

# Cables for wind power plant



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## DIN EN ISO 9001

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

We at SAB Bröckskes see ourselves as manufacturer and service provider - in the sense of real partnership and customer oriented work. The quality of our products is known in more than 40 countries of the world. Our customers have tested our products intensively and confirm that they have a longer service life than others. In all product ranges we are certified acc. to ISO 9001:2008. Besides we established an environmental management system for our company acc. to ISO 14001:2004, an occupational health and safety management acc. to NLF/ILO-OSH 2001 and OHSAS 18001:2007 as well as an energy management system acc. to DIN EN 16001:2009. And our future slogan is: **We go forward!**

### founded:

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

### CEO:

- Peter Bröckskes

### plant/location:

- in Viersen (lower Rhine) 110.000 m<sup>2</sup> company site
- manufacturing from copper conductor to outer sheath,
- own VDE proofed burnchamber and laboratory

### employees/workers:

- approx. 420 at the plant in Viersen, 500 worldwide

### yearly sales:

- approx. 95 Mio. € worldwide

### products:

- Special Cables
- Temperature Measurement
- Cable Harnessing

### certificates and approvals:

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



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

## Data / POF Cables POF-LWL and hybrid cables for data transmission



BRÖCKSKES · D-VIERSEN · Sonder-Kombi-Datenleitung 19 x 1,0 mm<sup>2</sup>



<b>Construction:</b>	2 x POF + 10 x 0,50 mm <sup>2</sup>	4 x POF + 19 x 1,00 mm <sup>2</sup>	6 x POF black	6 x POF coloured	8 x POF
<b>Conductor:</b>	bare copper strands, extra fine wires, acc. to EN 60228		---		
<b>POF:</b>	blue, red	black cores with consecutive numbers in white 1-4	black cores with consecutive numbers in white 1-6	black, blue, red, white, green, orange	black cores with consecutive numbers in white 1-8
<b>Insulation (copper conductor):</b>	YA, thermoplastic material, TI2 acc. to DIN VDE 0281 part 1		---		
<b>Colour code (copper conductor):</b>	0,50 mm <sup>2</sup> : black cores with consecutive numbers in white 1-10 without a green- yellow earth wire	1,00 mm <sup>2</sup> : black cores with consecutive numbers in white 1-18 without a green- yellow earth wire	---		
<b>Stranding:</b>	POF and cores in layers		POF in layers with non-woven tape wrapping		
<b>Wrapping:</b>	---	non-woven tape	---		
<b>Sheath material:</b>	YM, thermoplastic material, TM2 acc. to DIN VDE 0281 part 1				thermoplastic material
<b>Sheath colour:</b>	black (RAL 9005)				

<b>Technical data</b>	2 x POF + 10 x 0,50 mm <sup>2</sup>	4 x POF + 19 x 1,00 mm <sup>2</sup>	6 x POF black	6 x POF coloured	8 x POF
<b>Voltage:</b>	max. 350 V		---		
<b>Testing voltage:</b>	core / core 1500 V		---		
<b>Temperature range</b> <i>fixed laying:</i> <i>flexible application:</i>	- 30°C / + 70°C - 5°C / + 70°C		- 30°C / + 70°C - 5°C / + 70°C		
<b>Min. bending radius:</b>	7,5 x d				
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2				
<b>Oil resistance:</b>	acc. to internal standard				
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union				

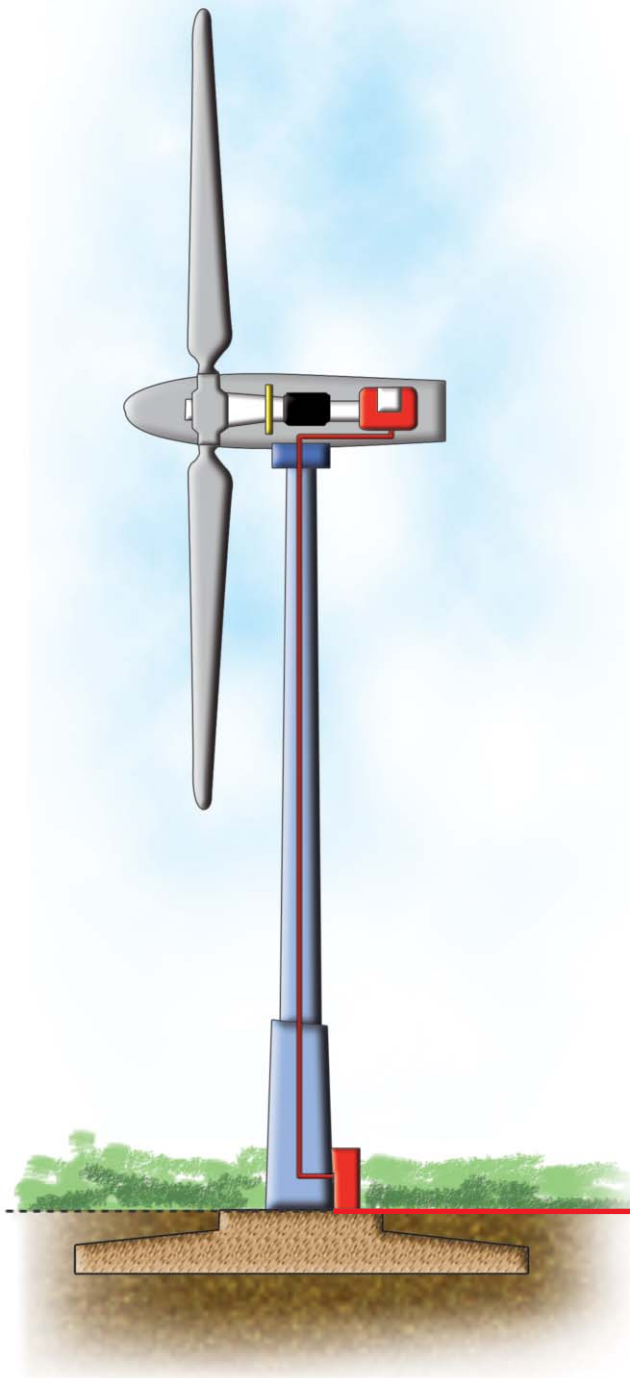
item no.	no. of cores	no. of POF	nominal cross-section mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max.Ω/km
	10	2	0,50	9,5	48,0	121	39,0
	19	4	1,00	14,9	182,4	293	19,5
on request		6		8,7		70	
		6		8,7		70	
		8		10,1		93	

Other dimensions and colours are possible on request.

## Data / POF Cables POF-LWL and hybrid cables for data transmission

### Example of use:

- Good electromagnetic characteristics signal transmission for installation in switch boxes and wind energy plants. The copper cable is used for the transmission of the temperature signals that are used for the control of the operating temperature with the help of a resistance thermometer.



## Sensor cable continuously flexible TPE/PUR data cable with coloured core 3 x (1 x 0,14 mm<sup>2</sup>)D + 12 x 0,14 mm<sup>2</sup>



AWM Style 21198 80°C 300V CSA AWM I A/B 80°C 300V FT2 CE



Marking for Sensor cable:

SAB BRÖCKSKES · D-VIERSEN · Special Cable AWM Style 21198 80°C 300V CSA AWM I A/B 80°C 300V FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands, extra fine wires
<b>Insulation:</b>	TPE
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	specially adjusted layering with non-woven tape over each layer
<b>Screen:</b>	wrapped with tinned copper
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	PUR
<b>Sheath colour:</b>	black (RAL 9005)

### Technical data

<b>Peak operating voltage:</b>	<b>DIN VDE:</b> max. 150 V <b>UL/CSA:</b> 300 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
<i>individual bending:</i>	90° for a length of 7 cm
<b>Temperature range</b>	<b>DIN VDE</b> <b>UL/CSA:</b> up to +80°C
<i>fixed laying:</i>	-40/+80°C
<i>flexible application:</i>	-30/+70°C
<i>high temperature:</i>	up to +90°C
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 + IEC 60754-1
<b>Resistance:</b>	very good against water, glycol and frost
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

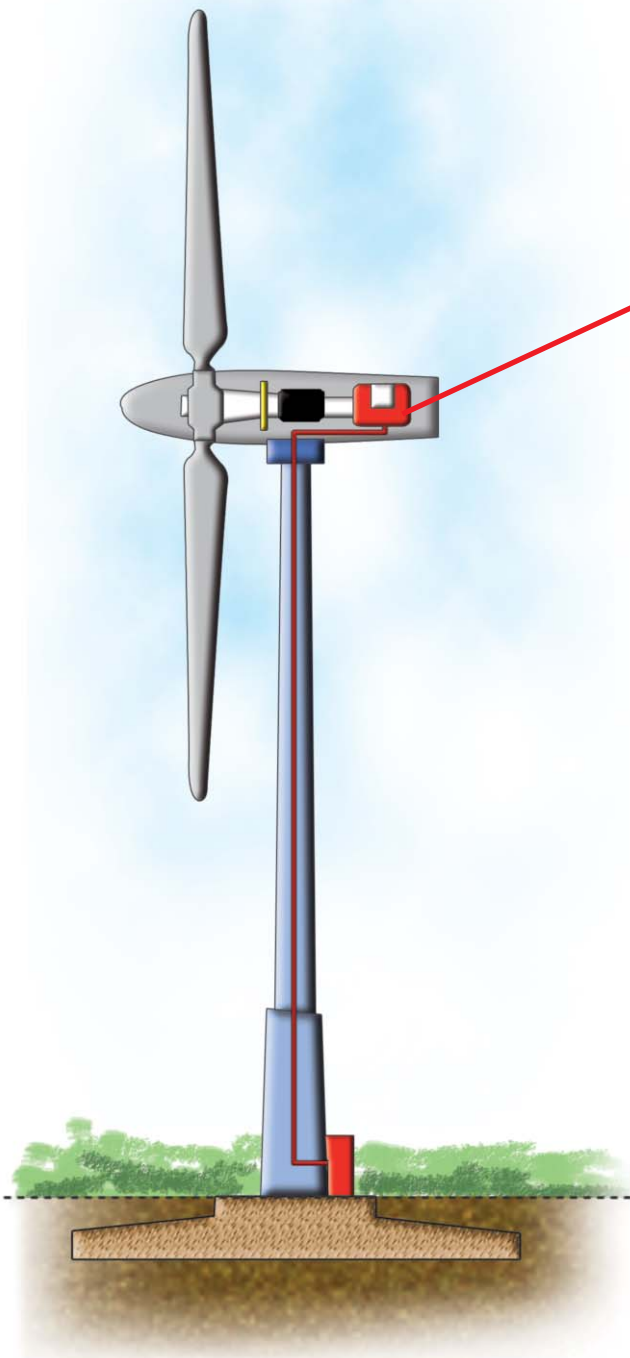
item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% ca. mm	copper figure kg/km	cable weight ≈ kg/km	ohmic resistance at 20°C max. Ω/km
on request	3 x (1 x 0,14 mm <sup>2</sup> )D + 12 x 0,14 mm <sup>2</sup>	7,2	45,1	74	139,3

Other dimensions and colours are possible on request.

**Sensor cable** continuously flexible TPE/PUR data cable with coloured core  
3 x (1 x 0,14 mm<sup>2</sup>)D + 12 x 0,14 mm<sup>2</sup>

## Example of use:

- Highly flexible sensor cable for the transmission of measured values of a weather station for the control of the yaw mechanism in wind energy plants. The highly flexible construction makes the cable resistant against the existing vibration of the rotor system.





