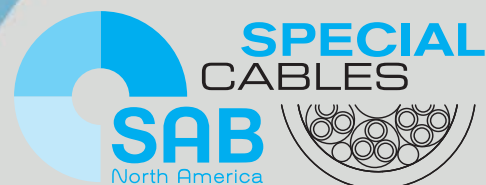


CABLES & CORDSETS FOR MEDICAL DEVICES



www.sabcable.com
866-722-2974 ■ info@sabcable.com



About Us



SAB North America is a focused supplier for the automation, aerospace, medical, high temperature, and robotics industries, providing cable and thermocouple solutions that meet, exceed, and set new standards in the flexible cable market. In addition to flexible cable products, we offer an extensive inventory of high-quality cable accessories, including cord grips, grounding glands and other accessories that complement our flexible control and automation cables.

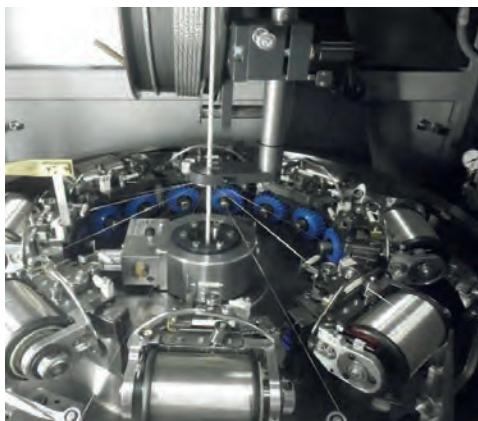
Whatever the need may be, look to SAB North America for Special Cables that can, for example, help minimize maintenance costs and increase productivity, reduce downtime, and solve specific problems. Here is a small sample of some of the challenges that Special Cables from SAB North America can help address:

- Hybrid designs for multiple functions
- Harsh environments
- Difficult applications
- Industry-specific requirements



Cables cannot compromise patient lives and safety, and they must maintain reliable connections amidst threats like frequent cleaning, disinfection, and handling, as well as be able to withstand abrasion, shock, impact, and tampering. Medical equipment OEMs must have complete certainty that the cables they choose are suitable for their design. SAB North America provides a wide variety of safe, reliable cables and over-molded cables for use in medical laboratories, operating rooms, and monitoring environments. SAB has more than 75 years of experience manufacturing quality, rugged cables for challenging applications so that you can be sure that SAB cable is a safe and reliable addition to your medical equipment.

SAB's level of speed and service as a supplier is unmatched. SAB lives up to its name in not only flexible cable but also flexible manufacturing.



SAB Advantage...We make it Easy

- Small prototype runs on serialized production equipment
- Biocompatible material range to meet your unique requirements.
- The color of the jacket can be customized to match the medical device.
- Plug & play pre-assembled solutions are available.
- Twisting characteristics include high flexibility, easy to grip, and no risk of kink.

OVERMOLDED CABLE SOLUTIONS FOR MEDICAL TECHNOLOGY

SAB BRÖCKSKES offers high-quality cable solutions with a large variety of materials for plug & play solutions for system equipment.



CABLES FOR PROTOTYPE CONSTRUCTION FOR MEDICAL TECHNOLOGY

SAB BRÖCKSKES, the specialist in cable production, offers small batch series runs for prototypes for medical devices.

“MEDICAL-GRADE” USB 3.0 CABLE FOR MEDICAL TECHNOLOGY

Biocompatible and highly flexible USB 3.0 cables for imaging systems

SABmed S-range is a silicone based material with a smooth surface, very pliable and high-temperature resistance. UL Certified power, data, bus, connection, or single-core cables for medical devices. Easy to grip and slide non-stick jacket does not require a parabellum coating.

SABmed T-range is characterized by an increased resistance to indentation making the cable smoother and more flexible than PVC. Furthermore, this material is halogen-free and very good for sterilization (gas and radiation) as well as for a retractable spiral cable.

