

# CABLES & ACCESSORIES FOR MEDICAL TECHNOLOGY



**SAB Control**

**SAB Flex**

**SAB Robot**

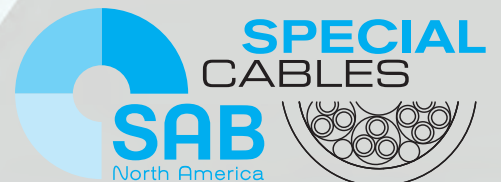
**SAB CATLine**

**SAB Data**

**SAB MEDLine**



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## 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.

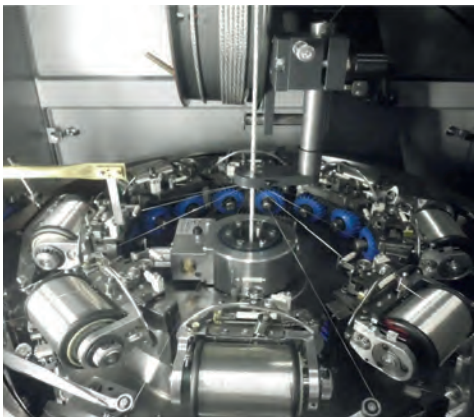
Whatever the need may be, look to SAB North America for Special Cables that can, for example, help minimize maintenance costs and increase productivity, reduce downtime, and solve specific problems. Here is a small sample of some of the challenges that Special Cables from SAB North America can help address:

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



Cables used in medical equipment must never compromise patient safety and lives. They need to maintain reliable connections despite challenges like frequent cleaning, disinfection, handling, and the ability to endure abrasion, shock, impact, and tampering. Medical equipment OEMs must be fully confident that the cables they choose are suitable for their designs. SAB North America offers a broad range of safe, dependable cables, including over-molded options, for use in medical laboratories, operating rooms, and monitoring environments. With over 75 years of experience in manufacturing durable, high-performance cables for demanding applications, SAB ensures its cables are a safe and reliable choice for 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

- Engineering & technical assistance
- Cut to length with no cut charges
- Prepaid freight within US for orders over \$2,500
- Specialty cable designs (1500 ft minimum)
- No minimum on orders from stock
- Free drop shipments (no surcharges)
- 24-hour shipments from stock
- Cord Grips for securing and grounding cables



## 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

**BIOCOMPATIBLE**

**PLIABLE**

**Designs can include:**

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



# Cables for Medical Technology

## MANUFACTURING



Pharmaceutical manufacturing relies on advanced automation for processes such as sorting, weighing, filling, sealing, labeling, and packaging to ensure efficiency and compliance with strict industry regulations. SAB provides a comprehensive range of cables and accessories designed to meet the demanding requirements of pharmaceutical production equipment. Our solutions offer high flexibility, power, control, signal, and data transmission capabilities, along with resistance to chemicals, washdowns, and extreme temperatures, ensuring reliable performance in sterile and high-precision environments.

## PACKAGING



Packaging automation plays a vital role in the medical and pharmaceutical industries, ensuring efficient processing, sorting, weighing, filling, sealing, labeling, and packing of products. With conveyors and robotics streamlining these processes, reliable cabling is essential. SAB offers a comprehensive range of cables and accessories designed to meet the demanding requirements of medical packaging equipment, providing flexibility, power, control, signal, and data transmission solutions.

## CLEANROOM



SABclean cables are specifically designed for use in medical research and pharmaceutical manufacturing cleanrooms, where combined twisting and bending stresses occur. Their high quality insulation, featuring a smooth surface and anti-stick wrapping, enhances durability under extreme mechanical strain. The specially formulated TPE outer jacket provides exceptional resistance to abrasion, oils, notching, microbes, and hydrolysis, ensuring reliability in sterile environments. Additionally, the smooth surface prevents adhesion to adjacent cables, maintaining cleanliness and organization.

## MRI & IMAGING



Speed and precision are critical for 3D measuring devices and their accessories. Optical 3D measurement offers significant advantages over traditional mechanical methods, providing results 10 to 1000 times faster with a notably lower error rate. To ensure reliable signal transmission for 3D sensors, cameras, lasers, and quality assurance systems, SAB offers CATLine Ethernet cables, USB 2.0 and 3.0 cables, as well as high- and low-temperature sensor cables. These solutions enable accurate data transfer for 3D measurement, capturing geometrical dimensions and surface characteristics with exceptional reliability.

