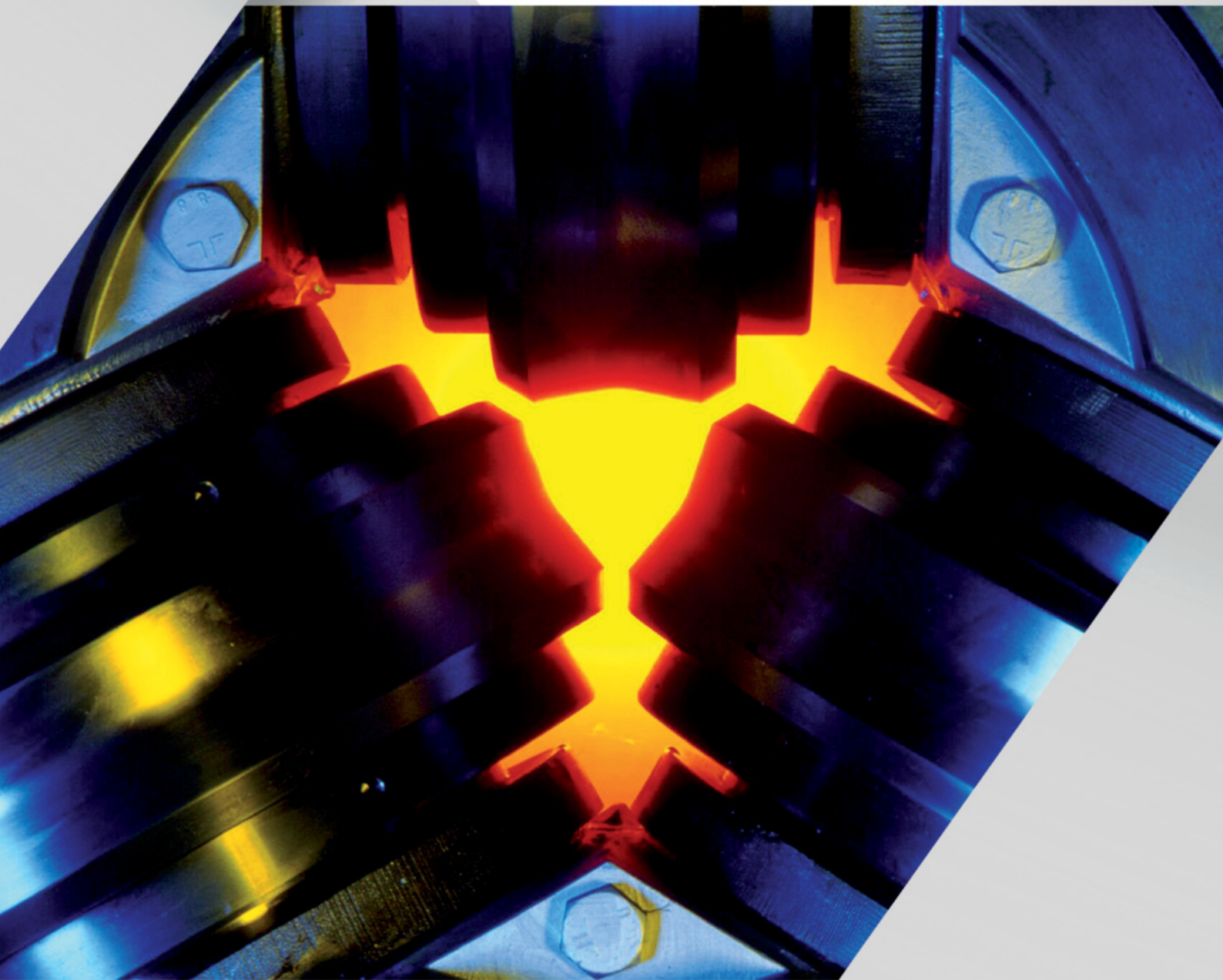


# APPLICATIONS FOR THE STEEL INDUSTRY



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# Applications for the steel industry

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# Applications for the steel industry

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# Applications for the steel industry

## Introduction / Survey steel production

### 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.

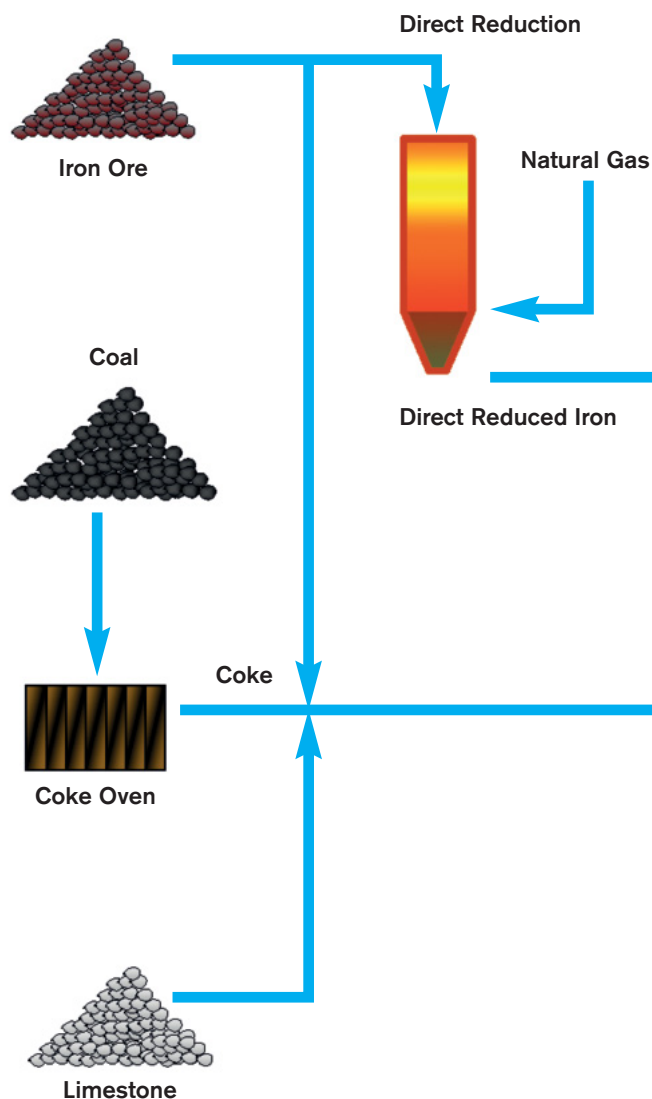
Of a large importance is the high quality of the about 2000 different varieties of steel. The manufacturing processes of the steel production have to be controlled optimally.

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

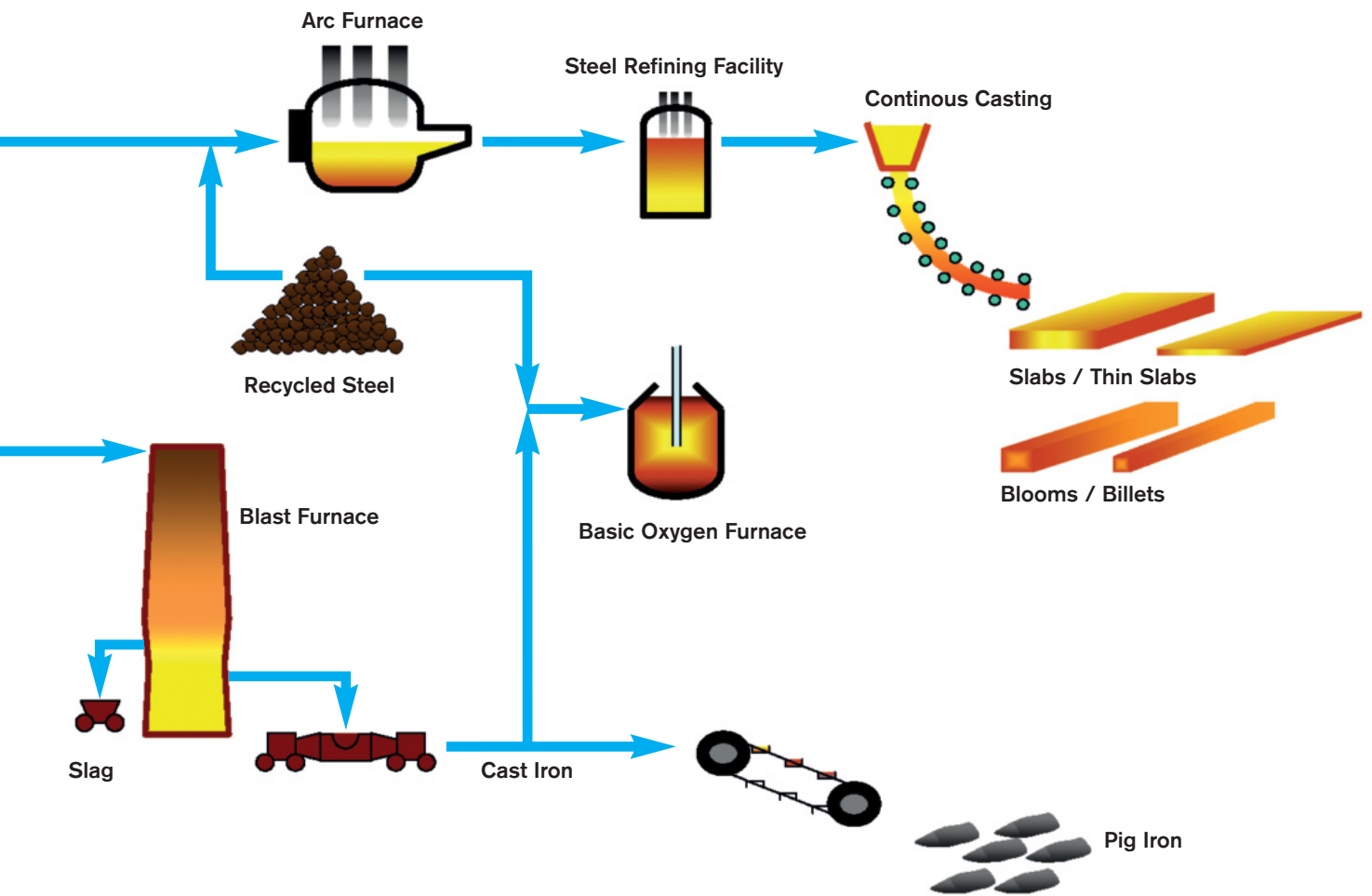
- Reeling Cables
- Besilen® (Silicone) Cables
- Control and Connection Cables

#### Steel Refining Facility

- Control and Connection Cables
- Cable Track Cables

# Applications for the steel industry

## Introduction / Survey steel production



### 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

# Besilen® - Silicone Cables

## BiAF

Besilen® insulated strands



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

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	2000 V
<b>Min. bending radius:</b>	7.5 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
<i>short-time use:</i>	+250 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

item no.	nominal cross section mm <sup>2</sup>	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
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, position 8 of the item no.:

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



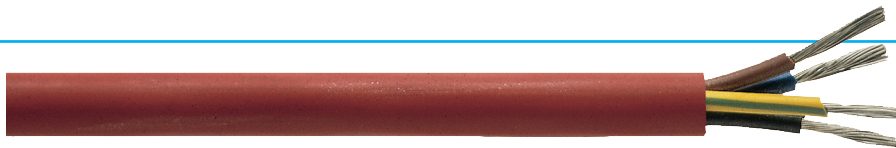
Stahl-Zentrum / SMTS

# Besilen® - Silicone Cables

## BiHF-J

Besilen® insulated strands with Besilen® outer sheath

also possible  
with extremely notch  
resistant sheath



### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	Besilen® EM9 acc. to EN 50363-2-1 + VDE 0207-363-2-1
<b>Sheath colour:</b>	reddish brown (similar RAL 3016)

