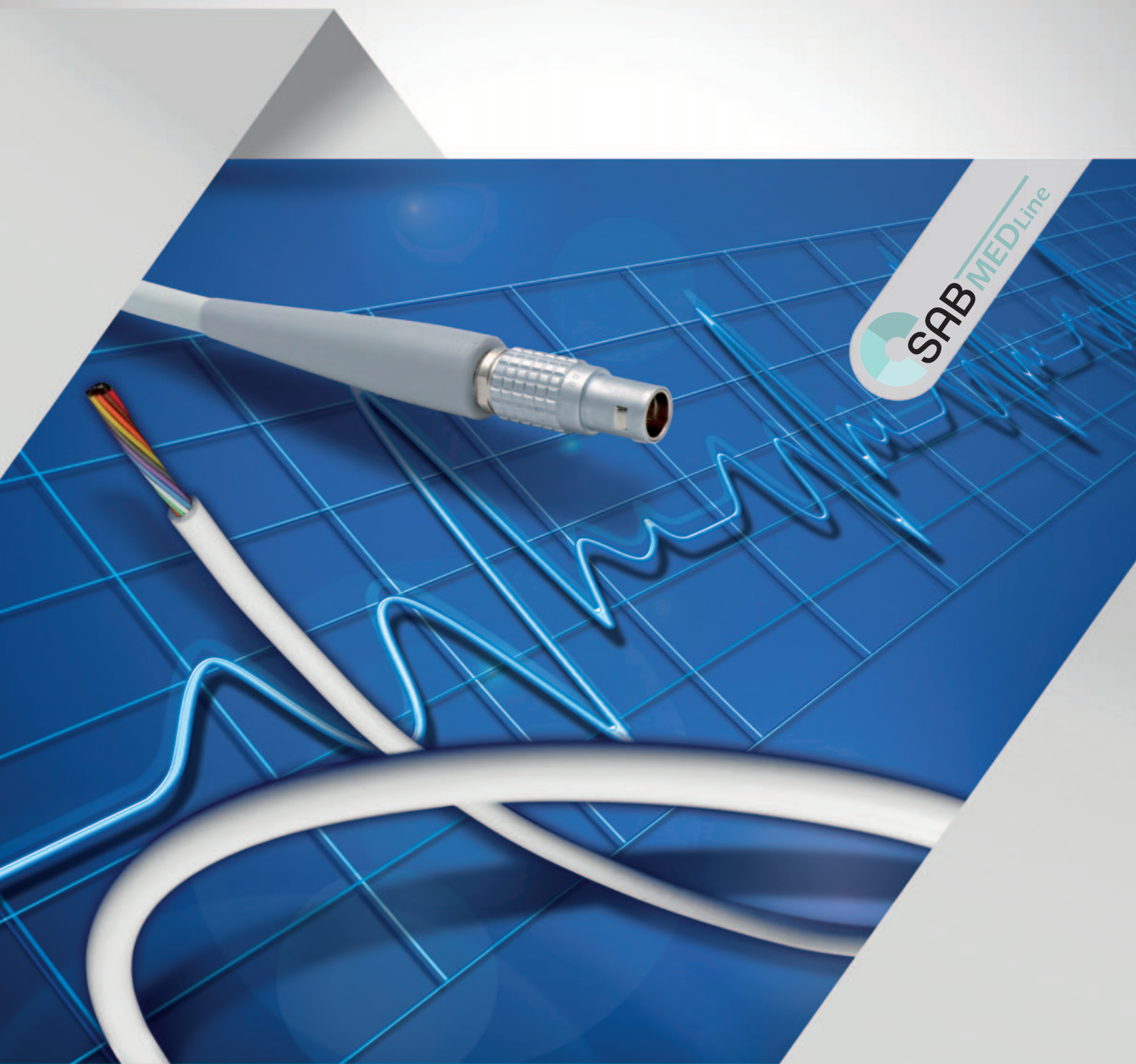


SPECIAL CABLES FOR MEDICAL TECHNOLOGY

THE RIGHT SOLUTION FOR EACH AREA



SAB MEDLine

www.sab-cables.com



TRADITIONAL
FAMILY BUSINESS
SINCE **1947**



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The examples listed below show 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.

