222	2 x AWG 22/7	0,254	3,50	17,2	20,0
38320220	2 x AWG 20/7	0,320	3,90	21,1	25,0
38320328	3 x AWG 28/7	0,127	2,80	11,1	14,0
38320326	3 x AWG 26/7	0,160	3,00	12,6	16,0
38320324	3 x AWG 24/7	0,203	3,30	15,2	19,0
38320322	3 x AWG 22/7	0,254	3,65	20,7	25,0
38320320	3 x AWG 20/7	0,320	4,15	28,2	34,0
38320428	4 x AWG 28/7	0,127	2,95	12,0	15,0
38320426	4 x AWG 26/7	0,160	3,20	13,9	18,0
38320424	4 x AWG 24/7	0,203	3,55	19,1	23,0
38320422	4 x AWG 22/7	0,254	3,90	25,9	30,0
38320420	4 x AWG 20/7	0,320	4,55	33,7	41,0
38320528	5 x AWG 28/7	0,127	3,15	12,9	18,0
38320526	5 x AWG 26/7	0,160	3,50	17,0	22,0
38320524	5 x AWG 24/7	0,203	3,85	21,4	28,0

item no.	dimension	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38320522	5 x AWG 22/7	0,254	4,40	29,4	38,0
38320520	5 x AWG 20/7	0,320	4,95	40,9	51,0
38320728	7 x AWG 28/7	0,127	3,45	16,3	21,0
38320726	7 x AWG 26/7	0,160	3,75	19,8	26,0
38320724	7 x AWG 24/7	0,203	4,20	27,6	35,0
38320722	7 x AWG 22/7	0,254	4,70	38,2	46,0
38320720	7 x AWG 20/7	0,320	5,45	53,6	65,0
38321028	10 x AWG 28/7	0,127	4,25	20,8	29,0
38321026	10 x AWG 26/7	0,160	4,70	25,7	35,0
38321024	10 x AWG 24/7	0,203	5,30	38,0	49,0
38321022	10 x AWG 22/7	0,254	5,95	52,2	65,0
38321020	10 x AWG 20/7	0,320	6,80	73,5	89,0
38321228	12 x AWG 28/7	0,127	4,40	22,5	32,0
38321226	12 x AWG 26/7	0,160	4,80	30,1	40,0
38321224	12 x AWG 24/7	0,203	5,50	42,4	55,0
38321222	12 x AWG 22/7	0,254	6,10	59,1	74,0
38321220	12 x AWG 20/7	0,320	7,00	86,1	103,0

Other dimensions and colours are possible on request.

SAB BRÖCKSKES

+250 °C

TD 834 CP PFA data cable with extended temperature range and overall copper screen

RoHS

Construction:

Conductor:	nickel-plated copper strands acc. to ASTM B 286
Insulation:	PFA
Colour code:	with reference to DIN VDE 47100
Stranding:	in layers
Wrapping:	PTFE foil
Screen:	nickel-plated copper braiding
Sheath material:	PFA
Sheath colour:	white (RAL 1013)

Outstanding features:

- **excellent resistance against chemicals and solvents**
- **excellent temperature resistance and flexibility at low temperatures**
- **excellent electrical insulating characteristics with low, nearly frequency-independent dielectric characteristics**

Technical data:

Peak operating voltage:	max. 375 V
Testing voltage:	1500 V
Min. bending radius:	7.5 x d
Radiation resistance:	5 x 10^6 cJ/kg
Temperature range	
fixed laying:	-90/+250 °C
flexible application:	-55/+250 °C
limited time of use:	+260 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Chem. resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	dimension	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38340228	2 x AWG 28/7	0,127	2,65	10,2	14,0
38340226	2 x AWG 26/7	0,160	2,85	11,2	15,0
38340224	2 x AWG 24/7	0,203	3,15	13,0	18,0
38340222	2 x AWG 22/7	0,254	3,50	17,2	23,0
38340220	2 x AWG 20/7	0,320	3,90	21,1	28,0
38340328	3 x AWG 28/7	0,127	2,80	11,1	16,0
38340326	3 x AWG 26/7	0,160	3,00	12,6	18,0
38340324	3 x AWG 24/7	0,203	3,30	15,2	21,0
38340322	3 x AWG 22/7	0,254	3,65	20,7	28,0
38340320	3 x AWG 20/7	0,320	4,15	28,2	38,0
38340428	4 x AWG 28/7	0,127	2,95	12,0	17,0
38340426	4 x AWG 26/7	0,160	3,20	13,9	21,0
38340424	4 x AWG 24/7	0,203	3,55	19,1	26,0
38340422	4 x AWG 22/7	0,254	3,90	25,9	34,0
38340420	4 x AWG 20/7	0,320	4,55	33,7	45,0
38340528	5 x AWG 28/7	0,127	3,15	12,9	20,0
38340526	5 x AWG 26/7	0,160	3,50	17,0	25,0
38340524	5 x AWG 24/7	0,203	3,85	21,4	31,0

item no.	dimension	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38340522	5 x AWG 22/7	0,254	4,40	29,4	42,0
38340520	5 x AWG 20/7	0,320	4,95	40,9	55,0
38340728	7 x AWG 28/7	0,127	3,45	16,3	24,0
38340726	7 x AWG 26/7	0,160	3,75	19,8	29,0
38340724	7 x AWG 24/7	0,203	4,20	27,6	39,0
38340722	7 x AWG 22/7	0,254	4,70	38,2	51,0
38340720	7 x AWG 20/7	0,320	5,45	53,6	71,0
38341028	10 x AWG 28/7	0,127	4,25	20,8	33,0
38341026	10 x AWG 26/7	0,160	4,70	25,7	40,0
38341024	10 x AWG 24/7	0,203	5,30	38,0	55,0
38341022	10 x AWG 22/7	0,254	5,95	52,2	72,0
38341020	10 x AWG 20/7	0,320	6,80	73,5	97,0
38341228	12 x AWG 28/7	0,127	4,40	22,5	36,0
38341226	12 x AWG 26/7	0,160	4,80	30,1	46,0
38341224	12 x AWG 24/7	0,203	5,50	42,4	62,0
38341222	12 x AWG 22/7	0,254	6,10	59,1	81,0
38341220	12 x AWG 20/7	0,320	7,00	86,1	112,0

Other dimensions and colours are possible on request.

