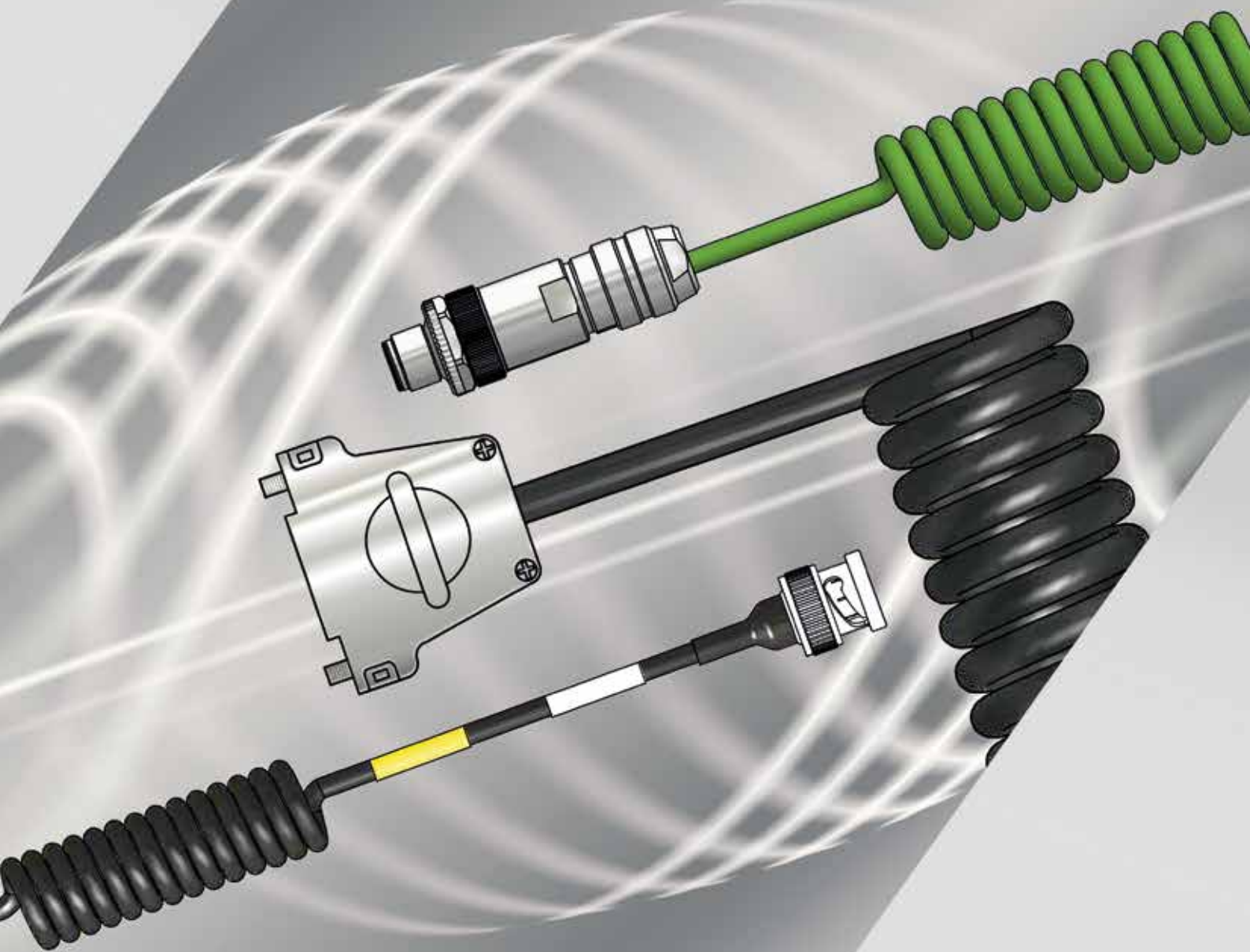


Harnessed Helix Cables

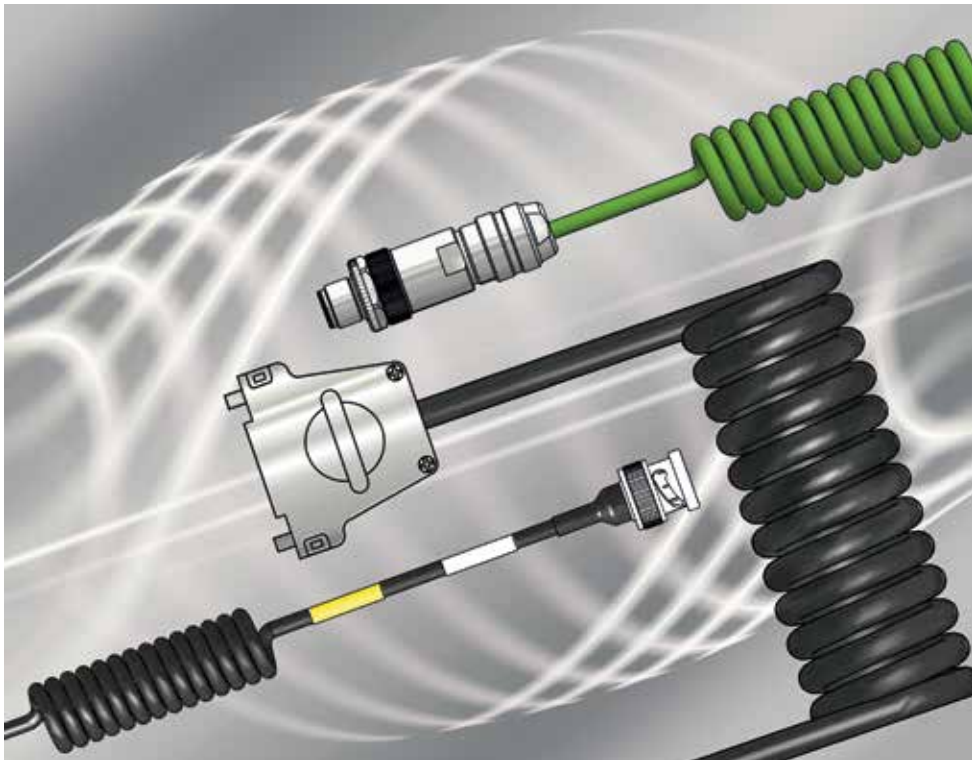
UL Certified Cable Harness



Helix Cables

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UL certified cable harness

SAB Bröckskes has completed its range of harnessed cables with the certification acc. to UL Standard Wiring Harness „category ZPFW2 (UL)“ and „ZPFW8 (Canada)“ and herewith strengthens its position as cable specialist for cable harness acc. to customer's specification.

Whenever harnessed cables are produced as component part of a final product for the North American and Canadian market, an UL certified cable harness is necessary. With the UL certification SAB ensures the detailed traceability of individual components as for example cables, plugs or sleeves and offers highest planning reliability also with special harnessing products.

Underwriter Laboratories Inc. (UL), an independent American test and certification authority confirms the use of the materials and documents required by the final customer according to the UL certification for "Wiring Harness" acc. to ZPFW2 and ZPFW8. In the manufacturer's data base (www.ul.com) SAB is listed under file no. E473226 as a qualified and reliable manufacturer.

The requirements for UL certified cable harness are controlled by external audits every three months in order to guarantee the high requirements of the UL standards. Besides our cables, also harnessed versions, are tested in our own laboratory with regard to safety and reliability and are marked with the „Wiring Harness Label“.