## SL 859 C PVC servo cable with overall copper screen



Marking for SL 859 C:

SAB BRÖCKSKES · D-VIERSEN · SL 859 C 4 x 10,0 mm<sup>2</sup> + 4 x (2 x 1,0 mm<sup>2</sup>) AWM Style 2587 90°C 600V E172204

CSA AWM I/II A/B 90°C 600V FT1 FT2 LL104758 CE

### Construction:

<b>Conductor:</b>	tinned copper strands
<b>Insulation:</b>	PVC
<b>Colour code:</b>	black cores with consecutive numbers and a green-yellow earth wire
<b>Stranding:</b>	1,0 mm <sup>2</sup> twisted to pairs
<b>Screen:</b>	pairs wrapped with tinned copper braid
<b>Inner sheath:</b>	pairs with PVC, colour: grey (RAL 7000)
<b>Stranding:</b>	specially adjusted layering
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	PVC
<b>Sheath colour:</b>	grey (RAL 7000)

### Technische Daten:

<b>Peak operating voltage:</b>	<b>DIN VDE:</b> 300/500 V <b>UL/CSA:</b> 600 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 1000 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>DIN VDE</b> <b>UL/CSA:</b> up to +90°C
<i>fixed laying:</i>	-30/+70°C
<i>flexible application:</i>	- 5/+70°C
<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% ca. mm	copper figure kg/km	cable weight ≈ kg/km	ohmic resistance at 20°C max.Ω/km
on request	4 x (2 x 1,0 mm <sup>2</sup> ) + 4 x 10,0 mm <sup>2</sup>	23,9	671,9	945	20,0 1,95

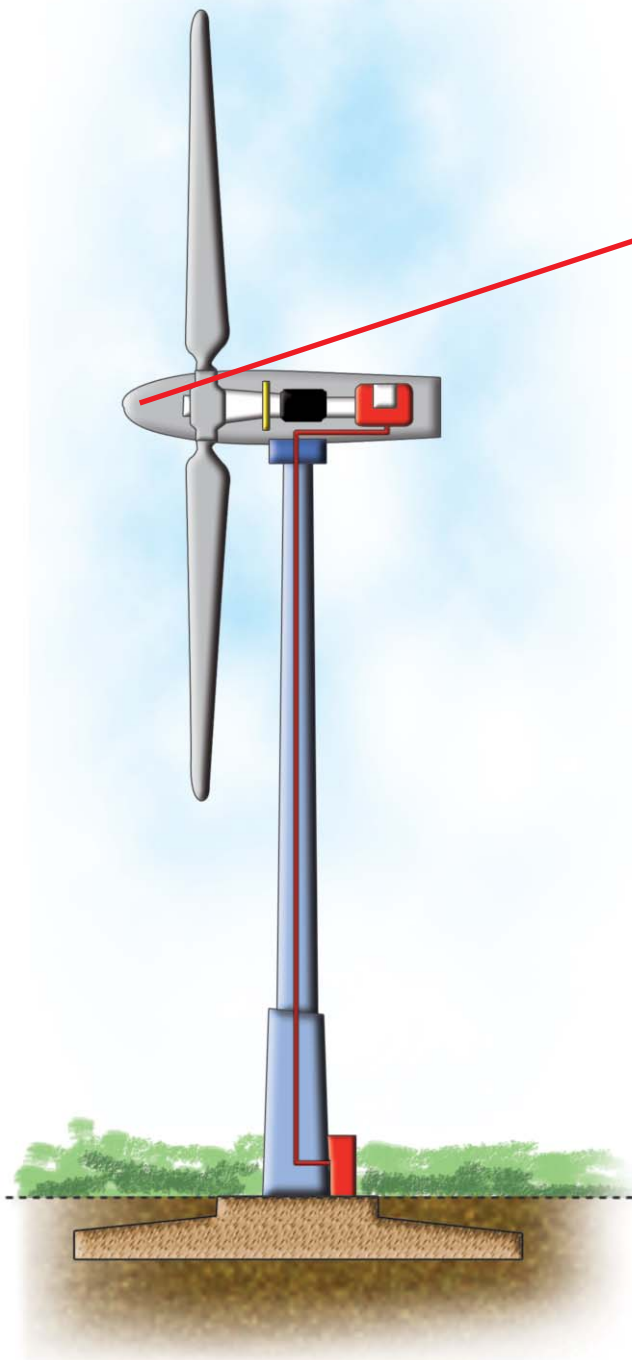
Other dimensions and colours are possible on request.



## SL 859 C PVC servo cable with overall copper screen

### Example of use:

- ▶ for example as motor connection cable of pitch drives.



## SD 200 C TP continuously flexible TPE/PUR paired data cable with coloured cores and overall copper screen



Marking for SD 200 C TP 07890350:

SAB BRÖCKSKES · D-VIERSEN · SD 200 C TP 3 x 2 x 0,5 mm<sup>2</sup> CE

### Construction:

<b>Conductor:</b>	bare copper strands, extra fine wires
<b>Insulation:</b>	TPE 510
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	cores twisted to pairs, pairs twisted in specially adjusted layering with non-woven tape over each layer
<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 DIN VDE 0282 part 10 + HD 22.10 with mat surface
<b>Sheath colour:</b>	grey (RAL 7000)

### Outstanding features:

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

### Technical data:

<b>Peak operating voltage:</b>	max. 350 V acc. to DIN VDE
<b>Testing voltage:</b>	1500 V acc. to DIN VDE 0472 part 509 core/screen 1200 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>	-50/+90 °C -40/+90 °C
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 + IEC 60754-1
<b>Oil resistance:</b>	very good - TPU acc. to DIN VDE 0282 part 10 + HD 22.10
<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

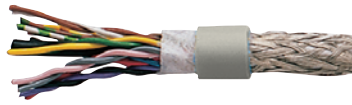
item no.	no. of pairs x cross section n x 2 x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈ kg/km
07890214	2 x 2 x 0,14	0,11	4,6	17,4	28
07890314	3 x 2 x 0,14	0,11	5,1	20,2	32
07890414	4 x 2 x 0,14	0,11	5,8	24,7	39
07890514	5 x 2 x 0,14	0,11	6,2	28,8	46
07890614	6 x 2 x 0,14	0,11	6,4	31,5	53
07890714	7 x 2 x 0,14	0,11	6,7	35,9	59
07891014	10 x 2 x 0,14	0,11	7,9	47,5	72
07891414	14 x 2 x 0,14	0,11	9,0	62,7	96
07891814	18 x 2 x 0,14	0,11	10,0	89,6	129
07892514	25 x 2 x 0,14	0,11	11,7	114,3	170
07890225	2 x 2 x 0,25	0,11	5,1	21,8	35
07890325	3 x 2 x 0,25	0,11	5,7	28,3	44
07890425	4 x 2 x 0,25	0,11	6,4	36,1	52
07890525	5 x 2 x 0,25	0,11	6,9	41,1	61
07890625	6 x 2 x 0,25	0,11	7,1	47,3	69
07890725	7 x 2 x 0,25	0,11	7,4	54,1	82
07891025	10 x 2 x 0,25	0,11	8,9	70,8	101
07891425	14 x 2 x 0,25	0,11	10,9	108,7	153
07891825	18 x 2 x 0,25	0,11	11,6	133,4	189
07892525	25 x 2 x 0,25	0,11	13,8	171,9	262
07890234	2 x 2 x 0,34	0,11	5,4	20,3	40
07890334	3 x 2 x 0,34	0,11	6,0	34,9	52
07890434	4 x 2 x 0,34	0,11	6,9	43,2	63
07890534	5 x 2 x 0,34	0,11	7,4	53,1	73

item no.	no. of pairs x cross section n x 2 x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈ kg/km
07890734	7 x 2 x 0,34	0,11	8,0	66,4	94
07891034	10 x 2 x 0,34	0,11	9,6	90,5	121
07891434	14 x 2 x 0,34	0,11	11,6	138,3	181
07891834	18 x 2 x 0,34	0,11	12,5	169,2	223
07892534	25 x 2 x 0,34	0,11	14,7	247,3	313
07890250	2 x 2 x 0,50	0,11	6,3	34,6	52
07890350	3 x 2 x 0,50	0,11	7,1	47,3	69
07890450	4 x 2 x 0,50	0,11	8,2	61,4	87
07890550	5 x 2 x 0,50	0,11	9,1	73,1	105
07890750	7 x 2 x 0,50	0,11	10,0	108,4	151
07891050	10 x 2 x 0,50	0,11	12,1	143,3	192
07891450	14 x 2 x 0,50	0,11	14,3	191,7	276
07891850	18 x 2 x 0,50	0,11	15,8	257,8	345
07892550	25 x 2 x 0,50	0,11	17,9	336,5	446
07890275	2 x 2 x 0,75	0,11	7,2	47,4	69
07890375	3 x 2 x 0,75	0,11	8,3	66,2	87
07890475	4 x 2 x 0,75	0,11	9,6	101,0	112
07890575	5 x 2 x 0,75	0,11	11,1	118,8	163
07890775	7 x 2 x 0,75	0,11	11,9	148,0	212
07891075	10 x 2 x 0,75	0,11	14,7	228,0	296
07891475	14 x 2 x 0,75	0,11	17,2	296,9	390
07891875	18 x 2 x 0,75	0,11	18,5	366,1	482
07892575	25 x 2 x 0,75	0,11	21,2	480,5	620

Other dimensions and colours are possible on request.



## SD 980 CP TP continuously flexible TPE/PUR paired data cable with coloured cores and overall copper screen



Style 21198 80°C 300V CSA AWM I/II A/B 80°C 300V FT

Marking for SD 980 CP TP 77890725:

SAB BRÖCKSKES · D-VIERSEN · 77890725 7 x 2 x 0,25 mm<sup>2</sup> SD 980 CP TP 24 AWG/7pr 77892407

AWM Style 21198 80°C 300V CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands, extra fine wires
<b>Insulation:</b>	TPE
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	cores twisted to pairs, pairs twisted in specially adjusted layering with netting tape over each layer
<b>Screen:</b>	tinned copper braiding
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface
<b>Sheath colour:</b>	grey (RAL 7032)

### Outstanding features:

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

### Technical data:

<b>Peak operating voltage:</b>	<b>DIN VDE:</b> max. 350 V <b>UL/CSA:</b> 300 V
<b>Testing voltage U:</b>	1500 V acc. to DIN VDE 0472 part 509 core/screen 1200V
<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>	<b>DIN VDE</b> UL/CSA: up to +80°C -50/+90°C -40/+90°C
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 + IEC 60754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2 UL VW-1 + CSA FT1 FT2
<b>Oil resistance:</b>	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc.
<b>Continuous flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union



### Possible on request!

- **with coloured cores**  
**acc. to colour code US 3**

item no.	no. of pairs x cross section n x 2 x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈ kg/km
77890214	2 x 2 x 0,14	0,11	5,1	19,3	34
77890314	3 x 2 x 0,14	0,11	5,6	22,1	39
77890414	4 x 2 x 0,14	0,11	6,3	26,8	47
77890514	5 x 2 x 0,14	0,11	6,7	31,1	53
77890714	7 x 2 x 0,14	0,11	7,2	38,5	64
77891014	10 x 2 x 0,14	0,11	8,4	50,7	83
77891414	14 x 2 x 0,14	0,11	9,3	66,6	105
77891814	18 x 2 x 0,14	0,11	10,3	96,0	136
77892514	25 x 2 x 0,14	0,11	11,7	121,6	174
77890225	2 x 2 x 0,25	0,11	5,6	23,6	42
77890325	3 x 2 x 0,25	0,11	6,2	30,4	52
77890425	4 x 2 x 0,25	0,11	6,9	38,7	60
77890525	5 x 2 x 0,25	0,11	7,4	43,8	68
77890725	7 x 2 x 0,25	0,11	7,9	57,2	85
77891025	10 x 2 x 0,25	0,11	9,2	74,3	110
77891425	14 x 2 x 0,25	0,11	10,9	115,1	157
77891825	18 x 2 x 0,25	0,11	11,6	140,7	188
77892525	25 x 2 x 0,25	0,11	14,0	205,5	275
77890234	2 x 2 x 0,34	0,11	5,9	29,0	48
77890334	3 x 2 x 0,34	0,11	6,5	37,2	60
77890434	4 x 2 x 0,34	0,11	7,4	45,9	72
77890534	5 x 2 x 0,34	0,11	7,9	56,3	81
77890734	7 x 2 x 0,34	0,11	8,5	69,5	98

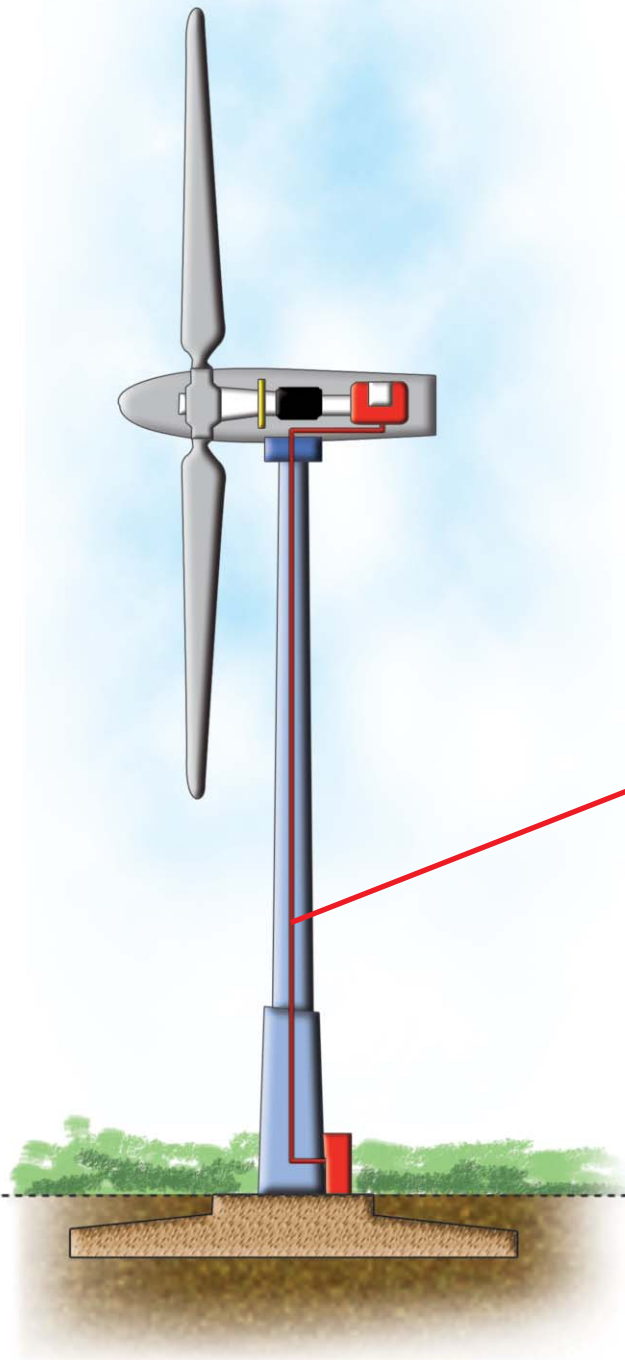
item no.	no. of pairs x cross section n x 2 x mm <sup>2</sup>	largest single wire ø mm	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈ kg/km
77891034	10 x 2 x 0,34	0,11	9,9	94,5	130
77891434	14 x 2 x 0,25	0,11	11,6	145,7	186
77891834	18 x 2 x 0,34	0,11	12,5	177,1	223
77892534	25 x 2 x 0,34	0,11	14,7	260,3	320
77890250	2 x 2 x 0,50	0,11	6,8	36,9	60
77890350	3 x 2 x 0,50	0,11	7,6	50,2	79
77890450	4 x 2 x 0,50	0,11	8,7	64,6	98
77890550	5 x 2 x 0,50	0,11	9,4	77,0	113
77890750	7 x 2 x 0,50	0,11	10,3	114,8	148
77891050	10 x 2 x 0,50	0,11	12,1	150,6	197
77891450	14 x 2 x 0,50	0,11	14,3	220,4	282
77891850	18 x 2 x 0,50	0,11	16,1	270,8	363
77892550	25 x 2 x 0,50	0,11	18,0	351,3	460
77890275	2 x 2 x 0,75	0,11	7,7	50,2	79
77890375	3 x 2 x 0,75	0,11	8,8	69,4	98
77890475	4 x 2 x 0,75	0,11	9,9	86,8	121
77890575	5 x 2 x 0,75	0,11	11,1	126,0	161
77890775	7 x 2 x 0,75	0,11	11,9	155,3	189
77891075	10 x 2 x 0,75	0,11	14,7	241,1	303
77891475	14 x 2 x 0,75	0,11	17,3	312,0	403
77891875	18 x 2 x 0,75	0,11	18,6	382,6	486
77892575	25 x 2 x 0,75	0,11	22,7	499,0	704

Other dimensions and colours are possible on request.

## SD 200 C TP SD 980 CP TP (UL/CSA)

### Example of use:

- Our data cables fulfill the requirements of our customers for a highly flexible cable for the installation from the housing to the base of a wind energy system. During operation they have proved their resistance against vibrations effectively.





## TR 600 black Type TC, MTW UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with black cores



Marking for TR 600 black 02841637:

SAB BRÖCKSKES · D-VIERSEN · TR 600 black 16 AWG/37c 02841637 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant, Direct Burial, FT4 (UL) WTTTC 90°C 1000V (UL) MTW 16 AWG/37c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228 class 5 and UL standard 758 table 5.1 + UL 1581 table 20.1
<b>Insulation:</b>	special formulated PVC/Nylon
<b>Color code:</b>	black cores with consecutive white numbers; green-yellow earth wire from 3 cores
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	special sunlight and oil resistant PVC
<b>Sheath color:</b>	black (RAL 9005)

### Outstanding features:

- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- New: Improved with WTTTC approval
- WTTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

### Technical data:

<b>Voltage:</b>	UL-AWM / (UL) / c(UL): 600 V (UL) WTTTC: 1000 V	
<b>Testing voltage:</b>	4000 V	
<b>Min. bending radius</b> <i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d	
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d	
<b>Radiation resistance:</b>	8 x 10 <sup>7</sup> cJ/kg	
<b>Temperature :</b> <i>fixed laying:</i>	<b>UL-AWM:</b> up to +105°C -25°C	<b>(UL) / c(UL):</b> up to +90°C
<b>Burning characteristics:</b>	(UL) FT4 and c(UL) FT1, FT2, FT4	
<b>Oil resistance I:</b>	yes	
<b>Sunlight resistance:</b>	yes	
<b>Exposed Runs:</b>	yes	
<b>Direct Burial:</b>	yes	
<b>Machinery Area:</b>	yes	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km	item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02841803	3 x 18	0,21	7,7	28,8	83	02841650	50 x 16	0,26	27,1	720,0	1126
02841804	4 x 18	0,21	8,3	38,4	99	02841661	61 x 16	0,26	28,8	878,4	1336
02841805	5 x 18	0,21	9,0	48,0	118	02841403	3 x 14	0,26	9,2	72,0	138
02841807	7 x 18	0,21	9,8	67,2	146	02841404	4 x 14	0,26	10,0	96,0	168
02841809	9 x 18	0,21	11,9	86,4	194	02841405	5 x 14	0,26	10,9	120,0	202
02841812	12 x 18	0,21	12,5	115,2	227	02841407	7 x 14	0,26	11,9	168,0	258
02841816	16 x 18	0,21	14,6	153,6	310	02841409	9 x 14	0,26	15,4	216,0	362
02841818	18 x 18	0,21	15,3	172,8	343	02841412	12 x 14	0,26	16,1	288,0	434
02841819	19 x 18	0,21	15,3	182,4	352	02841418	18 x 14	0,26	18,8	432,0	613
02841825	25 x 18	0,21	18,1	240,0	450	02841425	25 x 14	0,26	23,5	600,0	878
02841827	27 x 18	0,21	18,1	259,2	476	02841203	3 x 12	0,31	10,5	115,2	194
02841837	37 x 18	0,21	20,1	355,2	620	02841204	4 x 12	0,31	11,4	153,6	238
02841850	50 x 18	0,21	24,6	480,0	868	02841205	5 x 12	0,31	12,5	192,0	289
02841603	3 x 16	0,26	8,3	43,2	103	02841207	7 x 12	0,31	14,4	268,8	394
02841604	4 x 16	0,26	9,0	57,6	123	02841003	3 x 10	0,31	12,4	172,8	279
02841605	5 x 16	0,26	9,8	72,0	148	02841004	4 x 10	0,31	14,2	230,4	366
02841607	7 x 16	0,26	10,7	100,8	186	02841005	5 x 10	0,31	15,6	288,0	443
02841608	8 x 16	0,26	12,3	115,2	222	02841007	7 x 10	0,31	17,0	403,2	573
02841609	9 x 16	0,26	13,1	129,6	248	02840804	4 x 8	0,41	18,1	337,9	579
02841612	12 x 16	0,26	14,5	172,8	313	02840805	5 x 8	0,41	19,9	422,4	716
02841616	16 x 16	0,26	16,0	230,4	397	02840604	4 x 6	0,41	22,8	541,4	908
02841618	18 x 16	0,26	16,8	259,2	439	02840605	5 x 6	0,41	25,1	676,8	1099
02841619	19 x 16	0,26	16,8	273,6	453	02840404	4 x 4	0,41	27,4	844,8	1361
02841625	25 x 16	0,26	19,9	360,0	581	02840405	5 x 4	0,41	30,3	1056,0	1656
02841627	27 x 16	0,26	19,9	388,8	616	02840204	4 x 2	0,41	31,5	1305,6	1928
02841637	37 x 16	0,26	23,3	532,8	862	02840205	5 x 2	0,41	34,9	1632,0	2344
02841641	41 x 16	0,26	25,0	590,4	957						

Other dimensions and colours are possible on request.