SELECTION TABLE	Item group: 3900 Jacket material: SABmed S	Item group: 3901 Jacket material: SABmed T
Biocompatibility (ISO 10993-5)	✓	✓
Wipe disinfection*	✓	✓
Autoclavability (up to ±134°C)	✓	
High flexibility	✓	✓
Spiralization**		✓
Overmolding	✓	✓
Low adhesion	✓	✓
Temperature range +90°C	✓	✓
Temperature range +180°C	✓	
UL/CSA	✓	
RoHS	✓	✓



*against commercially available wipe disinfections according to instructions for use

**depending on the material combination

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 offer a lot of possibilities for your individual product requirements. The following materials and criteria shows an overview of our production possibilities:

Conductor Materials:

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

Insulation & jacket material:

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

Temperature range:

- 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

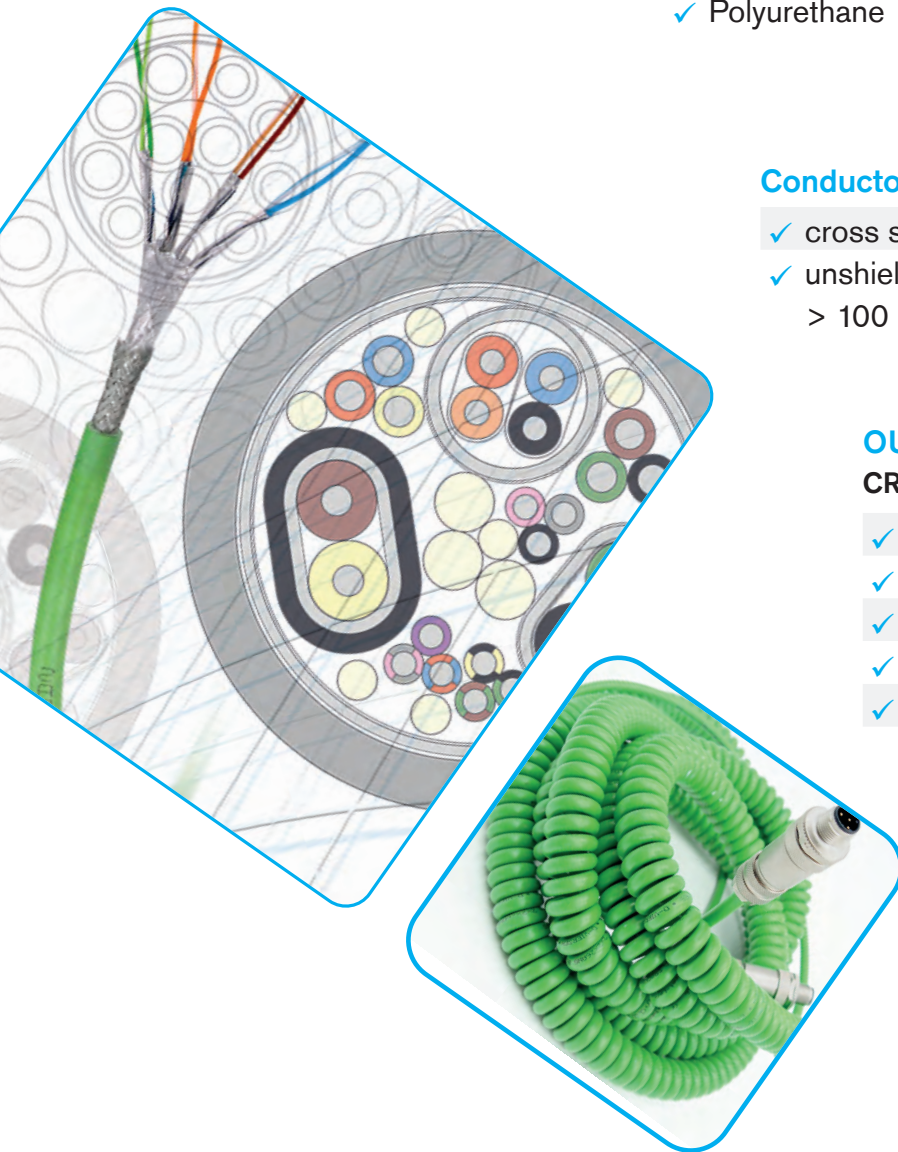
Conductors:

- ✓ cross section 0.022 - 300 mm²
- ✓ unshielded and shielded
- > 100 conductors

OUR HARNESSED CABLES

CREATE INNOVATIVE CONNECTIONS

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



Cable assembly directly from the manufacturer **SAB**:

SAB not only designs and manufactures cable, we can be a full service partner by providing cable assemblies according to customer's request.