CERTIFICATE OF COMPLIANCE	
Certificate Number	20150123-E473226
Report Reference	E473226-20150123
Issue Date	2015-JANUARY-23
Issued to:	SAB BROECKSKES GMBH & CO KG GREFRATHERSTRASSE 204-212B POSTFACH 12 01 60 41749 VIERSEN GERMANY
This is to certify that representative samples of	COMPONENT - WIRING HARNESSSES General Coverage
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	Wiring Harnesses, Subject 764, and CSA Informa Wiring Harnesses No. 1
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information
Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.	
Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.	
Look for the UL Certification Mark on the product.	
	
Page 1 of 1	

On request SAB is able to manufacture cable harnessing products acc. to customer's specification acc. to UL Wiring Harnesses ZPFW2 and ZPFW8 from the cable to the harness and offers broad advice.

Customised connection solutions - quality & innovation since 1947

For three generations, SAB Bröckskes stands for customised connection solutions in cable and measurement technology. Having grown from a one-man business, we now employ approx. 550 people and realise more than 1,500 customised special constructions every year. Our strength lies in the development and production of special solutions that are perfectly tailored to our customers' requirements.

As a manufacturer and service provider, we combine technological expertise with maximum flexibility and real part-

nership. Our products are used in more than 100 countries and fulfil the highest quality standards, certified in accordance with DIN EN ISO 9001. In addition, we set a clear example of sustainability and responsibility with environmental, labour and energy management systems in accordance with international standards.

Today as in future we follow the slogan:

WE GO FORWARD!

FOUNDATION

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

MANAGEMENT

- » Peter Bröckskes and Sabine Bröckskes-Wetten

EMPLOYEES

- » approx. 550 employees worldwide, approx. 430 at the location in Viersen

PRODUCTS

- » Special Cables
- » Measurement Technology
- » Cable Harnessing

YEARLY SALES

- » over 134 Mio. € worldwide

HEAD OFFICE & PRODUCTION

- » in Viersen-Süchteln (Lower Rhine), with a floor area of 110,000 m²
- » own manufacturing in Germany from copper conductor to outer sheath
- » VDE approved burnchamber and technical centre with own test laboratory

CERTIFICATES AND APPROVALS

- » Quality management system acc. to DIN EN ISO 9001 for every manufacturing field
- » Environmental management system acc. to DIN EN ISO 14001
- » Occupational Safety and Health Management System acc. to NLF/ILO-OSH and DIN ISO 45001
- » Energy management system acc. to DIN EN ISO 50001
- » UL, CSA, CE, VDE, HAR, IEC, EN, ISO, DNV, ABS, BSI



Family business in its third generation



1947 - 1989

Peter Bröckskes sen.

Visionary with a thirst for action: Peter Bröckskes Senior was a successful company founder with determination, hard work and a pioneering spirit. He started in 1947 as a one-man alarm system company and continuously developed new products. In the course of his entrepreneurial career, he overcame setbacks and repeatedly managed to recognise gaps in the market and develop new products.