FAMILY BUSINESS IN THE THIRD GENERATION

75 years of experience in cable and wire manufacturing as well as in temperature measurement technology turned a one-man business into a company with more than 550 employees. We prove our strength every year with more than 1500 special products according to customers' requirements. Each product is a new challenge for our creative technical team. We at **SAB** see ourselves as a manufacturer and a service provider – in the sense of true partnership and the greatest possible customer orientation.

Today, the quality of our products is known and appreciated in more than 100 countries around the world. In all product ranges, we are certified according to DIN EN ISO 9001. Furthermore, we have implemented an environmental management system for our company according to DIN EN ISO 14001, an occupational health and safety management system according to NLF/ILO-OSH and DIN ISO 45001, and an energy management system according to DIN EN ISO 50001.

And also for the future, our 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 approved burnchamber and laboratory within the company.
EMPLOYEES/WORKERS:	approx. 430 at the plant in Viersen, 550 worldwide
YEARLY SALES:	over 134 Mio. € worldwide
PRODUCTS:	Special Cables Measurement Technology Cable Harnessing
CERTIFICATES AND APPROVALS:	<p>Quality management system acc. to DIN EN ISO 9001 for every manufacturing field</p> <p>Environmental management system acc. to DIN EN ISO 14001</p> <p>Occupational health and safety management acc. to NLF/ILO-OSH and DIN ISO 45001</p> <p>Energy management system acc. to DIN EN ISO 50001</p>