Please trust on our decades long experience with assembling cables and connectors.





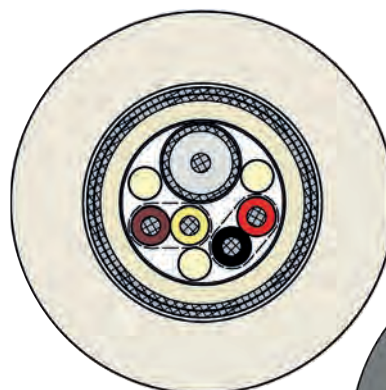
SABmed S

Connecting cable for electrotherapy devices

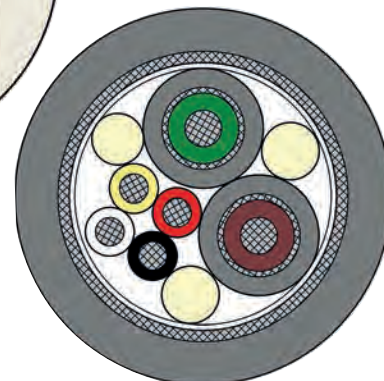
ELECTROTHERAPY



Electrotherapy connection cables for electrical stimulation can be designed and manufactured by SAB Bröckskes for customer specific applications and requirements. SAB can provide a flexible and motion-friendly space-saving hybrid cable with resistance against wipe-disinfection.



example configurations



Construction:

Conductor:	finely-stranded, silver-plated copper
Insulation:	FEP
Shielding:	highly-efficient tinned copper braid
Jacket:	biocompatible SABmed S

Technical data:

Voltage:	up to 50 V
Testing voltage:	selection test acc. to 2 MOP
Temperature range:	-40°C/+180°C
Cleaning:	autoclavable, standard wipe disinfection
Biocompatibility:	cytotoxicity acc. to DIN EN ISO 10993-5
Surface:	non-sticky

Outstanding features:



- biocompatible jacket material
- pliable



Shock wave ✓

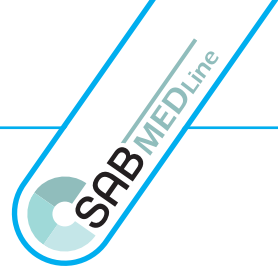
Ultrasound ✓

Stimulation current ✓

BIOCOMPATIBLE

PLIABLE





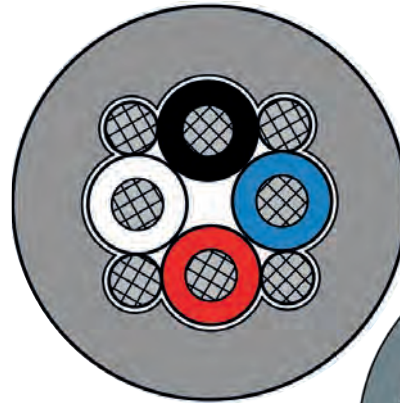
HF SABmed S

Power Supply Cables for Surgery

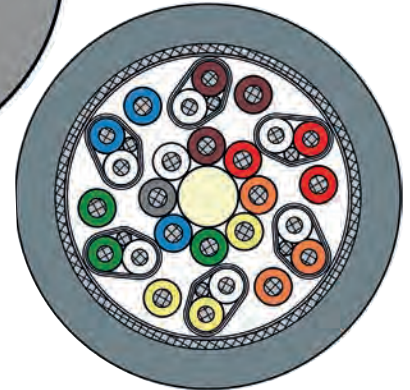
SURGERY



Whether for monopolar, bipolar applications, or electrical devices for other specialized surgical procedures - manufacturing at SAB Bröckskes is always carried out to the highest quality standards using biocompatible materials. Versions with increased shielding to prevent interference with imaging systems can also be manufactured. SAB designs and tests in our laboratory to meet the requirements for protective measures for electrical safety, such as MOOP and MOPP.



example configurations



Construction:

Conductor:	finely-stranded, silver-plated copper
Insulation:	FEP
Shielding:	highly-efficient tinned copper braid
Jacket:	biocompatible SABmed S

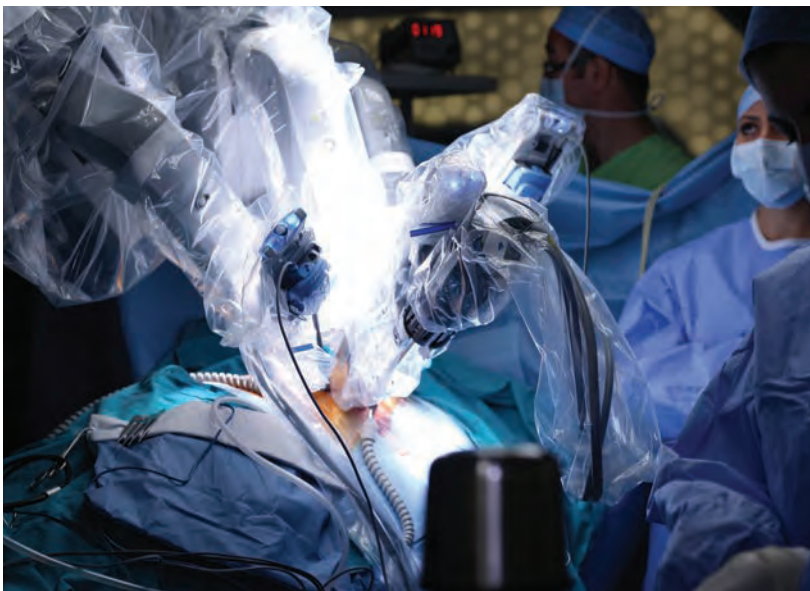
Outstanding features:



- UL approved
- 2 MOP tested

Technical data:

Voltage:	up to 900 V
Testing voltage:	selection test acc. to 2 MOP1
Temperature range:	-40°C/+180°C
Cleaning:	autoclavable, standard wipe disinfection
Surface:	non-sticky
Application:	permanent bending and torsion



- Coagulation ✓
- Orthopedics ✓
- Ophthalmology ✓
- Surgery robots ✓
- Operating tables ✓

UL approved



**TESTED TO
MOOP & MOPP**



MOOP- "Means of Operator Protection"- reduces the risk of electric shock to medical provider
MOPP- "Means of Patient Protection"- reduces the risk of electric shock to the patient



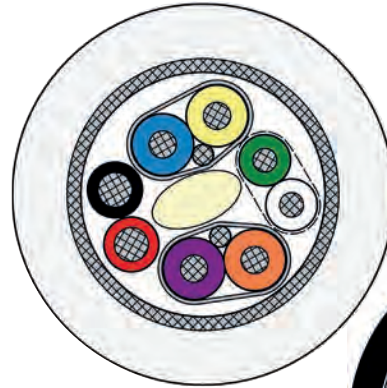
SABmed T USB 3.0 Gen 1

Data Cables for Imaging Techniques

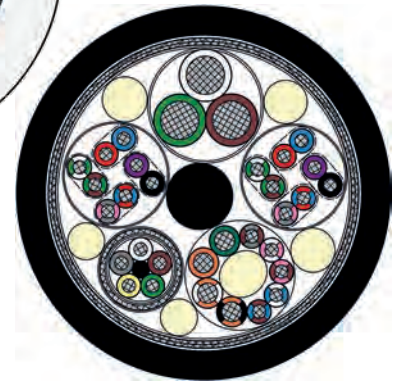
IMAGING DEVICES



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-minimized display devices also poses great challenges for the designers of imaging equipment when it comes to cable selection. SAB's strength is in providing innovative customized solutions whether hybrid cables with COAX elements or electrically shielded products with permanently flexible properties - we can produce from as little as 100 m.



