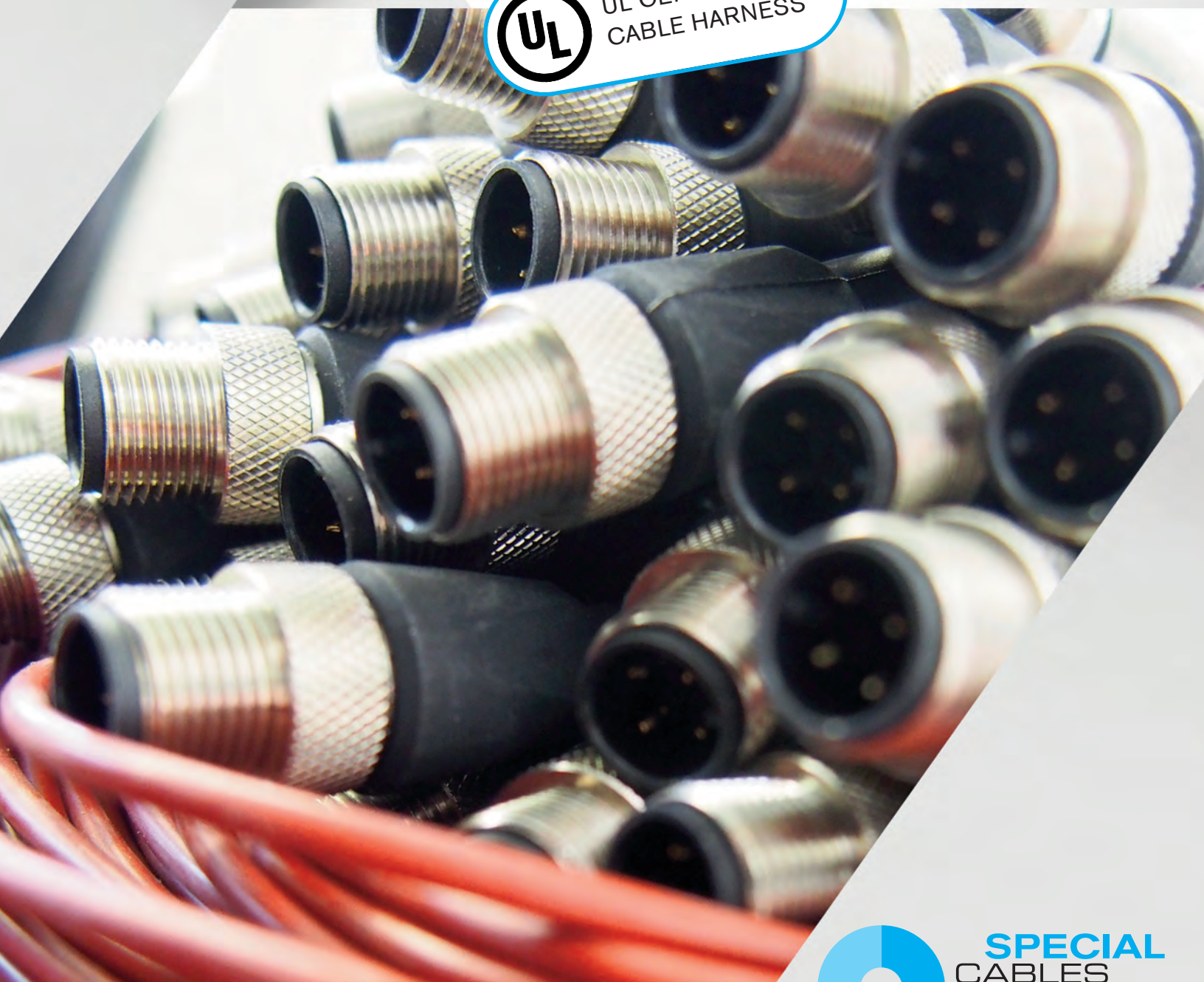


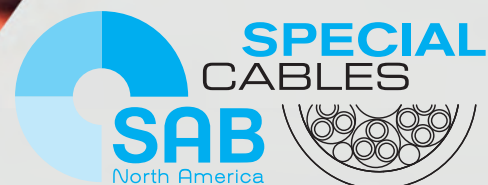
# SAB CABLE ASSEMBLIES CREATE INNOVATIVE CONNECTIONS



UL CERTIFIED  
CABLE HARNESS



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866-722-2974 ■ [info@sabcable.com](mailto:info@sabcable.com)



# SAB North America

## 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



SAB assembles our cables and wires directly to your individual requirements and specifications. We offer a variety of combination possibilities which include different connector types (Harting, Lemo, Sub-D, M12, and RJ45 connectors) and terminals. The cable jacket material is selected based on your application. We offer solutions for different applications including: connectorized solutions, cables with stripped outer jacket and wire insulation, and cables with wire end ferrules.