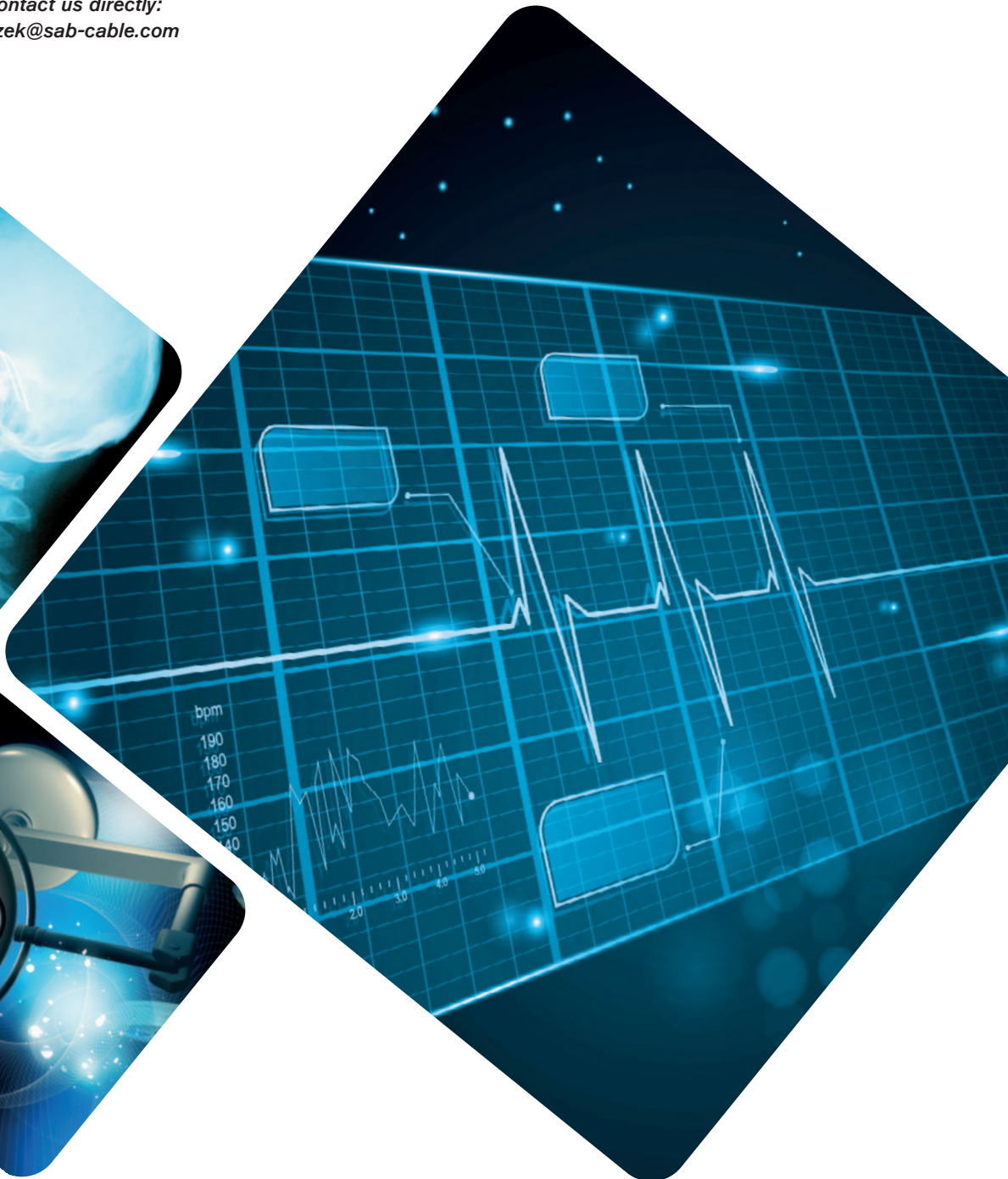


CABLE DESIGN AND PRODUCTION

SAB BRÖCKSKES – Your specialist in connection technology for electromedicine

In order to identify customer-specific requirements and to enable safe applications, the cable specialist from Viersen with its own development department relies on close customer contact. As the compliet production is carried out exclusively on series production equipment, each prototype is also a series product suitable for presentation to the notified body. Measurements can be carried out under real conditions on both the metre goods - already possible from 100m upwards - and the cable assemblies. The subsequent exchange of knowledge and - if required - the subsequent practical implementation in design features are elementarily important for a continuously successful application.

Please contact us directly:
m.gerlatzek@sab-cable.com



PRODUCTION POSSIBILITIES

Flexible cables and wires "Made in Germany"

As a leading manufacturer we develop and produce cables for industrial purposes.

Our wide range of materials offers a lot of possibilities for your individual product requirement.

The following survey shows an extract of our production possibilities:

Conductor Materials:

- ✓ bare copper
- ✓ tinned copper
- ✓ silver-plated copper
- ✓ nickel-plated copper

Insulation and Jacketing Materials:

- ✓ SABmed S
- ✓ SABmed T
- ✓ FEP, PFA
- ✓ Polyethylene
- ✓ TPE
- ✓ Polyurethane

Temperature Ranges:

- SABmed S
- ✓ -40°C up to +180°C
- SABmed T
- ✓ -40°C up to +100°C
- Polyurethane
- ✓ -40°C up to +90°C
- FEP, ETFE, PFA
- ✓ -90°C up to +260°C