example configurations



Construction:

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

Technical data:

Voltage:	up to 90 V
Testing voltage:	selection test acc. to 2 MOP
Temperature range:	-40°C/+180°C
Cleaning:	standard wipe disinfection, ETO
Surface:	non-sticky
Harness:	upgraded for individual connectors

Outstanding features:



- non-sticky
- autoclavable



Ultrasound ✓

Microscopy ✓

Endoscopy ✓

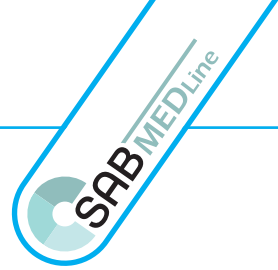
Monitoring ✓

NON-STICKY

AUTOCLAVABLE

PETP-Folie

Umteigung



Biocompatible hybrid cable

Cables for Cosmetic Procedures

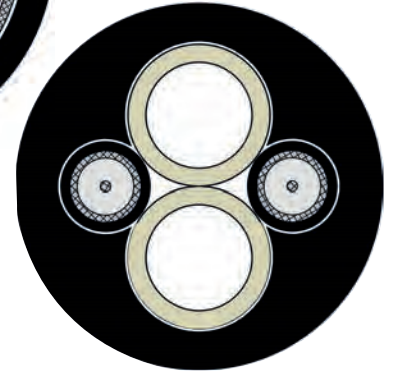
COSMETIC PROCEDURES



Imaging systems for medical diagnostics require reliable connections for transmission. SAB Bröckskes offers a variety of possibilities to fulfill your demands. SAB's strength is in providing innovative customized solutions whether hybrid cables with COAX elements or electrically shielded products with permanently flexible properties - we can produce from as little as 100 m.



example configurations



Construction:

Conductor:	finely-stranded
Insulation:	SABIX®
Stranding:	hybrid combination with different tubes
Shielding:	highly-efficient tinned or silver copper braid
Jacket:	PU

Outstanding features:



- customized
- prototypes

Technical data:

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



Liposuction ✓

Skin-abrasion ✓

Laser technology ✓



PROTOTYPES

CUSTOMIZABLE

Designs can include:

- ✓ PUR/Teflon Tubes (Cleaning/Washing)
- ✓ Hoses (Vacuuming)
- ✓ Optical fibers
- ✓ COAX elements
- ✓ Strain relief - support mesh jacket



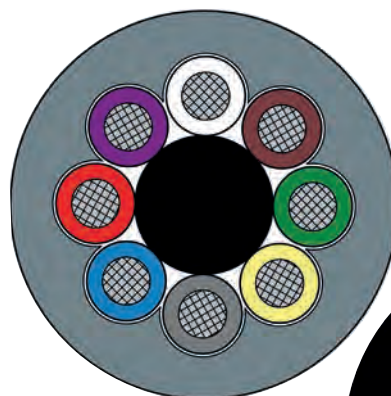
Biocompatible drive cable

Cables for Dental Technology

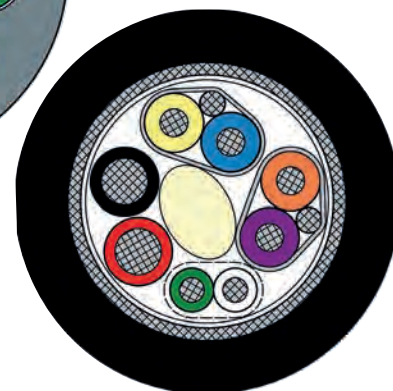
DENTAL TECHNOLOGY



The performance demands of dental technology ranges from flexible and smooth silicone cables in handheld applications and torsional stress at swivel arms to miniaturized connection cables. SAB utilizes a wide range of material combinations; so, we can provide a customized solutions to meet your requirements.



example configurations



Construction:

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

Technical data:

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



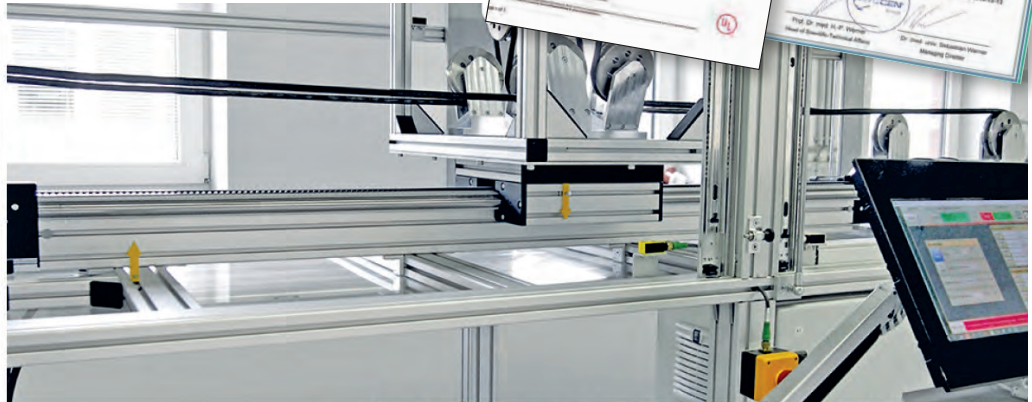
Drive cable ✓

Treatment unit ✓

Oral camera ✓

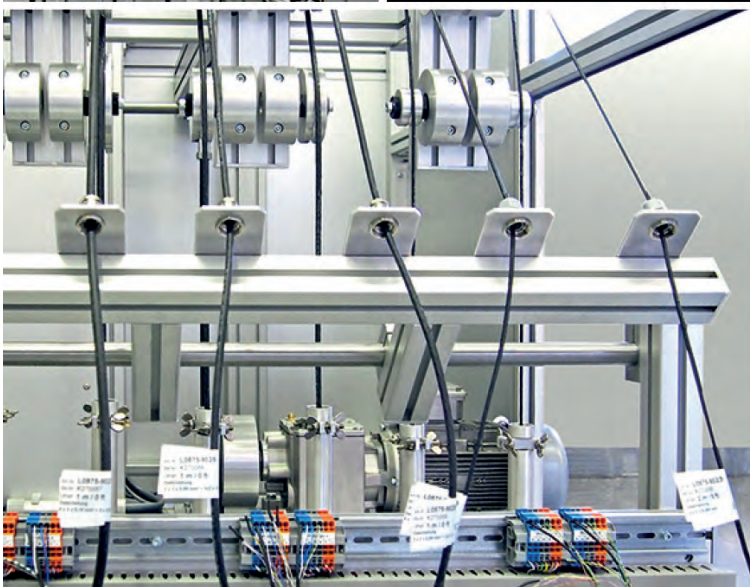
AUDITED / TESTED / APPROVED

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



K M P MASCHINENBAU Übersicht

Zyklen Vorwahl	Kabeltest 1	Kabeltest 2
2000000	1a OK	5a ---
Zyklen	1b OK	5b OK
217323	1c ---	5c ---
Zyklen gesamt	2a OK	6a OK
7064598	2b OK	6b OK
Antrieb	2c ---	6c OK
Freigabe	3a OK	7a ---
Geschwindigkeit	3b OK	7b ---
33.5 Zykl/min	3c ---	7c ---
	4a OK	8a ---
	4b OK	8b ---
	4c ---	8c ---
	4e ---	8e ---

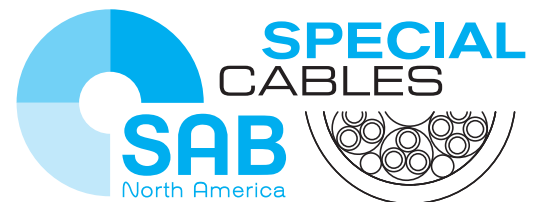


Test Laboratory ✓

Biocompatibility ✓
acc. to EN ISO 10993-1

Cable Harnessing ✓
UL certified





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