# Cables for Medical Technology

## ELECTRO-THERAPY DEVICES



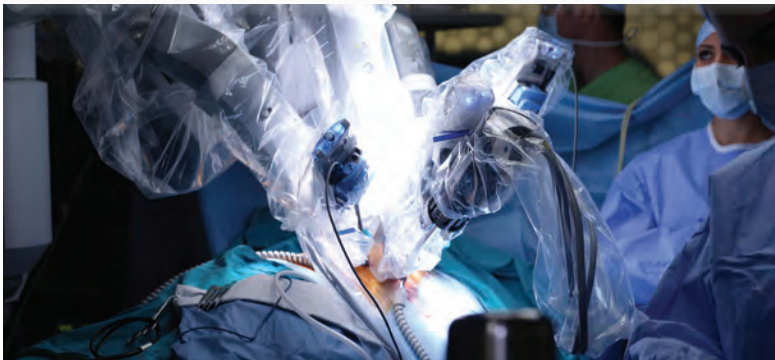
SAB designs and manufactures custom connection cables for electrotherapy applications utilizing electric stimulation and magnetic flux. Our cables are engineered to meet specific customer requirements, offering exceptional flexibility and motion-friendly performance. They are resistant to wipe disinfection and can be designed as space-saving hybrid cables. Additionally, we provide cable cordsets to support seamless integration into medical devices and systems.

## ENDOSCOPY



Endoscopic systems, like other imaging technologies, require secure and reliable transmission connections along with smooth, user-friendly performance. SAB offers innovative, custom-made solutions tailored to your specific application, including prototypes and harnessed assemblies for testing, ensuring optimal functionality and reliability.

## ROBOT SURGERY SYSTEMS



Robot surgery systems require cables with exceptional mechanical properties, capable of enduring millions of cycles of torsional and bending movements. To meet these stringent demands, SAB rigorously tests the performance and durability of its products at our in-house testing facility. The use of a variety of insulation and jacket materials enables compatibility with different disinfectants and cleaning agents, including autoclaving and cleanroom applications.

## OPERATING TABLES



Using SABmedLine cables in operating tables or treatment units simplifies patient positioning. Whether it's helix cables with harnessed ends, connection cables, or hybrid cables offering high-flexibility performance, we are able to meet your requirements at the highest standard.



# Cables for Medical Technology

## MONITORING



SAB continues to advance medical monitoring and information technology by developing innovative cable solutions. For linked surgery systems, we offer flexible CAT5, CAT6, and CAT7 cables designed for durability and performance. These cables feature temperature and chemical resistance, along with drumable and robot-compatible variations to meet the demanding requirements of medical applications.

## SURGICAL LIGHTS



To meet the demands of laboratory equipment, SAB offers a diverse range of innovative cable solutions. Our highly flexible Besilen® silicone cables provide exceptional temperature resistance up to +250°C, while our specialized connection cables are designed for continuous movement in appliance doors. Additionally, we offer steam-tight and autoclavable connection cables, including versions that comply with international standards.

## LABORATORY EQUIPMENT



SABclean cables are specifically designed for use in medical research and pharmaceutical manufacturing cleanrooms, where combined twisting and bending stresses occur. Their high quality insulation, featuring a smooth surface and anti-stick wrapping, enhances durability under extreme mechanical strain. The specially formulated TPE outer jacket provides exceptional resistance to abrasion, oils, notching, microbes, and hydrolysis, ensuring reliability in sterile environments. Additionally, the smooth surface prevents adhesion to adjacent cables, maintaining cleanliness and organization.

## STERILIZATION & DISINFECTION



SAB manufactures connection cables and temperature measurement products for sterilization and disinfection applications. We offer steam-tight options as well as autoclavable connection cables to ensure reliable performance in demanding environments.

# Cables for Medical Technology

## FLEXIBLE POWER & CONTROL CABLES

**Applications Include:** Radiology/Imaging Equipment, Operating Room Equipment, Sterilization Equipment, Laboratory Equipment, Hospital and Dental equipment, Electro-mobility



### Features:

- Flexible for easy installation
- Shielded versions available
- NFPA 79 compliant
- Abrasion and notch resistant
- Easy to crimp conductors
- Halogen free versions
- Harmonized versions available

### Suggested Cables:

- CC 600 & CC 600 CY (UR/CSA/CE) - Flexible, Unshielded & Braid Shielded, Chemical Resistant PVC Control Cable
- CC 600 P & CC 600 CP (UR/CSA/CE) - Flexible, Unshielded & Braid Shielded, Notch Resistant PUR Control Cable

## CONTINUOUS FLEX CABLES

**Applications Include:** Operating Room Equipment, Laboratory Equipment, Hospital and Dental Equipment, Electro-mobility



### Features:

- Applications requiring alternate bending or continuous motion
- Long service life- millions of bending cycles
- Abrasion resistant

### Suggested Cables:

- S 960 & S 960 CY (UR/CSA/CE) - Unshielded & Braid Shielded, PVC Cable
- S 200 & S 200 C (CE) TPE/PUR - Unshielded & Braid Shielded Cable, Extreme Temperatures, & Tight Bending Radius
- S 980 P & S 980 CP (UR/CSA/CE) - Unshielded & Braid Shielded, PUR Cable
- S 900 & S 900 P (UR/VDE/CE) - PVC & PUR Single Conductor, Tight Bend Radius for Confined Areas

## TORSIONAL CABLES

**Applications Include:** Robotic Surgery Systems, X-ray Equipment, Surgical Lighting, Electro-mobility



### Features:

- Designed for torsional movement
- Rugged PUR jacket
- Abrasion resistant
- Cleanroom version available

### Suggested Cables:

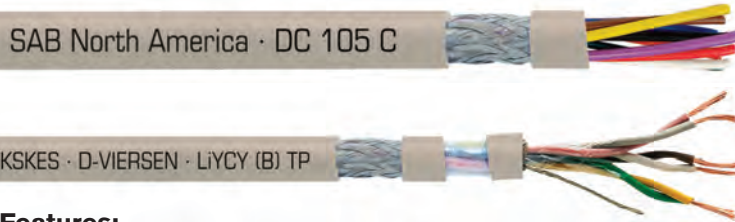
- RT 123 (UR/CSA/CE) - TPE/PUR Torsional and Continuous Flex Cable for  $\pm 450^\circ$  / 1/2 m Available Shielded and Unshielded
- RT 113 (UR/CSA/CE) - TPE/PVC Torsional and Continuous Flex Cable for  $\pm 270^\circ$  / 1/2 m Available Shielded and Unshielded



# Cables for Medical Technology

## DATA & SENSOR CABLES

**Applications Include:** Radiology/Imaging, Diagnostic and Monitoring Equipment, Sterilization equipment, Laboratory Equipment, Hospital and Dental Equipment, Electro-Surgical Equipment, Therapy Devices, Electro-Mobility



### Features:

- 26 AWG to 16 AWG data/communication cables
- Shielded, unshielded and paired with overall shield
- Flexible for easier routing

### Suggested Cables:

- DC 105, DC 105 C, & DC 105 TP (UL PLTC, ITC, CMG)(CSA/CE)- Flexible Multi-Conductor & Paired Cable, Shielded & Unshielded, PVC
- DC 300 DS & DC 300 TP (UR/CSA) - Flexible Multi-Conductor & Paired Cable, Shielded & Unshielded, PVC
- LiYY, LiYCY, & LiYCY TP (VDE/CE) - General Purpose, Multi-Conductor and Twisted Pair, Shielded & Unshielded, PVC



## FLEXIBLE INDUSTRIAL BUS & ETHERNET CABLES

**Applications Include:** Radiology/Imaging, Diagnostic and Monitoring Equipment, Sterilization equipment, Laboratory Equipment, Hospital and Dental Equipment, Electro-Surgical Equipment, Therapy Devices, Electro-Mobility

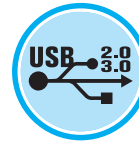


### Features:

- CATLine is available for continuous flex & torsion/robotic applications
- Available with PLTC rating for use in tray
- Cleanroom versions available
- CAT 5e, CAT 6, CAT 6A, or CAT 7A
- USB 2.0 and 3.0 versions also available.
- Profinet: Type A, B, & C