Whether you're a valued distribution partner, a manufacturer, an automation house, an integrator, or a contractor, rest assured that our cable assemblies are reliable to maximize production efficiencies. SAB brings world class performance & 75 years of ingenuity to the table.

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



# SAB CABLE ASSEMBLIES OVERVIEW

## OVERVIEW

■ Insights into our production .....	4
--------------------------------------	---

## HARNESSED CABLES

■ USB 2.0 cable flexible at low temperatures	suitable for the application at extremely low temperatures .....	6
■ Harnessed COAX cable	with BNC connector assembly .....	7
■ Harnessed COAX cable	with high frequency connector assembly .....	8
■ Connection cable	between CAN-BUS interface and module .....	9
■ Connection cable	for measuring module and data logger .....	10
■ Connection cable	helix/semi-helix for measuring module and data logger .....	11
■ Combined cable harness	current supply and connection cable for CAN-Bus interface .....	12
■ Adapter cable	for the suitable connection .....	13
■ Patch cable	with RJ 45 connector assembly .....	14
■ Sensor cable	with circular connector assembly .....	15
■ Sensor cable	with M12 plug connector .....	16
■ Sensor cable BNC	with circular connector assembly .....	17
■ RG 316 - Multiple coaxial cable with total shield	for the easy cabling of 8 or 16 measuring channels .....	18
■ Connecting cable module/PC	for extreme demands .....	19
■ Current supply cable	for data transmission and voltage supply of modules .....	20
■ Special cable	with male connector and socket plug assembly .....	21
■ Cable harness for robots	with 37-pin angle plug, AMP/Molex connector assembly .....	22
■ Cable harness for robots	with Harting connector assembly and signal socket connector assembly .....	23
■ Multi bus cable	with 17-pole socket and plug connector .....	24
■ FEP insulated hybrid cable	with connector housing .....	25
■ Cable harness with valve connector	for special machine construction .....	26
■ Reeling CAT 5 cable	highly flexible with 8-pole RJ45 plug on a cable drum with angle plug .....	27
■ Special connection cable	with 320-pin port connector and 50-pin Sub-D male connector .....	28
■ Harnessed Profinet cable	suitable for cable tracks with M12 male connector assembly .....	29
■ Harnessed Profibus cable	suitable for cable tracks with M12 male connector assembly .....	30
■ Helix cable	with axial and radial outgoing cable ends .....	31
■ Spiral Cable Assembly	email: info@sabcable.com .....	33
■ HV measurement technology / connection box	equipotential bonding of installed HV sensors type K / NTC .....	33
■ Products for voltage tap of CAN signals in the vehicle .....		34
■ UL certified cable harness .....		35



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 advice you individually for your special application.

# INSIGHTS INTO OUR PRODUCTION


**W**e at **SAB BRÖCKSKES** have expanded our cable assembly capabilities. No matter if standard or special construction, we design and produce high-quality cables and wires and assemble to a connector. Whether single conductor harnessing, assembled cables or complete cable sets - we offer a broad program especially according to your requirements and specifications.

Our cable assemblies are used in various industrial applications. They are used for example in automobile industry, for machine plants and control system construction as well as in household appliance industries.

- various combinations of connector types and terminals
- many application fields of various materials and jacket materials
- construction according to your special requirements
- complete solutions
- high quality standard by continuous quality control







## ... EVERYTHING FROM ONE SOURCE



Years of engineering and manufacturing expertise allow SAB the ability to develop new products as well as the ability to examine and improve existing solutions. Our innovative strength is the basis to successfully meet the challenges of the existing market and future developments. Continued research and development of our products takes place to expand our range of services to allow SAB to be your complete solution provider.



Our cable assemblies are already used in various industrial applications. For example, they are used in the automotive industry, in machine, plant and control engineering. The varied combination possibilities of plug types and terminals offer numerous application possibilities for the different materials processed by SAB.



In all product ranges, we are certified acc. to DIN EN ISO 9001. Besides, we established an environmental management system for our company acc. to DIN EN ISO 14001, an occupational health and safety management acc. to NLF/ILO-OSH and DIN ISO 45001 as well as an energy management system acc. to DIN EN ISO 50001.