### Possible on request!

- also available with blue, red, yellow or other color cores



## TR 600 CY black Type TC, MTW and WTTTC

UV and oil resistant, flexible  
Tray Cable and Machine-Tool Cable  
with black cores and overall copper screen



Marking for TR 600 CY black 32231612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 CY black 16 AWG/12c 32231612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC SHIELDED 90°C dry 600V FT1 FT2 FT4 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228 class 5 and UL standard 758 table 5.1 + UL 1581 table 20.1
<b>Insulation:</b>	special formulated PVC/Nylon
<b>Color code:</b>	black cores with consecutive white numbers; green-yellow earth wire from 3 cores
<b>Stranding:</b>	in layers
<b>Inner sheath:</b>	special formulated PVC
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	special sunlight and oil resistant PVC
<b>Sheath color:</b>	black (RAL 9005)

### Outstanding features:

- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- New: Improved with WTTTC approval
- WTTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

### Technical data:

<b>Voltage:</b>	UL-AWM / (UL) / c(UL): 600 V (UL) WTTTC: 1000 V
<b>Testing voltage:</b>	4000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Radiation resistance:</b>	8 x 10 <sup>7</sup> cJ/kg
<b>Temperature :</b>	UL-AWM: (UL) / c(UL): up to +105°C up to +90°C
<i>fixed laying:</i>	-25°C
<b>Burning characteristics:</b>	(UL) FT4 and c(UL) FT1, FT2, FT4
<b>Oil resistance I:</b>	yes
<b>Sunlight resistance:</b>	yes
<b>Exposed Runs:</b>	yes
<b>Direct Burial:</b>	yes
<b>Machinery Area:</b>	yes
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32231803	3 x 18	0,21	9,1	52,6	118
32231804	4 x 18	0,21	9,7	64,7	137
32231805	5 x 18	0,21	10,4	77,1	159
32231807	7 x 18	0,21	11,4	115,0	203
32231809	9 x 18	0,21	14,2	146,2	280
32231812	12 x 18	0,21	15,0	201,0	337
32231816	16 x 18	0,21	17,2	263,4	444
32231818	18 x 18	0,21	17,9	283,5	483
32231819	19 x 18	0,21	17,9	293,1	492
32231825	25 x 18	0,21	20,7	366,1	611
32231827	27 x 18	0,21	20,7	385,3	633
32231837	37 x 18	0,21	23,8	496,5	853
32231850	50 x 18	0,21	27,9	654,8	1128
32231603	3 x 16	0,26	9,7	69,5	141
32231604	4 x 16	0,26	10,4	86,7	165
32231605	5 x 16	0,26	11,4	119,8	205
32231607	7 x 16	0,26	12,3	155,2	249
32231608	8 x 16	0,26	14,8	200,8	330
32231609	9 x 16	0,26	15,6	226,7	368
32231612	12 x 16	0,26	17,1	282,5	450
32231616	16 x 16	0,26	18,6	342,0	541
32231618	18 x 16	0,26	19,4	383,2	595
32231619	19 x 16	0,26	19,4	397,6	608
32231625	25 x 16	0,26	23,6	500,9	812
32231627	27 x 16	0,26	23,6	529,7	848
32231637	37 x 16	0,26	26,6	704,3	1113
32231641	41 x 16	0,26	28,3	766,3	1214

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32231650	50 x 16	0,26	30,4	918,1	1408
32231661	61 x 16	0,26	32,1	1038,0	1637
32231403	3 x 14	0,26	10,6	101,2	180
32231404	4 x 14	0,26	11,6	149,9	229
32231405	5 x 14	0,26	12,5	174,5	266
32231407	7 x 14	0,26	14,2	227,8	348
32231409	9 x 14	0,26	18,0	326,8	504
32231412	12 x 14	0,26	18,7	399,7	579
32231418	18 x 14	0,26	22,5	570,8	842
32231425	25 x 14	0,26	26,8	772,0	1131
32231203	3 x 12	0,31	12,1	169,4	256
32231204	4 x 12	0,31	13,0	213,2	306
32231205	5 x 12	0,31	15,0	277,8	400
32231207	7 x 12	0,31	17,0	367,4	524
32231003	3 x 10	0,31	14,9	258,5	390
32231004	4 x 10	0,31	16,8	328,8	495
32231005	5 x 10	0,31	18,2	399,1	585
32231007	7 x 10	0,31	19,6	527,5	730
32230804	4 x 8	0,41	20,7	464,0	741
32230805	5 x 8	0,41	23,6	563,3	933
32230604	4 x 6	0,41	26,1	711,7	1156
32230605	5 x 6	0,41	28,4	852,9	1365
32230404	4 x 4	0,41	30,7	1044,0	1653
32230405	5 x 4	0,41	33,6	1277,3	1974
32230204	4 x 2	0,41	34,8	1532,4	2261
32230205	5 x 2	0,41	38,2	1879,0	2713

Other dimensions and colours are possible on request.



### Possible on request!

- also available with blue, red or other color cores

# CABLES FOR WIND POWER PLANT - CONTROL AND CONNECTION CABLES



## CC 600 PVC control cable with numbered black cores, AWG 20 - AWG 10



Marking for CC 600 02041840:

SAB BRÖCKSKES · D-VIERSEN · 40 x 1,0 mm<sup>2</sup> CC 600 18 AWG/40c 02041840

AWM Style 21216 90°C Oil 60°C 600V CSA AWM I/II A/B 90°C F 600V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
<b>Insulation:</b>	special PVC acc. to DIN VDE and UL/CSA
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	special oil resistant PVC acc. to DIN VDE and UL/CSA
<b>Sheath colour:</b>	grey (RAL 7000)

### Outstanding features:

- UL and CSA approved
- high mechanical loading capacity
- oil resistant

### Technical data:

<b>Nominal voltage:</b>	<b>DIN VDE</b> U <sub>0</sub> /U 300/500 V	<b>UL/CSA</b> 600 V
<b>Testing voltage U:</b>	3000 V acc. to DIN VDE 0281 part 2 + HD 21.2	
<b>Min. bending radius</b>		
<i>fixed laying:</i>	4 x d	
<i>flexible application:</i>	6 x d	
<b>Radiation resistance:</b>	8 x 10 <sup>7</sup> cJ/kg	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL/CSA</b>
<i>fixed laying:</i>	-40/+70 °C	up to +90°C
<i>flexible application:</i>	+5/+70 °C	up to +90°C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, UL VW-1, CSA FT1 and FT2	
<b>Oil resistance:</b>	very good - TM5 acc. to DIN VDE 0281 part 1 + HD 21.1, Oil 60 °C acc. to UL 758, Fuel Oil acc. to CSA-C 22.2 No. 210-05	
<b>Chem. resistance:</b>	good	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

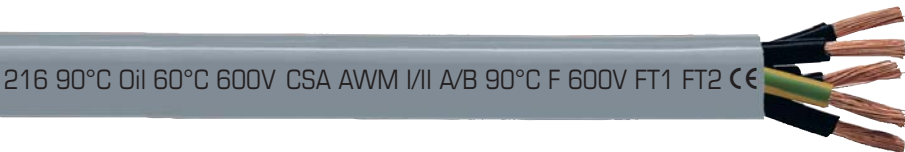
item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02042002	2 x 20	0,21	5,3	9,6	41
02042003	3 x 20	0,21	5,6	14,4	48
02042004	4 x 20	0,21	6,0	19,2	57
02042005	5 x 20	0,21	6,7	24,0	70
02042007	7 x 20	0,21	7,2	33,6	86
02042008	8 x 20	0,21	8,5	38,4	108
02042010	10 x 20	0,21	9,4	48,0	126
02042012	12 x 20	0,21	9,7	57,6	143
02042014	14 x 20	0,21	10,1	67,2	161
02042016	16 x 20	0,21	10,9	76,8	186
02042018	18 x 20	0,21	11,4	86,4	205
02042025	25 x 20	0,21	13,9	120,0	282
02042030	30 x 20	0,21	14,3	144,0	232
02042034	34 x 20	0,21	15,6	163,2	370
02042040	40 x 20	0,21	16,9	192,0	435
02042061	61 x 20	0,21	19,8	292,8	628
02041903	3 x 19	0,21	6,2	21,6	60
02041904	4 x 19	0,21	6,7	28,8	71
02041905	5 x 19	0,21	7,5	36,0	89
02041907	7 x 19	0,21	8,2	50,4	111
02041908	8 x 19	0,21	9,6	57,6	136
02041910	10 x 19	0,21	10,6	72,0	161
02041912	12 x 19	0,21	10,9	86,4	182
02041914	14 x 19	0,21	11,4	100,8	205
02041916	16 x 19	0,21	12,0	115,2	228
02041918	18 x 19	0,21	12,9	129,6	261
02041925	25 x 19	0,21	15,6	180,0	357
02041930	30 x 19	0,21	16,1	216,0	410
02041934	34 x 19	0,21	17,8	244,8	478
02041940	40 x 19	0,21	19,0	288,0	549
02041961	61 x 19	0,21	22,8	439,2	824
02041802	2 x 18	0,21	6,0	19,2	55
02041803	3 x 18	0,21	6,4	28,8	68
02041804	4 x 18	0,21	7,0	38,4	82
02041805	5 x 18	0,21	7,8	48,0	102
02041807	7 x 18	0,21	8,5	67,2	128
02041808	8 x 18	0,21	9,9	76,8	157
02041812	12 x 18	0,21	11,3	115,2	211
02041814	14 x 18	0,21	12,1	134,4	245

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02041818	18 x 18	0,21	13,6	172,8	311
02041825	25 x 18	0,21	16,4	240,0	424
02041830	30 x 18	0,21	17,0	288,0	489
02041834	34 x 18	0,21	18,5	326,4	559
02041840	40 x 18	0,21	19,9	384,0	650
02041861	61 x 18	0,21	23,7	585,6	966
02041602	2 x 16	0,26	6,7	28,8	71
02041603	3 x 16	0,26	7,1	43,2	87
02041604	4 x 16	0,26	7,9	57,6	109
02041605	5 x 16	0,26	8,6	72,0	131
02041607	7 x 16	0,26	9,6	100,8	171
02041608	8 x 16	0,26	11,2	115,2	208
02041610	10 x 16	0,26	12,4	144,0	245
02041612	12 x 16	0,26	12,8	172,8	281
02041614	14 x 16	0,26	13,6	201,6	325
02041616	16 x 16	0,26	14,3	230,4	365
02041618	18 x 16	0,26	15,3	259,2	413
02041625	25 x 16	0,26	18,5	360,0	569
02041630	30 x 16	0,26	19,3	432,0	667
02041634	34 x 16	0,26	21,0	489,6	760
02041640	40 x 16	0,26	22,9	576,0	916
02041661	61 x 16	0,26	26,7	878,4	1309
02041402	2 x 14	0,26	8,1	48,0	108
02041403	3 x 14	0,26	8,6	72,0	132
02041404	4 x 14	0,26	9,5	96,0	166
02041405	5 x 14	0,26	10,6	120,0	208
02041407	7 x 14	0,26	11,6	168,0	263
02041408	8 x 14	0,26	13,8	192,0	322
02041410	10 x 14	0,26	15,2	240,0	383
02041412	12 x 14	0,26	15,7	288,0	440
02041418	18 x 14	0,26	18,7	432,0	643
02041425	25 x 14	0,26	23,1	600,0	904
02041203	3 x 12	0,31	10,2	115,2	196
02041204	4 x 12	0,31	11,3	153,6	246
02041205	5 x 12	0,31	12,6	192,0	304
02041207	7 x 12	0,31	13,9	268,8	397
02041003	3 x 10	0,31	12,1	172,8	284
02041004	4 x 10	0,31	13,2	230,4	351
02041005	5 x 10	0,31	14,9	288,0	440

Continued on next page



## CC 600 PVC control cable with numbered black cores, AWG 8 - AWG 2



216 90°C Oil 60°C 600V CSA AWM I/II A/B 90°C F 600V FT1 FT2 CE

Marking for CC 600 02040805:

SAB BRÖCKSKES · D-VIERSEN · CC 600 8 AWG/5c 02040805 AWM Style 21216 90°C Oil 60°C 600V CSA AWM I/II A/B 90°C F 600V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to UL/CSA
<b>Insulation:</b>	special PVC acc. to DIN VDE and UL/CSA
<b>Colour code:</b>	black cores with consecutive numbers; green-yellow earth wire from 3 cores
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	special oil resistant PVC acc. to DIN VDE and UL/CSA
<b>Sheath colour:</b>	grey (RAL 7000)

### Outstanding features:

- UL and CSA approved
- high mechanical loading capacity
- oil resistant
- on request construction with metric conductor stranding and VDE-Reg. no.