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
<i>short-time use:</i>	+250 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01410202	2 x 0,25	0,16	4,3	4,8	23
01410402	4 x 0,25	0,16	4,9	9,6	32
01410205	2 x 0,50	0,21	4,8	9,6	31
01410305	3 x 0,50	0,21	5,1	14,4	37
01410405	4 x 0,50	0,21	5,5	19,2	45
01410505	5 x 0,50	0,21	6,1	24,0	53
01410705	7 x 0,50	0,21	6,6	33,6	69
01411205	12 x 0,50	0,21	8,9	57,6	113
01411805	18 x 0,50	0,21	10,6	86,4	164
01412505	25 x 0,50	0,21	12,9	120,0	225
01410207	2 x 0,75	0,21	5,4	14,4	41
01410307	3 x 0,75	0,21	5,7	21,6	49
01410407	4 x 0,75	0,21	6,2	28,8	60
01410507	5 x 0,75	0,21	6,9	36,0	72
01410607	6 x 0,75	0,21	7,7	43,2	86
01410707	7 x 0,75	0,21	7,7	50,4	96
01411007	10 x 0,75	0,21	10,0	57,6	136
01411207	12 x 0,75	0,21	10,3	86,4	157
01411607	16 x 0,75	0,21	11,5	115,2	201
01411807	18 x 0,75	0,21	13,2	129,6	228
01412507	25 x 0,75	0,21	14,9	180,0	314
01410210	2 x 1,00	0,21	5,6	19,2	46
01410310	3 x 1,00	0,21	5,9	28,8	57
01410410	4 x 1,00	0,21	6,5	38,4	70
01410510	5 x 1,00	0,21	7,1	48,0	84
01410610	6 x 1,00	0,21	8,0	57,6	101
01410710	7 x 1,00	0,21	8,0	67,2	113
01410810	8 x 1,00	0,21	9,3	76,8	129
01411010	10 x 1,00	0,21	10,4	96,0	160
01411210	12 x 1,00	0,21	10,7	115,2	185
01411410	14 x 1,00	0,21	11,3	134,4	211
01411610	16 x 1,00	0,21	11,9	153,6	242
01411810	18 x 1,00	0,21	12,8	172,8	270
01412010	20 x 1,00	0,21	13,5	192,0	296
01412510	25 x 1,00	0,21	15,5	240,0	369
01410215	2 x 1,50	0,26	6,6	28,8	62

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01410315	3 x 1,50	0,26	7,0	43,2	80
01410415	4 x 1,50	0,26	7,8	57,6	102
01410515	5 x 1,50	0,26	8,6	72,0	121
01410615	6 x 1,50	0,26	9,4	86,4	142
01410715	7 x 1,50	0,26	9,4	100,8	158
01410815	8 x 1,50	0,26	11,2	115,2	187
01411215	12 x 1,50	0,26	12,8	172,8	265
01411615	16 x 1,50	0,26	14,6	230,4	352
01411815	18 x 1,50	0,26	15,4	259,2	391
01412015	20 x 1,50	0,26	16,2	288,0	429
01412415	24 x 1,50	0,26	18,2	345,6	520
01412515	25 x 1,50	0,26	18,6	360,0	539
01410225	2 x 2,50	0,26	8,0	48,0	99
01410325	3 x 2,50	0,26	8,5	72,0	123
01410425	4 x 2,50	0,26	9,3	96,0	153
01410525	5 x 2,50	0,26	10,6	120,0	192
01410625	6 x 2,50	0,26	11,6	144,0	224
01410725	7 x 2,50	0,26	11,6	168,0	251
01410925	9 x 2,50	0,26	15,2	216,0	333
01411225	12 x 2,50	0,26	15,7	288,0	417
01412425	24 x 2,50	0,26	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.

# Besilen® - Silicone Cables

also possible  
with extremely notch  
resistant sheath

## BiHF/Cu/Bi-J

Besilen® insulated strands with Besilen® inner sheath, overall copper screen and Besilen® outer sheath



### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	in layers
<b>Inner sheath:</b>	Besilen® EM9 acc. to EN 50363-2-1 + VDE 0207-363-2-1
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	Besilen® EM9 acc. to EN 50363-2-1 + VDE 0207-363-2-1
<b>Sheath colour:</b>	reddish brown (similar RAL 3016)

### Outstanding features:



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

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
<i>short-time use:</i>	+250 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section n x mm <sup>2</sup>	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 mm <sup>2</sup>	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.



# Besilen® - Silicone Cables

## SC 600 C HDTR

Besilen® insulated strands with overall copper screen and Besilen® outer sheath, UL recognized, CSA approved



Marking for SC 600 C HDTR 01240410:

SAB BRÖCKSKES · D-VIERSEN · SC 600 C HDTR AWM Style 4535 150°C 600V CSA AWM I/II A 150°C 600V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	in layers
<b>Inner sheath:</b>	Besilen® EM9 acc. to EN 50363-2-1 + VDE 0207-363-2-1
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	Besilen® better than EM9 acc. to EN 50363-2-1 + VDE 0207-363-2-1
<b>Sheath colour:</b>	black (similar RAL 9011)

### Outstanding features:



- good EMC characteristics
- halogen-free
- flexible at low temperatures
- heat resistant
- UL recognized, CSA approved

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Voltage UL/CSA:</b>	600 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	<b>UL/CSA:</b> up to +150 °C Style 4535
<i>flexible application:</i>	<b>DIN VDE:</b> -40/+180 °C / +200 °C (2000 h)
<i>short-time use:</i>	-25/+180 °C +250 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, CSA FT1, FT2
<b>Corrosiveness of conflagration gases:</b>	IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section n x mm <sup>2</sup>	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 mm <sup>2</sup>	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.



Temperature range up to +200 °C  
Style 4511 with nickel  
or silver plated copper strands.  
Please contact SAB!

# Besilen® - Silicone Cables

## 05SJ-U

Besilen® insulated wire with fibre-glass braiding with reference to DIN EN 50525-2-41



**Application:** For use in converters, furnaces and cold rolling mills.

### Construction:

<b>Conductor:</b>	solid tinned copper wire acc. to IEC 60228, VDE 0295, class 1
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Standard colour:</b>	nature
<b>Braiding:</b>	fibre-glass
<b>Impregnation:</b>	impregnating lacquer

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	2000 V
<b>Min. bending radius:</b>	7.5 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
<i>short-time use:</i>	+250 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

item no.	nominal cross section mm <sup>2</sup>	nominal wire-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
01540109	1,00	1,13	3,0	9,6	19
01540159	1,50	1,38	3,4	14,4	26
01540259	2,50	1,78	4,0	24,0	38
01540409	4,00	2,26	4,5	38,4	55
01540609	6,00	2,76	5,0	57,6	75
01541009	10,00	3,57	6,2	96,0	125

Other dimensions and colours are possible on request.



Stahl-Zentrum / ThyssenKrupp Steel

# Compensating and extension cables

## Fibre-glass insulated extension cables for thermocouples

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



Th LGS · Th LRS

### Construction:

<b>Insulation:</b>	<b>Th LGS:</b> fibre-glass <b>Th LRS:</b> special fibre-glass
<b>Stranding:</b>	cores together
<b>Braiding:</b>	<b>Th LGS:</b> fibre-glass <b>Th LRS:</b> special fibre-glass
<b>Armouring:</b>	galvanized steel wire armouring with tracer
<b>Shape:</b>	round

### Technical data:

<b>Min. bending radius:</b>	12 x d
<b>Temperature range of insulation:</b>	<b>Th LGS:</b> max. 250 °C <b>Th LRS:</b> max. 400 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 Cat. C resp. D. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2.
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

<b>Type:</b>	<b>Th LGS</b>	<b>Th LRS</b>
Conductor construction:	0,22 mm <sup>2</sup> = 7 x 0,20 mm ø 0,50 mm <sup>2</sup> = 16 x 0,20 mm ø 1,00 mm <sup>2</sup> = 32 x 0,20 mm ø	0,22 mm <sup>2</sup> = 7 x 0,20 mm ø 0,50 mm <sup>2</sup> = 16 x 0,20 mm ø 1,00 mm <sup>2</sup> = 32 x 0,20 mm ø

### Th LGS

item no.	type	no. of cores x cross section n x mm <sup>2</sup>	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 mm <sup>2</sup>	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

# Compensating and extension cables

## FEP insulated cables

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



A 18 L · A 18-022 L



A 19 L · A 19-022 L

### Construction:

<b>Insulation:</b>	FEP
<b>Stranding:</b>	2 cores together
<b>Wrapping:</b>	A 18 L, A 18-022 L: PETP foil
<b>Screen:</b>	A 19 L, A 19-022 L: tinned copper braiding
<b>Sheath material:</b>	FEP
<b>Shape:</b>	round
<b>Conductor construction:</b>	strand

### Technical data:

<b>Min. bending radius:</b>	12 x d
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg
<b>Temperature range of insulation:</b>	fixed laying: -90/+180 °C flexible application: -55/+180 °C
<b>Insulation resistance:</b>	> 1MΩ x km
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 Cat. C resp. D. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2.
<b>Chem. resistance:</b>	very good against fats, oils, salts and acids
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

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

### IEC 60584

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 VDE 43714 – 06/79 and the basic values laid down in 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

# Compensating and extension cables

## Besilen® insulated cables

A 3 Ln · A 4 Ln with steel wire armouring



A 3 Ln



A 4 Ln



Also available  
with cross-sections  
1,0 mm<sup>2</sup>, 0,75 mm<sup>2</sup>,  
0,5 mm<sup>2</sup> and 0,22 mm<sup>2</sup>!

### Construction:

<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Stranding:</b>	2 cores parallel
<b>Sheath material:</b>	Besilen® EM9 acc. to EN 50363-2-1 + VDE 0207-363-2-1
<b>Armouring:</b>	<b>A 4 Ln:</b> tinned steel wire armouring with tracer
<b>Shape:</b>	oval
<b>Conductor construction:</b>	strand

### Technical data:

<b>Min. bending radius:</b>	<b>A 3 Ln:</b> 10 x d <b>A 4 Ln:</b> 12 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range of insulation:</b>	fixed laying: -40/+180 °C flexible application: -25/+180 °C short-time use: +250 °C
<b>Insulation resistance:</b>	> 1MΩ x km
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

<b>Type:</b>	<b>A 3 Ln</b>	<b>A 4 Ln</b>
Conductor cross section:	1,5 mm <sup>2</sup>	1,5 mm <sup>2</sup>
Outer diameter:	approx. 3,7 x 6,2 mm	approx. 4,5 x 7,0 mm
Weight/100m:	approx. 4,6 kg	approx. 7,5 kg

### IEC 60584

for thermocouple	EMK at 100 °C in mV	cable type	<b>A 3 Ln</b> item no.	<b>A 4 Ln</b> 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 VDE 43714 – 06/79 and the basic values laid down in 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	<b>A 3 Ln</b> item no.	<b>A 4 Ln</b> 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

# Compensating and extension cables

## Besilen® insulated cables

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



A 11 Lr · A 11-4 Lr



A 11 Dr



Also available  
with cross-sections  
1,0 mm<sup>2</sup>, 0,75 mm<sup>2</sup>,  
0,5 mm<sup>2</sup> and 0,22 mm<sup>2</sup>!

### Construction:

<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Stranding:</b>	2 resp. 4 cores together
<b>Braiding:</b>	fibre-glass with tracer
<b>Armouring:</b>	tinned steel wire armouring with tracer
<b>Shape:</b>	round
<b>Conductor construction:</b>	strand resp. wire

### Technical data:

<b>Min. bending radius:</b>	A 11 Lr, A11-4 Lr: 10 x d A 11 Dr: 12 x d
<b>Temperature range of insulation:</b>	fixed laying: -40/+180 °C flexible application: -25/+180 °C short-time use: +250 °C
<b>Insulation resistance:</b>	> 1MΩ x km
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

Type:	A 11 Lr	A 11-4 Lr	A 11 Dr
Conductor cross section:	1,5 mm <sup>2</sup>	1,5 mm <sup>2</sup>	1,5 mm <sup>2</sup>
Outer diameter:	approx. 6,3 mm	approx. 7,3 mm	approx. 5,5 mm
Weight/100m:	approx. 5,9 kg	approx. 9,6 kg	approx. 6,4 kg

### IEC 60584

for thermocouple	EMK 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 VDE 43714 – 06/79 and the basic values laid down in 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 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

# Cable Track Cable

## S 90

continuously flexible PUR control cable with numbered cores



Marking for S 90 07780715:

SAB BRÖCKSKES · D-VIERSEN · S 90 12 x 1,5 mm² CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, VDE 0295, class 6
<b>Insulation:</b>	PVC, TI2 acc. to EN 50363-3 + VDE 0207-363-3
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
<b>Stranding:</b>	specialy adjusted layering with non-woven tape over each layer
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with mat surface
<b>Sheath colour:</b>	grey (RAL 7000)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 3000 V
<b>Min. bending radius continuously flexible:</b>	7,5 x d
<b>Radiation resistance:</b>	5 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b> fixed laying: flexible application:	-40/+70 °C +5/+70 °C
<b>Oil resistance:</b>	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc.
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

Also available as hybrid cable for example

3G1,0 + 16 x 0,34 mm<sup>2</sup>

3G1,0 + 8 x 0,34 mm<sup>2</sup>

1G0,5 + 4 x 0,34 mm<sup>2</sup>

Peak operating voltage of data conductors: max. 500 V

item no.	no. of cores x cross section n x mm <sup>2</sup>	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	9,5	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

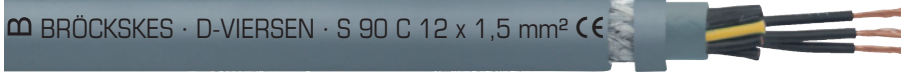
item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07781215	12 x 1,50	0,16	12,3	172,8	259
07781815	18 x 1,50	0,16	14,4	259,2	380
07782515	25 x 1,50	0,16	18,0	360,0	533
07783615	36 x 1,50	0,16	20,1	518,4	746
07785015	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	0,31	32,5	1920,0	2354
07780565	5 x 50,0	0,31	36,5	2400,0	3066

Other dimensions and colours are possible on request.