# SAB CABLE ASSEMBLIES OVERVIEW

## USB 2.0 cable flexible at low temperatures

suitable for the application at extremely low temperatures



The requirements of automobiles are growing more and more highly specialized. In order to fulfill those requirements, the applications are intensifying especially in the range of test vehicles. The test runs take place under harsh ambient conditions for example in arctic areas. As a consequence, the requirements on the harnesses are also becoming harder. On this basis, SAB has developed a USB 2.0 cable that is appropriate for permanent flexible use at  $-25^{\circ}\text{C}$ .

### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands / silver-plated copper strands
<b>insulation:</b>	polymer
<b>shield:</b>	alu foil / tinned copper braiding
<b>outer jacket:</b>	Besilen®
<b>jacket color:</b>	black (RAL 9011)
<b>dimension:</b>	(2 x 0.22 mm <sup>2</sup> )ST + 2 x 0.50 mm <sup>2</sup>

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>free movement:</i>	$-25^{\circ}\text{C}/+180^{\circ}\text{C}$
▪ <i>static:</i>	$-40^{\circ}\text{C}/+180^{\circ}\text{C}$
<b>special feature:</b>	flexible at low temperatures
<b>outer diameter:</b>	approx. 6.0 mm

#### Further cable types are possible on request:

- ✓ other dimensions
- ✓ other jacket colors and marking
- ✓ different cable lengths

#### Choice of connector:

- USB-A-plug
- USB-A-socket
- USB-B-plug
- USB-B-socket



# SAB CABLE ASSEMBLIES OVERVIEW

## Harnessed COAX cable

with BNC connector assembly



SAB BRÖCKSKES offers different cable assemblies for high frequency (radio, audio, and video communication), among others coax cables with different bayonet connectors (BNC). The bayonet offers a reliable connection. Also for this cable harness, you can choose different cable and connector types in order to adapt the product to your special requirement profile. SAB has specialized on industrial demands and has developed the corresponding solutions.

### CABLE CONSTRUCTION

<b>conductor:</b>	silver-plated copper strands 0.55 mm <sup>2</sup>
<b>insulation:</b>	polymer
<b>shield:</b>	silver-plated copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>free movement:</i>	-40°C/+125°C
▪ <i>static:</i>	-50°C/+125°C
<b>short-term use:</b>	+150°C
<b>special feature:</b>	silicone free, 75 Ω

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

- ✓ RG 316
- ✓ RG 58
- ✓ RG 179
- ✓ coax cables with 50 Ω or 75 Ω
- ✓ cables with heat resistant silicone free outer jacket up to +125°C

Please choose from the following plug connectors:

- Huber & Suhner BNC plug connector
- Telegärtner BNC plug connector
- Amphenol BNC plug connector
- insulated and uninsulated BNC plug connector

# SAB CABLE ASSEMBLIES OVERVIEW

## Harnessed COAX cable

with high frequency connector assembly



Besides cable assemblies with BNC plug connectors, SAB BRÖCKSKES offers further assemblies for high frequency applications for example coax cables with UHF-, mini-UHF or SMB connectors. We don't have a standard product range but special products for individual application ranges. Special applications include temperature or flexibility requirements.

### CABLE CONSTRUCTION

<b>conductor:</b>	silver-plated copper strands 0.55 mm <sup>2</sup>
<b>insulation:</b>	polymer
<b>shield:</b>	silver-plated copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+125°C
▪ <i>static:</i>	-50°C/+125°C
▪ <i>short-term use:</i>	+150°C
<b>special feature:</b>	silicone free, 75 Ω

#### 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 jacket up to +150°C

#### Please choose from the following plug connectors:

- UHF plug connector
- mini UHF plug connector
- MMCX plug connector
- SMB plug connector
- ...



# SAB CABLE ASSEMBLIES OVERVIEW

## Connection cable

between CAN-BUS interface and module



### CABLE AND PLUG COMBINATION FOR AN OPTIMAL CONNECTION

SAB BRÖCKSKES' capabilities also include cable assembly that are used as connection cable between CAN-BUS interfaces and different modules (for example thermo- or A/D module). There is the possibility to choose between different cable types and plug combinations. The connectors can be adapted to the module with regard to size, type, number of pins, and pin configuration. Furthermore, different cables are available that are suitable for different applications.

#### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	polymer
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

#### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+125°C
▪ <i>static:</i>	-50°C/+125°C
▪ <i>short-term use:</i>	+150°C
<b>special feature:</b>	silicone free

#### Further cable types are possible on request for example:

- ✓ jacket material up to +125°C, silicone free
- ✓ different cable lengths
- ✓ variations regarding jacket color and marking
- ✓ different dimensions, sections and numbers of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Lemo connector
- ODU connector
- Fischer connector
- Yamaichi connector
- different SUB-D connector (for example 9-pole/ 25-pole)

#### Connection ends for example:

- ✓ round plug connector 7-pole
- SUB-D 9-pole

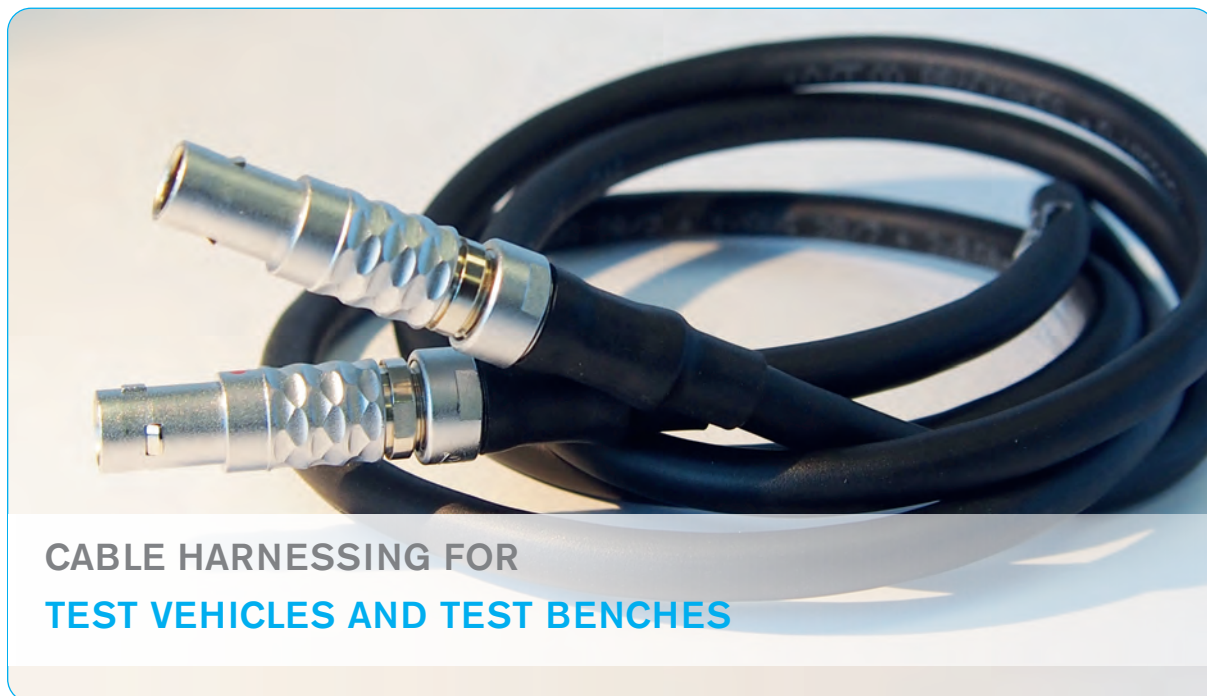
#### Cable variations for example:

- 2 x 0.15 mm<sup>2</sup>
- 7 x 0.15 mm<sup>2</sup>

# SAB CABLE ASSEMBLIES OVERVIEW

## Connection cable

for measuring module and data logger



Also harnessed connection cables for measuring modules and data loggers (CAN cable) are part of the SAB product range. These cable assemblies have been mainly developed for use in test vehicles and test benches, nevertheless they can also be used in other fields. The customer can choose between different cable and plug combinations. The plugs can be adapted with regard to size, construction form, number of poles, and pin assignment to the module and logger. Furthermore, different cable types can be chosen which are suitable for different application fields.

### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	polymer
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free

#### Further cable types are possible on request for example:

- ✓ jacket material up to +150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and numbers of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Lemo connector
- ODU connector
- Fischer connector
- Yamaichi connector

#### Connection ends for example:

- ✓ round plug connector 5-pole at both sides
- ✓ round plug connector 9-pole at both sides

#### Cable variations for example:

- 2 x AWG 28 + 1 x AWG 28 + 2 x 0.50 mm<sup>2</sup>
- 2 x AWG 28 + 8 x AWG 28



# SAB CABLE ASSEMBLIES OVERVIEW

## Connection cable

spiral/semi-spiral for measuring module and data logger



Besides the straight versions, SAB offers 2 special types of connection cables. The first one has a complete spiral with a cable length of 0.3 m. The second version is a semi-spiral with a cable length of 0.15 m. The advantage of this construction type is that the measuring module and data logger can be placed and connected close beside each other. Also for this construction type, you can choose between different cable and plug combinations. The plugs can be adapted to the module and logger with regard to size, type number of poles and pin assignment. Furthermore, you can choose between different cable types for different applications.

### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	polymer
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free

#### