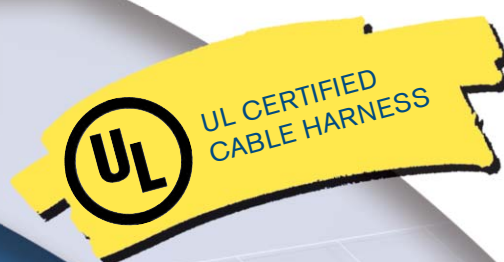


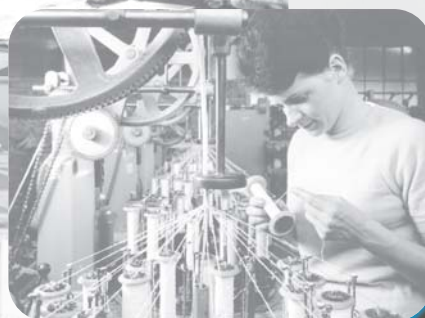
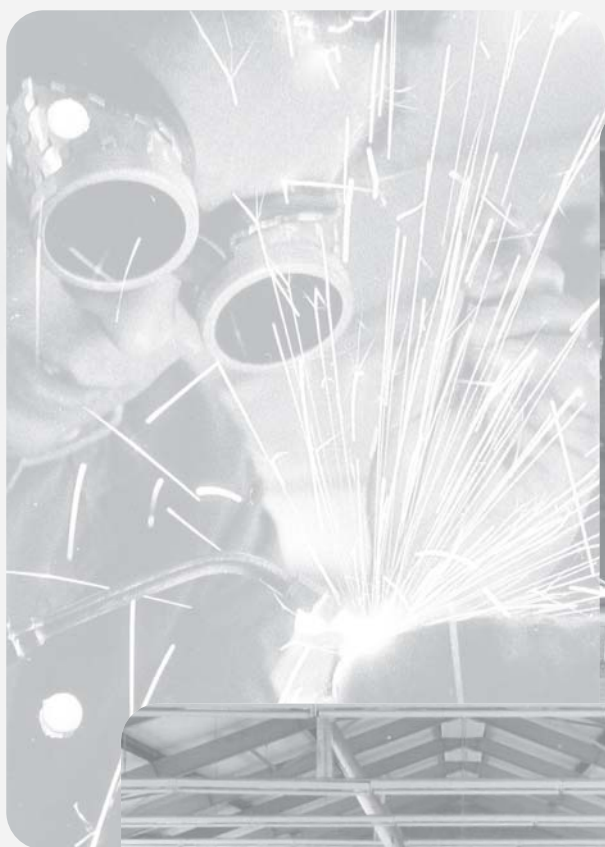
SPECIAL CABLES
TEMPERATURE MEASUREMENT · CABLE HARNESSING



SPECIAL CABLES FOR MEDICAL TECHNOLOGY

THE RIGHT SOLUTION FOR EACH AREA





TRADITIONAL
FAMILY BUSINESS
SINCE **1947**

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The examples shown above are only a selection of our possibilities. For other solutions our experts are always at your disposal. Please do not hesitate to contact our specialists who will advise you individually for your special application.

WHO WE ARE

A SURVEY

70 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 customers' 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 worldwide. 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 ISO 50001:2011. And our future slogan is:

WE GO FORWARD!

FOUNDED:	1947 by Peter Bröckskes sen. an independent, medium-sized company.
CEO:	Peter Bröckskes and Sabine Bröckskes-Wetten
PLANT/LOCATION:	In Viersen (Lower Rhine) 110.000 m ² company site. Own manufacturing from copper conductor to outer sheath. VDE proved burnchamber and laboratory within the company.
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 ISO 50001:2011

BIOCOMPATIBILITY

ACC. TO EN ISO 10993-1

SAB Bröckskes has certified the **SABmed Line** cable range according to EN ISO 10993-1. The testing institute HygCen Germany GmbH has subjected our cables to a cytotoxicity test according to DIN EN ISO 10993-5.