# Cable Track Cable

## S 90 C

continuously flexible PUR control cable with numbered cores and overall copper screen



Marking for S 90 C 07881215:

SAB BRÖCKSKES · D-VIERSEN · S 90 C 12 x 1,5 mm² CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, VDE 0295, class 6
<b>Insulation:</b>	PVC, TI2 acc. to EN 50363-3 + VDE 0207-363-3
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
<b>Stranding:</b>	specially adjusted layering with non-woven tape over each layer
<b>Inner sheath:</b>	PVC, TM2 acc. to EN 50363-3 + VDE 0207-363-3
<b>Screen:</b>	tinned copper braiding
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with mat surface
<b>Sheath colour:</b>	grey (RAL 7000)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 3000 V core/screen 2000 V
<b>Min. bending radius</b> <i>continuously flexible:</i>	7,5 x d
<b>Radiation resistance:</b>	5 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b> <i>fixed laying:</i> <i>flexible application:</i>	-40/+70 °C +5/+70 °C
<b>Oil resistance:</b>	very good - TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc.
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

item no.	no. of cores x cross section n x mm <sup>2</sup>	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 mm <sup>2</sup>	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.



# Cable Track Cable

## S 200

extremely flexible TPE/PUR control cable with numbered cores for continuous movement



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

**Application:** 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.

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, VDE 0295, class 6
<b>Insulation:</b>	TPE
<b>Colour code from 2 conductors</b>	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
<b>Stranding:</b>	specially adjusted layering with non-woven tape over each layer
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with mat surface
<b>Sheath colour:</b>	grey (RAL 7000)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V
<b>Min. bending radius</b> <i>continuously flexible:</i>	7,5 x d
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b> <i>fixed laying:</i>	-50/+90 °C
<i>flexible application:</i>	-40/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Oil resistance:</b>	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc.
<b>Continuous flexibility:</b>	very good
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- PWIS uncritical  
(PWIS = paint-wetting impairment substances)
- flexible at low temperatures
- halogen-free
- travel > 10 m is possible
- high abrasion resistance
- small bending radius
- small outer diameter

Also available as hybrid cable for example

3G1,0 + 16 x 0,34 mm<sup>2</sup>

3G1,0 + 8 x 0,34 mm<sup>2</sup>

1G0,5 + 4 x 0,34 mm<sup>2</sup>

Peak operating voltage of data conductors: max. 500 V

item no.	no. of cores x cross section n x mm <sup>2</sup>	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	28
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	51
07740705	7 x 0,50	0,16	6,9	33,6	69
07741205	12 x 0,50	0,16	8,3	57,6	99
07741805	18 x 0,50	0,16	9,9	86,4	143
07742505	25 x 0,50	0,16	11,9	120,0	197
07743605	36 x 0,50	0,16	13,7	172,8	282
07745005	50 x 0,50	0,16	16,1	240,0	381
07746505	65 x 0,50	0,16	18,2	312,0	478
07740207	2 x 0,75	0,16	5,4	14,4	36
07740307	3 x 0,75	0,16	5,7	21,6	44
07740407	4 x 0,75	0,16	6,1	28,8	54
07740507	5 x 0,75	0,16	6,7	36,0	67
07740707	7 x 0,75	0,16	7,9	50,4	93
07741207	12 x 0,75	0,16	9,6	86,4	137

item no.	no. of cores x cross section n x mm <sup>2</sup>	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	202
07742507	25 x 0,75	0,16	13,9	180,0	279
07743607	36 x 0,75	0,16	15,4	259,2	384
07745007	50 x 0,75	0,16	18,4	360,0	528
07746507	65 x 0,75	0,16	20,8	468,0	688
07740210	2 x 1,00	0,16	5,8	19,2	45
07740310	3 x 1,00	0,16	6,1	28,8	54
07740410	4 x 1,00	0,16	6,6	38,4	67
07740510	5 x 1,00	0,16	7,2	48,0	82
07740710	7 x 1,00	0,16	8,6	67,2	116
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	496
07745010	50 x 1,00	0,16	20,3	480,0	682
07746510	65 x 1,00	0,16	22,9	624,0	885

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# Cable Track Cable

## S 200

extremely flexible TPE/PUR control cable with numbered cores for continuous movement



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	57
07740315	3 x 1,50	0,16	6,7	43,2	70
07740415	4 x 1,50	0,16	7,3	57,6	89
07740515	5 x 1,50	0,16	8,0	72,0	110
07740715	7 x 1,50	0,16	9,6	100,8	159
07741215	12 x 1,50	0,16	11,8	172,8	242
07741815	18 x 1,50	0,16	14,2	259,2	362
07742515	25 x 1,50	0,16	17,1	360,0	490
07743615	36 x 1,50	0,16	19,3	518,4	691
07745015	50 x 1,50	0,16	23,0	720,0	950
07746515	65 x 1,50	0,16	26,0	936,0	1240
07740125	1 x 2,50	0,16	4,7	24,0	39
07740225	2 x 2,50	0,16	7,8	48,0	85
07740325	3 x 2,50	0,16	8,3	72,0	110
07740425	4 x 2,50	0,16	9,2	96,0	142
07740525	5 x 2,50	0,16	10,2	120,0	175
07740725	7 x 2,50	0,16	12,2	168,0	256
07741225	12 x 2,50	0,16	15,4	288,0	399
07741825	18 x 2,50	0,16	18,1	432,0	588
07742525	25 x 2,50	0,16	22,1	600,0	802
07743625	36 x 2,50	0,16	24,8	864,0	1128
07740140	1 x 4,00	0,16	5,4	38,4	56
07740240	2 x 4,00	0,16	9,3	76,8	129
07740340	3 x 4,00	0,16	9,8	115,2	172
07740440	4 x 4,00	0,16	10,8	153,6	217
07740540	5 x 4,00	0,16	12,1	192,0	268
07740740	7 x 4,00	0,16	14,6	268,8	394
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	176
07740360	3 x 6,00	0,21	11,7	172,8	246
07740460	4 x 6,00	0,21	12,8	230,4	316
07740560	5 x 6,00	0,21	14,5	288,0	388
07740760	7 x 6,00	0,21	17,3	403,2	504
07740161	1 x 10,0	0,21	7,1	96,0	120
07740361	3 x 10,0	0,21	14,1	288,0	395
07740461	4 x 10,0	0,21	15,8	384,0	507
07740561	5 x 10,0	0,21	17,2	480,0	610
07740162	1 x 16,0	0,21	8,3	153,6	177
07740362	3 x 16,0	0,21	17,0	460,8	597
07740462	4 x 16,0	0,21	19,0	614,4	782
07740562	5 x 16,0	0,21	21,2	768,0	981
07740163	1 x 25,0	0,21	9,9	240,0	263
07740363	3 x 25,0	0,21	20,6	720,0	848
07740463	4 x 25,0	0,21	22,8	960,0	1155
07740563	5 x 25,0	0,21	25,4	1200,0	1359
07740164	1 x 35,0	0,21	11,5	336,0	367
07740464	4 x 35,0	0,21	26,4	1344,0	1533
07740564	5 x 35,0	0,21	29,8	1680,0	1894
07740165	1 x 50,0	0,31	14,0	480,0	538
07740465	4 x 50,0	0,31	31,8	1920,0	2266
07740166	1 x 70,0	0,31	16,7	672,0	754
07740167	1 x 95,0	0,31	20,5	912,0	1028
07740168	1 x 120,0	0,31	21,5	1152,0	1260
07740169	1 x 150,0	0,31	24,6	1440,0	1618
07740170	1 x 185,0	0,41	26,7	1776,0	1942
07740171	1 x 240,0	0,41	30,1	2304,0	2483

Other dimensions and colours are possible on request.



### Possible on request:

- singlecore with green-yellow insulation and black outer sheath or 0,6/1 kV



Stam/Zentrum / Dillinger Hüttenwerke

# Cable Track Cable

## S 200 C

continuously flexible TPE/PUR control cable with numbered cores and overall copper screen



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



Marking for S 200 C 07841215:  
SAB BRÖCKSKES · D-VIERSEN · S 200 C 12 x 1,5 mm² CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, VDE 0295, class 6
<b>Insulation:</b>	TPE
<b>Colour code from 2 conductors</b>	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
<b>Stranding:</b>	specially adjusted layering with non-woven tape over each layer
<b>Inner sheath:</b>	SABIX®
<b>Wrapping:</b>	non-woven tape
<b>Screen:</b>	tinned copper braiding
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with mat surface
<b>Sheath colour:</b>	grey (RAL 7000)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius</b> <i>continuously flexible:</i>	7,5 x d
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b> <i>fixed laying:</i> <i>flexible application:</i>	-50/+90 °C -40/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Oil resistance:</b>	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc.
<b>Continuous flexibility:</b>	very good
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- **PWIS uncritical**  
(PWIS = paint-wetting impairment substances)
- **flexible at low temperatures**
- **halogen-free**
- **travel > 10 m is possible**
- **good EMC characteristics**
- **high abrasion resistance**
- **small bending radius**
- **small outer diameter**

Also available as hybrid cable for example

3G1,0 + 16 x 0,34 mm<sup>2</sup>

3G1,0 + 8 x 0,34 mm<sup>2</sup>

1G0,5 + 4 x 0,34 mm<sup>2</sup>

Peak operating voltage of data conductors: max. 500 V

item no.	no. of cores x cross section n x mm <sup>2</sup>	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	55
07840305	3 x 0,50	0,16	7,0	34,0	62
07840405	4 x 0,50	0,16	7,4	51,1	71
07840505	5 x 0,50	0,16	7,9	61,5	83
07840705	7 x 0,50	0,16	9,0	74,1	109
07841205	12 x 0,50	0,16	10,6	108,2	152
07841805	18 x 0,50	0,16	12,2	141,0	214
07842505	25 x 0,50	0,16	14,8	217,0	307
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 mm <sup>2</sup>	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	64
07840307	3 x 0,75	0,16	7,6	54,1	74
07840407	4 x 0,75	0,16	8,0	64,0	86
07840507	5 x 0,75	0,16	8,8	74,3	106
07840707	7 x 0,75	0,16	9,8	92,3	129
07841207	12 x 0,75	0,16	11,9	142,4	204
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	382,6	520
07845207	52 x 0,75	0,16	21,9	514,3	727
07846507	65 x 0,75	0,16	24,5	639,8	868

Continued on next page

# Cable Track Cable

## S 200 C

continuously flexible TPE/PUR control cable with numbered cores and overall copper screen