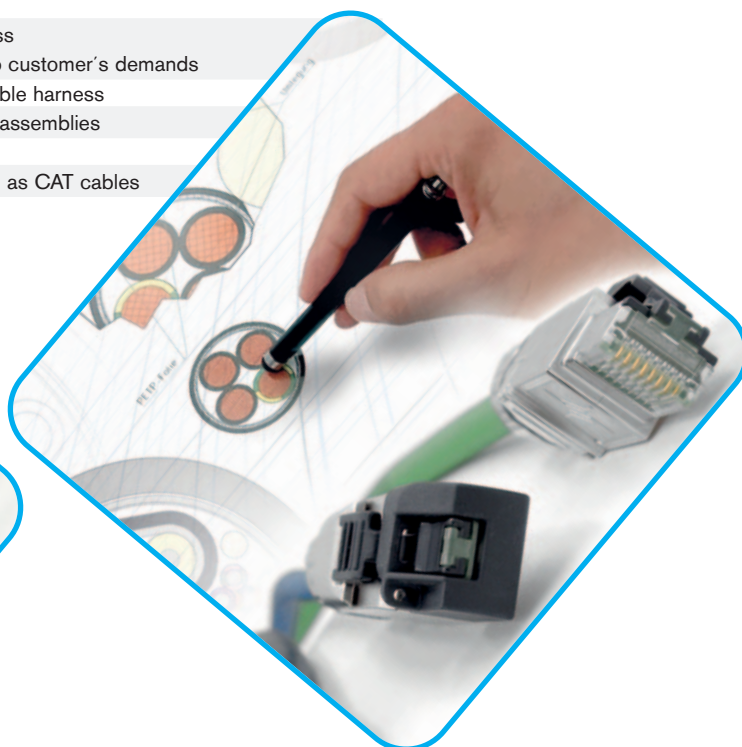
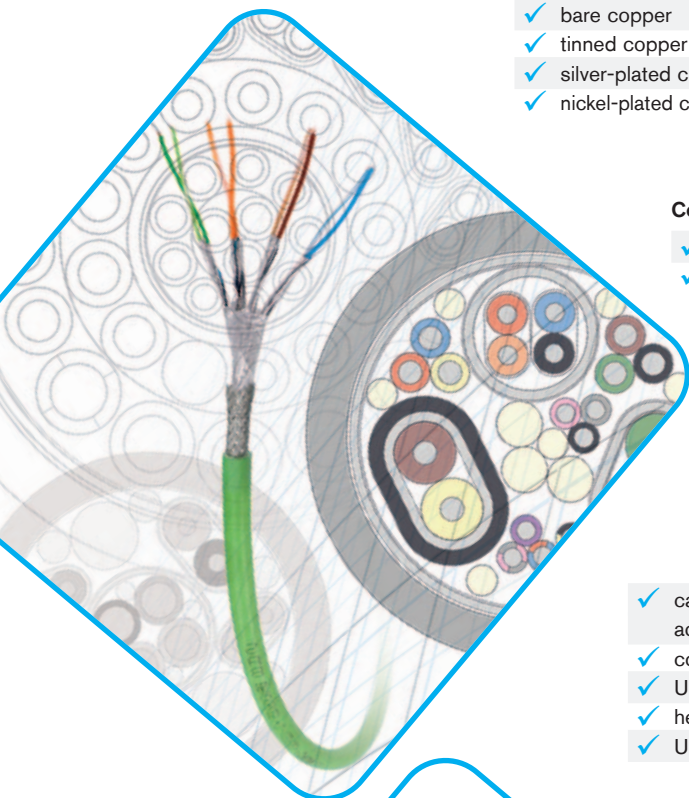
Conductors:

- ✓ cross sections 0,022 - 300 mm²
- ✓ unshielded and shielded over 100 conductors

Cable harnessing directly from the manufacturer SAB:

As a full service partner we are able to offer besides cable design and production the manufacturing of cable harnessing products according to customer's request. Please trust on our experience for decades in the treatment of cables and connectors.

- ✓ cable harness according to customer's demands
- ✓ complete cable harness
- ✓ UL certified assemblies
- ✓ helix cables
- ✓ USB as well as CAT cables



SELECTION TABLE

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 very good for sterilization (gas and radiation) as well as for a helix cable!

	Item group: 3900 Sheath material: SABmed S	Item group: 3901 Sheath material: SABmed T	Item group: 3902 Sheath material: variable	Item group: 3903 Sheath material: variable
Biocompatibility (ISO 10993-5)	X	X	X	
Wipe disinfection*	X	X	X	X
Autoclavability (up to $\pm 134^{\circ}\text{C}$)	X			
High flexibility	X	X	X	X
Spiralisation**		X	X	X
Overmoulding	X	X	X	X
Low adhesion	X	X	X	X
Temperature range $+90^{\circ}\text{C}$	X	X	X	X
Temperature range $+180^{\circ}\text{C}$	X			
UL/CSA	X		X	X
RoHS	X	X	X	X

*against commercially available wipe disinfections according to instructions for use

**depending on the material combination

ELECTROTHERAPY

Connection cables in the field of electrotherapy application with electric stimulation 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.



TECHNICAL DATA

SABmed S CONNECTING CABLE

CABLE CONSTRUCTION

Conductor:	finely-stranded, silver-plated copper
Insulation:	FEP
Screen:	highly-efficient tinned copper braid
Sheath material:	biocompatible SABmed S

CABLE CHARACTERISTICS

Voltage:	up to 50 V
Temperature range:	-40°C/+180°C
Testing voltage:	selection test acc. to 2 MOP
Cleaning:	autoclavable, standard wipe disinfection
Surface:	„non-sticky“



Shock wave ✓

Ultrasound ✓

Stimulation current ✓

BIOCOMPATIBLE

PLIABLE



SURGERY

Whether for monopolar, bipolar application technology or electrical devices for other specialised surgical procedures - manufacturing at SAB Bröckskes is always carried out to the highest quality standards, taking into account biocompatible materials. Versions with increased shielding to prevent interference with imaging systems can also be manufactured. The requirements for protective measures for electrical safety, such as MOOP and MOPP, are also included and tested.



TECHNICAL DATA

HF SABmed S

POWER SUPPLY CABLE

TYPICAL CABLE CONSTRUCTION

Conductor:	finely-stranded, silver-plated copper
Insulation:	FEP
Screen:	highly-efficient tinned copper braid
Sheath material:	biocompatible SABmed S

TYPICAL CABLE CHARACTERISTICS

Voltage:	up to 900 V
Temperature range:	-40°C/+180°C
Testing voltage:	selection test acc. to 2 MOP
Cleaning:	autoclavable, standard wipe disinfection
Surface:	„non-sticky“
Application:	permanent bending and torsion



Coagulation ✓

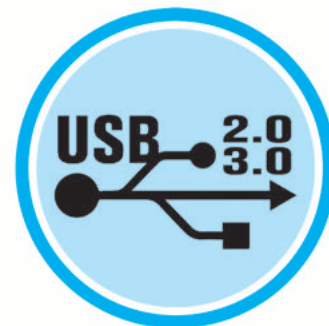
Orthopaedics ✓

Ophthalmology ✓

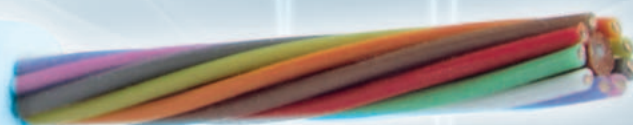
Surgery robots ✓

Operating tables ✓

UL approved



2 MOP tested



IMAGING TECHNIQUES

Imaging systems are an integral part of medical diagnostics and surgical treatments. A brilliant image display is crucial for targeted and successful therapy. This means that the demand for ever faster transmission systems and interference-minimised display devices also poses great challenges for the designers of imaging procedures when it comes to cable selection. Our strength in customised solutions is particularly evident in the innovative implementation of your application. Whether hybrid cables with KOAX elements or specially electrically shielded products with permanently flexible properties - we can produce from as little as 100 m.



TECHNICAL DATA

SABmed T USB 3.0 Gen 1 DATA CABLE

CABLE CONSTRUCTION

Conductor:	finely-stranded, silver-plated copper
Insulation:	FEP
Stranding:	highest precise, homogenized stranding
Screen:	highly-efficient tinned copper braid
Sheath material:	biocompatible SABmed T

CABLE CHARACTERISTICS

Voltage:	up to 90 V
Temperature range:	-40°C/+100°C
Testing voltage:	selection test acc. to 2 MOP
Cleaning:	standard wipe disinfection, ETO
Surface:	„non-sticky“
Harness:	upgraded for individual connectors



Ultrasound ✓

Microscopy ✓

Endoscopy ✓

Monitoring ✓

NON-STICKY

AUTOCLAVABLE

PETP-Folie

Umlegung

AESTHETICS

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.



TECHNICAL DATA

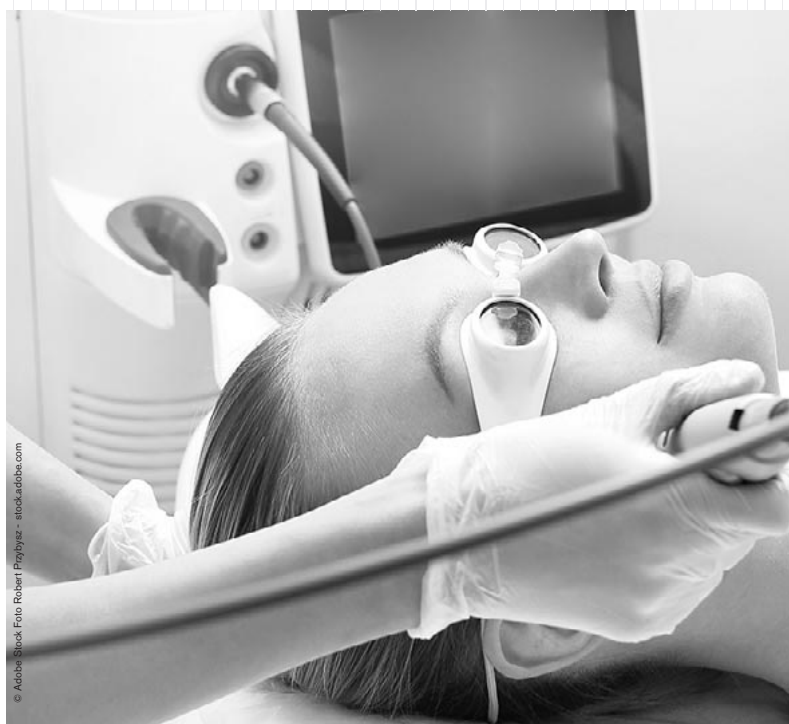
BIOCOMPATIBLE HYBRID CABLE

CABLE CONSTRUCTION

Conductor:	finely-stranded conductor
Insulation:	SABIX®
Stranding:	hybrid combination with different tubes
Screen:	highly-efficient tinned or silver copper braid
Sheath material:	PU

CABLE CHARACTERISTICS

Voltage:	up to 375 V
Temperature range:	-40°C/+80°C
Testing voltage:	selection test acc. to 2 MOP
Cleaning:	standard wipe disinfection
Surface:	„non-sticky“
Application:	mechanical sophisticated, cross-pressure stable



Liposuction ✓

Skin-abrasion ✓

Laser technology ✓

CUSTOMISED

PROTOTYPES

DENTAL TECHNOLOGY

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 fulfil your demands at the highest level.



TECHNICAL DATA

BIOCOMPATIBLE DRIVE CABLE

CABLE CONSTRUCTION

Conductor:	finely-stranded, silver-plated copper
Insulation:	FEP or PFA
Screen:	highly-efficient tinned or silver copper braid
Sheath material:	biocompatible SABmed S

CABLE CHARACTERISTICS

Voltage:	up to 900 V
Temperature range:	-40°C/+180°C
Testing voltage:	selection test acc. to 2 MOP
Cleaning:	autoclavable, standard wipe disinfection
Surface:	„non-sticky“
Application:	permanent bending and torsion



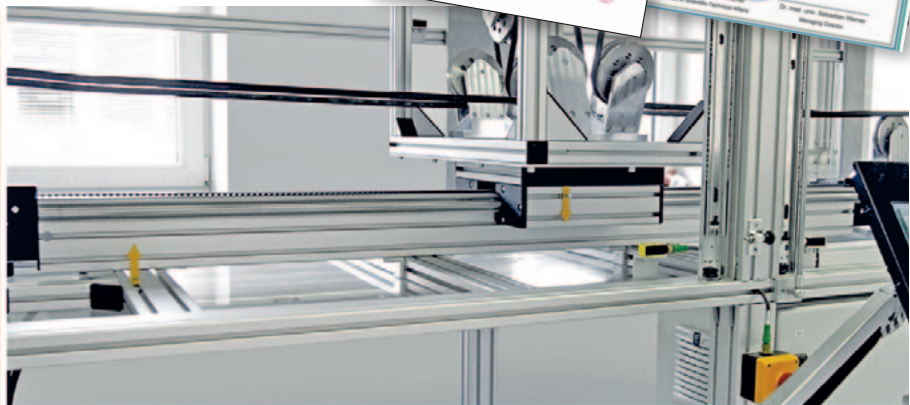
Drive cable ✓

Treatment unit ✓

Intraoral camera ✓

AUDITED / TESTED / APPROVED

Our modern testing machines make it possible to reproduce almost all customer-specific requirements. In this way, we ensure that all products are fully developed when they come onto the market. For us, new products are the result of close communication between customer, sales, development department, laboratory and raw material supplier. In addition, SAB has all the test procedures required by the VDE as well as numerous international certifications.



Test laboratory ✓

Biocompatibility ✓
acc. to EN ISO 10993-1

Cable Harnessing ✓
UL certified



SALES AND SERVICE

From our central stock in Viersen-Süchteln or our external stocks, we supply standard lengths as well as special dimensions, often within 24 hours. It is our strength to be at different places at the same time. This shows also our wide product range. Being always ready to deliver our products of constant quality is our strength at SAB Bröckskes. Challenge, obligation - but also guarantee at the same time. This is your advantage - we are present whenever you need our assistance.