### Technical data:

<b>Nominal voltage:</b>	<b>DIN VDE</b> U <sub>o</sub> /U 300/500 V	<b>UL/CSA</b> 600 V
<b>Testing voltage U:</b>	3000 V acc. to DIN VDE 0281 part 2 + HD 21.2	
<b>Min. bending radius</b>		
<i>fixed laying:</i>	4 x d	
<i>flexible application:</i>	6 x d	
<b>Radiation resistance:</b>	8 x 10 <sup>7</sup> cJ/kg	
<b>Temperature range</b>	<b>DIN VDE</b>	<b>UL/CSA</b>
<i>fixed laying:</i>	-40/+70 °C	up to +90°C
<i>flexible application:</i>	+5/+70 °C	up to +90°C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, UL VW-1, CSA FT1 and FT2	
<b>Oil resistance:</b>	very good - TM5 acc. to DIN VDE 0281 part 1 + HD 21.1, Oil 60 °C acc. to UL 758, Fuel Oil acc. to CSA-C 22.2 No. 210-05	
<b>Chem. resistance:</b>	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 AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02040804	4 x 8	0,41	17,0	337,9	567
02040805	5 x 8	0,41	18,9	422,4	696
02040604	4 x 6	0,41	20,9	541,4	768
02040605	5 x 6	0,41	23,6	676,8	969
02040404	4 x 4	0,41	25,6	844,8	1355
02040204	4 x 2	0,41	30,4	1344,0	1998

Other dimensions and colours are possible on request.





## SRY D 321 C Semi rigid PVC data cables with overall copper screen



2464 80°C 300V CSA AWM I/II A/B 80°C 300V FT1 FT2

Marking for SRY D 321 C 03210722:  
SAB BRÖCKSKES · D-VIERSEN · 03210722 SRY D 321 C 22 AWG/7c 03212207  
AWM Style 2464 80°C 300V CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to. ASTM B 286
<b>Insulation:</b>	semi-rigid PVC
<b>Colour code:</b>	colour code US 2
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	PETP foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	PVC, YM1 acc. to DIN VDE 0207 part 5
<b>Sheath colour:</b>	grey (RAL 7032)

### Technical data:

<b>Voltage UL/CSA:</b>	300 V	
<b>Testing voltage:</b>	1500 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>DIN VDE</b>	<b>UL/CSA</b>
<i>fixed laying:</i>	-30/+70 °C	up to + 80 °C
<i>flexible application:</i>	- 5/+70 °C	up to + 80 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, CSA FT1 FT2	
<b>Oil resistance:</b>	acc. to internal standard	
<b>Chem. resistance:</b>	good	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

### Outstanding features:

- good EMC characteristic
- flexible
- small outer diameter
- small bending radius



On request  
also possible with  
colour code  
**DIN 47100**

item no.	no. of cores x cross section n x AWG	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
03210226	2 x 26	4,1	9,5	22
03210326	3 x 26	4,3	10,8	24
03210426	4 x 26	4,5	12,2	26
03210526	5 x 26	4,8	15,3	31
03210726	7 x 26	5,1	18,0	36
03210826	8 x 26	5,7	21,2	44
03211226	12 x 26	6,2	26,6	52
03211626	16 x 26	6,8	33,9	64
03211826	18 x 26	7,1	38,4	71
03212526	25 x 26	8,2	50,0	91
03210224	2 x 24	4,4	11,2	25
03210324	3 x 24	4,6	13,4	28
03210424	4 x 24	4,9	17,4	33
03210524	5 x 24	5,2	19,6	38
03210724	7 x 24	5,5	25,8	46
03210824	8 x 24	6,2	28,2	55
03211024	10 x 24	6,6	34,4	60
03211224	12 x 24	6,8	38,9	67
03211624	16 x 24	7,4	49,7	84
03211824	18 x 24	7,8	54,2	92
03212524	25 x 24	9,2	73,8	123
03210222	2 x 22	4,7	13,7	28
03210322	3 x 22	4,9	18,9	34
03210422	4 x 22	5,2	22,4	40
03210522	5 x 22	5,6	27,7	47
03210722	7 x 22	6,0	34,6	57
03210822	8 x 22	6,7	40,0	68
03211022	10 x 22	7,2	48,8	78
03211222	12 x 22	7,4	55,8	87

item no.	no. of cores x cross section n x AWG	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
03211622	16 x 22	8,1	71,7	110
03211822	18 x 22	8,7	78,8	124
03212522	25 x 22	10,1	107,4	136
03210220	2 x 20	5,2	20,5	37
03210320	3 x 20	5,4	26,5	44
03210420	4 x 20	5,8	34,2	54
03210520	5 x 20	6,2	40,3	63
03210620	6 x 20	6,7	48,1	74
03210720	7 x 20	6,7	54,0	80
03211020	10 x 20	8,2	76,0	109
03211220	12 x 20	8,5	87,9	127
03211820	18 x 20	9,9	126,1	179
03212520	25 x 20	11,6	172,8	238
03210218	2 x 18	5,6	28,8	47
03210318	3 x 18	5,9	38,1	57
03210418	4 x 18	6,3	49,1	71
03210518	5 x 18	6,9	60,3	86
03210718	7 x 18	7,4	78,8	108
03210818	8 x 18	8,6	90,2	131
03211218	12 x 18	9,6	129,4	176
03211818	18 x 18	11,1	189,5	251
03212518	25 x 18	13,4	258,9	346
03210216	2 x 16	6,0	34,1	54
03210316	3 x 16	6,2	45,9	67
03210416	4 x 16	6,7	59,6	83
03210516	5 x 16	7,3	73,3	101
03210716	7 x 16	7,9	99,0	130
03210816	8 x 16	9,1	113,1	157
03211216	12 x 16	10,2	162,8	212

Other dimensions and colours are possible on request.



## SRY D 351 C (B) TP Semi rigid PVC paired data cables with overall copper screen



Marking for SRY D 351 C (B) TP 03510322:  
 SAB BRÖCKSKES · D-VIERSEN · 03510322 SRY D 351 C (B) TP 22 AWG/3pr 03512203  
 AWM Style 2464 80°C 300V CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to. ASTM B 286
<b>Insulation:</b>	semi-rigid PVC
<b>Colour code:</b>	colour code US 3
<b>Stranding:</b>	cores twisted to pairs, pairs twisted in layers
<b>Wrapping:</b>	PETP foil
<b>Screen:</b>	tinned copper braiding with a tinned copper drain wire $\approx$ (0,22 mm <sup>2</sup> )
<b>Sheath material:</b>	PVC, YM1 acc. to DIN VDE 0207 part 5
<b>Sheath colour:</b>	grey (RAL 7032)

### Technical data:

<b>Voltage UL/CSA:</b>	300 V	
<b>Testing voltage:</b>	1500 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>DIN VDE</b>	<b>UL/CSA</b>
<i>fixed laying:</i>	-30/+70 °C	up to + 80 °C
<i>flexible application:</i>	- 5/+70 °C	up to + 80 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, CSA FT1 FT2	
<b>Oil resistance:</b>	acc. to internal standard	
<b>Chem. resistance:</b>	good	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

### Outstanding features:

- good EMC characteristic
- flexible
- small outer diameter
- small bending radius



On request  
 also possible with  
 colour code  
**DIN 47100**

item no.	no. of pairs x cross section n x 2 x AWG	outer- $\phi$ $\pm$ 10% mm	copper figure kg/km	cable weight $\approx$ kg/km
03510226	2 x 2 x 26	5,5	14,9	34
03510326	3 x 2 x 26	6,1	19,2	43
03510426	4 x 2 x 26	6,8	23,5	49
03510526	5 x 2 x 26	7,3	26,3	56
03510726	7 x 2 x 26	7,6	33,3	66
03510826	8 x 2 x 26	8,1	36,1	72
03511026	10 x 2 x 26	9,0	43,3	89
03511226	12 x 2 x 26	9,8	50,6	102
03511626	16 x 2 x 26	10,6	63,4	125
03511826	18 x 2 x 26	10,9	70,6	136
03512526	25 x 2 x 26	12,7	90,3	182
03512626	26 x 2 x 26	12,6	92,9	185
03510224	2 x 2 x 24	5,9	19,9	42
03510324	3 x 2 x 24	6,6	24,4	51
03510424	4 x 2 x 24	7,4	30,5	59
03510524	5 x 2 x 24	7,9	36,6	69
03510724	7 x 2 x 24	8,5	47,2	87
03510824	8 x 2 x 24	9,0	51,7	95
03511024	10 x 2 x 24	9,8	62,5	113
03511224	12 x 2 x 24	10,7	73,4	130
03511624	16 x 2 x 24	11,6	93,3	161
03511824	18 x 2 x 24	12,4	102,4	189
03512524	25 x 2 x 24	14,0	137,3	239
03512624	26 x 2 x 24	14,3	141,9	247
03510222	2 x 2 x 22	6,4	25,0	50
03510322	3 x 2 x 22	7,1	33,5	62
03510422	4 x 2 x 22	8,0	42,2	74

item no.	no. of pairs x cross section n x 2 x AWG	outer- $\phi$ $\pm$ 10% mm	copper figure kg/km	cable weight $\approx$ kg/km
03510522	5 x 2 x 22	8,8	50,9	91
03510722	7 x 2 x 22	9,3	64,9	110
03511222	12 x 2 x 22	11,8	105,7	170
03511822	18 x 2 x 22	13,7	151,2	246
03512522	25 x 2 x 22	15,8	203,0	332
03510220	2 x 2 x 20	7,0	36,6	64
03510320	3 x 2 x 20	7,6	50,3	80
03510420	4 x 2 x 20	9,2	64,1	104
03510520	5 x 2 x 20	9,9	77,9	124
03510720	7 x 2 x 20	10,4	103,6	155
03511220	12 x 2 x 20	13,9	169,7	255
03511820	18 x 2 x 20	16,0	244,6	368
03512520	25 x 2 x 20	18,1	336,9	484
03510218	2 x 2 x 18	7,8	51,4	81
03510318	3 x 2 x 18	9,0	71,7	114
03510418	4 x 2 x 18	10,2	92,3	138
03510518	5 x 2 x 18	11,1	112,8	166
03510718	7 x 2 x 18	11,7	151,7	211
03511218	12 x 2 x 18	16,0	251,6	365
03511818	18 x 2 x 18	18,0	366,1	511
03512518	25 x 2 x 18	20,6	521,4	692
03510216	2 x 2 x 16	8,2	61,9	96
03510316	3 x 2 x 16	9,6	89,1	133
03510416	4 x 2 x 16	10,9	115,0	164
03510516	5 x 2 x 16	11,8	140,8	198
03510716	7 x 2 x 16	12,9	188,5	264
03510816	8 x 2 x 16	13,8	215,8	297

Other dimensions and colours are possible on request.