### Suggested Cables:

- Profinet/CAT5 Cables for Type A, B, & C Applications Plus Torsion and Reeling (UL/CSA)
- DeviceNet™ Cables for Flexible, Continuous Flex, and Torsion Applications (UL/CSA)
- Profibus Cables for Flexible, Continuous Flex, Torsion, and Outdoor Applications, Halogen-Free (UL/CSA)
- CATLine 5e, 6, 6A, 7A Cables for Continuous Flex, Torsion, Reeling, and High Temperature Applications (UL/CSA)



## FLEXIBLE HIGH TEMPERATURE CABLE

**Applications Include:** Surgical Lights, Laboratory Testing Equipment, Sterilization Equipment



### Features:

- Suitable for areas with high ambient temperatures in dry, damp or wet areas
- Resist temperatures as low as -50°C
- Resist high temperatures up to 180°C for continuous operation and up to 250°C for short periods.
- Continuous flex versions available

### Suggested Cables:

- SC 600 HDTR (UR/CSA/CE) - Heavy-Duty, Tear Resistant Silicone Multi-Conductor Cable, Shielded Available
- SC 113 (CE) - 300 Volt Silicone Hook-Up Wire & SC 123 (CE) 500 Volt Silicone/Fiberglass Hook-Up Wire

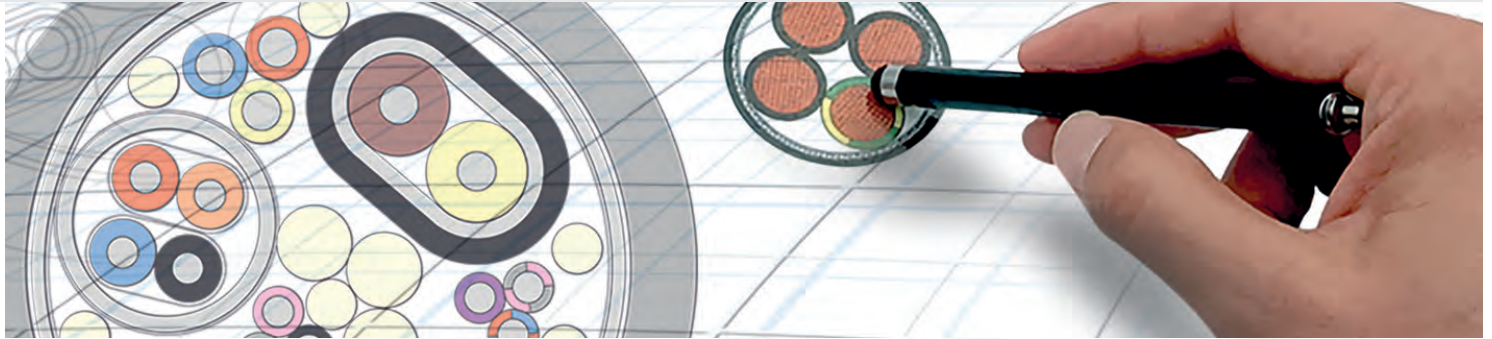


# Cables for Medical Technology

## **Manufacturing Capabilities**

Specialty flexible cables built for specific needs and approvals for demanding applications.

Order minimums are as low as 1,500 feet, and we can test your unique product in our lab. No matter your application's requirements, SAB Special Cables expand the possibilities of standard cables and address your design challenges.



### **Conductor Materials**

- Bare copper
- Tinned copper
- Silver plated copper
- Nickel plated copper
- Nickel
- Nickel pure
- Compensating cable alloys

### **Conductor Sizes**

- 0.14 mm<sup>2</sup> - 300 mm<sup>2</sup>  
(26 AWG to 500 MCM)
- variety of stranding styles

### **Insulation and Jacketing Materials**

- PVC (many varieties)
- Polyethylene
- Polypropylene
- TPE
- Fiberglass
- Besilen®/Silicone
- Pi foil
- FEP, ETFE, PFA, PTFE
- SABIX® zero halogen
- Polyurethane