+180 °C

TD 845 DS

double shielded FEP connection cable with extended temperature range, coloured cores, overall copper screen and alu foil wrapping

RoHS

AuMarking for TD 845 DS 38450320:
SAB BRÖCKSKES · D-VIERSEN · TD 845 DS 20/7 AWG/3c AWM Style 20229 150°C 300V

Construction:

Conductor:	tinned copper strands acc. to ASTM B 286
Insulation:	FEP, 6YI1 acc. to VDE 0207 part 6
Color code:	with reference to US 4
Stranding:	in layers
Wrapping:	PETP foil
Drain wire:	tinned copper strands acc. to ASTM B 286
Wrapping:	AL/P/AL-foil coated on both sides
Screen:	tinned copper braiding
Slitting cord:	Aramid-thread 1580 dtex under the jacket
Sheath material:	FEP, 6YM1 acc. to VDE 0207 part 6
Sheath color:	brown (RAL 8003)

Technical data:

Voltage UL:	300 V
Peak operating voltage:	max. 900 V
Testing voltage:	core/core 2000 V core/screen 1000 V core/screen 600 V (ST)
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	**DIN VDE:** **UL:** up to +150 °C -90/+180 °C -55/+180 °C
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2 + UL VW1
Oil resistance:	acc. to UL standard 758, at 80 °C after 80 days
Chem. resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **high resistance against chemicals and solvents**
- **low and high temperature resistance**
- **good electrical insulating characteristics with low, nearly frequency-independent dielectric characteristics**

tem no.	dimensions	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38450224	2 x AWG 24/7	0,20	4,4	17,0	34,4
38450222	2 x AWG 22/7	0,25	4,7	20,8	40,0
38450220	2 x AWG 20/7	0,32	5,1	28,4	49,6
38450218	2 x AWG 18/7	0,40	5,7	40,1	64,1
38450216	2 x AWG 16/7	0,29	6,0	51,5	76,7
38450324	3 x AWG 24/7	0,20	4,7	19,3	39,6
38450322	3 x AWG 22/7	0,25	5,0	26,1	47,8
38450320	3 x AWG 20/7	0,32	5,5	35,6	60,3
38450318	3 x AWG 18/7	0,40	6,1	50,7	78,3
38450316	3 x AWG 16/7	0,29	6,5	63,6	93,7
38450424	4 x AWG 24/7	0,20	5,0	23,3	47,2
38450422	4 x AWG 22/7	0,25	5,4	29,6	56,4
38450420	4 x AWG 20/7	0,32	5,9	41,2	71,7
38450418	4 x AWG 18/7	0,40	6,6	61,0	95,0
38450416	4 x AWG 16/7	0,29	7,1	78,8	116,1

item no.	dimensions	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38450524	5 x AWG 24/7	0,20	5,3	25,6	53,3
38450522	5 x AWG 22/7	0,25	5,8	35,0	65,8
38450520	5 x AWG 20/7	0,32	6,4	50,0	85,1
38450518	5 x AWG 18/7	0,40	7,1	71,6	111,8
38450516	5 x AWG 16/7	0,29	7,7	92,8	136,7
38450624	6 x AWG 24/7	0,20	5,7	29,7	61,2
38450622	6 x AWG 22/7	0,25	6,2	40,4	75,6
38450620	6 x AWG 20/7	0,32	6,9	55,6	97,1
38450618	6 x AWG 18/7	0,40	7,7	82,4	129,5
38450616	6 x AWG 16/7	0,29	8,3	106,6	158,3
38450824	8 x AWG 24/7	0,20	6,4	37,6	77,3
38450822	8 x AWG 22/7	0,25	7,1	50,9	96,4
38450820	8 x AWG 20/7	0,32	7,7	70,3	123,5
38450818	8 x AWG 18/7	0,40	8,7	104,5	165,9
38450816	8 x AWG 16/7	0,29	9,4	132,8	202,5

Continued on next page

Suitable for the application in coking plants and at furnaces.

+180 °C

TD 845 DS

double shielded FEP connection cable with extended temperature range, coloured cores, overall copper screen and alu foil wrapping

RoHS

Marking for TD 845 DS 38450320:
SAB BRÖCKSKES · D-VIERSEN · TD 845 DS 20/7 AWG/3c AWM Style 20229 150°C 300V CE

item no.	dimensions	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38451024	10 x AWG 24/7	0,20	6,7	42,1	80,2
38451022	10 x AWG 22/7	0,25	7,3	59,7	101,5
38451020	10 x AWG 20/7	0,32	8,1	82,0	131,7
38451018	10 x AWG 18/7	0,40	9,2	121,5	177,3
38451016	10 x AWG 16/7	0,29	9,9	159,2	220,1
38451224	12 x AWG 24/7	0,20	7,0	48,5	90,4
38451222	12 x AWG 22/7	0,25	7,6	66,8	113,4
38451220	12 x AWG 20/7	0,32	8,5	93,9	148,6
38451218	12 x AWG 18/7	0,40	9,6	141,5	203,4
38451216	12 x AWG 16/7	0,29	10,4	138,0	251,5
38451424	14 x AWG 24/7	0,20	7,3	54,8	101,8
38451422	14 x AWG 22/7	0,25	8,0	73,9	127,3
38451420	14 x AWG 20/7	0,32	9,0	107,0	169,5
38451418	14 x AWG 18/7	0,40	10,1	159,0	230,2
38451416	14 x AWG 16/7	0,29	11,0	225,4	298,4
38451624	16 x AWG 24/7	0,20	7,7	59,5	112,2
38451622	16 x AWG 22/7	0,25	8,4	85,4	143,6
38451620	16 x AWG 20/7	0,32	9,4	117,9	187,6
38451618	16 x AWG 18/7	0,40	10,9	195,0	270,5
38451616	16 x AWG 16/7	0,29	11,8	255,4	337,2
38451824	18 x AWG 24/7	0,20	8,0	64,0	122,1
38451822	18 x AWG 22/7	0,25	8,8	92,0	157,0
38451820	18 x AWG 20/7	0,32	9,9	131,5	209,1
38451818	18 x AWG 18/7	0,40	11,4	212,5	297,4
38451816	18 x AWG 16/7	0,29	12,6	279,4	382,7

item no.	dimensions	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38452024	20 x AWG 24/7	0,20	8,3	68,6	13,2
38452022	20 x AWG 22/7	0,25	9,2	99,0	171,1
38452020	20 x AWG 20/7	0,32	10,3	142,4	228,0
38452018	20 x AWG 18/7	0,40	11,9	236,2	329,0
38452016	20 x AWG 16/7	0,29	13,2	308,0	422,1
38452524	25 x AWG 24/7	0,20	9,0	83,8	152,7
38452522	25 x AWG 22/7	0,25	9,9	119,2	197,1
38452520	25 x AWG 20/7	0,32	11,3	188,1	275,6
38452518	25 x AWG 18/7	0,40	13,2	284,7	394,7
38452516	25 x AWG 16/7	0,29	14,3	373,8	493,6
38453024	30 x AWG 24/7	0,20	9,6	97,7	177,7
38453022	30 x AWG 22/7	0,25	10,8	155,2	241,1
38453020	30 x AWG 20/7	0,32	12,5	221,6	334,6
38453018	30 x AWG 18/7	0,40	14,1	328,5	457,4
38453016	30 x AWG 16/7	0,29	15,4	433,7	576,3
38453624	36 x AWG 24/7	0,20	10,0	111,1	200,7
38453622	36 x AWG 22/7	0,25	11,4	176,1	273,6
38453620	36 x AWG 20/7	0,32	12,9	254,2	379,9
38453618	36 x AWG 18/7	0,40	14,7	386,8	530,0
38453616	36 x AWG 16/7	0,29	16,1	535,9	684,8
38454224	42 x AWG 24/7	0,20	11,3	143,3	241,8
38454222	42 x AWG 22/7	0,25	12,8	203,8	325,9
38454220	42 x AWG 20/7	0,32	14,4	298,1	442,0
38454218	42 x AWG 18/7	0,40	16,6	471,1	628,7
38454216	42 x AWG 16/7	0,29	17,6	620,3	789,4

Other dimensions and colours are possible on request.