After having tested the cytotoxicity of the material according to DIN EN ISO 10993-5: 2009-10 the testing institute gave the following statement: an evaluation of the scope of biological testing was carried out acc. to EN ISO 10993-1:2010-04.

In order to evaluate the biocompatibility of the product, a cytotoxicity test acc. to DIN EN ISO 10993-5:2009 was considered to be sufficient. The type and scope of the performed tests comply with the specifications acc. to EN ISO 10993-1:2010-04. If the test material is used in accordance with the regulations, no cytotoxic effects are to be expected.

A biological harmlessness according to EN ISO 10993-1 can be certified.

SABmed S Classic

The classic material with high notch- and tear resistance as well as excellent flexibility, frequently proved for various medical devices.

SABmed S Ultraflexible

As the name implies, the special compound feature is its high flexibility offering a maximum degree of mobility to the user.

SABmed S UL

For the first time we successfully combined a biocompatible **SABmed S** material with the possibility for an UL-certification. We are now able to offer a complete low-voltage range of cables for medical devices with UL approval.

SABmed S Platin

„Non-Blooming“ means that there is no release of fission products at the cable surface. This phenomenon is already reduced to a minimum level for each of our **SABmed S** compounds. With our **SABmed S Platin** we are able to eliminate it completely.

Our **SABmed T** - range is characterized by a reduced shore-hardness making the cable smoother and more flexible than PVC. Furthermore, this material is free of halogen and well suited for sterilization (gas and radiation).



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“.

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.

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 HARNESSES
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 Inform 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.

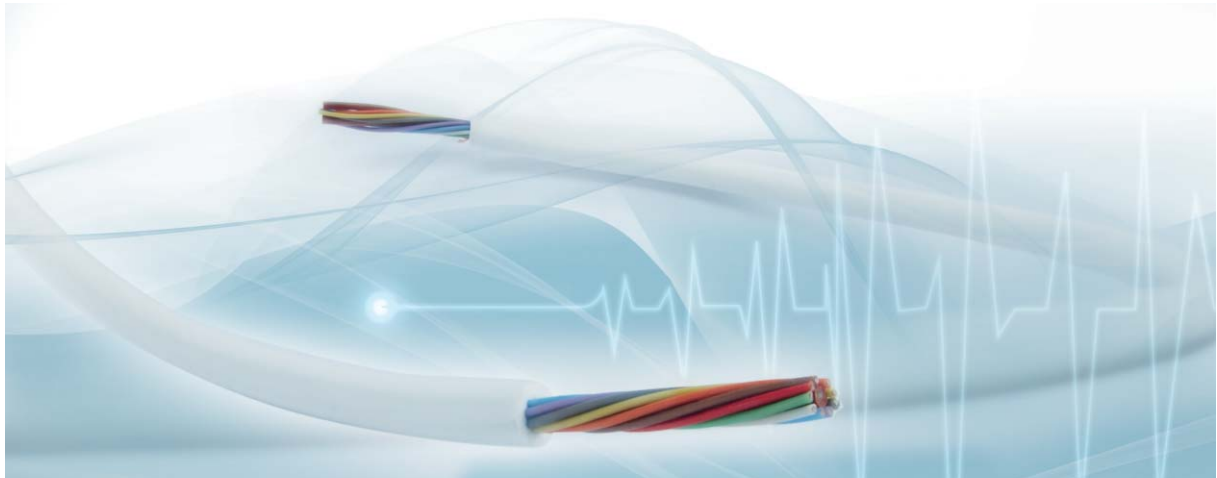

Bruce Mahrenholz, Assistant Chief Engineer, Global Inspection and Field Services
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (LLC) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at info@ul.com

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SABmed LINE



EXTREMELY SKIN COMPATIBLE MEDICAL CABLE
WITH ULTRA SOFT OUTER SHEATH

SAB_{med}Line

besides the basic version with high notch- and tear resistance, a material for ultraflexible and smooth cables, one for cables with UL-certification as well as a "non-blooming" version.

For the market of medical devices we developed a brand new family of biocompatible cable compounds called SABmed Line: Our range of SABmed S compounds includes

PRODUCT RANGE



Cable track cables

Torsion cables

UL/CSA cables

Sensor cables

Cable harnessing

Helix cables

Fluoroplastic cables

Control cables

Bus cables

Data cables

Hybrid cables



MEDICAL TECHNOLOGY

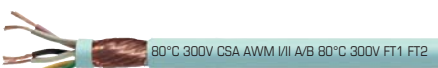
SURGERY ROBOT SYSTEMS



THE SPECIALIST FOR RELIABILITY AND VARIETY

Surgery robot systems have the demand of high mechanic requirements as well as million cycles of torsional and bending movements. To fulfill these high requirements we check our products with our in-house test systems regarding performance and durability. The combination of different insulation and sheath materials allows the use of various disinfectants and cleaning substances up to autoclaveability and clean-room application.

PRODUCT RANGE



Robot cables

Torsion cables

UL/CSA cables

Silicone cables

COAX cables

Helix cables

Cable harnessing

Control cables

Fluoroplastic cables

Cleanroom cables

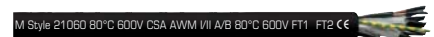
Bus cables

Data cables

Hybrid cables

Resistance sensors

Sensor cables





CUSTOMIZED SOLUTIONS FOR YOUR APPLICATION

The performance demands of dental technology ranges from flexible and smooth silicone cables in handheld applications and torsional stress at swivel arms to miniaturised connection cables. Due to the wide range of material combinations we fulfill your demands at the highest level.

PRODUCT RANGE



Hybrid cables ■

■ Torsion cables

UL/CSA cables ■

■ Silicone cables

COAX cables ■

■ Helix cables

Cable harnessing ■

■ Control cables

Fluoroplastic cables ■

■ Data cables

Bus cables ■





RELIABLE PRODUCTS FOR SAFE CLEANLINESS

For the application of sterilization and disinfection we produce connection cables and products for temperature measurement. The often used PT100/PT1000 and NTC sensors are manufactured with highest precision. Steam-tight versions are possible as well as autoclaveable connection cables, even with international standards.

PRODUCT RANGE



UL/CSA cables ■

■ Silicone cables

COAX cables ■

■ Control cables

Cable harnessing ■

■ Helix cables

Fluoroplastic cables ■

■ Resistance sensors

Bus cables ■

■ Hybrid cables

Sensor cables ■



MEDICAL TECHNOLOGY

IMAGING TECHNIQUES



CABLES AND PLUGS FOR A GOOD CONNECTION

© Anton Gotschke / Fotolia

Imaging systems for medical diagnostic require a reliable connection of transmission. SAB BRÖCKSKES offers a variety of possibilities to fulfil your demands. Our strength of the custom-made solution becomes particularly clear in the innovative realization of your application. Whether hybrid cables with COAX-elements or special electrical screened products with high flexible performance - often we are already able to produce for a quantity of 100 m.

PRODUCT RANGE



Robot cables

Torsion cables

UL/CSA cables

Silicone cables

COAX cables

Helix cables

Cable harnessing

Control cables

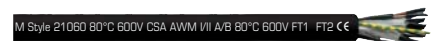
Fluoroplastic cables

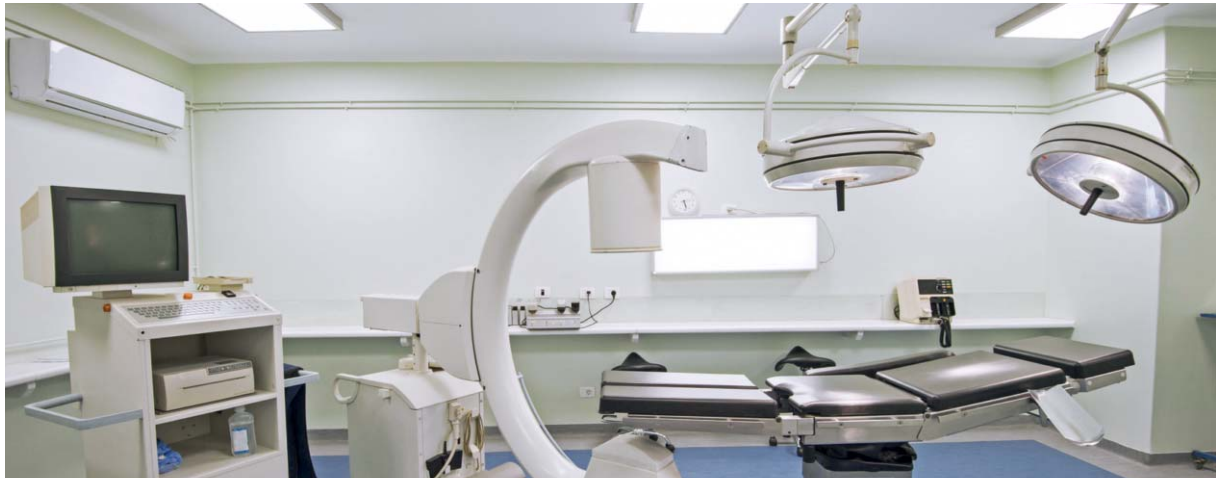
Data cables

Bus cables

Sensor cables

Hybrid cables





CABLES AND HARNESSING FOR MEDICAL EQUIPMENT

We fulfill the rising requirements on operating tables and treatment units regarding to patient positioning and user friendly handling with our wide range of products. Whether we produce helix-cables with harnessed ends, connection cables with international standards or hybrid cables with high-flexible performance - we satisfy your demands on the highest level.

PRODUCT RANGE



Cable track cables

Torsion cables

UL/CSA cables

Sensor cables

Cable harnessing

Helix cables

Fluoroplastic cables

Control cables

Bus cables

Data cables

Hybrid cables



SURGICAL LIGHTS



CONNECTION AND WIRING CABLES FOR DURABLE ILLUMINATION

© pengyou2 / Fotolia

Above all in the medical lighting industry cables are needed that withstand high and fluctuating ambient temperatures up to + 180°C. For this application SAB BRÖCKSKES offers a broad range of Besilen insulated cables and strands. These are particularly used for the inner wiring of lamps and devices as well as for the wiring of switch and distribution boards with low mechanical stress.

PRODUCT RANGE



Fluoroplastic cables ■

■ Torsion cables

UL/CSA cables ■

■ Silicone cables

COAX cables ■

■ Helix cables

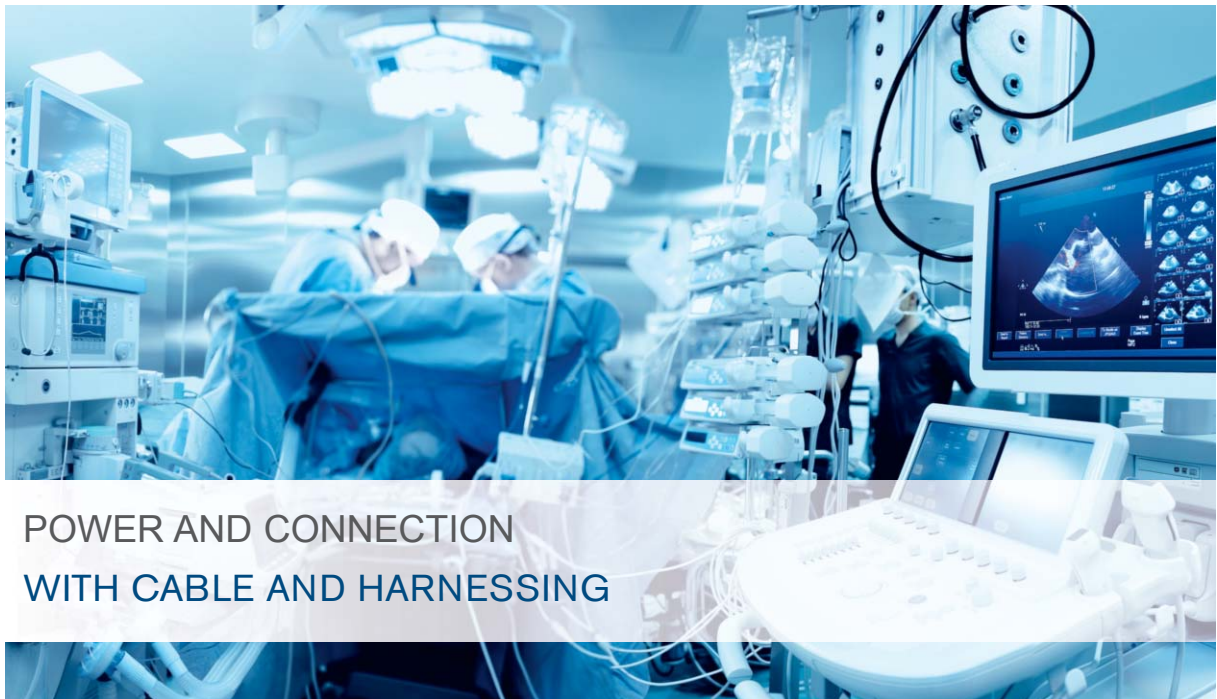
Cable harnessing ■

■ Hybrid cables



MEDICAL TECHNOLOGY

ELECTRO-SURGICAL SYSTEMS



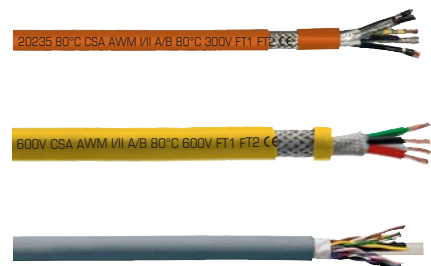
POWER AND CONNECTION WITH CABLE AND HARNESSING

Whether if monopolar or bipolar applications - the manufacturing at SAB BRÖCKSKES always takes place on the highest quality level in consideration of bio-compatible materials. Even versions with increased screen effectiveness to avoid disturbance of imaging techniques can be manufactured.

PRODUCT RANGE



	Hybrid cables	■
■	Silicone cables	
	UL/CSA cables	■
■	Cable harnessing	
	Sensor cables	■



MEDICAL TECHNOLOGY

ELECTRO-THERAPY DEVICES



POWERFUL SOLUTIONS – RELIABLE IMPLEMENTED

Connection cables in the field of electrotherapy application with electric stimulation and /or magnetic flux can be customer-specific designed and manufactured by SAB BRÖCKSKES. Depending on the application and the customer's demands, we would be glad to consider the request for an especially flexible and motion-friendly performance, a resistance against wipe-disinfection or a space-saving hybrid cable. We are waiting for your challenge. Also cable harnessing is possible.

PRODUCT RANGE

AWM Style 21060 80°C 600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE



BRÖCKSKES - D-VIERSEN - LVCY 7 x 0

600V CSA AWM VII A/B 80°C 600V FT2 CE



Robot cables

Torsion cables

UL/CSA cables

Silicone cables

COAX cables

Helix cables

Cable harnessing

Data cables

Fluoroplastic cables

Bus cables

Hybrid cables

Sensor cables

M Style 21060 80°C 600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE

600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE



20235 80°C CSA AWM VII A/B 80°C 300V FT1 FT2

MEDICAL TECHNOLOGY

LABORATORY EQUIPMENT



MEDICAL LABORATORY OR SAMPLE PROCESSING – INDIVIDUAL AND PRACTICAL



For the demands of laboratory equipment SAB BRÖCKSKES offers a wide range of innovative products: silicone (Besilen®) cables, featured by high-temperature resistance up to +250°C with simultaneous high-flexible performance. Or connection cables designed for permanent movement at the door of appliances. The often used PT100/PT1000 and NTC sensors are manufactured with highest precision. Steam-tight versions are possible as well as autoclaveable connection cables, even with international standards.