1989 - 2017

Peter Bröckskes

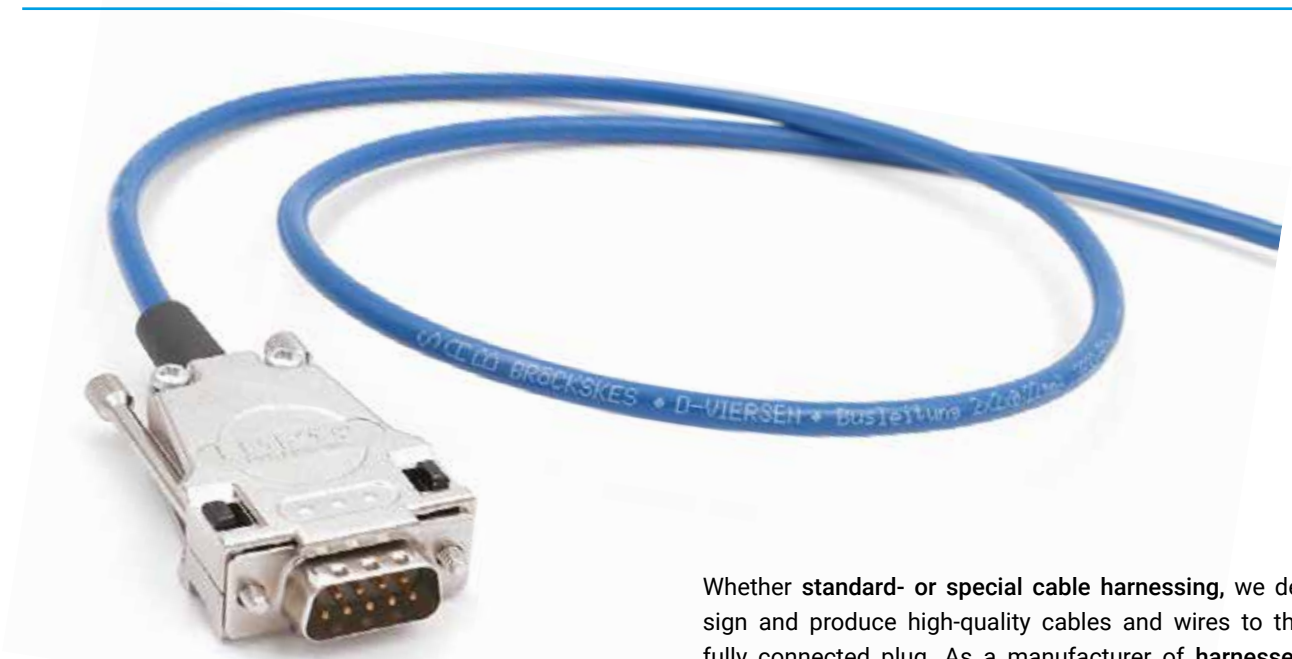
After studying business administration, Peter Bröckskes joined the company in 1980 as sales manager and took over the management in 1989. Under his leadership, the company's strategy shifted away from trading to speciality cable manufacturing and problem solving. Despite economic challenges, the company grows.

since 2011

Sabine Bröckskes-Wetten

In the summer of 2000, Sabine Bröckskes-Wetten began her training as a cable production mechanic at SAB Bröckskes. After completing her studies in industrial engineering, Sabine Bröckskes-Wetten rejoined the company in 2007. She becomes head of the production department and later has overall responsibility for the technical area. In 2011, she became the owner of the company and successfully focused on expansion, quality and service.

Cable harnessing



- » Single wire harnesses
- » Special cable harnesses
- » Complete cable harnesses
- » Customized cable harnesses
- » Production acc. to UL Standard Wiring Harness category „ZPFW2“ (UL) and „ZPFW8“ (Canada)

Whether **standard- or special cable harnessing**, we design and produce high-quality cables and wires to the fully connected plug. As a manufacturer of **harnessed single cores, cables or complete cable sets**. We offer an extensive range of specially tailored product to your requirements and specifications, including **UL certification** in accordance with UL Standard Wiring Harness „category ZPFW2 (UL)“ and „ZPFW8 (Canada)“.

Our cable assemblies are already used in a wide range of industries. For example, they are used in the automotive industry, in machine, plant and control engineering and in the household appliance industry.

We pay particular attention to a **high quality standard** for our products through continuous quality control.



Helix Cables

CATLine Cat. 5/Cat. 6A Ethernet Helix Cable

Helix cable with radial/axial outlets and RJ45 connector at one or both ends



Application: Cat. 5/6A Ethernet cable as helix cable for mobile use on machines and systems.