Picture: www.pixelio.de

+180 °C

TA 866 F FEP connection cable with extended temperature range

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5 <0,50 mm² with reference DIN VDE 0250 part 106
Insulation:	FEP, 6YI1 acc. to VDE 0207 part 6
Colour code:	up to 5 cores coloured acc to. HD 308. green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	FEP, 6YM1 acc to. VDE 0207 part 6
Sheath colour:	black (RAL 9005)

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	2000 V
Min. bending radius:	7.5 x d
Radiation resistance:	1 x 10^7 cJ/kg
Temperature range	
fixed laying:	-55/+180 °C
flexible application:	-55/+180 °C
Firre performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Chem. resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **excellent resistance against chemicals and solvents**
- **excellent temperature resistance and flexibility at low temperatures**
- **excellent electrical insulating characteristics with low, nearly frequency-independent dielectric characteristics**

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38660205	2 x 0,50	0,21	3,8	9,6	21,0
38660207	2 x 0,75	0,21	4,6	14,4	29,0
38660210	2 x 1,00	0,21	4,8	19,2	34,0
38660215	2 x 1,50	0,26	5,4	28,8	46,0
38660225	2 x 2,50	0,26	6,6	48,0	70,0
38660240	2 x 4,00	0,31	8,1	76,8	107,0
38660260	2 x 6,00	0,31	9,2	115,2	147,0
38660305	3 x 0,50	0,21	4,2	14,4	30,0
38660307	3 x 0,75	0,21	4,9	21,6	40,0
38660310	3 x 1,00	0,21	5,1	28,8	47,0
38660315	3 x 1,50	0,26	5,8	43,2	63,0
38660325	3 x 2,50	0,26	7,0	72,0	97,0
38660340	3 x 4,00	0,31	8,7	115,2	152,0
38660360	3 x 6,00	0,31	9,8	172,8	210,0
38660405	4 x 0,50	0,21	4,6	19,2	38,0
38660407	4 x 0,75	0,21	5,5	28,8	53,0
38660410	4 x 1,00	0,21	5,7	38,4	63,0
38660415	4 x 1,50	0,26	6,4	57,6	80,0
38660425	4 x 2,50	0,26	7,8	96,0	129,0
38660440	4 x 4,00	0,31	9,6	153,6	197,0

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38660460	4 x 6,00	0,31	10,9	230,4	274,0
38660505	5 x 0,50	0,21	5,1	24,0	48,0
38660507	5 x 0,75	0,21	6,0	36,0	67,0
38660510	5 x 1,00	0,21	6,3	48,0	79,0
38660515	5 x 1,50	0,26	7,1	72,0	102,0
38660525	5 x 2,50	0,26	8,7	120,0	163,0
38660540	5 x 4,00	0,31	10,7	192,0	250,0
38660560	5 x 6,00	0,31	12,1	288,0	348,0
38660705	7 x 0,50	0,21	5,7	33,6	63,0
38660707	7 x 0,75	0,21	6,7	50,4	86,0
38660710	7 x 1,00	0,21	7,0	67,2	102,0
38660715	7 x 1,50	0,26	7,8	100,8	135,0
38660725	7 x 2,50	0,26	9,7	168,0	217,0
38660740	7 x 4,00	0,31	12,0	268,8	339,0
38660760	7 x 6,00	0,31	13,6	403,2	473,0
38661205	12 x 0,50	0,21	7,6	57,6	105,0
38661207	12 x 0,75	0,21	9,0	89,4	144,0
38661210	12 x 1,00	0,21	9,4	115,2	172,0
38661215	12 x 1,50	0,26	10,5	172,8	228,0
38661225	12 x 2,50	0,26	13,1	288,0	366,0

Other dimensions and colours are possible on request.

SAB BRÖCKSKES

+400 °C

excellent temperature resistance

Special single conductor

glass fibre insulated strands
with excellent temperature resistance

RoHS

Construction

Conductor:	nickel-plated copper strands
Wrapping:	multiple wrapping with mica tape
Braiding:	glass fibre
Impregnation:	PTFE impregnating lacquer
Identification:	red tracer thread in external screen

Outstanding features:

- **halogen - free**
- **excellent heat resistance**
- **flame resistant**

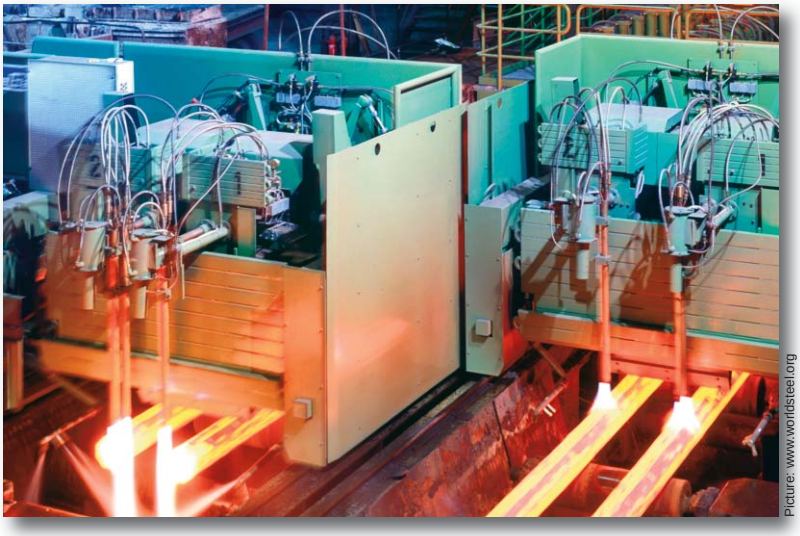
Technical Data:

Nominal voltage Uo/U:	300/500 V
Testing voltage:	2200 V
Min. bending radius:	5 x d
Temperature range *fixed laying:* *flexible application:*	 max. +400°C max. +400°C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
32869035	1 x 185,00	0,40	23,7	1776,0	1893

Other dimensions and colours are possible on request

Single conductor also in different dimensions and other tracer threads on request



Picture: www.worldsteel.org

+400 °C

excellent temperature resistance

Special connection cable

connection cable with excellent temperature resistance

RoHS

Construction:

Conductor:	nickel-plated copper strands
Insulation:	glass fibre
Impregnation:	PU-lacquer
Colour code:	brown, black, grey, green-yellow tracer in external glass fibre braiding
Stranding:	cores together
Braiding:	glass fibre
Armouring:	stainless steel wire armouring (VA)

Technical Data:

Nominal voltage Uo/U:	300/500 V
Testing voltage:	2500 V
Min. bending radius: *fixed laying:* *flexible application:*	 5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	 max. +400°C max. +400°C
Fire performance	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **halogen - free**
- **excellent heat resistance**
- **flame resistant**

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
32869039	4 x 2,50	0,25	11,6	96,0	229
32869040	4 x 4,00	0,30	12,8	153,6	285

Other dimensions and colours are possible on request

Other dimensions on request

+250 °C

Special connection cable with Silicone impregnated fibre-glass braiding

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
Wrapping:	non-woven tape
Insulation:	special silicone
Colour code **450/750 V:** **3,8/6,6 kV:** **8,0/13,8 kV:**	 white grey black
Braiding:	fibre-glass
Impregnation:	special silicon

Technical data:

Nominal voltag Uo/U:	450/750 V 3,8/6,6 kV 8,0/13,8 kV
Testing voltage:	450/750 V = 2500 V 3,8/6,6 kV = 15000 V 8,0/13,8 kV = 30000 V
Min. bending radius:	7.5 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range *fixed laying:* *flexible application:* *short-time use:*	 -40/+180 °C -25/+180 °C +250 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Corrosiveness of conflagration gases:	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 – no development of corrosive conflagration gases
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**
- **good mechanical characteristics**
- **fibre-glass braiding up to +400°C**

Example of use:

- **For the wiring of motors /generators / transformers. Suitable for the potting with impregnating materials for example with epoxy resin. Residues can be easily removed from the silicone impregnated surfaces.**

450/750 V

item no.	nominal cross section mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
	6,00	0,31	5,3	57,6	71
	10,00	0,41	6,9	96,0	125
item group 0123	16,00	0,41	7,9	153,6	179
	25,00	0,41	10,1	240,0	279
	35,00	0,41	11,5	336,0	381
item no. on request	50,00	0,41	13,1	480,0	548
	70,00	0,41	15,4	672,0	722
	95,00	0,51	18,3	912,0	1004
	120,00	0,51	20,2	1152,0	1221

Other dimensions and colours are possible on request.

3,8/6,6 kV

item no.	nominal cross section mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
	16,00	0,41	10,3	153,6	224
item group 0123	25,00	0,41	12,1	240,0	325
	35,00	0,41	13,5	336,0	434
	50,00	0,41	15,1	480,0	596
item no. on request	70,00	0,41	17,4	672,0	798
	95,00	0,51	19,5	912,0	1032
	120,00	0,51	21,4	1152,0	1250

Other dimensions and colours are possible on request.

8,0/13,8 kV

item no.	nominal cross section mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
	10,00	0,41	11,9	96,0	224
item group 0123	16,00	0,41	12,9	153,6	286
	25,00	0,41	14,7	240,0	386
	50,00	0,41	17,3	480,0	663
item no. on request	70,00	0,41	19,6	672,0	870
	95,00	0,51	21,7	912,0	1109

Other dimensions and colours are possible on request.

Festoon Cable

Besilen® insulated connection cable with glass fibre braiding, inner sheath and overall copper screen

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, DIN VDE 0295, class 5
Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1
Colour code:	up to 5 cores coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with consecutive numbers acc. to EN 50334; from 3 cores a green-yellow earth wire
Wrapping:	cores together with mica tape
Braiding:	cores together with glass fibre
Stranding:	in layers
Braiding:	glass fibre
Wrapping:	mica tape
Geflecht:	glass fibre
Inner sheath:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1
Sheath colour:	reddish brown (similar RAL 3016)
Screen:	tinned copper braiding

Technical Data:

Nominal voltage Uo/U:	300/500 V
Testing voltage:	core/core 2000 V core/screen 2000V
Min. bending radius:	15 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range: *fixed laying* *flexible application*	 -40/+180 °C -25/+180 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

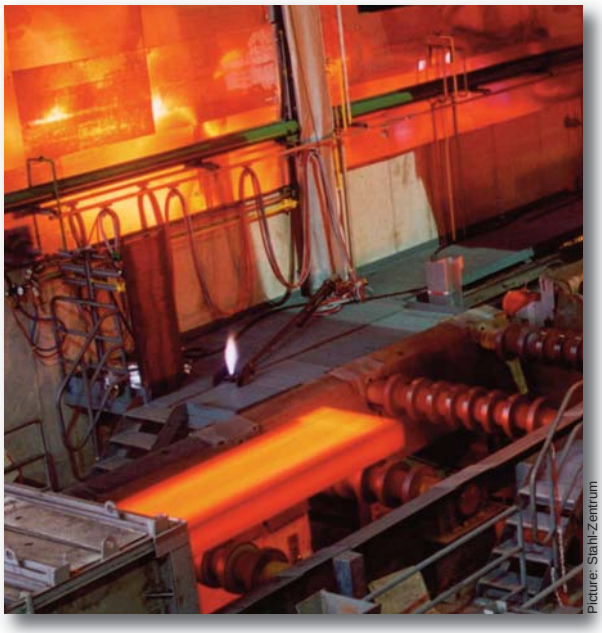
Outstanding features:

- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**
- **good EMC characteristic**

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07479011	4 x 1,00	0,21	13,2	139,5	254
07479017	5 x 1,00	0,21	14,7	159,7	284
07479018	8 x 1,00	0,21	17,0	207,9	413
07479002	3 x 1,50	0,26	13,0	139,2	243
07479012	4 x 1,50	0,26	14,4	163,5	285
07479010	5 x 1,50	0,26	15,8	200,5	337
07479005	8 x 1,50	0,26	19,6	256,0	545
07479006	12 x 1,50	0,26	21,8	349,7	651
07479008	24 x 1,50	0,26	30,0	704,9	1197
07479016	25 x 1,50	0,26	30,0	584,5	1131
07479003	3 x 2,50	0,26	14,7	196,7	302
07479004	4 x 2,50	0,26	15,8	225,8	365
07479015	5 x 2,50	0,26	17,2	251,1	432
07479007	4 x 4,00	0,31	17,3	288,4	443
07479014	4 x 6,00	0,31	15,1	230,4	367

Other dimensions and colours are possible on request

For use at furnaces, slag casting plants as well as transport and crane systems.



Picture: Stahl-Zentrum

Smeltery Cable

Besilen® insulated connection cable with glass fibre braiding and overall copper screen

RoHS

Construction:

Conductor:	tinned copper strands acc. to IEC 60228, EN 60228, DIN VDE 0295, class 5
Insulation:	Besilen® EI2 acc. to DIN VDE 0282 part 1 and HD 22.1
Colour code:	up to 5 cores coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with consecutive numbers acc. to EN 50334; from 3 cores a green-yellow earth wire
Wrapping:	cores together with mica tape
Braiding:	glass fibre
Stranding:	in layers
Braiding:	glass fibre
Wrapping:	mica tape
Braiding:	glass fibre
Screen:	tinned copper braiding

Technical Data:

Nominal voltage Uo/U:	300/500 V
Testing voltage:	core/core 2000 V core/screen 2000V
Min. bending radius:	15 x d
Radiation resistance:	2 x 10^7 cJ/kg
Temperature range: *fixed laying:* *flexible application:*	 -40/+180 °C -25/+180 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Outstanding features:

- **halogen-free**
- **flexible at low temperatures**
- **heat resistant**
- **good EMC characteristic**

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07470210	2 x 1,00	0,21	9,2	79,9	109
07470310	3 x 1,00	0,21	9,7	103,0	144
07470410	4 x 1,00	0,21	10,6	115,1	173
07470510	5 x 1,00	0,21	11,7	110,1	210
07470710	7 x 1,00	0,21	12,7	162,5	256
07470810	8 x 1,00	0,21	14,8	202,1	335
07471210	12 x 1,00	0,21	16,7	246,8	393
07470315	3 x 1,50	0,26	10,8	120,4	173
07470415	4 x 1,50	0,26	11,8	151,8	209
07470515	5 x 1,50	0,26	13,0	175,2	262
07470815	8 x 1,50	0,26	16,6	246,3	415

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07471215	12 x 1,500	0,26	18,8	311,5	498
07471915	19 x 1,50	0,26	22,2	437,4	709
07472415	24 x 1,50	0,26	26,2	540,9	884
07470325	3 x 2,50	0,26	12,1	166,2	213
07470425	4 x 2,50	0,26	13,2	192,4	266
07470525	5 x 2,50	0,26	14,6	230,9	322
07470440	4 x 4,00	0,31	14,7	237,1	350
07470461	4 x 10,00	0,41	19,7	494,9	687
07470462	4 x 16,00	0,41	22,7	800,1	954
07470463	4 x 25,00	0,41	27,2	1347,0	1332
07470464	4 x 35,00	0,41	30,5	1579,6	1814

Other dimensions and colours are possible on request.

Especially appropriate for the application between ladle carriages.

DR 721 P

RoHS

Marking for DR 721 P 07211215:
SAB BRÖCKSKES · D-VIERSEN · DR 721 P 12 G 1,5 mm² CE

Construction:

Conductor	bare copper strandds acc. to IEC 60228 EN 60228, VDE 0295, class 5
Insulation	special polymer
Colour Code	coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with-consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding	specially adjusted layering
Inner sheath	special-PVC
Supporting screen:	high-tech yarn
Outer sheath:	PUR
Sheath Colour:	black (RAL 9005)

Outstanding features:

- **good winding and unwinding strength**
- **small outer diameter**
- **small cable weight**
- **corresponds to low voltage guideline 73/23/EWG CE**

Application:

- **The DR 721 P is used for spring cable and motor cable reels, hoists, transport systems and farm vehicles with medium mechanical stress.**

Technical Data:

Nominal voltage:	0,6/1 kV
Testing voltage:	core/core 4000 V
Current-carrying capacity:	acc. to DIN VDE 0298-4
Min. bending radius:	
for laying and installation (fixed laying):	6 x d
for repeated winding action (flexible):	10 x d
guided on deflection pulleys: (flexible):	12 x d
Temperature range of the cable:	
fixed laying:	-30/+70 °C
flexible:	-30/+70 °C
Temperature resistance of primary insulation:	up to +90 °C
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
Chemical resistance:	very good against acids, alkaline solutions, solvents and hydraulic liquids, etc.
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 und EN 60332-1-2
Weather resistance:	very good
UV-resistance:	very good - enhanced due to black sheath colour
Tensile strength:	acc. to DIN VDE 0298-3 section 7.1
Mechanical characteristics:	the main mechanical characteristics accomplished by the PUR outer sheath are: - high tensile strength - high tear strength - high abrasion resistance - high notch resistance
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

item no.	no. of coresx cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07210415	4 G 1,50	8,8	57,6	124
07210515	5 G 1,50	9,6	72,0	148
07210715	7 G 1,50	11,7	100,8	214
07211215	12 G 1,50	16,4	172,8	357
07211815	18 G 1,50	16,3	259,2	445
07212415	24 G 1,50	19,6	345,6	597
07213615	36 G 1,50	22,1	518,4	829
07210425	4 G 2,50	10,2	96,0	178
07210525	5 G 2,50	11,2	120,0	217
07210725	7 G 2,50	13,6	168,0	310
07211225	12 G 2,50	19,4	288,0	530
07211825	18 G 2,50	19,4	432,0	660
07212425	24 G 2,50	23,6	576,0	891

item no.	no. of coresx cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07213625	36 G 2,50	26,4	864,0	1240
07210440	4 G 4,00	12,4	153,6	270
07210460	4 G 6,00	14,4	230,4	382
07210560	5 G 6,00	15,6	288,0	459
07210470	4 G 10,0	17,9	384,0	614
07210480	4 G 16,0	22,4	614,4	950
07210580	5 G 16,0	25,0	768,0	1172
07210390	3 x 25,0 + 3 G 6,00	24,2	892,8	1224
07210395	3 x 35,0 + 3 G 6,00	28,0	1180,8	1630
07210396	3 x 50,0 + 3 G 10,0	31,8	1728,0	2333

Other dimesnsions and colours are possible on request.
Please mention the required winding length when placing the order.

DR 720 P Highflex

RoHS

Marking for DR 720 P Highflex 07201215:
SAB BRÖCKSKES · D-VIERSEN · DR 720 P Highflex 12 G 1,5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228 EN 60228, VDE 0295, class 5
Insulation:	special polymer
Colour code:	coloured acc. to HD 308 (VDE 0293 part 308); from 6 cores black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
Stranding:	specially adjusted layering around central suspension unit
Inner sheath:	PUR
Supporting screen:	high-tech yarn
Outer sheath:	PUR
Sheath colour:	black (RAL 9005)

Outstanding features:

- **path feed rate up to 120 m/min.**
- **high winding and unwinding strength**
- **small outer diameter**
- **small cable weight**
- **corresponds to low voltage guideline 73/23/EWG CE**

Technical Data:

Nominal voltage:	0,6/1 kV
Testing voltage:	core/core 4000 V
Current-carrying capacity:	acc. to DIN VDE 0298-4
Min. bending radius:	
for laying and installation (fixed laying):	≤ 12 mm 3 x d / >12 mm 4 x d
for repeated winding action (flexible):	6 x d
guided on deflection pulleys (flexible):	7,5 x d
Temperature range	
fixed laying:	-50/+90 °C
flexible application:	-40/+90 °C
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
Chemical resistance:	good against acids, alkalines, solvents, hydraulic liquids, etc.
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2
Weather resistance:	very good
UV-resistance:	very good - enhanced due to black sheath colour
Tensile strength:	acc. to DIN VDE 0298-3 section 7.1
Mechanical characteristics:	the main mechanical characteristics accomplished by the PUR outer sheath are: - high tensile strength - high tear strength - high abrasion resistance - high notch resistance
Absence of harmful substances:	acc. to RoHS directive of the European Union see page 43

Picture: Stahl-Zentrum

To be used in converters, furnaces and cold rolling mills

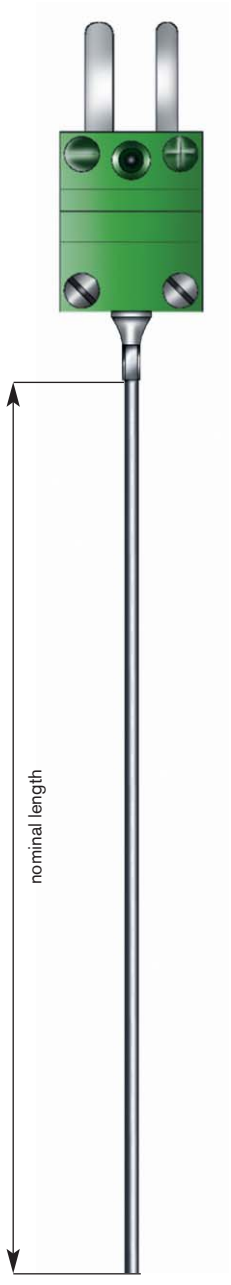
item no.	no. of cores x cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km	min breaking load of suspension unit N
07200415	4 G 1,50	9,0	57,6	119	1340
07200515	5 G 1,50	9,8	72,0	142	1690
07200715	7 G 1,50	11,8	100,8	204	2150
07201215	12 G 1,50	16,6	172,8	359	2600
07201815	18 G 1,50	16,4	259,2	430	2600
07200425	4 G 2,50	10,4	96,0	170	1345
07200525	5 G 2,50	11,6	120,0	213	2100
07201225	12 G 2,50	19,6	288,0	531	2900
07201825	18 G 2,50	19,7	432,0	641	3450
07202425	24 G 2,50	23,8	576,0	879	2700
07203025	30 G 2,50	26,6	720,0	1099	4200
07205025	50 G 2,50	32,4	1200,0	1739	6750

item no.	no. of cores x cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km	min breaking load of suspension unit N
07200440	4 G 4,00	12,4	153,6	255	1690
07201240	12 G 4,00	24,0	460,8	835	5000
07200460	4 G 6,00	14,8	230,4	369	1860
07200470	4 G 10,0	18,2	384,0	592	2300
07200480	4 G 16,0	22,7	614,4	915	2800
07200390	3 x 25,0 + 3 G 6,00	24,3	892,8	1188	3300
07200490	4 G 25,0	26,9	960,0	1351	3300
07200395	3 x 35,0 + 3 G 6,00	28,1	1180,8	1577	3300
07200495	4 G 35,0	31,5	1344,0	1893	3300
07200396	3 x 50,0 + 3 G 10,0	31,9	1728,0	2264	3800

Other dimesnsions and colours are possible on request.
Please mention the required winding length when placing the order.

All purpose mineral insulated thermocouple!

Equally available with batch certificate and identification on request.



THERMOCOUPLE:

❑ 1 x J ❑ 1 x K
❑ 2 x J ❑ 2 x K ❑ other thermocouples: _____

SHEATH - Ø:

❑ 0,5 mm ❑ 1,5 mm ❑ 3,0 mm ❑ 6,0 mm
❑ 1,0 mm ❑ 2,0 mm ❑ 4,5 mm ❑ other sheath-Ø: _____

SHEATH MATERIAL:

❑ 1.4541 ❑ 2.4816 ❑ other sheath materials: _____

CONNECTION ELEMENTS:

❑ without plug
❑ standard plug
❑ miniature plug
❑ standard socket
❑ miniature socket
❑ high temperature socket
❑ high temperature plug

ACCESSORIES:

❑ without ❑ _____

TOLERANCE/ MEASURING TIP:

❑ class 1, form A
❑ class 1, form B
❑ class 2, form A
❑ class 2, form B

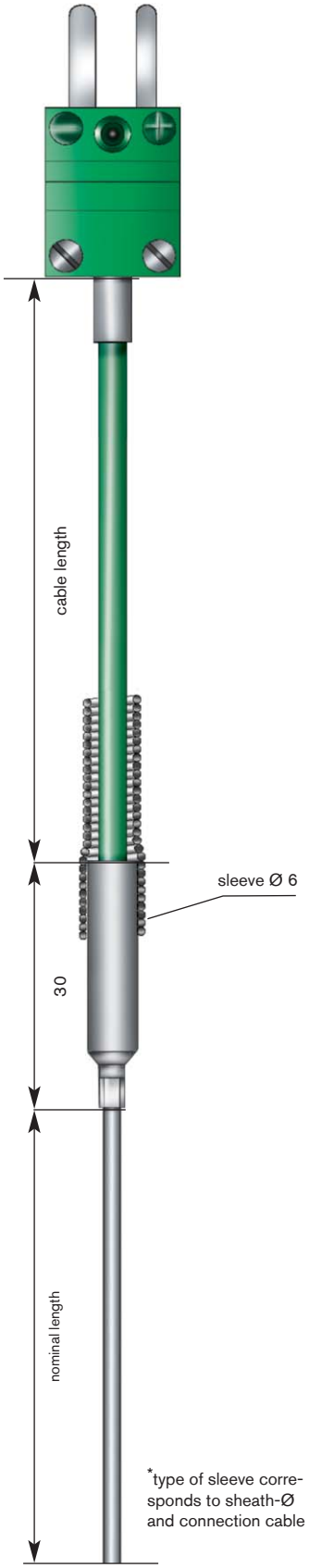
NOMINAL LENGTH:

_____ mm

Our mineral insulated thermocouples MTE 302 and MTE 207 are for example used for temperature control at continuous casting machines

STANDARD MINERAL INSULATED THERMOCOUPLE MTE 207

with FEP insulated cable (strands/FEP/foil/screen/FEP 2 x 0,22 mm²) up to +180°C



All purpose mineral insulated thermocouple!

Equally available with batch certificate and identification on request.

THERMOCOUPLE:

❑ 1 x J ❑ 1 x K
❑ 2 x J ❑ 2 x K, ❑ other thermocouples: _____

SHEATH - Ø:

❑ 0,5 mm ❑ 1,5 mm ❑ 3,0 mm ❑ 6,0 mm
❑ 1,0 mm ❑ 2,0 mm ❑ 4,5 mm ❑ 8,0 mm ❑ other sheath-Ø: _____

SHEATH MATERIAL:

❑ 1.4541 ❑ 2.4816 ❑ other sheath materials: _____

CABLE ENDS:

❑ bare ends ❑ cable lugs M4
❑ end sleeves ❑ miniature plug
❑ other cable ends: _____

CONNECTION CABLE:

❑ 1,0 m ❑ 2,5 m ❑ 5,0 m
❑ 1,5 m ❑ 3,0 m ❑ 10,0 m
❑ 2,0 m ❑ 4,0 m ❑ other length: _____

TYPE OF MEASURING TIP:

❑ form A, without kink protection
❑ form B, without kink protection
❑ form A, with kink protection (shrinkable sleeve)
❑ form B, with kink protection (shrinkable sleeve)
all types in class 1