PRODUCT RANGE

AWM Style 21060 80°C 600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE



RSN - 02-J VDE-Reg.-Nr. 7000 CC 500 50 x 0,5 mm

BRÖCKSKES - D-VIERSEN - S 200 C 5 x 1,5 mm CE

BRÖCKSKES - D-VIERSEN - LIVCY 7 x 0



D-VIERSEN - SAB Heat 50W/m 230V

Robot cables

Torsion cables

UL/CSA cables

Silicone cables

COAX cables

Helix cables

Cable harnessing

Control cables

Fluoroplastic cables

Cable track cables

Bus cables

Data cables

Hybrid cables

Resistance sensors

Sensor cables

Heating cables

M Style 21060 80°C 600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE

600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE



600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE

20235 80°C CSA AWM VII A/B 80°C 300V FT1 FT2 CE





BUS CABLES – WE CARE FOR A GOOD NETWORK

Based on the strong innovative power of medical monitoring and information techniques, SAB BRÖCKSKES developed a high amount of new cable solutions. Particularly progressive are the applications of linked surgery systems. Depending on the use, we can offer for example high flexible CAT5, CAT6 and CAT7-cables with temperature and chemical resistance as well as drumable and robot suitable variations.

PRODUCT RANGE



Robot cables

Torsion cables

UL/CSA cables

COAX cables

Helix cables

Cable harnessing

Control cables

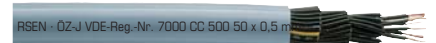
Fluoroplastic cables

Data cables

Bus cables

Sensor cables

Hybrid cables



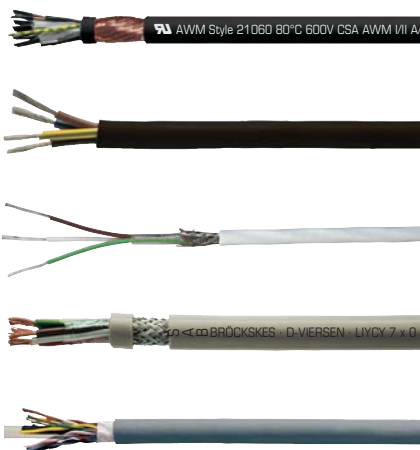


SMOOTH CONNECTION – RELIABLE HANDLING AND DIAGNOSTICS

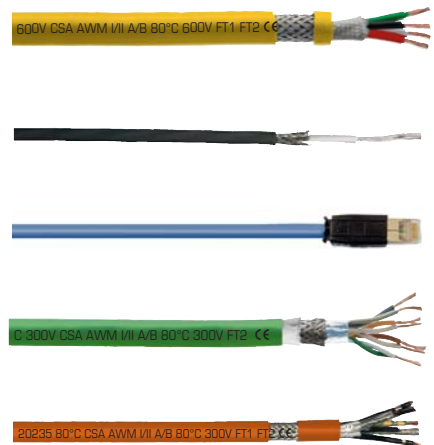
© KufB3 / Fotolia

Endoscopic systems need, like other imaging systems, secure and reliable transmission connections in combination with smooth and user-friendly performance. SAB BRÖCKSKES can use its innovative strength for custom-made products - often we are already able to produce for a quantity of 100 m. Also cable harnessing is possible.

PRODUCT RANGE



UL/CSA cables
■ Torsion cables
COAX cables
■ Silicone cables
Cable harnessing
■ Fluoroplastic cables
Bus cables
■ Data cables
Hybrid cables
■ Sensor cables





INTELLIGENT PRODUCTS – KEEP YOU IN MOTION

Based on our experiences in the field of vehicle technology and battery-charging systems, SAB BRÖCKSKES offers a wide range of products for electro-mobility. The special advantage is the easy installation, even at narrow space conditions.

PRODUCT RANGE



Automotive cables ■

■ Torsion cables

UL/CSA cables ■

■ Silicone cables

COAX cables ■

■ Helix cables

Cable harnessing ■

■ Control cables

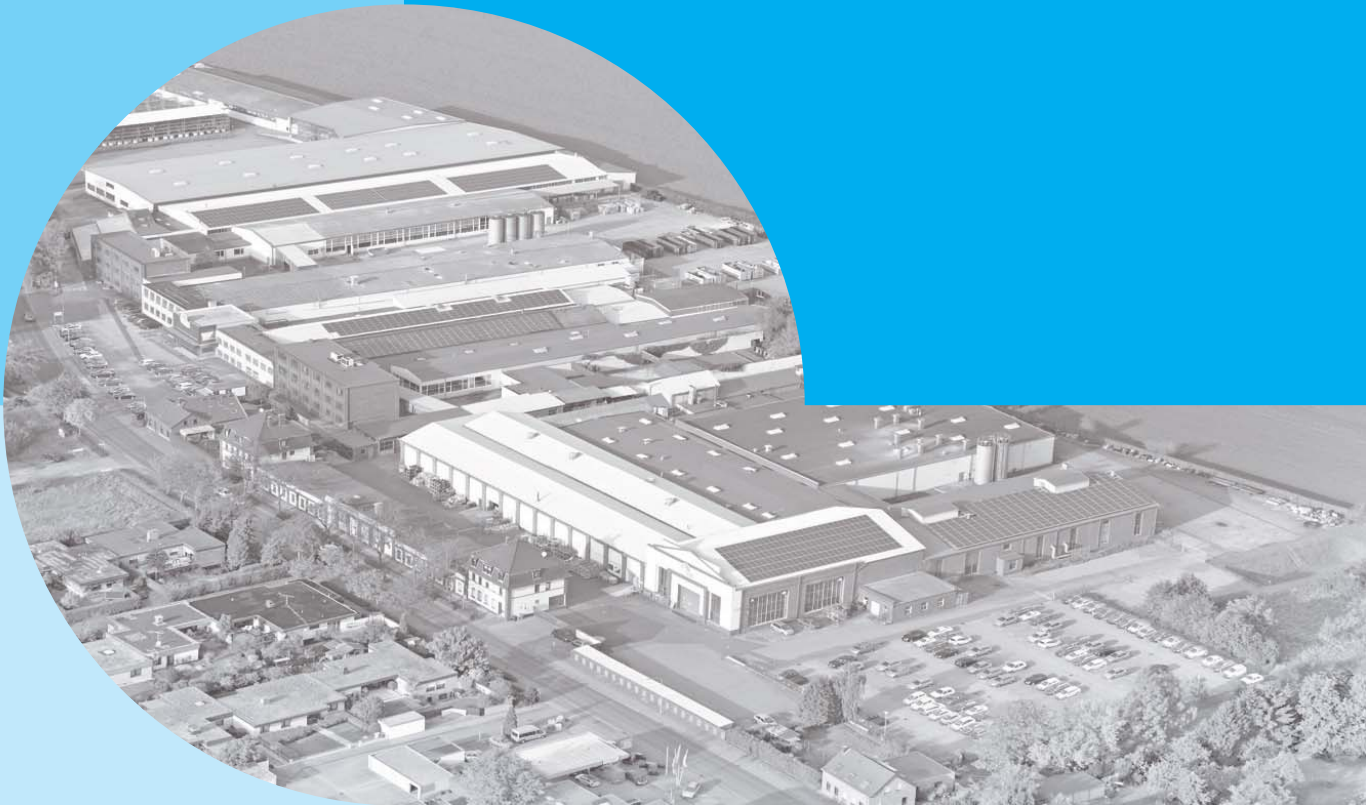
Fluoroplastic cables ■

■ Cable track cables

Hybrid cables ■

■ Sensor cables





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-WORLDWIDE.COM
INFO@SAB-BROECKSKES.DE