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 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
07840210	2 x 1,00	0,16	7,7	56,5	72
07840310	3 x 1,00	0,16	8,0	66,4	86
07840410	4 x 1,00	0,16	8,5	77,3	98
07840510	5 x 1,00	0,16	9,3	89,0	121
07840710	7 x 1,00	0,16	10,7	117,9	174
07841210	12 x 1,00	0,16	12,8	174,9	248
07841810	18 x 1,00	0,16	15,2	270,2	369
07842510	25 x 1,00	0,16	18,4	367,5	497
07843610	36 x 1,00	0,16	20,3	478,7	657
07845210	52 x 1,00	0,16	23,8	668,9	911
07846510	65 x 1,00	0,16	26,8	805,7	1130
07840115	1 x 1,50	0,16	4,6	24,8	35
07840215	2 x 1,50	0,16	8,3	66,8	87
07840315	3 x 1,50	0,16	8,6	81,5	106
07840415	4 x 1,50	0,16	9,4	101,2	131
07840515	5 x 1,50	0,16	10,1	122,2	149
07840715	7 x 1,50	0,16	11,9	156,8	210
07841215	12 x 1,50	0,16	14,7	269,7	351
07841815	18 x 1,50	0,16	16,9	369,2	483
07842515	25 x 1,50	0,16	20,4	493,4	653
07843615	36 x 1,50	0,16	23,0	660,3	889
07845215	52 x 1,50	0,16	26,9	931,0	1189
07846515	65 x 1,50	0,16	29,9	1132,8	1513
07840125	1 x 2,50	0,16	5,3	38,0	49
07840225	2 x 2,50	0,16	9,9	77,2	122
07840325	3 x 2,50	0,16	10,6	119,7	165
07840425	4 x 2,50	0,16	11,5	150,1	204
07840525	5 x 2,50	0,16	12,6	179,6	249
07840725	7 x 2,50	0,16	15,0	265,2	365
07841225	12 x 2,50	0,16	18,5	417,1	542
07841825	18 x 2,50	0,16	21,6	571,4	767
07842525	25 x 2,50	0,16	26,0	780,8	1036
07843625	36 x 2,50	0,16	28,7	1058,0	1390
07845225	52 x 2,50	0,16	33,0	1479,3	1861
07840140	1 x 4,00	0,16	5,9	54,3	67

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	11,6	132,8	181
07840340	3 x 4,00	0,16	12,1	172,9	224
07840440	4 x 4,00	0,16	13,7	216,5	299
07840540	5 x 4,00	0,16	15,0	289,2	357
07840740	7 x 4,00	0,16	18,0	396,3	532
07840160	1 x 6,00	0,21	6,6	75,3	91
07840260	2 x 6,00	0,21	13,7	182,6	251
07840360	3 x 6,00	0,21	14,6	258,8	339
07840460	4 x 6,00	0,21	15,9	328,3	419
07840560	5 x 6,00	0,21	18,0	398,4	523
07840760	7 x 6,00	0,21	20,6	537,3	712
07840161	1 x 10,0	0,21	7,7	117,5	135
07840361	3 x 10,0	0,21	17,4	392,9	517
07840461	4 x 10,0	0,21	18,9	507,7	646
07840561	5 x 10,0	0,21	20,5	615,5	731
07840162	1 x 16,0	0,21	9,1	179,9	208
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	300
07840363	3 x 25,0	0,21	23,9	898,2	1039
07840463	4 x 25,0	0,21	25,8	1148,0	1296
07840563	5 x 25,0	0,21	29,1	1400,1	1610
07840164	1 x 35,0	0,21	12,5	390,6	414
07840464	4 x 35,0	0,21	30,1	1546,4	1780
07840564	5 x 35,0	0,21	33,1	1915,1	2119
07840165	1 x 50,0	0,31	15,0	577,2	603
07840465	4 x 50,0	0,31	35,5	2165,3	2613
07840166	1 x 70,0	0,31	17,6	783,1	834
07840167	1 x 95,0	0,31	21,5	1051,2	1139
07840168	1 x 120,0	0,31	22,7	1293,1	1374
07840169	1 x 150,0	0,31	26,2	1611,0	1733
07840170	1 x 185,0	0,41	25,6	1952,4	2086
07840171	1 x 240,0	0,41	31,3	2507,0	2645

Other dimensions and colours are possible on request.



### Possible on request:

- singlecore  
with green-yellow insulation  
and black outer sheath  
or 0,6/1 kV

# Cable Track Cable

## S 180 HT

continuously flexible high temperature control cable with numbered cores, and Besilen® outer sheath

## S 180 C HT

continuously flexible high temperature control cable with numbered cores, overall copper screen and Besilen® outer sheath

+180 °C



**Application:** For use in cable tracks with extremely ambient temperature like for example in steel industry.

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 6
<b>Insulation:</b>	FEP
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
<b>Stranding:</b>	specially adjusted layering with non-woven tape over each layer
<b>Wrapping:</b>	tape
<b>S 180 C HT Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	special Besilen®
<b>Sheath colour:</b>	grey (similar RAL 7000)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>o</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Min. bending radius continuously flexible:</b>	10 x d
<b>Temperature range fixed laying:</b>	-25/+180 °C
<b>flexible application:</b>	-25/+180 °C
<b>short-time use:</b>	+200 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- extreme temperature resistance
- high notch resistance
- very good flexibility
- S 180 C HT:  
very good EMC characteristics

### S 180 HT

item no.	no. of cores x cross section n x mm <sup>2</sup>	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
31800625	6 x 2,50	0,16	12,8	144,0	268
31800725	7 x 2,50	0,16	13,5	168,0	320
31801225	12 x 2,50	0,16	16,5	288,0	470
31802025	20 x 2,50	0,16	20,2	480,0	762
31800440	4 x 4,00	0,16	12,2	153,6	263
31800540	5 x 4,00	0,16	13,4	192,0	333
31800740	7 x 4,00	0,16	15,9	268,8	469
31801240	12 x 4,00	0,16	19,6	460,8	707
31800360	3 x 6,00	0,21	13,4	172,8	302
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
31800361	3 x 10,0	0,21	15,3	288,0	457
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
31800362	3 x 25,0	0,21	21,5	720,0	999
31800463	4 x 25,0	0,21	24,0	960,0	1312
31800164	1 x 35,0	0,21	12,9	336,0	429
31800464	4 x 35,0	0,21	28,2	1344,0	1800
31800167	1 x 95,0	0,31	21,1	912,0	1116
31800169	1 x 150,0	0,31	25,5	1440,0	1745

Other dimensions and colours are possible on request.

### S 180 C HT

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
31850315	3 x 1,50	0,16	8,1	63,8	110
31850415	4 x 1,50	0,16	8,9	80,4	137
31850515	5 x 1,50	0,16	9,6	98,3	166
31850715	7 x 1,50	0,16	11,4	147,6	240
31850325	3 x 2,50	0,16	9,8	98,5	163
31850425	4 x 2,50	0,16	11,1	142,1	221
31850525	5 x 2,50	0,16	12,1	171,9	268
31850725	7 x 2,50	0,16	14,0	229,2	364
31852025	20 x 2,50	0,16	21,0	612,4	856
31850440	4 x 4,00	0,16	12,7	206,4	304
31850540	5 x 4,00	0,16	14,0	253,2	378
31850740	7 x 4,00	0,16	16,7	368,0	541
31851240	12 x 4,00	0,16	20,3	577,4	790
31850360	3 x 6,00	0,21	14,0	234,0	341
31850460	4 x 6,00	0,21	15,2	297,9	457
31850560	5 x 6,00	0,21	17,2	388,0	568
31850760	7 x 6,00	0,21	20,2	519,5	780
31850461	4 x 10,0	0,21	17,8	485,6	683
31850561	5 x 10,0	0,21	19,7	594,9	828
31850462	4 x 16,0	0,21	21,5	747,7	1007
31850562	5 x 16,0	0,21	24,0	922,4	1256
31850463	4 x 25,0	0,21	25,2	1117,5	1444
31850464	4 x 35,0	0,21	29,0	1532,5	1934
31850167	1 x 95,0	0,31	22,3	1046,6	1228
31850170	1 x 185,0	0,41	28,6	1962,7	2250

Other dimensions and colours are possible on request.

# Profibus-DP Cables acc. to IEC 61158-2

## S PB 634 HT

## S PB 634 HT Hybrid

Profibus-DP cable  
for the high temperature range, continuously flexible  
combined Profibus-DP cable with supply cores  
for the high temperature, continuously flexible

+180 °C



BRÖCKSKES · D-VIERSEN · S PB 634 HT 2x0,34mm<sup>2</sup> CE



Marking for S PB 634 HT 36341000:

SAB BRÖCKSKES · D-VIERSEN · S PB 634 HT 2x0,34mm<sup>2</sup> CE

**Application:** For use in cable tracks with extreme ambient temperatures.

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

<b>Technical data:</b>	S PB 634 HT	S PB 634 HT Hybrid
<b>Item number:</b>	3634-1000	see table below
<b>Nominal voltage:</b>	---	U <sub>0</sub> /U 300/500 V (supply cores)
<b>Peak operating voltage:</b>	max. 350 V (0,34 mm <sup>2</sup> )	
<b>Testing voltage</b>		
core/core:	1500 V	0,34 mm <sup>2</sup> supply cores 1500 V      2000 V
core/screen:	1200 V	1200 V      2000 V
<b>Min. bending radius</b>		
fixed laying:	5 x d	
flexible application:	10 x d	
continuously flexible:	15 x d	
<b>Temperature range</b>		
fixed laying:	- 40°C / + 180°C	
flexible application:	- 25°C / + 180°C	
short time use:	+ 250°C	
<b>Characteristic impedance</b>	150 Ω ± 10%	
<b>PB element (3-20 MHz):</b>		
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	
<b>Flexibility:</b>	very good	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	



### Outstanding features:

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

item no.	type	dimensions	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km
36341000	S PB 634 HT	2 x 0,34 mm <sup>2</sup>	9,4	33,3	120
36341307	S PB 634 HT Hybrid	2 x 0,34 mm <sup>2</sup> + 3 x 0,75 mm <sup>2</sup>	12,0	54,9	190
36341407	S PB 634 HT Hybrid	2 x 0,34 mm <sup>2</sup> + 4 x 0,75 mm <sup>2</sup>	12,0	62,1	191
36341510	S PB 634 HT Hybrid	2 x 0,34 mm <sup>2</sup> + 5 x 1,00 mm <sup>2</sup>	12,2	81,3	229
36341315	S PB 634 HT Hybrid	2 x 0,34 mm <sup>2</sup> + 3 x 1,50 mm <sup>2</sup>	12,6	76,5	215
36341415	S PB 634 HT Hybrid	2 x 0,34 mm <sup>2</sup> + 4 x 1,50 mm <sup>2</sup>	12,6	90,9	235

Other dimensions and colours are possible on request.

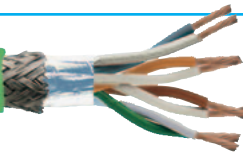
# Industrial Ethernet Cables

## CATLine CAT 6A HT

Gigabit Ethernet cable – high temperature resistant



6AWG 1631-4631 AWM Style 21618 150°C 600V CE



Marking for CATLine CAT 6A HT 16314631:

SAB BRÜCKSKES · D-VIERSEN · Cat.6A HT 4x2x26AWG 1631-4631 AWM Style 21618 150°C 600V CE

### Construction:

<b>Conductor:</b>	bare copper strands, fine wires
<b>Insulation:</b>	FEP
<b>Colour code:</b>	white/blue, white/orange, white/green, white/brown
<b>Stranding:</b>	twisted to pairs
<b>Wrapping:</b>	PETP foil
<b>Screen:</b>	alu foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	FEP
<b>Sheath colour:</b>	green (similar RAL 6018)

### Technical data:

<b>Peak operating voltage:</b>	max. 90 V
<b>Voltage UL:</b>	600 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Temperature range</b>	<b>UL:</b> up to +150 °C
<i>fixed laying:</i>	-90/+180 °C
<i>flexible application:</i>	-55/+180 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL VW1
<b>Oil resistance:</b>	very good
<b>Chemical resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
<b>Characteristic impedance:</b>	100Ω ± 10Ω, accomplishes the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 (CAT 6A)
<b>Application:</b>	suitable for EtherCAT and EtherNET/IP applications
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- high temperature resistant
- low temperature resistant
- flame retardant and self-extinguishing
- oil- and chemical resistant
- UL recognized

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km
16314631	CATLine CAT 6A HT	4 x 2 x 26 AWG	1,05	5,7	30,0	52

Other dimensions and colours are possible on request.



Stahl-Zentrum / ArcelorMittal

Also possible  
as harnessed cable  
with M12 or RJ 45 plug!



# ETFE, FEP, PFA Cables

## FEP and PFA insulated stranded hook-up wire

Li6Ybl, Li6Yvz, LiPFAvn - with extended temperature range

375 V



### Construction:

<b>Conductor:</b>	bare, tinned or nickel-plated copper strands acc. to ASTM B 286
<b>Insulation:</b>	FEP, 6Y11 acc. to VDE 0207-6 or PFA, 51Y11 acc. to VDE 0207-6

### 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

UL recognized

### Technical data:

<b>Peak operating voltage:</b>	max. 375 V	
<b>Voltage UL:</b>	600 V	
<b>Testing voltage:</b>	2000 V	
<b>Installation:</b>	for one single bend the inner bending radius must not be smaller than 0,5 x outer diameter of the insulated strands	
<b>Radiation resistance:</b>	<b>FEP:</b> 1 x 10 <sup>7</sup> cJ/kg	<b>PFA:</b> 1 x 10 <sup>6</sup> cJ/kg
<b>Temperature range</b>	<b>fixed laying:</b>	<b>FEP:</b> -90/+180 °C
	<b>flexible application:</b>	<b>PFA:</b> -90/+250 °C
	<b>limited time of use:</b>	<b>FEP:</b> -55/+180 °C <b>PFA:</b> -55/+250 °C +200 °C
<b>UL:</b>	up to +150 °C	up to +250 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT2	
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days	
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

### Li6Ybl

item no. bare copper FEP	AWG	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3339 .. 28*	28/7	0,127	0,70	0,9	1,4
3339 .. 26*	26/7	0,160	0,80	1,4	2,0
3339 .. 24*	24/7	0,203	0,93	2,2	2,9
3339 .. 22*	22/7	0,254	1,08	3,4	4,2
3339 .. 20*	20/7	0,320	1,28	5,4	6,3

\* 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  |             |

### Li6Yvz

item no. tinned copper FEP	AWG	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3340 .. 28*	28/7	0,127	0,70	0,9	1,4
3340 .. 26*	26/7	0,160	0,80	1,4	2,0
3340 .. 24*	24/7	0,203	0,93	2,1	2,9
3340 .. 22*	22/7	0,254	1,08	3,4	4,2
3340 .. 20*	20/7	0,320	1,28	5,4	6,3
3340 .. 16*	16/19	0,287	1,79	11,8	12,7

### LiPFAvn

item no. nickel-plated copper PFA	AWG	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3344 .. 28*	28/7	0,127	0,71	0,9	1,4
3344 .. 26*	26/7	0,160	0,80	1,4	2,0
3344 .. 24*	24/7	0,203	0,93	2,2	2,9
3344 .. 22*	22/7	0,254	1,08	3,4	4,2
3344 .. 20*	20/7	0,320	1,28	5,4	6,3

Other dimensions and colours are possible on request.

ETFE insulated strands on request.



Stahl-Zentrum / Bacplate



# ETFE, FEP, PFA Cables

## ETFE, FEP and PFA insulated stranded hook-up wire

Li7Ybl, Li6Ybl, Li6Yvz, LiPFAvn - with extended temperature range

900 V



### Construction:

<b>Conductor:</b>	bare, tinned or nickel-plated copper strands acc. to ASTM B 286
<b>Insulation:</b>	ETFE, 7Y11 acc. to VDE 0207-6 or FEP, 6Y11 acc. to VDE 0207-6 or PFA, 51Y11 acc. to VDE 0207-6

### Outstanding features:

#### ETFE:

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

#### FEP + PFA:

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

#### FEP + PFA:

UL recognized

### Technical data:

<b>Peak operating voltage:</b>	max. 900 V			
<b>Voltage UL:</b>	<b>FEP/PFA:</b> 600 V			
<b>Testing voltage:</b>	2500 V			
<b>Installation:</b>	for one single bend the inner bending radius must not be smaller than 0,5 x outer diameter of the insulated strands			
<b>Radiation resistance:</b>	<b>ETFE:</b> 2 x 10 <sup>8</sup> cJ/kg	<b>FEP:</b> 1 x 10 <sup>7</sup> cJ/kg	<b>PFA:</b> 1 x 10 <sup>6</sup> cJ/kg	
<b>Temperature range</b>	<b>ETFE:</b>	<b>FEP:</b>	<b>PFA:</b>	
	<i>fixed laying:</i>	-90/+135 °C	-90/+180 °C	-90/+250 °C
	<i>flexible application:</i>	-55/+135 °C	-55/+180 °C	-55/+250 °C
<i>limited time of use:</i>	+150 °C	+200 °C	+260 °C	
<b>UL:</b>	up to +150 °C		up to +250 °C	
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT2 (FEP and PFA version)			
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days			
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds			
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union			

### Li7Ybl

item no. bare copper ETFE	AWG	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3345 .. 28*	28/7	0,127	0,93	0,9	1,8
3345 .. 26*	26/7	0,160	1,03	1,3	2,4
3345 .. 24*	24/7	0,203	1,16	2,2	3,4
3345 .. 22*	22/7	0,254	1,31	3,5	4,8
3345 .. 20*	20/7	0,320	1,51	5,4	7,0
3345 .. 18*	18/19	0,254	1,78	9,2	11,0
3345 .. 16*	16/19	0,287	1,94	11,8	14,0
3345 .. 14*	14/19	0,361	2,30	18,7	21,0
3345 .. 12*	12/19	0,455	2,76	29,7	32,0

### Li6Yvz

item no. tinned copper FEP	AWG	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3349 .. 28*	28/7	0,127	0,93	0,9	2,0
3349 .. 26*	26/7	0,160	1,03	1,3	2,7
3349 .. 24*	24/7	0,203	1,16	2,2	3,7
3349 .. 22*	22/7	0,254	1,31	3,5	5,2
3349 .. 20*	20/7	0,320	1,51	5,4	7,5
3349 .. 18*	18/19	0,254	1,78	9,2	12,0
3349 .. 16*	16/19	0,287	1,94	11,8	14,0
3349 .. 14*	14/19	0,361	2,30	18,7	22,0
3349 .. 12*	12/19	0,455	2,76	29,7	33,0

### Li6Ybl

item no. bare copper FEP	AWG	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3348 .. 28*	28/7	0,127	0,93	0,9	2,0
3348 .. 26*	26/7	0,160	1,03	1,3	2,7
3348 .. 24*	24/7	0,203	1,16	2,2	3,7
3348 .. 22*	22/7	0,254	1,31	3,5	5,2
3348 .. 20*	20/7	0,320	1,51	5,4	7,5
3348 .. 18*	18/19	0,254	1,78	9,2	12,0
3348 .. 16*	16/19	0,287	1,94	11,8	14,0
3348 .. 14*	14/19	0,361	2,30	18,7	22,0
3348 .. 12*	12/19	0,455	2,76	29,7	33,0

### LiPFAvn

item no. nickel-plated copper PFA	AWG	nominal single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
3353 .. 28*	28/7	0,127	0,96	0,9	2,0
3353 .. 26*	26/7	0,160	1,06	1,4	2,7
3353 .. 24*	24/7	0,203	1,17	2,2	3,6
3353 .. 22*	22/7	0,254	1,34	3,4	5,1
3353 .. 20*	20/7	0,320	1,54	5,4	7,3
3353 .. 18*	18/19	0,254	1,81	9,2	11,0
3353 .. 16*	16/19	0,287	1,97	11,8	14,0

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	

# ETFE, FEP, PFA Cables

+180 °C

## TD 801 F

FEP data cable with extended temperature range

AWG 22/3c  AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3801-0322 



Marking for TD 801 F 38010322:

SAB BRÖCKSKES · D-VIERSEN · TD 801 F AWG 22/3c  AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3801-0322 

**Application:** Suitable for the application in coking plants and at furnaces.

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to ASTM B 286
<b>Insulation:</b>	FEP, 6Y11 acc. to VDE 0207-6
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	FEP, 6YM1 acc. to VDE 0207-6
<b>Sheath colour:</b>	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

UL/cUL recognized

### Technical data:

<b>Peak operating voltage:</b>	max. 375 V	
<b>Voltage UL/cUL:</b>	600 V	
<b>Testing voltage:</b>	core/core 2000 V	
<b>Min. bending radius:</b>	7,5 x d	
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL/cUL: up to +150 °C</b>
<i>fixed laying:</i>	-90/+180 °C	
<i>flexible application:</i>	-55/+180 °C	
<i>limited time of use:</i>	+200 °C	
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT1, FT2	
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days	
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

item no.	dimension	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38010228	2 x AWG 28/7	0,127	2,0	1,8	6,3
38010226	2 x AWG 26/7	0,160	2,2	2,8	7,9
38010224	2 x AWG 24/7	0,203	2,5	4,2	10,3
38010222	2 x AWG 22/7	0,254	2,8	6,8	13,6
38010220	2 x AWG 20/7	0,320	3,2	10,8	18,6
38010328	3 x AWG 28/7	0,127	2,1	2,7	7,9
38010326	3 x AWG 26/7	0,160	2,4	4,2	9,9
38010324	3 x AWG 24/7	0,203	2,6	6,3	13,4
38010322	3 x AWG 22/7	0,254	2,9	10,2	18,0
38010320	3 x AWG 20/7	0,320	3,4	16,2	25,5
38010428	4 x AWG 28/7	0,127	2,3	3,6	9,7
38010426	4 x AWG 26/7	0,160	2,5	5,6	12,7
38010424	4 x AWG 24/7	0,203	2,9	8,4	16,9
38010422	4 x AWG 22/7	0,254	3,2	13,6	22,8
38010420	4 x AWG 20/7	0,320	3,7	21,6	32,2
38010528	5 x AWG 28/7	0,127	2,5	4,5	11,7
38010526	5 x AWG 26/7	0,160	2,8	7,0	15,2
38010524	5 x AWG 24/7	0,203	3,1	10,5	21,0

item no.	dimension	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38010522	5 x AWG 22/7	0,254	3,5	17,0	28,3
38010520	5 x AWG 20/7	0,320	4,4	27,0	42,4
38010624	6 x AWG 24/7	0,203	3,5	12,6	25,0
38010728	7 x AWG 28/7	0,127	2,7	6,3	14,8
38010726	7 x AWG 26/7	0,160	3,0	9,8	19,4
38010724	7 x AWG 24/7	0,203	3,4	14,7	26,6
38010722	7 x AWG 22/7	0,254	4,1	23,8	38,6
38010720	7 x AWG 20/7	0,320	4,5	37,8	54,1
38011028	10 x AWG 28/7	0,127	3,4	9,0	20,4
38011026	10 x AWG 26/7	0,160	4,0	14,0	27,4
38011024	10 x AWG 24/7	0,203	4,5	21,0	39,0
38011022	10 x AWG 22/7	0,254	5,1	34,0	55,2
38011020	10 x AWG 20/7	0,320	5,9	54,0	78,3
38011228	12 x AWG 28/7	0,127	3,5	10,8	23,4
38011226	12 x AWG 26/7	0,160	4,0	16,8	32,6
38011224	12 x AWG 24/7	0,203	4,7	25,2	45,3
38011222	12 x AWG 22/7	0,254	5,3	40,8	64,2
38011220	12 x AWG 20/7	0,320	6,3	64,8	92,0

Other dimensions and colours are possible on request.

ETFE and PFA are possible on request.

# ETFE, FEP, PFA Cables

+180 °C

## TD 833 CF

FEP data cable with extended temperature range and overall copper screen

M Style 21618 I/II A/B 150°C 600V FT1 FT2 3833-0320 CE



Marking for TD 833 CF 38330320:

SAB BRÖCKSKES · D-VIERSEN · TD 833 CF AWG 20/3c AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3833-0320 CE

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to ASTM B 286
<b>Insulation:</b>	FEP, 6YI1 acc. to VDE 0207-6
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	PETP foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	FEP, 6YM1 acc. to VDE 0207-6
<b>Sheath colour:</b>	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

UL/cUL recognized

### Technical data:

<b>Peak operating voltage:</b>	max. 375 V	
<b>Voltage UL/cUL:</b>	600 V	
<b>Testing voltage:</b>	core/core	2000 V
	core/screen	2000 V
<b>Min. bending radius:</b>	7,5 x d	
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL/cUL:</b> up to +150 °C
<i>fixed laying:</i>	-90/+180 °C	
<i>flexible application:</i>	-55/+180 °C	
<i>limited time of use:</i>	+200 °C	
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT1, FT2	
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days	
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

item no.	dimension	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
a 38330228	2 x AWG 28/7	0,127	2,4	8,8	12,3
38330226	2 x AWG 26/7	0,160	2,7	13,0	16,1
38330224	2 x AWG 24/7	0,203	3,1	14,5	18,8
38330222	2 x AWG 22/7	0,254	3,3	17,1	21,9
38330220	2 x AWG 20/7	0,320	3,7	24,6	29,3
38330328	3 x AWG 28/7	0,127	2,6	9,7	13,9
38330326	3 x AWG 26/7	0,160	2,8	14,4	18,2
38330324	3 x AWG 24/7	0,203	3,1	16,6	21,6
38330322	3 x AWG 22/7	0,254	3,5	20,6	26,6
38330320	3 x AWG 20/7	0,320	4,0	30,1	37,5
38330428	4 x AWG 28/7	0,127	2,8	13,8	17,8
38330426	4 x AWG 26/7	0,160	3,1	15,9	20,6
38330424	4 x AWG 24/7	0,203	3,3	18,4	25,0
38330422	4 x AWG 22/7	0,254	3,8	27,4	33,4
38330420	4 x AWG 20/7	0,320	4,3	35,6	44,5
38330528	5 x AWG 28/7	0,127	3,0	14,8	19,9
38330526	5 x AWG 26/7	0,160	3,5	17,4	24,5
38330524	5 x AWG 24/7	0,203	3,8	24,4	32,0
38330522	5 x AWG 22/7	0,254	4,2	30,9	40,5
38330520	5 x AWG 20/7	0,320	4,8	42,9	54,4

item no.	dimension	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38330622	6 x AWG 22/7	0,254	4,6	34,5	47,2
38330620	6 x AWG 20/7	0,320	5,2	48,4	64,0
38330728	7 x AWG 28/7	0,127	3,2	16,6	23,3
38330726	7 x AWG 26/7	0,160	3,5	20,2	28,1
38330724	7 x AWG 24/7	0,203	4,0	25,2	36,8
38330722	7 x AWG 22/7	0,254	4,4	37,8	49,4
38330720	7 x AWG 20/7	0,320	5,2	53,8	68,4
38330820	8 x AWG 20/7	0,320	5,9	62,5	83,9
38331028	10 x AWG 28/7	0,127	4,0	22,9	33,0
38331026	10 x AWG 26/7	0,160	4,4	28,1	41,9
38331024	10 x AWG 24/7	0,203	5,0	36,9	53,4
38331022	10 x AWG 22/7	0,254	5,6	51,7	69,4
38331020	10 x AWG 20/7	0,320	6,4	75,4	95,1
38331228	12 x AWG 28/7	0,127	4,0	27,4	35,9
38331226	12 x AWG 26/7	0,160	4,5	30,8	44,2
38331224	12 x AWG 24/7	0,203	5,2	41,2	59,9
38331222	12 x AWG 22/7	0,254	5,8	60,3	80,2
38331220	12 x AWG 20/7	0,320	6,6	86,2	108,3
38331426	14 x AWG 26/7	0,160	4,7	35,5	50,0

Other dimensions and colours are possible on request.

ETFE and PFA are possible on request.

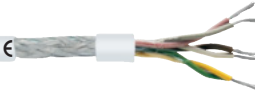
# ETFE, FEP, PFA Cables

+180 °C

## TD 838 CF TP

FEP data cable, twisted pairs with extended temperature range and overall copper screen

for   AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3838-0326 



Marking for TD 838 CF TP 38380326:

SAB BRÖCKSKES · D-VIERSEN · TD 838 CF TP AWG 26/3pr   AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3838-0326 

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to ASTM B 286
<b>Insulation:</b>	FEP, 6YI1 acc. to VDE 0207-6
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	cores twisted to pairs, pairs together in specially adjusted layering
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	FEP, 6YM1 acc. to VDE 0207-6
<b>Sheath colour:</b>	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

UL/cUL recognized

### Technical data:

<b>Peak operating voltage:</b>	max. 375 V	
<b>Voltage UL/cUL:</b>	600 V	
<b>Testing voltage:</b>	core/core	2000 V
	core/screen	2000 V
<b>Min. bending radius:</b>	7,5 x d	
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL/cUL: up to +150 °C</b>
<i>fixed laying:</i>	-90/+180 °C	
<i>flexible application:</i>	-55/+180 °C	
<i>limited time of use:</i>	+200 °C	
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT1, FT2	
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days	
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

item no.	dimension	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38380228	2 x 2 x AWG 28/7	0,127	3,2	13,9	18,7
38380226	2 x 2 x AWG 26/7	0,160	3,5	16,0	22,0
38380224	2 x 2 x AWG 24/7	0,203	4,0	22,3	30,1
38380222	2 x 2 x AWG 22/7	0,254	4,6	27,7	37,1
38380220	2 x 2 x AWG 20/7	0,320	5,1	37,6	49,5
38380328	3 x 2 x AWG 28/7	0,127	3,6	19,2	24,8
38380326	3 x 2 x AWG 26/7	0,160	4,1	22,3	30,7
38380324	3 x 2 x AWG 24/7	0,203	4,5	26,6	37,3
38380322	3 x 2 x AWG 22/7	0,254	5,2	36,4	50,0
38380320	3 x 2 x AWG 20/7	0,320	5,9	51,9	66,8
38380428	4 x 2 x AWG 28/7	0,127	4,2	21,1	30,3
38380426	4 x 2 x AWG 26/7	0,160	4,7	25,3	36,3
38380424	4 x 2 x AWG 24/7	0,203	5,5	32,6	48,6

item no.	dimension	nominal single wire ø mm	approx. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38380422	4 x 2 x AWG 22/7	0,254	5,9	46,7	62,7
38380420	4 x 2 x AWG 20/7	0,320	6,8	66,8	84,8
38380418	4 x 2 x AWG 18/19	0,254	8,1	100,3	124,2
38380528	5 x 2 x AWG 28/7	0,127	4,6	24,8	36,5
38380526	5 x 2 x AWG 26/7	0,160	5,2	30,0	43,9
38380524	5 x 2 x AWG 24/7	0,203	5,8	38,7	50,1
38380522	5 x 2 x AWG 22/7	0,254	6,5	55,3	76,2
38380520	5 x 2 x AWG 20/7	0,320	7,5	77,5	104,5
38380628	6 x 2 x AWG 28/7	0,127	4,7	26,7	40,1
38380626	6 x 2 x AWG 26/7	0,160	5,3	34,3	52,5
38380624	6 x 2 x AWG 24/7	0,203	5,9	44,7	66,6
38380622	6 x 2 x AWG 22/7	0,254	6,9	65,2	90,0
38380620	6 x 2 x AWG 20/7	0,320	7,8	92,6	123,7

Other dimensions and colours are possible on request.

ETFE and PFA are possible on request.

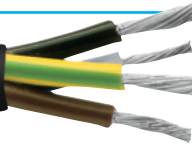
# ETFE, FEP, PFA Cables

+180 °C

## TA 866 F

FEP connection cable with extended temperature range

AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3866-0415 CE



Marking for TA 866 F 38660415:

SAB BRÖCKSKES · D-VIERSEN · TA 866 F AWG 16/4c AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3866-0415 CE

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	FEP, 6Y11 acc. to VDE 0207-6
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	FEP, 6YM1 acc. to VDE 0207-6
<b>Sheath colour:</b>	black (RAL 9005)

### 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

UL/cUL recognized

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V	
<b>Voltage UL/cUL:</b>	600 V	
<b>Testing voltage:</b>	core/core 2000 V	
<b>Min. bending radius:</b>	7,5 x d	
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL/cUL: up to +150 °C</b>
<i>fixed laying:</i>	-90/+180 °C	
<i>flexible application:</i>	-55/+180 °C	
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT1, FT2	
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days	
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38660202	2 x 0,25	0,16	2,9	4,8	13,0
38660205	2 x 0,50	0,21	3,5	9,6	20,6
38660207	2 x 0,75	0,21	4,1	14,4	27,5
38660210	2 x 1,00	0,21	4,3	19,2	32,3
38660215	2 x 1,50	0,26	4,9	28,8	42,5
38660225	2 x 2,50	0,26	5,8	48,0	63,4
38660240	2 x 4,00	0,31	7,0	76,8	94,1
38660260	2 x 6,00	0,31	8,7	115,2	145,6
38660302	3 x 0,25	0,16	3,1	7,2	17,2
38660305	3 x 0,50	0,21	3,7	14,4	27,7
38660307	3 x 0,75	0,21	4,4	21,6	36,9
38660310	3 x 1,00	0,21	4,8	28,8	43,8
38660315	3 x 1,50	0,26	5,3	43,2	60,3
38660325	3 x 2,50	0,26	6,2	72,0	88,6
38660340	3 x 4,00	0,31	7,6	115,2	136,1
38660360	3 x 6,00	0,31	9,4	172,8	213,3
38660402	4 x 0,25	0,16	3,4	9,6	21,6
38660405	4 x 0,50	0,21	4,2	19,2	36,9
38660407	4 x 0,75	0,21	5,3	28,8	46,9
38660410	4 x 1,00	0,21	5,5	38,4	57,8
38660415	4 x 1,50	0,26	6,1	57,6	77,2
38660425	4 x 2,50	0,26	7,5	96,0	114,4
38660440	4 x 4,00	0,31	8,3	153,6	176,1
38660460	4 x 6,00	0,31	10,4	230,4	275,0
38660502	5 x 0,25	0,16	3,7	12,0	27,1
38660505	5 x 0,50	0,21	4,6	24,0	45,9

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38660507	5 x 0,75	0,21	5,4	36,0	60,6
38660510	5 x 1,00	0,21	5,8	48,0	73,0
38660515	5 x 1,50	0,26	6,9	72,0	97,8
38660525	5 x 2,50	0,26	7,7	120,0	147,1
38660540	5 x 4,00	0,31	9,4	192,0	225,9
38660560	5 x 6,00	0,31	11,6	288,0	357,7
38660702	7 x 0,25	0,16	4,2	16,8	36,0
38660705	7 x 0,50	0,21	5,2	33,6	61,7
38660707	7 x 0,75	0,21	6,2	50,4	78,5
38660710	7 x 1,00	0,21	6,2	67,2	94,3
38660715	7 x 1,50	0,26	7,2	100,8	130,1
38660725	7 x 2,50	0,26	8,4	168,0	193,9
38660740	7 x 4,00	0,31	10,3	268,8	299,2
38660760	7 x 6,00	0,31	12,8	403,2	458,3
38661002	10 x 0,25	0,16	5,4	24,0	52,0
38661005	10 x 0,50	0,21	6,6	48,0	86,3
38661007	10 x 0,75	0,21	7,7	72,0	113,1
38661010	10 x 1,00	0,21	8,1	96,0	135,7
38661015	10 x 1,50	0,26	9,4	144,0	195,5
38661025	10 x 2,50	0,26	11,0	240,0	278,2
38661202	12 x 0,25	0,16	5,6	28,8	62,3
38661205	12 x 0,50	0,21	6,8	57,6	101,6
38661207	12 x 0,75	0,21	8,0	86,4	134,2
38661210	12 x 1,00	0,21	8,4	115,2	159,0
38661215	12 x 1,50	0,26	9,7	172,8	218,9
38661225	12 x 2,50	0,26	11,5	288,0	332,1

Other dimensions and colours are possible on request.

ETFE and PFA are possible on request.

# ETFE, FEP, PFA Cables

+180 °C

## TA 867 CF

FEP connection cable with extended temperature range and overall copper screen

AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3867-0415 CE



Marking for TA 867 CF 38670415:

SAB BRÖCKSKES · D-VIERSEN · TA 867 CF AWG 16/4c AWM Style 21618 I/II A/B 150°C 600V FT1 FT2 3867-0415 CE

Construction:	
<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	FEP, 6Y11 acc. to VDE 0207-6
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	FEP, 6YM1 acc. to VDE 0207-6
<b>Sheath colour:</b>	black (RAL 9005)

Technical data:	
<b>Peak operating voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Voltage UL/cUL:</b>	600 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius:</b>	7,5 x d
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	<b>DIN VDE</b> <b>UL/cUL: up to +150 °C</b>
<i>fixed laying:</i>	-90/+180 °C
<i>flexible application:</i>	-55/+180 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT1, FT2
<b>Oil resistance:</b>	very good acc. to UL standard 758, at 80 °C after 80 days
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

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
	<b>UL/cUL recognized</b>

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38670202	2 x 0,25	0,16	3,4	15,2	21,7
38670205	2 x 0,50	0,21	4,1	23,5	33,2
38670207	2 x 0,75	0,21	4,6	28,5	38,9
38670210	2 x 1,00	0,21	4,8	35,1	44,9
38670215	2 x 1,50	0,26	5,5	46,4	57,7
38670225	2 x 2,50	0,26	6,3	67,5	78,4
38670240	2 x 4,00	0,31	7,6	100,3	114,8
38670302	3 x 0,25	0,16	3,6	17,6	25,5
38670305	3 x 0,50	0,21	4,3	28,4	40,0
38670307	3 x 0,75	0,21	4,9	37,6	49,3
38670310	3 x 1,00	0,21	5,2	44,8	58,1
38670315	3 x 1,50	0,26	5,8	60,9	74,2
38670325	3 x 2,50	0,26	6,7	93,0	104,7
38670340	3 x 4,00	0,31	8,1	141,5	156,1
38670360	3 x 6,00	0,31	10,1	226,7	250,1
38670402	4 x 0,25	0,16	4,0	23,5	34,3
38670405	4 x 0,50	0,21	4,7	33,3	48,0
38670407	4 x 0,75	0,21	5,4	44,6	61,2
38670410	4 x 1,00	0,21	5,6	53,1	72,2
38670415	4 x 1,50	0,26	6,3	77,1	93,0
38670425	4 x 2,50	0,26	7,4	119,5	136,0
38670440	4 x 4,00	0,31	8,8	182,5	200,4
38670502	5 x 0,25	0,16	4,3	26,0	39,1

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
38670505	5 x 0,50	0,21	5,2	39,8	60,0
38670507	5 x 0,75	0,21	5,9	55,5	75,7
38670510	5 x 1,00	0,21	6,2	67,4	88,1
38670515	5 x 1,50	0,26	7,2	95,7	118,4
38670525	5 x 2,50	0,26	8,2	146,3	167,1
38670702	7 x 0,25	0,16	4,7	30,9	47,1
38670705	7 x 0,50	0,21	5,7	51,3	75,5
38670707	7 x 0,75	0,21	6,4	70,0	93,6
38670710	7 x 1,00	0,21	6,7	88,2	110,4
38670715	7 x 1,50	0,26	7,7	126,9	150,0
38670725	7 x 2,50	0,26	8,9	196,9	216,1
38671002	10 x 0,25	0,16	5,1	43,5	64,3
38671005	10 x 0,50	0,21	6,9	71,6	102,7
38671007	10 x 0,75	0,21	8,1	98,3	133,1
38671010	10 x 1,00	0,21	8,6	125,0	158,0
38671015	10 x 1,50	0,26	10,1	197,9	235,4
38671025	10 x 2,50	0,26	11,7	299,6	327,9
38671202	12 x 0,25	0,16	6,1	48,2	75,2
38671205	12 x 0,50	0,21	7,4	81,4	121,4
38671207	12 x 0,75	0,21	8,5	115,4	155,5
38671210	12 x 1,00	0,21	8,9	144,1	181,2
38671215	12 x 1,50	0,26	10,4	226,9	260,5
38671225	12 x 2,50	0,26	12,4	348,0	377,5

Other dimensions and colours are possible on request.

ETFE and PFA are possible on request.

# Reeling cables

## DR 721 P



Marking for DR 721 P 07210425:

SAB BRÜCKSKES · D-VIERSEN · DR 721 P 4 G 2,5 mm² CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special polymer
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	specially adjusted layering
<b>Inner sheath:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Supporting screen:</b>	high-tech yarn
<b>Sheath material:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Sheath colour:</b>	black (RAL 9005)

### Outstanding features:



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

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Current-carrying capacity:</b>	acc. to VDE 0298-4
<b>Min. bending radius</b> <i>for laying and installation</i> <i>(fixed laying):</i>	6 x d
<i>for repeated winding action</i> <i>(flexible):</i>	10 x d
<i>guided on pulleys</i> <i>(flexible):</i>	12 x d
<b>Temperature range</b> <i>fixed laying:</i>	-50/+90 °C
<i>flexible:</i>	-40/+90 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 und EN 60332-1-2
<b>Oil resistance:</b>	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Chemical resistance:</b>	very good against acids, alkaline solutions, solvents and hydraulic liquids, etc.
<b>Weather resistance:</b>	very good
<b>Sunlight resistance:</b>	very good - enhanced due to black sheath colour
<b>Tensile strength:</b>	acc. to VDE 0298-3 section 7.1
<b>Mechanical characteristics:</b>	the main mechanical characteristics accomplished by the PUR outer sheath are: - high tensile strength - high tear strength - high abrasion resistance - high notch resistance
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07210415	4 G 1,50	8,8	57,6	116
07210515	5 G 1,50	9,6	72,0	140
07210715	7 G 1,50	11,7	100,8	203
07211215	12 G 1,50	16,4	172,8	339
07211815	18 G 1,50	16,3	259,2	427
07212415	24 G 1,50	19,6	345,6	571
07213615	36 G 1,50	22,1	518,4	798
07210425	4 G 2,50	10,2	96,0	168
07210525	5 G 2,50	11,2	120,0	205
07210725	7 G 2,50	13,6	168,0	297
07211225	12 G 2,50	19,4	288,0	507
07211825	18 G 2,50	19,4	432,0	634
07212425	24 G 2,50	23,6	576,0	854

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07213625	36 G 2,50	26,4	864,0	1196
07210440	4 G 4,00	12,4	153,6	256
07210460	4 G 6,00	14,4	230,4	363
07210560	5 G 6,00	15,6	288,0	438
07210470	4 G 10,0	17,9	384,0	585
07210480	4 G 16,0	22,4	614,4	905
07210580	5 G 16,0	25,0	768,0	1131
07210390	3 x 25,0			
	+ 3 G 6,00	24,2	892,8	1178
07210395	3 x 35,0			
	+ 3 G 6,00	28,0	1180,8	1568
07210396	3 x 50,0			
	+ 3 G 10,0	31,8	1728,0	2249

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

# Reeling cables

## DR 720 P Highflex



Marking for DR 720 P Highflex 07200425:

SAB BRÖCKSKES · D-VIERSEN · DR 720 P Highflex 4 G 2,5 mm² CE

**Application:** To be used in converters, furnaces and cold rolling mills.

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special polymer
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	specially adjusted layering around central suspension unit
<b>Inner sheath:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Supporting screen:</b>	high-tech yarn
<b>Sheath material:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Sheath colour:</b>	black (RAL 9005)

### Outstanding features:



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

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Current-carrying capacity:</b>	acc. to VDE 0298-4
<b>Min. bending radius</b> <i>for laying and installation (fixed laying):</i> <i>for repeated winding action (flexible):</i> <i>guided on pulleys (flexible):</i>	≤ 12 mm 3 x d / >12 mm 4 x d 6 x d 7,5 x d
<b>Temperature range</b> <i>fixed laying:</i> <i>flexible application:</i>	-50/+90 °C -40/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Oil resistance:</b>	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Chemical resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids, etc.
<b>Weather resistance:</b>	very good
<b>Sunlight resistance:</b>	very good - enhanced due to black sheath colour
<b>Tensile strength:</b>	acc. to VDE 0298-3 section 7.1
<b>Mechanical characteristics:</b>	the main mechanical characteristics accomplished by the PUR outer sheath are: - high tensile strength - high tear strength - high abrasion resistance - high notch resistance
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section n x mm <sup>2</sup>	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
07202415	24 G 1,50	19,5	345,6	575	2700
07200425	4 G 2,50	10,4	96,0	170	1345
07200525	5 G 2,50	11,6	120,0	213	2100
07200725	7 G 2,50	13,8	168,0	299	2500
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
07203625	36 G 2,50	26,7	864,0	1208	4750
07205025	50 G 2,50	32,4	1200,0	1739	6750

item no.	no. of cores x cross section n x mm <sup>2</sup>	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 dimensions and colours are possible on request.  
Please mention the required winding length when placing the order.



# Special Cables

## Special single conductor

glass fiber insulated strands with excellent temperature resistance

excellent  
temperature  
resistance

+400 °C



**Application:** e.g. in metallurgy and rolling mill technology.

### Construction:

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

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	2200 V
<b>Min. bending radius:</b>	5 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	max. +400°C
<i>flexible application:</i>	max. +400°C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union



### Outstanding features:

- excellent heat resistance
- flame resistant

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km
32869035	1 x 185,00	0,40	23,7	1776,0	1855

Other dimensions and colours are possible on request.



**Single conductor  
in other dimensions  
on request!**



Stahl-Zentrum / Geörgsmannhütte

# Special Cables

## Special connection cable

connection cable with excellent temperature resistance

excellent  
temperature  
resistance

+400 °C



**Application:** e.g. in metallurgy and rolling mill technology.

### Construction:

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

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	2500 V
<b>Min. bending radius:</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Temperature range:</b>	
<i>fixed laying:</i>	max. +400°C
<i>flexible application:</i>	max. +400°C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- halogen-free
- excellent heat resistance
- flame resistant

item no.	no. of cores x cross section n x mm <sup>2</sup>	largest single wire ø mm	max. outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
32869066	3 x 2,50	0,25	9,5	72,0	190
32869039	4 x 2,50	0,25	10,4	96,0	239
32869040	4 x 4,00	0,30	12,8	153,6	349

Other dimensions and colours are possible on request.



Other dimensions  
on request!



Stahl-Zentrum / AccelorMittal

# Special Cables

## Special connection cable

with silicone impregnated fiber-glass braiding

+180 °C



**Application:** 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.

### Construction:

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

### Technical data:

<b>Nominal voltage:</b>	U <sub>o</sub> /U 450/750 V U <sub>o</sub> /U 3,8/6,6 V U <sub>o</sub> /U 8,0/13,8 V
<b>Testing voltage:</b>	450/750 V = 2500 V 3,8/6,6 kV = 15000 V 8,0/13,8 kV = 30000 V
<b>Min. bending radius:</b>	7,5 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
fixed laying:	-40/+180 °C
flexible application:	-25/+180 °C
short-time use:	+250 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

### 450/750 V

item no.	nominal cross-section mm <sup>2</sup>	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 mm <sup>2</sup>	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 mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
item group 0123	10,00	0,41	11,9	96,0	224
	16,00	0,41	12,9	153,6	286
	25,00	0,41	14,7	240,0	386
item no. on request	50,00	0,41	17,3	480,0	663
	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 fiber braiding, inner sheath and overall copper screen



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

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Wrapping:</b>	cores together with mica tape
<b>Braiding:</b>	cores together with glass fiber
<b>Stranding:</b>	in layers
<b>Braiding:</b>	glass fiber
<b>Wrapping:</b>	mica tape
<b>Braiding:</b>	glass fiber
<b>Inner sheath:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Sheath colour:</b>	reddish brown (similar RAL 3016)
<b>Screen:</b>	tinned copper braiding

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius:</b>	15 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

item no.	no. of cores x cross section n x mm <sup>2</sup>	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.



Stahl-Zentrum / HKM

## Smeltery Cable

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



**Application:** Especially appropriate for the application between ladle carriages.

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Wrapping:</b>	cores together with mica tape
<b>Braiding:</b>	glass fiber
<b>Stranding:</b>	in layers
<b>Braiding:</b>	glass fiber
<b>Wrapping:</b>	mica tape
<b>Braiding:</b>	glass fiber
<b>Screen:</b>	tinned copper braiding

### Technical data:

<b>Nominal voltage:</b>	Uo/U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius:</b>	15 x d
<b>Radiation resistance:</b>	2 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



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

item no.	no. of cores x cross section n x mm <sup>2</sup>	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 mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
07471215	12 x 1,50	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.

# Temperature Measurement Techniques

## Temperature measurement in universal use

mineral insulated thermocouple with plug



■ This temperature probe is versatile due to its design and high temperature resistance. With its slim design and flexible sheath material, the probe can even be installed in hardly reachable positions. Easy installation is ensured in conjunction with a clamping screw connection.