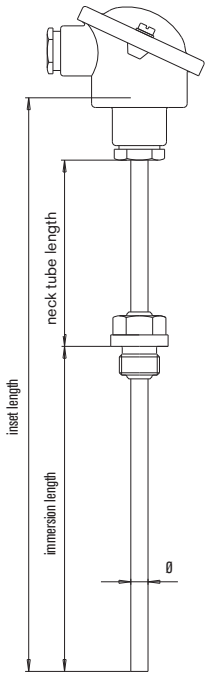
NOMINAL LENGTH:

_____ mm

Picture: SAB Bröckskes

for gauge slides Ø 6 mm

T421 / FOR GAUGE SLIDE Ø 6 mm



PROTECTING TUBE FORM B:

- ❑ 1.3050 Ø 11 x 2 mm
- ❑ 1.4571 Ø 11 x 2 mm
- ❑ 1.4571 Ø 9 x 1 mm
- ❑ 1.7335 Ø 11 x 2 mm

GAUGE SLIDE:

❑ without gauge slide ❑ with gauge slide: _____

SCREWED THREAD:

❑ without ❑ G 1/2 A ❑ G 3/4 A ❑ G 1 A ❑ other thread: _____

CONNECTION HEAD:

- ❑ B (KE 122)
- ❑ DAN-Z (KE 064)
- ❑ DAN-S (KE 066)
- ❑ DAN-WZ (KE 202)
- ❑ DAN-WS (KE 204)
- ❑ BNK (KK 029)
- ❑ without
- ❑ other connection head: _____

INSET / NECK TUBE / IMMERSION LENGTH:

- ❑ 100/120/255 mm
- ❑ 160/120/315 mm
- ❑ 250/120/405 mm
- ❑ 400/120/555 mm
- ❑ 500/120/655 mm
- ❑ 580/120/735 mm
- ❑ 670/120/825 mm
- ❑ 870/120/1025 mm
- ❑ other length: _____

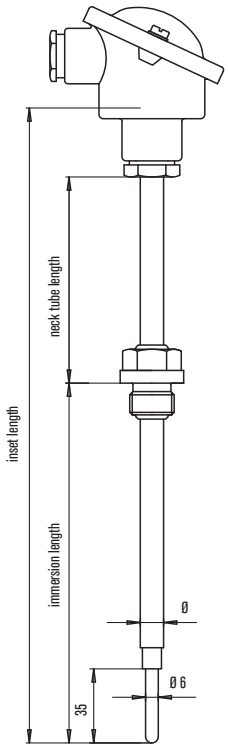
ADDITIONAL INFORMATION:

_____

Picture: SAB Bröckskes

for gauge slides Ø 3 mm / Ø 6 mm

T433 / FOR GAUGE SLIDE Ø 3 mm



PROTECTING TUBE FORM BS WITH TAPERED MEASURING TIP:

❑ 1.4571 Ø 11 x 2 mm

GAUGE SLIDE:

❑ without gauge slide ❑ with gauge slide: _____

SCREWED THREAD:

❑ without ❑ G 1/2 A ❑ G 3/4 A ❑ G 1 A
❑ M 20 x 1,5 ❑ other thread: _____

CONNECTION HEAD:

❑ B (KE 122) ❑ DAN-WZ (KE 202) ❑ without
❑ DAN-Z (KE 064) ❑ DAN-WS (KE 204) ❑ other connection head:
❑ DAN-S (KE 066) ❑ BNK (KK 029) _____

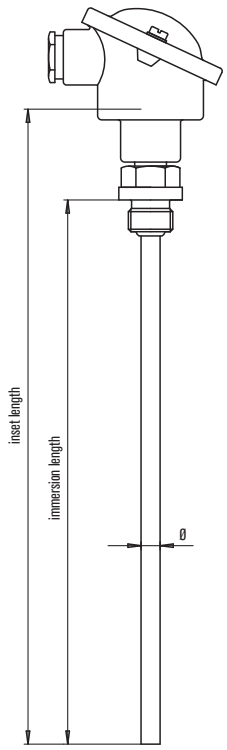
IMMERSION / NECK TUBE / INSET LENGTH:

❑ 100/120/255 mm ❑ 400/120/555 mm ❑ 670/120/825 mm
❑ 160/120/315 mm ❑ 500/120/655 mm ❑ 870/120/1025 mm
❑ 250/120/405 mm ❑ 580/120/735 mm ❑ other length: _____

ADDITIONAL INFORMATION:

_____

T445 / FOR GAUGE SLIDE Ø 6 mm



PROTECTING TUBE FORM BO WITHOUT NECK TUBE:

❑ 1.4571 Ø 9 x 1 mm ❑ 1.4571 Ø 11 x 2 mm
❑ 1.4571 Ø 8 x 0,9 mm ❑ 1.4571 Ø 12 x 2,5 mm

GAUGE SLIDE:

❑ without gauge slide ❑ with gauge slide: _____

SCREWED THREAD:

❑ ohne ❑ G 1/2 A ❑ G 3/4 A ❑ G 1 A
❑ M 20 x 1,5 ❑ other thread: _____

CONNECTION HEAD:

❑ B (KE 021) ❑ DAN-WZ (KE 201) ❑ without
❑ DAN-Z (KE 063) ❑ DAN-WS (KE 203) ❑ other connection head:
❑ DAN-S (KE 065) ❑ BNK (KK 028) _____

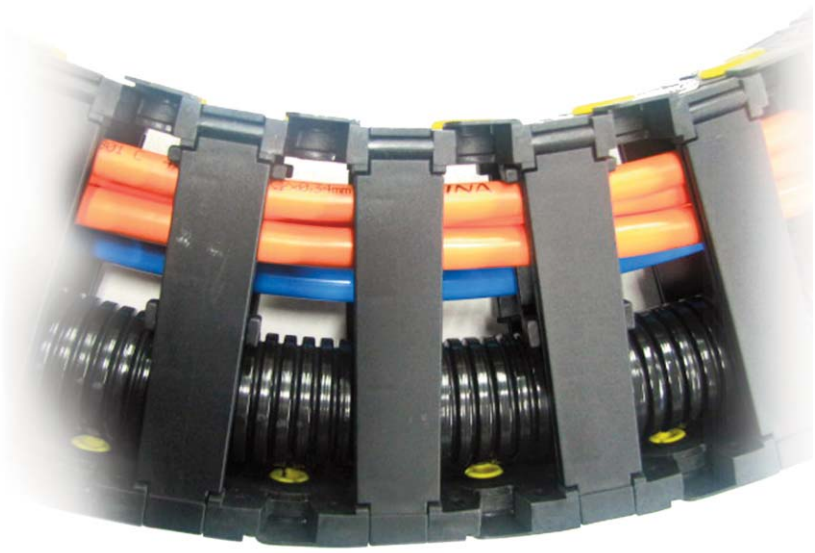
IMMERSION / INSET LENGTH:

❑ 100/145 mm ❑ 250/295 mm
❑ 160/205 mm ❑ 400/445 mm ❑ other length: _____

ADDITIONAL INFORMATION:

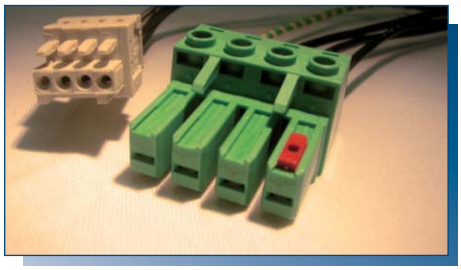
_____

We at **SAB** BRÖCKSKES have enlarged our delivery programme by the field of cable harnessing. No matter if standard or special product, we offer high quality cables from construction over production to plug connection. No matter if single conductor harnessing, harnessed cables or complete cable sets - we offer a broad programme especially according to your requirements and specifications. Harnessed cables are used in many different industrial branches.
The varied combination possibilities of the plug types and stop parts offer rational and economic solutions. Just as the numerous application possibilities of the different materials that are processed at **SAB**.