### **Conductor Count Ranges**

- unshielded - up to 125 conductors
- shielded - up to 100 conductors

### **Temperature Ranges** (based on material)

- Thermoplastic Elastomers -50°C up to +145°C
- Besilen®/Silicone -40°C up to +220°C
- FEP, ETFE, PFA, PTFE -90°C up to +260°C
- Halogen-free -50°C up to +220°C
- Fiberglass up to +600°C

### **Shielding and Braiding Materials**

- Bare copper
- Tinned copper
- Galvanized steel
- Stainless steel
- Aluminum foil
- Fiberglass
- Aramid

### **Approvals**

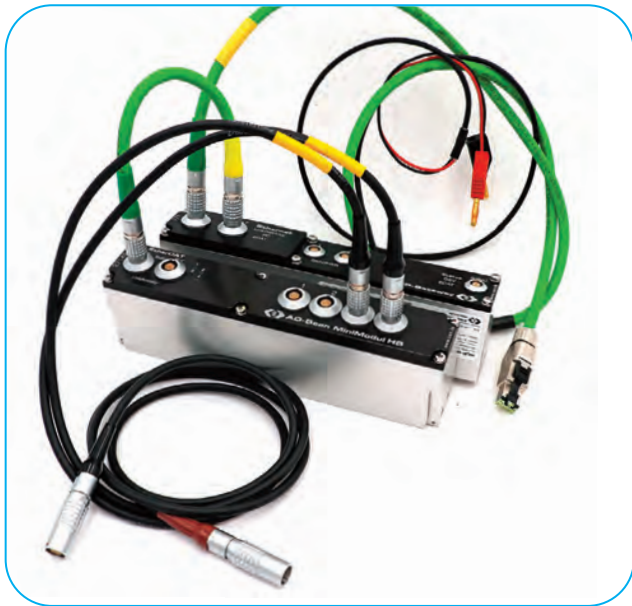
- UL, CSA, CE, EAC, VDE, HAR, IEC, EN, ISO, DNV, LR, ABS, RINA, BSI, RoHS





# Cables for Medical Technology

## Measurement Technology & Cord Grips and Accessories



### Measuring technology for industrial applications

Manufacturer of temperature sensors for industrial applications with 75 years of experience.

- ✓ mineral insulated thermocouples
- ✓ mineral insulated resistance thermometers
- ✓ temperature sensors
- ✓ mobile high voltage measuring technology
- ✓ temperature sensors for vehicle testing

## SECURE AND PROTECT YOUR CABLE

### CG 100 Polyamide Cord Grips

Dome cap, black or gray available in NPT, PG, or metric thread

Liquid tight seal, fast and easy installation, wide clamping range, multi-purpose applications, easy handling.



### CG 200 Polyamide Cord Grips

Flex cap, black or gray available in NPT, PG, or metric thread

Strain relief gland offers maximum protection against conductor fatigue caused by flexing cables



### CG 300 Nickel Plated Brass Cord Grips

Available in NPT, PG, or metric thread

Impact resistant, suitable for industrial applications, water tight, corrosion resistant.



### CG 350 SS303 or SS316 Stainless Steel Cord Grips

Available in NPT, PG, or metric thread

Impact resistant, suitable for industrial applications, water tight, corrosion resistant.



### EMC-2 Grounding Cord Grips

Nickel plated brass EMC cable gland available in NPT, PG, or metric thread

EMC-2 is a nickel plated brass strain relief with integral grounding springs in the gland.

#### Features:

- One Direction Installation
- Affordable
- Nickel Plated Brass with Tinned Copper Springs



### EMC-4 Grounding Cord Grips

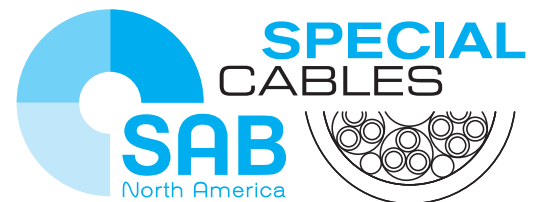
Nickel plated brass, EMC cable gland, vibration proof, available in NPT, PG, or metric thread

EMC-4 is a nickel plated brass strain relief with integral grounding springs in the gland that will allow the cable to move without damage to the shield.

#### Features:

- Bi-directional Installation
- Great Anti-Vibration Mechanisms
- Nickel Plated Brass with Tinned Copper Springs





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