● HEAD OFFICE

Germany

SAB Bröckskes GmbH & Co. KG
Grefrather Str. 204-212 b
41749 Viersen
Germany
Phone +49 (0) 2162 898-0
info@sab-cable.com
www.sab-kabel.de

● SUBSIDIARY

France (east)

SAB France
28, rue des Caillottes
Z.I. La Plaine des Isles
89000 Auxerre
France
Phone +33 3 869 466 94
info@sab-cables.com
www.sab-cables.com

● SUBSIDIARY

USA

SAB North America
344 Kaplan Drive
Fairfield, NJ 07004
USA
Phone +1 973 276 0500
info@sabcable.com
www.sabcable.com

● REPRESENTATION

Korea

TCC Thomas Cable Co. Ltd.
206 Yecheon 3-gil, Ochang-eup
Cheongwon-gu, Cheongju-si
Chungcheongbuk-do
28127, South Korea
Phone + 82 43 211 9900
thomascable@thomaskorea.com
www.thomas.co.kr

● SUBSIDIARY

Netherlands

SAB Bröckskes Benelux
Bokkerijder 34
5571 MX Bergeijk
Netherlands
Phone +31 (0) 497 575 201
info@brockskes.nl
www.nl.sab-kabel.com

● SUBSIDIARY

France (west)

SAB France
3 rue de la Lagune
Parc d'Activités de Viais
44860 Pont Saint Martin
France
Phone +33 2 518 976 76
info@sab-cables.com
www.sab-cables.com

● SUBSIDIARY

China

**SAB Special Cable
(Shanghai) Co. Ltd.**
Room 706,
Tower C. Bo Hui Plaza Nr. 768
South Zhongshan 1st Road,
Huangpu District, Shanghai, China
Phone + 86 21 583 508 43
sales@sab-broeckskes.net
www.sab-cable.cn

● REPRESENTATION

India

Alltronix
No. C-340, 6th Cross, 1st Stage,
Peenya Industrial Estate,
Bengaluru - 560 058, Karnataka
India
Phone +91 80 40838383
mail@alltronix.com
www.alltronix.com

WORLDWIDE

Here you will find the right contact worldwide for your service request.



● REPRESENTATION

Singapore

Precision Technologies Pte Ltd
211 Henderson Road #13 - 02
Henderson Industrial Park
Singapore 159552
Phone +65 6273 4573
precision@pretech.com.sg
www.pretech.com.sg

● REPRESENTATION

Temperature measurement Belgium

Ets. Fabritius SPRL
Av. van Volxem 180
1190 Brussels
Belgium
Phone +32 2 34 33 932
info@fabritius.be
www.fabritius.be

● REPRESENTATION

Japan

JEPICO Corporation
Shinjuku Front Tower
21-1, Kita-Shinjuku 2-Chome
Shinjuku-Ku, Tokyo 169-0074
Japan
www.jepico.co.jp/english/contact
www.jepico.co.jp/english

● REPRESENTATION

Sweden

OEM Automatic AB
Dalagatan 4
573 42 Tranås
Sweden
Phone +46 75 242 41 00
info@oem.se
www.oem.se/en

● REPRESENTATION

Poland

Kabel-Projekt
Podkomorzego 3/15
83-000 Pruszcz Gdański
Poland
Phone + 48 602 211 405
krzysztof.pilip@kabel-projekt.com
www.kabel-projekt.pl

● REPRESENTATION

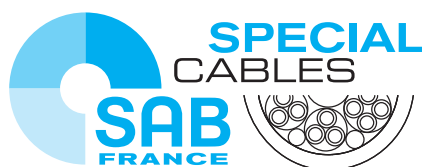
Israel

TransElectric
27 Shaked Street,
Hevel Modiin Industrial Park
7319900 Shoham
Israel
Phone +972 73 2336600
info-tig@ti-group.co.il
ti-group.co.il

● REPRESENTATION

Finland

OEM Finland Oy
Cable Department
Fiskarsinkatu 3
20750 Turku, Finland
Phone +358 207 499 499
info@oem.fi
www.oem.fi



26, la Rue des Caillottes
ZI Plaine des Isles
89006 Auxerre Cedex
FRANCE
Tél.: +33 3 869 466 94
Fax: +33 3 869 466 50
info@sab-cables.com
www.sab-cables.com

3 rue de la Lagune
Parc d'Activités de Viais
44860 Pont Saint Martin
FRANCE
Tél.: +33 2 518 976 76
Fax: +33 2 518 900 21
info@sab-cables.com
www.sab-cables.com