Harnessed special cables

- according to customers specification - e.g. with
  - ✔ Harting plugs
  - ✔ Sub-D-plugs
  - ✔ plug-in connectors
  - ✔ RJ 45 connectors
- cables with stripped outer sheath and insulation
- cables with end sleeves



Harnessed cable tracks

- available on request

Cables with moulded plugs

- available on request

Substance	Concentr. %	Temp. degree °C	PVC	SABIX® 322 + 336	SABIX® 231	SABIX® 722	PUR	PE	Besilen®	FEP	PFA	ETFE
Acetone		20	–	+	–	o	–	+	o	+	+	+
Äthylenchlorid		50	–	n.e.	–	o	–	+	o	+	+	+
Äthylenglykol		100	o	+	–	+	–	n.e.	+	+	+	+
Alum		20	+	+	n.e.	–	+	+	–	+	+	+
Ammonia	25	20	+	+	n.e.	+	o	+	+	+	+	+
Aniline		50	–	+	–	+	–	+	+	+	+	+
Benzine		20	–	–	o	o	+	–	o	+	+	+
Benzol	100	50	–	+	–	–	–	–	–	+	+	+
Boric acid	sat.	20	+	+	n.e.	+	+	+	+	+	+	+
Break fluid		100	o	o	–	+	–	n.e.	+	+	+	+
Butter		50	+	o	o	+	o	+	+	+	+	+
Chlorobenzine		30	–	n.e.	–	–	–	o	–	+	+	+
Diethyl ether		20	o	+	o	–	+	+	–	+	+	+
Diethylene glycol		50	+	+	o	+	+	+	+	+	+	+
Pure acetic acid	concentr.	50	–	+	–	+	–	+	+	n.e.	n.e.	n.e.
Freon		20	–	n.e.	o	–	+	o	–	+	+	+
Gear oil		100	+	o	–	o	o	–	o	+	+	+
Glycerine	all	50	+	+	o	+	+	+	+	+	+	+
Hydraulic oil		20	+	+	+	–	+	–	–	+	+	+
Potassium chloride	sat.	20	+	+	+	+	n.e.	+	+	+	n.e.	n.e.
Potassium nitrate		20	+	+	+	+	o	+	+	+	+	+
Copper salt		20	+	+	+	+	+	+	+	+	+	+
Machine oil		20	–	o	+	+	+	–	+	+	+	+
Methanol		50	+	+	o	+	–	+	+	+	+	+
Dichlormethane	100	20	–	n.e.	–	–	–	+	–	+	+	+
Motor oil		120	–	o	–	+	–	–	+	+	+	+
Sodium chloride	50	20	+	+	+	+	+	+	+	+	+	+
Caustic soda	50	50	+	+	o	–	+	+	–	+	+	+
Nitrobenzene	100	50	–	+	–	+	–	+	+	+	+	+
Olive oil		50	+	+	–	+	+	+	+	+	+	+
Mercury salt		20	–	+	+	+	–	+	+	+	+	+
Nitric acid		20	–	+	+	–	–	+	–	+	+	+
Hydrochloric acid	concentr.	20	–	+	+	–	–	+	–	+	+	+
Sulphuric acid	50	50	+	+	–	–	–	+	–	+	+	+
Silver salts		20	+	+	+	+	+	+	+	+	+	+
Phenol from tar (Tectal)		20	+	+	o	–	–	n.e.	–	+	+	+
Carbon tetrachloride	100	20	+	–	–	–	–	–	–	+	+	+
Trichlorethylene	100	50	–	–	–	+	–	–	+	+	+	+
Detergent lye	2	100	–	+	o	–	–	n.e.	–	+	+	+
Destilled water		100	o	+	o	–	o	+	–	+	+	+
Destilled water		20	+	+	+	+	+	+	+	+	+	+
Tartaric acid	sat.	20	+	+	+	+	n.e.	+	+	+	+	+
Citric acid		20	+	+	+	+	o	+	+	+	+	+

Reference:

This information is the result of our many years of experience and has been compiled to the best of our knowledge. However, we would like to point out that they are not binding and a final assessment can only be made under normal working conditions.

– = poor resistance o = average resistance + = good resistance n.e. = not existing

Absence of harmful substances acc. to RoHS directive 2002/95/EG as well as the recast of RoHS directive 2011/65/EU and GefStoffV appendix IV-no. 24

The materials that are to be found in the indicated items are free of harmful substances according to directive 2002/95/EG as well as the recast of directive 2011/65/EU and according to the dangerous material regulation (GefStoffV) appendix IV no. 24 medium of flame protection. This means that for the following substances based on the guidelines as well as on the customers' requirements of S Bröckskes GmbH & Co. KG, the following quantity and content limits were specified, below which a declaration can be dropped:

RoHS

- lead < 0,1 %
- mercury < 0,1 %
- cadmium < 0,01 %
- hexavalent chromium < 0,1 %
- polybrominated biphenyl (PBB) < 0,1 %
- polybrominated diphenyl ether (PBDE) < 0,1 %
- decabromo diphenyl ether (DecaBDE) < 0,1 %
- pentabrominated diphenyl ether < 0,1 %
- octabrominated diphenyl ether < 0,1 %

FLEXIBLE CABLES

- Halogen-free cables
- Cable track cables
- Servo motor cables
- ETFE, FEP, PFA cables
- Bus cables
- Torsion cables
- Hybrid and special cables
- Control and connection cables
- Data cables
- Besilen® (Silicone) cables
- Compensating and extension cables
- Tray cables

TEMPERATURE MEASUREMENT

- Protecting armatures and gauge slides
- Mineral insulated thermocouples and Mineral insulated resistance thermometers
- Temperature measurement in plastic processing industry/Hot runner technique
- Diesel thermocouples
- Probe with stainless steel sleeve
- Temperature measurement in test vehicles
- Measurement techniques

CABLE HARNESSING

- Harnessed cables acc. to customer's specification
- Harnessed cable track cables
- Helix cables
- Cable harnesses
- Harnessed motor and transmission cables for Siemens and Indramat drives

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