# CABLES FOR WIND POWER PLANT - BUS CABLES

**S CB 628** Halogen-free, highly flexible CAN-bus cable with UL approval

**SABIX® CB 620 FRNC** Halogen-free, flame retardant CAN-Bus cable



Marking for S CB 628 06282251:

SAB BRÖCKSKES · D-VIERSEN · S CB 628 2 x 0.25 mm² AWM Style 20235 80°C 300 V CE



Construction:	S CB 628	SABIX® CB 620 FRNC
Conductor:	bare copper strands, extra fine wires	bare copper strands acc. to DIN VDE 0812
Core insulation:	PE 2Y11 acc. to DIN VDE 0207 part 2	SABIX® 336
Colour code:	acc. to DIN VDE 47100	
Wrapping:	non-woven tape	PETP foil
Inner sheath (nature):	SABIX®	---
Screen:	tinned copper braiding	
Sheath material:	TMPU acc. to DIN VDE 0282 part 10 with rough surface	SABIX® 230
Sheath colour:	redlilac (RAL 4001)	

Technical data:	S CB 628	SABIX® CB 620 FRNC
Peak operating voltage:	max. 350 V	
Voltage:	UL: 300 V	---
Testing voltage:	1500 V	
Min. bending radius:	7,5 x d	
Radiation resistance:	5 x 10 <sup>7</sup> cJ/kg	---
Temperature range <i>fixed laying:</i> <i>flexible application:</i>	UL: up to +80°C - 50°C / + 70°C - 40°C / + 70°C	- 40°C / + 85°C - 30°C / + 85°C
Halogen-free:	acc. to DIN VDE 0472 part 815 + IEC 60754-1	
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2	no flame propagation acc. to IEC 60332-3 + EN 60332-3 Cat. C resp. D
Corrosiveness of conflagration gases:	---	in compliance with IEC 60754-2 and EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases
Smoke density:	---	acc. to IEC 61034 + EN 61034
Oil resistance:	very good - TMPU acc. to DIN VDE 0282 part 10	---
Flexibility:	very good	good
Application in cable tracks:	recommended	not recommended
Chemical resistance:	good against acids, alkalines, solvents, hydraulic liquids etc.	---
Weather resistance:	very good	good
Characteristic impedance at 1 MHz:	120 Ω (95 - 140 Ω)	
Absence of harmful substances:	acc. to RoHS directive of the European Union	

item no.	type	no. of pairs x cross section mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
06282251	S CB 628	2 x 0,25	7,9	20,2	71
06282341	S CB 628	2 x 0,34	8,3	22,9	77
06282501	S CB 628	2 x 0,50	8,7	29,0	74
06284251	S CB 628	2 x 2 x 0,25	9,1	27,9	90
06284341	S CB 628	2 x 2 x 0,34	9,6	32,7	97
06284501	S CB 628	2 x 2 x 0,50	10,6	44,9	94
66202251	SABIX® CB 620 FRNC	2 x 0,25	5,7	19,0	41

Other dimensions and colours are possible on request.

**S PB 640 UL**  
with „Fast Connect“  
construction

**SABIX® PB 630 FRNC** Halogen-free, flame retardant Profibus-DP cable  
**S PB 640 UL** Highly flexible PUR Profibus-DP cable with UL approval



Marking for SABIX PB 630 FRNC 66302341:  
SAB BRÖCKSKES · D-VIERSEN · SABIX PB 630 FRNC 2 x 0,34 mm² CE



<b>Construction:</b>	<b>SABIX® PB 630 FRNC</b>	<b>S PB 640 UL</b>
<b>Conductor:</b>	bare copper strands acc. to DIN VDE 0812	bare copper strands AWG 24
<b>Core insulation:</b>	acc. to DIN VDE 0819 part 103 (02Y11)	
<b>Colour code:</b>	red, green	
<b>Stranding:</b>	in layers	
<b>Wrapping:</b>	alu foil	alu foil and tinned copper braiding
<b>Screen:</b>	tinned copper braiding	---
<b>Inner sheath (nature):</b>	---	SABIX®
<b>Sheath material:</b>	SABIX® 230	PUR, TMPU acc. to DIN VDE 0282 part 10 with rough surface
<b>Sheath colour:</b>	redlilac (RAL 4001)	

<b>Technical data:</b>	<b>SABIX® PB 630 FRNC</b>	<b>S PB 640 UL</b>
<b>Peak operating voltage:</b>	max. 350 V	
<b>Voltage:</b>	---	UL: 30 V
<b>Testing voltage:</b>	1500 V	
<b>Min. bending radius:</b>	12 x d	
<b>Temperature range</b> <i>fixed laying:</i> <i>flexible application:</i>	- 40°C / + 80°C - 30°C / + 80°C	UL: up to +60°C - 40°C / + 80°C - 30°C / + 80°C
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 + IEC 60754-1	
<b>Fire performance :</b>	no flame propagation acc. to IEC60332-3 + EN 60332-3 Cat. C resp. D. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2	flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 and EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases	---
<b>Smoke density:</b>	sehr gering	---
<b>Oil resistance:</b>	---	very good - TMPU acc. to DIN VDE 0282 part 10
<b>For fixed installation:</b>	X	
<b>For flexible application:</b>	---	X
<b>Suitable for cable tracks:</b>	---	X
<b>Weather resistance:</b>	good	---
<b>UL Style:</b>	---	X
<b>Characteristic impedance 3 - 20 MHz:</b>	120 Ω (95 - 140 Ω)	150 Ω ± 10%
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

item no.	type	no. of cores x cross section mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
66302341	SABIX® PB 630 FRNC	2 x 0,34	7,5	30,4	62
06402611	S PB 640 UL	2 x AWG 24	8,0 ± 0,4	31,2	62

Other dimensions and colours are possible on request.

**Profibus-DP** and **Profibus-FMS** apply the same transmission technology and a uniform bus access log. Therefore, both types can be used simultaneously on one cable.



## Outstanding features S PB 640 UL:

- short assembling time
- avoidance of connection errors

## RT PN 668 Torsion Profinet cable



Marking for RT PN 668:  
SAB BRÖCKSKES · D-VIERSEN · RT PN 668 Profinet 2x2x22 AWG

### Construction:

<b>Conductor:</b>	tinned copper strands, extra fine wires
<b>Core insulation:</b>	PE
<b>Colour code:</b>	blue, yellow, white, orange
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	netting tape, alu foil
<b>Screen:</b>	tinned copper braiding
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	PUR
<b>Sheath colour:</b>	green (similar RAL 6018)

### Technical data:

<b>Peak operating voltage VDE:</b>	max. 350 V
<b>Testing voltage:</b>	core/core 1500 V - core/screen 1200 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Torsion angle:</b>	± 180°/m
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+70 °C
<i>flexible applicatio:</i>	-30/+70 °C
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 + IEC 60754-1
<b>Characteristic impedance:</b>	100Ω ± 10Ω, accomplishes the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 (CAT 5 acc. to EN 50173-1)
<b>Oil resistance:</b>	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	type	no. of cores	cross section AWG	approx. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max.Ω/km
06689001	RT PN 668, torsion cable	4	22	1,50	7,0	36,3	62	58,0

Other dimensions and colours are possible on request.



## SL 839 C PUR transmission cable with overall copper screen



Marking for SL 839 C 08390138:

SAB BRÖCKSKES · D-VIERSEN · 08390138 SL 839 C 4 x 2 x 0,38 mm<sup>2</sup> + 4 x 0,50 mm<sup>2</sup> DESINA AWM Style 20236 80°C 30V

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to DIN VDE 0812
<b>Insulation:</b>	special Polymer
<b>Colour code:</b>	coloured
<b>Screen:</b>	acc. to dimension: pairs wrapped with tinned copper braid
<b>Inner sheath:</b>	special Polymer
<b>Stranding:</b>	cores or pairs
<b>Stranding:</b>	cores/pairs twisted together in layers
<b>Wrapping:</b>	one non-woven tape or non-woven tape and PETP foil
<b>Screen:</b>	tinned copper braiding
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface or PU acc. to UL 758
<b>Sheath colour:</b>	green (RAL 6018)

### Technical data:

<b>Peak operating voltage:</b>	max. 30 V
<b>Voltage UL:</b>	30 V
<b>Testing voltage U:</b>	750 V
<b>Min. bending radius</b>	
fixed laying:	5 x d
flexible application:	10 x d
continuously flexible:	12 x d
<b>Radiation resistance:</b>	5 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	DIN VDE
fixed laying:	-40/+70 °C
flexible application:	-20/+70 °C
<b>Oil resistance:</b>	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc. or oilrating 60°C acc. to UL 758
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:

- good EMC characteristics
- flexible installation
- oil resistant
- long service life
- adhesion-free installation
- halogen-free
- labs uncritical  
(labs = enamel moisturing interfering substances)
- DESINA® colours



suitable for  
resolvers and  
shaft encoders

### Sheath material TMPU acc. to DIN VDE 0282

item no.	dimensions	sheath colour	largest single wire ø mm	outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
08390114	3 x (2 x 0,14) D + 2 x (0,50) D	green	0,11/0,16	9,0 ± 0,4	71,4	96
08390214	3 x (2 x 0,14) D + 4 x 0,14 + 2 x 0,50	green	0,11/0,16	8,8 ± 0,4	63,7	97
08391050	3 x (2 x 0,14) D + 4 x 0,14 + 4 x 0,22 + 2 x 0,50	green	0,11/0,16	9,5 ± 0,4	79,0	111
08390138	4 x 2 x 0,38 + 4 x 0,50	green	0,11/0,16	8,9 ± 0,4	76,3	106
08390318	8 x 2 x 0,18	green	0,11	7,8 ± 0,4	48,0	74
08390122	12 x 0,22	green	0,11	6,9 ± 0,4	42,5	63

Other dimensions and colours are possible on request.

### Sheath material PU acc. to UL 758

item no.	dimensions	sheath colour	largest single wire ø mm	outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
08390118	4 x 0,18	green	0,11	4,9 ± 0,4	18,9	28
08390218	4 x 2 x 0,18	green	0,11	6,3 ± 0,4	30,8	47
08390115	2 x 2 x 0,15 + 2 x 0,38	green	0,11/0,16	6,9 ± 0,3	28,1	52

Other dimensions and colours are possible on request.



## SL 841 C Combined TPE/PUR motor connection cable with overall copper screen 0,6/1 kV



AWM Style 20235 80°C CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

Marking for SL 841 C 08410407: SAB BRÖCKSKES · D-VIERSEN ·  
08410407 SL 841 C 4 x 0,75 mm<sup>2</sup> (1000V) + 2 x (2 x 0,34 mm<sup>2</sup>) (300V) **DESINA** AWM Style 20235 80°C CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 6 < 0,50 mm <sup>2</sup> with reference to DIN VDE 0812
<b>Insulation:</b>	TPE 510
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334 (except 0,34 mm <sup>2</sup> = coloured) and a green-yellow earth wire supply cores: * U1, V2, W3 and a green-yellow earth wire control cores: ** BR1 and BR2
<b>from item no. 08411415:</b>	
<b>Stranding:</b>	control cores 0,34 mm <sup>2</sup> - 2,5 mm <sup>2</sup> twisted to pairs
<b>Screen:</b>	pairs wrapped with Alu-foil, tinned copper braid
<b>Wrapping:</b>	pairs with PETP foil
<b>Stranding:</b>	screened control pairs and supply cores twisted together in layers
<b>Wrapping:</b>	two layers non-woven tape
<b>Screen:</b>	overall copper screen
<b>Wrapping:</b>	non-woven tape
<b>Sheath material:</b>	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10 with mat surface
<b>Sheath colour:</b>	orange (RAL 2003)

### Technical data:

<b>Nominal voltage:</b>	<b>DIN VDE:</b> supply cores U <sub>o</sub> /U 0,6/1 kV
<b>Voltage:</b>	<b>UL/CSA:</b> supply cores 1000 V
<b>Peak operating voltage:</b>	<b>DIN VDE:</b> control cores max. 350 V
<b>Voltage:</b>	<b>UL/CSA:</b> control cores 300 V
<b>Testing voltage U:</b>	supply cores 4000 V control cores 1500 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<i>continuously flexible:</i>	12 x d
<b>Radiation resistance:</b>	5 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	<b>DIN VDE</b> <b>UL/CSA:</b> up to +80°C
<i>fixed laying:</i>	-50/+90 °C
<i>flexible application:</i>	-40/+90 °C
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2, EN 60332-1-2, CSA FT1 FT2 and UL FT1
<b>Oil resistance:</b>	very good - TMPU acc. to DIN VDE 0282 part 10 + HD 22.10
<b>Chem. resistance:</b>	good against acids, alkalines, solvents, hydraulic liquids etc.
<b>Weather resistance:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:

- very good EMC characteristics
- long service life
- adhesion-free installation
- high flexibility
- suitable for cable tracks
- halogen-free
- labs uncritical  
(labs = enamel moisturing interfering substances)
- flexible at low temperatures
- **DESINA®** colours



**Cable harnessing possible on request**

item no.	dimensions	AWG		largest single wire ø mm	outer-ø mm	copper figure kg/km	cable weight ≈ kg/km
		supply cores	control cores (pairs)				
08410407	4 x 0,75 + 2 x (2 x 0,34)	19 / 4c	22 / 2pr	0,16/0,11	11,6 ± 0,5	117,1	168
08410410	4 x 1,00 + 2 x (2 x 0,75)	18 / 4c	19 / 2pr	0,16	11,8 ± 0,5	150,1	201
08410415	4 x 1,50 + 2 x (2 x 0,75)	16 / 4c	19 / 2pr	0,16	12,3 ± 0,5	170,1	228
08410425	4 x 2,50 + 2 x (2 x 1,00)	14 / 4c	18 / 2pr	0,16	14,5 ± 0,8	231,8	320
08410441	4 x 4,00 + (2 x 1,00) + (2 x 1,50)	12 / 4c	18 / 1pr + 16 / 1pr	0,16	17,4 ± 0,6	343,0	458
08410461	4 x 6,00 + (2 x 1,00) + (2 x 1,50)	10 / 4c	18 / 1pr + 16 / 1pr	0,21/0,16	18,9 ± 0,8	432,8	557
08410471	4 x 10,00 + (2 x 1,00) + (2 x 1,50)	8 / 4c	18 / 1pr + 16 / 1pr	0,21/0,16	20,4 ± 1,0	603,7	736
08410485	4 x 16,00 + 2 x (2 x 1,50)	6 / 4c	16 / 2pr	0,21/0,16	26,0 ± 0,8	875,7	1111
08410490	4 x 25,00 + 2 x (2 x 1,50)	4 / 4c	16 / 2pr	0,21/0,16	29,4 ± 0,8	1251,1	1517
08410495	4 x 35,00 + 2 x (2 x 1,50)	2 / 4c	16 / 2pr	0,21/0,16	31,3 ± 0,8	1644,6	1882
08410496	4 x 50,00 + 2 x (2 x 2,50)	1 / 4c	14 / 2pr	0,31/0,16	38,2 ± 0,8	2317,6	2659
08411415	4 x 1,50 + (2 x 1,50)	16 / 4c	16 / 1pr	0,16	12,5 ± 0,3	159,9	222
08411425	4 x 2,50 + (2 x 1,50)	14 / 4c	16 / 1pr	0,16	13,3 ± 0,4	204,8	285
08411440	4 x 4,00 + (2 x 1,50)	12 / 4c	16 / 1pr	0,16	15,2 ± 0,4	268,8	369
08411460	4 x 6,00 + (2 x 1,50)	10 / 4c	16 / 1pr	0,21/0,16	16,6 ± 1,1	377,5	485
08411470	4 x 10,00 + (2 x 1,50)	8 / 4c	16 / 1pr	0,21/0,16	19,5 ± 1,6	555,8	677
08411480	4 x 16,00 + (2 x 1,50)	6 / 4c	16 / 1pr	0,21/0,16	23,7 ± 1,0	814,8	1019
08411490	4 x 25,00 + (2 x 1,50)	4 / 4c	16 / 1pr	0,21/0,16	27,2 ± 0,7	1175,6	1418
08411495	4 x 35,00 + (2 x 1,50)	2 / 4c	16 / 1pr	0,21/0,16	30,1 ± 1,0	1586,4	1810
08411496	4 x 50,00 + (2 x 1,50)	1 / 4c	16 / 1pr	0,31/0,16	34,4 ± 1,0	2192,4	2463

Other dimensions and colours are possible on request.

**DESINA**  
INDRAMAT  
SIEMENS

## SABIX® A 147 FRNC Wiring cable 600 V

## SABIX® A 157 FRNC Wiring cable 1000V



BRÖCKSKES · D-VIERSEN · SABIX A 147 FRNC 300/500V 0,5 mm<sup>2</sup> 20 AWG AWM Style 10528 75°C 600V

Marking for SABIX A 147 FRNC 61470150:

SAB BRÖCKSKES · D-VIERSEN · SABIX A 147 FRNC 300/500V 0,5 mm<sup>2</sup> 20 AWG AWM Style 10528 75°C 600V

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
<b>Insulation:</b>	SABIX® 231
<b>Colour code:</b>	coloured

### Outstanding features:

- halogen-free
- no flame propagation
- flame retardant and self-extinguishing
- approval for US-market

### Technical data:

<b>Voltage UL:</b>	<b>SABIX® A147 FRNC:</b> 20 - 18 AWG: 600 V	<b>SABIX® A157 FRNC:</b> 16 AWG - 550 MCM: 1000 V
<b>Nominal voltage U<sub>0</sub>/U:</b>	<b>SABIX® A147 FRNC:</b> 0,50 - 1,0 mm <sup>2</sup> : 300/500 V	<b>SABIX® A157 FRNC:</b> 1,50 - 300,0 mm <sup>2</sup> : 450/750 V
<b>Testing voltage:</b>	<b>SABIX® A147 FRNC:</b> 2000 V	<b>SABIX® A157 FRNC:</b> 2500 V
<b>Min. bending radius: For one single bend:</b>	7,5 x d 5 x d	
<b>Temperature range</b> <i>fixed laying:</i> <i>flexible application:</i>	<b>DIN/VDE:</b> -40/+90 °C <b>UL:</b> up to +75 °C -30/+90 °C	
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 and IEC 60754-1	
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332 + EN 60332 cat. C resp. D flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2	
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 and EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases	
<b>Smoke density:</b>	acc. to IEC 61034 + EN 61034	
<b>Flexibility:</b>	good	
<b>Weather resistance:</b>	good	
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union	

### SABIX® A 147 FRNC

item no.	nominal cross-section mm <sup>2</sup>	AWG/MCM	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
6147 .. 50*	0,50	20 (15/32)	0,21	2,1	4,8	9
6147 .. 75*	0,75	19 (23/32)	0,21	2,4	7,2	12
6147 .. 80*	1,00	18 (30/32)	0,21	2,5	9,6	15

Other dimensions and colours are possible on request.

### SABIX® A 157 FRNC

item no.	nominal cross-section mm <sup>2</sup>	AWG/MCM	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
6157 .. 82*	1,50	16 (27/30)	0,26	3,0	14,4	20
6157 .. 84*	2,50	14 (46/30)	0,26	3,6	24,0	32
6157 .. 86*	4,00	12 (52/28)	0,31	4,2	38,4	48
6157 .. 87*	6,00	10 (70/20)	0,31	4,7	57,6	67
6157 .. 88*	10,00	8 (77/26)	0,41	6,3	96,0	117
6157 .. 89*	16,00	6 (119/26)	0,41	8,0	153,6	181
6157 .. 90*	25,00	4 (196/26)	0,41	9,9	240,0	292
6157 .. 91*	35,00	2 (280/26)	0,41	11,1	336,0	394
6157 .. 92*	50,00	1 (400/26)	0,41	13,8	480,0	563
6157 .. 93*	70,00	2/0 (554/26)	0,41	14,8	672,0	751
6157 .. 94*	95,00	3/0 (484/24)	0,51	18,2	912,0	1034
6157 .. 95*	120,00	4/0 (589/24)	0,51	19,7	1152,0	1241
6157 .. 96*	150,00	250 MCM (740/24)	0,51	21,8	1440,0	1544
6157 .. 97*	185,00	350 MCM (899/24)	0,51	23,2	1776,0	1866
6157 .. 98*	240,00	450 MCM (1220/24)	0,51	26,9	2304,0	2507
6157 .. 99*	300,00		0,51	30,0	2880,0	3125

Other dimensions and colours are possible on request.

#### \* Colour code for single conductors:

01 = black	06 = green
02 = blue	07 = violet
03 = brown	08 = white
04 = grey	16 = gentian blue
05 = yellow	27 = green-yellow



On request as multi-core cable possible





## SABIX® CC 625 FRNC M Control cable with numbered cores



Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1 CE

Marking for SABIX CC 625 FRNC M 62521215:  
 SAB BRÖCKSKES · D-VIERSEN · 62521215 12 x 1,5 mm<sup>2</sup> SABIX CC 625 FRNC M 16 AWG/12c 62521612  
 AWM Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
<b>Insulation:</b>	FRNC
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	FRNC
<b>Sheath colour:</b>	grey (RAL 7000)

### Outstanding features:

- halogen-free
- UL/CSA approved
- no flame propagation
- flame retardant and self-extinguishing
- flexible

### Technical data:

<b>Nominal voltage:</b>	<b>UL/CSA:</b> 600 V <b>DIN VDE:</b> Uo/U 300/500 V
<b>Testing voltage:</b>	3000 V acc. to DIN VDE 0281 part 2 + HD 21.2
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Temperature range</b>	<b>UL:</b> up to +75 °C <b>CSA:</b> up to + 80 °C
<i>fixed laying:</i>	<b>DIN VDE:</b> -40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 and IEC 60754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332 + EN 60332 cat. C resp. D flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, CSA FT1.
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 and EN 50267-2-2 + VDE 0472 part 267-2-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + EN 61034
<b>Flexibility:</b>	good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
<b>▶ 20 AWG (15/32) • 0,50 mm<sup>2</sup></b>				
62520205	2	5,2	10,3	40
62520305	3	5,5	15,4	47
62520405	4	5,9	20,5	56
62520505	5	6,4	25,6	65
62520705	7	7,0	35,9	83
62520805	8	8,2	41,0	104
62520905	9	8,9	46,1	118
62521005	10	9,1	51,3	120
62521205	12	9,3	61,5	136
62521405	14	9,8	71,8	154
62521605	16	10,5	82,0	177
62521805	18	11,1	92,3	196
62522505	25	13,5	128,2	270
62523005	30	13,9	153,8	310
62523405	34	15,2	174,3	355
62524005	40	16,5	205,1	421
62524105	41	16,5	210,2	428
62526105	61	19,3	312,8	608
<b>▶ 19 AWG (23/32) • 0,75 mm<sup>2</sup></b>				
62520207	2	5,7	14,4	48
62520307	3	6,0	21,6	57
62520407	4	6,5	28,8	69
62520507	5	7,1	36,0	81
62520707	7	7,9	50,4	106
62520807	8	9,3	57,6	132
62520907	9	9,9	64,8	145
62521007	10	10,1	72,0	149
62521207	12	10,6	86,4	175
62521407	14	11,1	100,8	197
62521607	16	11,9	115,2	226
62521807	18	12,5	129,6	250
62522507	25	15,2	180,0	344
62523007	30	15,7	216,0	397
62523407	34	17,1	244,8	453
62524007	40	18,6	288,0	535
62524107	41	18,6	295,2	545
62526107	61	22,0	439,2	786

item no.	no. of cores	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
<b>▶ 18 AWG (30/32) • 1,00 mm<sup>2</sup></b>				
62520210	2	5,9	19,2	54
62520310	3	6,3	28,8	66
62520410	4	6,8	38,4	80
62520510	5	7,5	48,0	97
62520710	7	8,2	67,2	124
62520810	8	9,6	76,8	152
62520910	9	10,5	86,4	173
62521010	10	10,7	96,0	179
62521210	12	11,0	115,2	204
62521410	14	11,5	134,4	231
62521810	18	13,0	172,8	294
62522510	25	15,8	240,0	404
62523010	30	16,6	288,0	477
62523410	34	18,0	326,4	543
62524010	40	19,5	384,0	639
62524110	41	19,5	393,6	675
62526110	61	22,9	585,6	931
<b>▶ 16 AWG (27-29/30) • 1,50 mm<sup>2</sup></b>				
62520215	2	6,5	28,8	69
62520315	3	6,9	43,2	85
62520415	4	7,6	57,6	105
62520515	5	8,3	72,0	129
62520715	7	9,3	100,8	166
62520815	8	10,9	115,2	202
62520915	9	11,8	129,6	228
62521015	10	12,1	144,0	240
62521215	12	12,4	172,8	274
62521415	14	13,0	201,6	311
62521815	18	14,9	259,2	404
62522515	25	18,1	360,0	558
62523015	30	18,7	432,0	647
62523415	34	20,5	489,6	747
62524015	40	22,2	576,0	874
62524115	41	22,2	590,4	883
62526115	61	26,0	878,4	1281

item no.	no. of cores	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
<b>▶ 14 AWG (46/30) • 2,50 mm<sup>2</sup></b>				
62520225	2	7,8	48,0	104
62520325	3	8,3	72,0	128
62520425	4	9,2	96,0	161
62520525	5	10,1	120,0	195
62520725	7	11,2	168,0	257
62520825	8	13,4	192,0	316
62520925	9	14,3	216,0	348
62521025	10	14,8	240,0	375
62521225	12	15,3	288,0	431
62521825	18	18,2	432,0	632
62522525	25	22,3	600,0	871
<b>▶ 12 AWG (52/28) • 4,00 mm<sup>2</sup></b>				
62520340	3	9,7	115,2	188
62520440	4	10,8	153,6	238
62520540	5	12,1	192,0	295
62520740	7	13,4	268,8	388
<b>▶ 10 AWG (78/28) • 6,00 mm<sup>2</sup></b>				
62520360	3	11,4	172,8	271
62520460	4	12,7	230,4	343
62520560	5	14,2	288,0	425
<b>▶ 8 AWG (77/26) • 10,00 mm<sup>2</sup></b>				
62520461	4	17,2	384,0	608
62520561	5	19,3	480,0	756
<b>▶ 6 AWG (119/26) • 16,00 mm<sup>2</sup></b>				
62520462	4	21,1	614,4	909
<b>▶ 4 AWG (196/26) • 25,00 mm<sup>2</sup></b>				
62520463	4	26,5	960,0	1475
<b>▶ 2 AWG (280/26) • 35,00 mm<sup>2</sup></b>				
62520464	4	30,2	1344,0	2004

Other dimensions and colours are possible on request.



## SABIX® CC 625 S FRNC M Control cable with numbered cores and overall copper screen



Marking for SABIX CC 625 S FRNC M 62341215:

SAB BRÖCKSKES · D-VIERSEN · 62341215 12 x 1,5 mm<sup>2</sup> SABIX CC 625 S FRNC M 16 AWG/12c 62341612

AWM Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1 CE

### Construction:

<b>Conductor:</b>	bare copper strands acc. to IEC 60228, EN 60228, VDE 0295, class 5
<b>Insulation:</b>	FRNC
<b>Colour code:</b>	black cores with consecutive numbers acc. to EN 50334; green-yellow earth wire from 3 cores
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	PETP foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	FRNC
<b>Sheath colour:</b>	grey (RAL 7000)

### Outstanding features:

- halogen-free
- UL/CSA approved
- no flame propagation
- good EMC characteristics\*
- flame retardant and self-extinguishing
- flexible

\* Copper braiding should be connected circularly to optimize the EMC characteristics

### Technical data:

<b>Nominal voltage:</b>	<b>UL/CSA:</b> 600 V <b>DIN VDE:</b> Uo/U 300/500 V
<b>Testing voltage:</b>	3000 V acc. to DIN VDE 0281 part 2 + HD 21.2 core/screen 1000 V
<b>Min. bending radius</b>	5 x d 10 x d
<i>fixed laying:</i>	
<i>flexible application:</i>	
<b>Temperature range</b>	<b>UL:</b> up to +75 °C <b>CSA:</b> up to + 80 °C
<i>fixed laying:</i>	<b>DIN VDE:</b> -40/+90 °C -30/+90 °C
<i>flexible application:</i>	
<b>Halogen-free:</b>	acc. to DIN VDE 0472 part 815 and IEC 60754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332 + EN 60332 cat. C resp. D flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2, CSA FT1.
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 and EN 50267-2-2 + VDE 047 2 part 267-2-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + EN 61034
<b>Flexibility:</b>	good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

item no.	no. of cores	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
<b>▶ 20 AWG (17/32) • 0,50 mm<sup>2</sup></b>				
62340205	2	5,7	20,8	45
62340305	3	6,0	26,0	54
62340405	4	6,4	32,2	64
62340505	5	7,0	38,7	76
62340705	7	7,6	50,3	96
62340805	8	8,9	58,4	121
62340905	9	9,4	63,6	131
62341005	10	9,6	70,6	136
62341205	12	9,8	80,9	152
62341405	14	10,7	103,4	188
62341605	16	11,2	113,8	206
62341805	18	12,0	128,3	234
62342505	25	13,8	168,2	306
62343005	30	15,0	198,0	361
62343405	34	16,3	239,4	429
62344005	40	17,6	278,3	503
62344105	41	17,6	283,4	514
62346105	61	20,2	395,6	693
<b>▶ 19 AWG (23/32) • 0,75 mm<sup>2</sup></b>				
62340207	2	6,2	25,1	52
62340307	3	6,5	33,3	64
62340407	4	7,0	41,8	77
62340507	5	7,8	50,4	94
62340707	7	8,4	67,8	118
62340807	8	9,8	76,9	145
62340907	9	10,8	100,4	181
62341007	10	11,0	103,7	182
62341207	12	11,3	122,2	207
62341407	14	12,0	136,8	235
62341607	16	12,6	151,5	259
62341807	18	13,2	169,3	286
62342507	25	16,3	245,1	416
62343007	30	16,8	281,4	468
62343407	34	18,2	318,5	534
62344007	40	19,7	370,3	625
62344107	41	19,7	377,5	635
62346107	61	22,9	532,4	879

item no.	no. of cores	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
<b>▶ 18 AWG (30/32) • 1,00 mm<sup>2</sup></b>				
62340210	2	6,4	30,9	58
62340310	3	6,8	41,8	73
62340410	4	7,3	51,5	87
62340510	5	8,0	63,7	107
62340710	7	8,9	84,6	139
62340810	8	10,1	96,2	165
62340910	9	11,2	118,2	200
62341010	10	11,4	131,8	210
62341210	12	11,9	151,2	241
62341410	14	12,4	170,6	268
62341810	18	13,9	216,7	340
62342510	25	16,9	312,8	483
62343010	30	17,7	361,3	556
62343410	34	19,1	400,7	629
62344010	40	20,6	467,1	730
62344110	41	20,6	476,7	742
62346110	61	24,0	687,8	1042
<b>▶ 16 AWG (27-29/30) • 1,50 mm<sup>2</sup></b>				
62340215	2	7,0	41,8	71
62340315	3	7,5	57,5	92
62340415	4	8,1	73,4	113
62340515	5	9,0	89,4	139
62340715	7	9,8	120,1	178
62340815	8	11,8	151,1	236
62340915	9	12,5	165,8	259
62341015	10	12,8	183,6	272
62341215	12	13,3	212,5	313
62341415	14	13,9	245,5	354
62341815	18	15,8	324,1	464
62342515	25	19,2	441,8	644
62343015	30	19,8	514,5	734
62343415	34	21,4	581,2	835
62344015	40	23,1	669,4	963
62344115	41	23,1	683,8	972
62346115	61	27,1	992,6	1403

item no.	no. of cores	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
<b>▶ 14 AWG (46/36) • 2,50 mm<sup>2</sup></b>				
62340225	2	8,3	63,8	101
62340325	3	9,0	89,4	136
62340425	4	9,7	115,3	168
62340525	5	11,0	151,7	220
62340725	7	12,1	204,1	286
62340825	8	14,1	236,0	346
62340925	9	15,2	260,4	386
62341025	10	15,7	304,8	428
62341225	12	16,4	353,1	493
62341825	18	19,3	513,9	712
62342525	25	23,4	693,5	965
<b>▶ 12 AWG (52/28) • 4,00 mm<sup>2</sup></b>				
62340340	3	10,6	146,8	205
62340440	4	11,5	189,5	256
62340540	5	12,8	231,6	316
62340740	7	14,1	312,8	412
<b>▶ 10 AWG (78/28) • 6,00 mm<sup>2</sup></b>				
62340360	3	12,3	208,9	284
62340460	4	13,6	270,2	362
62340560	5	15,1	332,3	449
<b>▶ 8 AWG (77/26) • 10,00 mm<sup>2</sup></b>				
62340461	4	18,3	457,8	636
62340561	5	20,2	562,9	783
<b>▶ 6 AWG (119/26) • 16,00 mm<sup>2</sup></b>				
62340462	4	22,2	706,7	927
<b>▶ 4 AWG (196/26) • 25,00 mm<sup>2</sup></b>				
62340463	4	27,4	1074,8	1450
<b>▶ 2 AWG (280/26) • 35,00 mm<sup>2</sup></b>				
62340464	4	31,3	1471,8	1959

Other dimensions and colours are possible on request.

## Generator connection cable with Silicone impregnated fibre-glass braiding



### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, EN 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>	fibre-glass
<b>Impregnation:</b>	special silicon

### Outstanding features:

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

### Example of use:

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

### Technical data:

<b>Nominal voltage U<sub>0</sub>/U:</b>	450/750 V 3,8/6,6 kV 8,0/13,8 kV
<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>	
<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 DIN VDE 0472 part 815 and IEC 60754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
<b>Corrosiveness of conflagration gases:</b>	IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

#### 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	16,00	0,41	7,9	153,6	179
0123	25,00	0,41	10,1	240,0	279
	35,00	0,41	11,5	336,0	381
item no.	50,00	0,41	13,1	480,0	548
on request	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	25,00	0,41	12,1	240,0	325
0123	35,00	0,41	13,5	336,0	434
	50,00	0,41	15,1	480,0	596
item no.	70,00	0,41	17,4	672,0	798
on request	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
	10,00	0,41	11,9	96,0	224
item group	16,00	0,41	12,9	153,6	286
0123	25,00	0,41	14,7	240,0	386
	50,00	0,41	17,3	480,0	663
item no.	70,00	0,41	19,6	672,0	870
on request	95,00	0,51	21,7	912,0	1109

Other dimensions and colours are possible on request.



## FLEXIBLE CABLES

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

## TEMPERATURE MEASUREMENT

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

## CABLE HARNESSING

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