### Thermocouple:

- 1 x type J
- 1 x type K
- 2 x type J } from Ø 1,5 mm
- 2 x type K }
- other thermocouples \_\_\_\_\_

### Sheath-Ø:

- 0,25 mm
- 0,50 mm
- 0,64 mm
- 0,75 mm
- 1,00 mm
- 1,50 mm
- 2,00 mm
- 3,00 mm
- 4,50 mm
- 6,00 mm
- other sheath-Ø \_\_\_\_\_

### Sheath material:

- 1.4541 (+800°C)
- 2.4816 (+1100°C)
- other sheath materials \_\_\_\_\_

### Connection ends:

- miniature thermoplug  miniature socket
- standard plug  standard socket
- free ends \_\_\_\_\_ mm
- other connection ends

### Type of measuring tip:

- class 1, form A, insulated measuring tip
- class 1, form B, welded measuring tip

Nominal length: \_\_\_\_\_ mm

- with batch certificate and identification
- Dakks calibration on request
- accessories (fix): \_\_\_\_\_

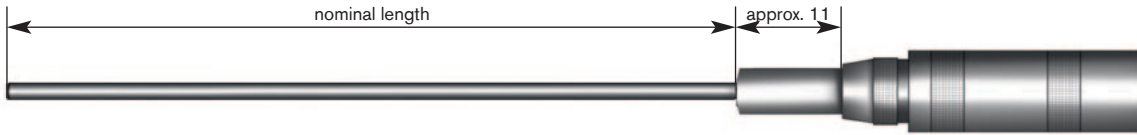
### CONFIGURATION EXAMPLES

item no.	type	Ø mm	nominal length mm	material	connection ends	feature
T302-051-218	K	0,50	100	2.4816	miniature thermoplug	without tip
T302-046-275	K	1,00	100	2.4816	miniature thermoplug	without tip
T302-043-185	K	1,50	100	1.4541	miniature thermoplug	with tip

# Temperature Measurement Techniques

## Temperature measurement in universal use

mineral insulated resistance thermometer with Lemo connection end



■ This temperature probe is versatile due to its design and high temperature resistance. With its slim design and flexible sheath material, the probe can even be installed in hardly reachable positions. Easy installation is ensured in conjunction with a clamping screw connection.

### RTD:

- 1 x PT100 class B
- 1 x PT100 class A
- 2 x PT100 class B
- 2 x PT100 class A

### Connection types of inner wire:

- 2-wire circuit
- 3-wire circuit
- 4-wire circuit

### Sheath-Ø:

- 1,5 mm     3,0 mm     4,5 mm
- other sheath-Ø \_\_\_\_\_

### Connection element:

- socket size 0       plug size 0
- socket size 1       plug size 1
- socket size 2       plug size 2
- other connection elements \_\_\_\_\_

### Accessories (fix):

- without socket/plug housing
- with socket/plug housing
- other accessories \_\_\_\_\_

### Measuring ranges:

- 50 up to +400°
- 50 up to +600°
- other measuring ranges

### Nominal length: \_\_\_\_\_ mm

- with batch certificate and identification
- Dakks calibration on request
- accessories (fix): \_\_\_\_\_

RTD:	PT100 acc. to DIN EN 60751
sheath material:	mat. no. 1.4541
measuring range:	-50 up to +400°C and -50 up to +600°C
plug/socket size:	size 0 with sheath-Ø 1,5 mm size 1 with sheath-Ø 1,5 mm – 4,5 mm size 2 with sheath-Ø 6,00 mm

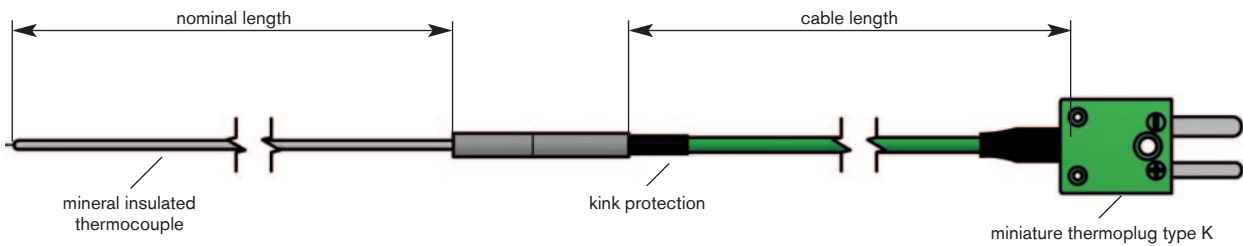
### CONFIGURATION EXAMPLES

item no.	RTD	Ø mm	nominal length mm	connection types	connection ends
T603-046-327	1 x PT100 class A	1,5	100	4-wire circuit	Lemo plug size 0, 4 pole
T603-040-028	1 x PT100 class A	3,0	100	4-wire circuit	Lemo plug size 1, 4 pole

# Temperature Measurement Techniques

## Temperature measurement in universal use

mineral insulated thermocouple with cable



■ This temperature probe is versatile due to its design and high temperature resistance. With its slim design and flexible sheath material, the probe can even be installed in hardly reachable positions. Easy installation is ensured in conjunction with a clamping screw connection.

### Thermocouple:

- 1 x type J
- 1 x type K
- 2 x type J
- 2 x type K } from Ø 1,5 mm
- other thermocouples \_\_\_\_\_

### Sheath-Ø:

- 0,25 mm
- 0,50 mm
- 1,00 mm
- 1,50 mm
- 2,00 mm
- 3,00 mm
- 4,50 mm
- 6,00 mm
- other sheath-Ø \_\_\_\_\_

### Sheath material:

- 1.4541 (+800°C)
- 2.4816 (+1100°C)
- other sheath materials \_\_\_\_\_

### Type of measuring tip:

- class 1, form A, insulated measuring tip
- class 1, form B, welded measuring tip

### Nominal length: \_\_\_\_\_ mm

- with batch certificate and identification
- Dakks calibration on request
- accessories (fix): \_\_\_\_\_

### Type:

- with kink protection
- without kink protection

### Connection cable:

- Thermocouple extension cable 2 x 0,22 mm<sup>2</sup> (FEP / C / FEP)
- Thermocouple extension cable 2 x 0,22 mm<sup>2</sup> (FEP / FEP)
- other connection cables

### Connection cable length:

- 0,50 m
- 1,00 m
- 1,50 m
- 2,00 m
- 3,00 m
- 5,00 m
- 10,0 m
- other length \_\_\_\_\_ m

### Connection ends:

- miniature thermoplug  miniature socket
- standard plug  standard socket
- free ends \_\_\_\_\_ mm
- other connection ends

### CONFIGURATION EXAMPLES

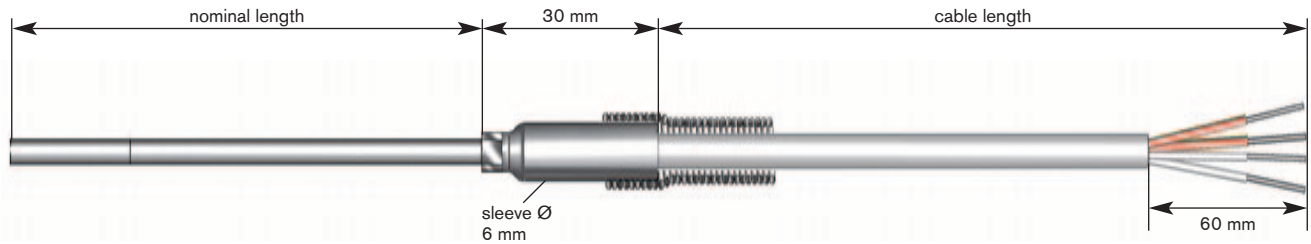
item no.	type	Ø mm	nominal length mm	material	cable	cable length mm	connection ends
T207-058-738	K	0,25	100	1.4541	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	1000	miniature thermoplug
T207-058-674	K	0,50	300	1.4541	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	3000	miniature thermoplug
T207-053-625	K	0,50	150	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	1000	miniature thermoplug
T207-059-165	K	0,64	200	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	3000	miniature thermoplug
T207-035-153	K	1,00	100	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	2000	miniature thermoplug
T207-055-557	K	1,00	500	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	1000	miniature thermoplug
T207-058-740	K	1,50 (double wall thickness)	150	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	3000	Lemo plug size 0, 2 pole
T207-037-493	K	1,50	150	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	1000	miniature thermoplug
T207-056-787	K	3,00	150	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	2000	miniature thermoplug
T207-056-830	K	3,00 (double wall thickness)	150	2.4816	2 x 0,22 mm <sup>2</sup> FEP/C/FEP	250	miniature thermoplug



# Temperature Measurement Techniques

## Temperature measurement in universal use

mineral insulated resistance thermometer with connection cable



■ This temperature probe is versatile due to its design and high temperature resistance. With its slim design and flexible sheath material, the probe can even be installed in hardly reachable positions. Easy installation is ensured in conjunction with a clamping screw connection.

### general information

With a 2-wire circuit only one class accuracy class B accuracy can be confirmed.

material 1.4541: +800°C

Please note that the temperature stability of the sensor is determined by the weakest parameters.

### RTD:

- 1 x PT100
- 2 x PT100

### Limiting deviation:

- class A     -30°C/+300°C     -100°C/+450°C
- class B     -50°C/+500°C     -196°C/+600°C

### Connection types of inner wire:

- 2-wire circuit
- 3-wire circuit
- 4-wire circuit

### Sheath-Ø:

- 1,5 mm     3,0 mm     4,5 mm
- other sheath-Ø \_\_\_\_\_

Nominal length: \_\_\_\_\_ mm



### Available on request:

- class AA
- class DIN 1/10

### Type:

- with kink protection
- without kink protection

### Connection cable:

- RTD cable (FEP / FEP)
- other connection cables

### Connection cable length:

- 0,50 m     1,00 m
- 1,50 m     2,00 m
- 3,00 m     5,00 m
- 10,0 m     other length \_\_\_\_\_ m

### Connection ends:

- bare ends
- endsleeves
- cable lugs M4
- tinned
- other cable ends \_\_\_\_\_
- with batch certificate and identification
- Dakks calibration on request
- accessories (fix): \_\_\_\_\_

### CONFIGURATION EXAMPLES

item no.	RTD	ø mm	nominal length mm	connection types	cable	cable length mm	connection ends
T507-059-257	1 x PT100	1,5	100	4-wire circuit	FEP/FEP	1000	Lemo FGA.0B.306
T505-053-490	1 x PT100	1,5	100	4-wire circuit	FEP/FEP	1000	bare ends

# Temperature Measurement Techniques

## Our temperature measurement at a glance

WITH US YOU GET **TEMPERATURE MEASUREMENT**  
AND **ACCESSORIES** FOR A WIDE VARIETY  
OF REQUIREMENTS AND INDUSTRIES.

### Protecting armatures and gauge slides

- Immersion protecting armatures
- Screwed protecting armatures
- Welding protecting armatures, etc.

### Temperature measurement in test vehicles

- Thermo 8-plug connector
- Dipstick thermocouples
- Thermocouples for cooling water tube applications, etc.

### Mineral insulated thermocouples/ Mineral insulated resistance thermometers

- with fixed connecting cable
- with bare connection ends
- with thermo-plug/miniature plug, etc.

### Temperature measurement in plastics processing industry/Hot runner technique

- Hot runner mineral insulated thermocouples
- Plug-in thermocouples
- Molten mass thermocouples, etc.

### Probe with stainless steel sleeve

- available as thermocouple
- available as resistance thermometer

### Compensating and extension cables

- Compensating and extension cables for thermocouples
- Connection cables for resistance thermometers, etc.

### Accessories

- Clamping screw connections
- Flanges
- Screw sockets
- Connection heads
- Welding protecting tubes
- Transmitters
- Thermo-plugs/sockets
- Screw-in nipples
- Miniature plugs/sockets



# Cable Harnessing

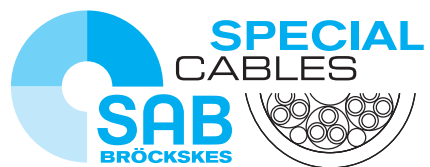
## Our cable harnessing at a glance

### WE SUPPLY **HARNESSED CABLES AND WIRES**

FROM A SINGLE SOURCE.

- helix cables
- harnessed cables acc. to customers' specification
- cable harnesses
- harnessed motor and transmission cables for Siemens and Indramat drives
- harnessed track cable
- various combinations of connector types and terminals
- many application of various materials and sheath materials
- complete solutions
- high quality standard by continuous quality control





**SAB** Bröckskes GmbH & Co. KG

Grefrather Str. 204 - 212 b

41749 Viersen · GERMANY

Tel.: +49/2162/898-0

Fax: +49/2162/898-101

[www.sab-cable.com](http://www.sab-cable.com)

[info@sab-cable.com](mailto:info@sab-cable.com)