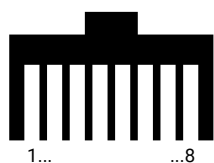
Technical Data:

Temperature range:	-40 °C to +90 °C
Voltage:	max. 90 V
Connection end 1:	mounted RJ45 male connector
Connection end 2:	mounted RJ45 male connector
Marking:	yellow marking tube with marking: item number - order number - length - certification mark

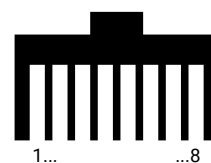
Cable characteristics:

SAB item no.:	Cat. 5 L1579-9013	Cat. 6A L1679-9008
Dimension:	4 x 2 x 26 AWG	
Conductor:	bare copper strands, fine wires	
Insulation:	SABIX®	
Screen:	tinned copper braiding	
Outer sheath:	PUR, green (similar RAL 6018)	
Outer diameter:	L1579-9013 approx. 6,9 mm	L1679-9008 approx. 8,8 mm

connection diagram/pin assignment



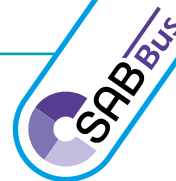
end 1	TIA 568-B		end 2
RJ45	end 2		RJ45
pin 1	white-orange	pin 1	pin 1
pin 2	orange	pin 2	pin 2
pin 3	white-green	pin 3	pin 3
pin 4	green	pin 4	pin 4
pin 5	white-brown	pin 5	pin 5
pin 6	brown	pin 6	pin 6
pin 7	white-blue	pin 7	pin 7
pin 8	blue	pin 8	pin 8
housing	screen		housing



Helix Cables

Ethernet Cable

Helix cable with axial outlets and M12 D-coded male connectors



Application:

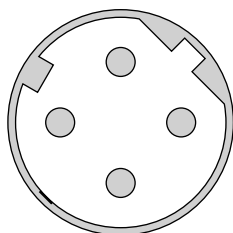
Cat. 5 Profinet cable as helix cable for mobile use on machines and systems.

Cable characteristics:

SAB item no.:	L0616-9066
Dimension:	2 x 2 x 26 AWG
Conductor:	bare copper strands, fine wires
Insulation:	SABIX®
Screen:	tinned copper braiding
Outer sheath:	PUR, green (similar RAL 6018))
Outer diameter:	approx. 6,1 mm

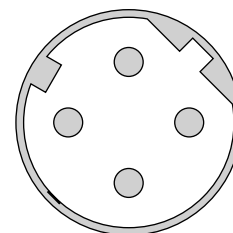
Technical Data:

Temperature range:	-30 °C to +80 °C
Voltage:	max. 113 V
Connection side 1:	M12 D-coded
Connection side 2:	M12 D-coded
Marking:	yellow marking tube with marking: item number - order number - length - certification mark, with customer identification on request!



Anschlussbild/Steckerbelegung:

side 1	1:1	side 2
M12 connector	core	M12 connector
pin 1	yellow	pin 1
pin 2	white	pin 2
pin 3	orange	pin 3
pin 4	blue	pin 4
housing	screen	housing

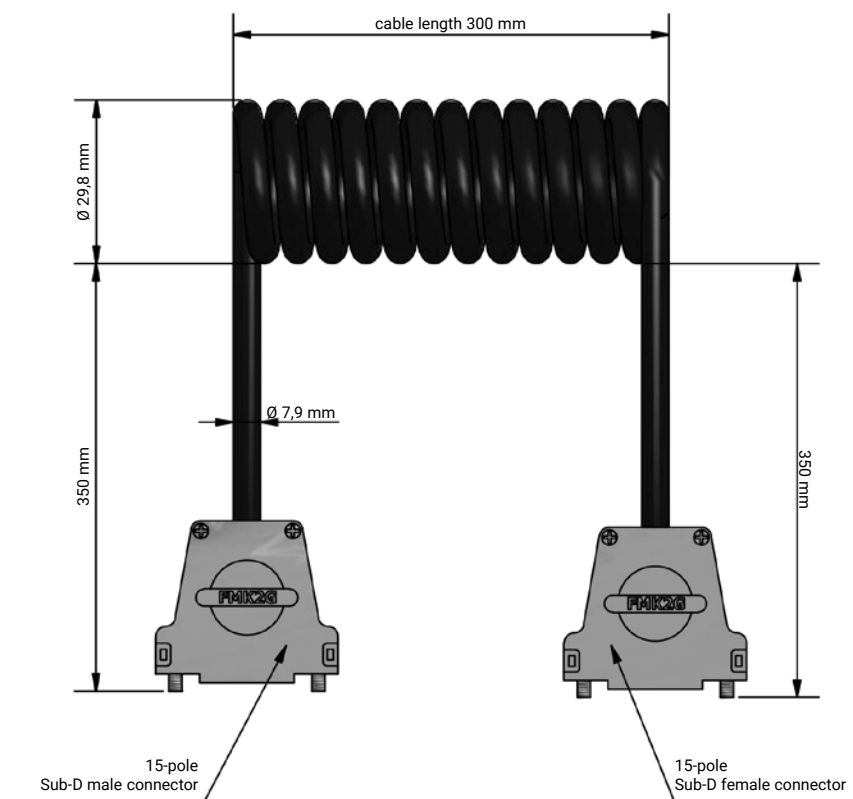


Individual lengths
and further
plug combinations
on request!



Helix Cable

with radial outlets and 15-pole Sub-D male connector and female connector



Cable characteristics:

SAB item no.:	L0803-9209
Dimension:	(5x0,14 mm ² +2x0,14mm ² +4x(2x0,14mm ²)D)D
Conductor:	bare copper strands, fine wires
Insulation:	TPE
Screen:	wrapped with tinned copper braiding
Outer sheath:	PUR, black (similar RAL 9005)
Outer diameter:	approx. 7,9 mm

Technical Data:

Temperature range:	-35 °C to +85 °C
Voltage range:	0 - 24 V
Connection side 1:	Sub-D connector
Connection side 2:	Sub-D connector

item no. with length code

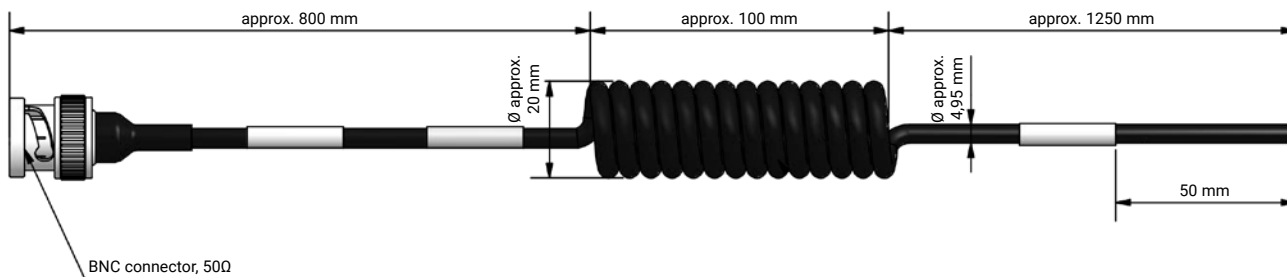
length	item no.: S0803-4123- - - - -
0,3 m	00030
0,5 m	00050
1,0 m	00100
2,0 m	00200
3,0 m	00300
5,0 m	00500
7,5 m	00750
10,0 m	01000
15,0 m	01500
20,0 m	02000
25,0 m	02500

Helix Cables

Helix Cable

with axial outlets, BNC connector and smoothly cut end

SAB Data



Cable characteristics:

SAB item no.:	L3600-9064 / KOAX 50 Ω
Dimension:	AWG 22/19
Conductor:	bare copper strands, fine wires
Insulation:	SABIX®
Screen:	wrapped with tinned copper braiding
Outer sheath:	PUR, black (similar RAL 9005)
Outer diameter:	approx. 5,0 mm

Technical Data:

Temperature range:	-40 °C to +90 °C (cable)
Voltage range:	max. 500 V (cable)
Connection side 1:	HF plug connector
Connection side 2:	cut smoothly

item no. with length code

length	item no.: S3600-4103- - - - -
0,5 m	00050
1,0 m	00100
2,0 m	00200
3,0 m	00300
5,0 m	00500
7,5 m	00750
10,0 m	01000
15,0 m	01500
20,0 m	02000
25,0 m	02500

Among others the following cable types belong to our delivery program:

- » low-noise cable
- » RG 316
- » RG 58
- » RG 179
- » coax cables with 50 Ω or 75 Ω
- » cables with heat resistant, flexible outer sheath up to +150°C

Please choose from the following plug connectors:



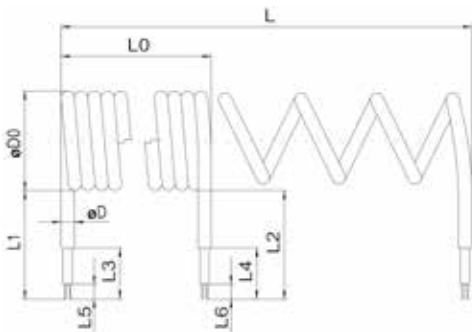
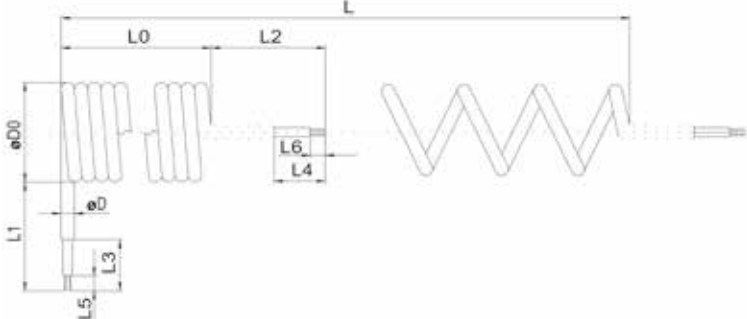
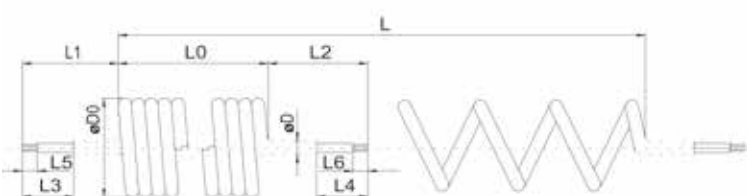
Helix Cables

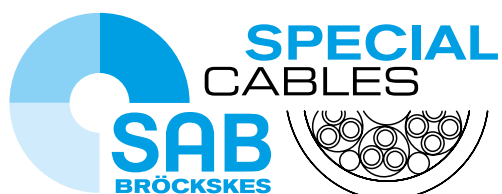
Construction details for helix cables

SAB BRÖCKSKES GmbH & Co. KG
info@sab-cable.com | Phone: +49/2162/898-0

Company/Name: _____

Please calculate a non-binding offer based on the following data:

 Cable ends: radial	L = _____ mm L0 = _____ mm øD = _____ mm øD0 = _____ mm L1 = _____ mm L2 = _____ mm L3 = _____ mm L4 = _____ mm L5 = _____ mm L6 = _____ mm
 Cable ends: radial and axial	Quantity: _____ Application (type of installation): _____ Helical direction: _____ Standard cable (item no.): _____
 Cable ends: axial	Insulation material (core): _____ Screening: ☐ yes ☐ no Insulation material (sheath): _____ No. of cores: _____ Cross section: _____
Notes: _____ _____ _____ _____	



SAB Bröckskes GmbH & Co. KG

Greifrather Str. 204 - 212 b | 41749 Viersen | GERMANY

Tel.: +49(0)2162/898-0 | www.sab-kabel.de | info@sab-cable.com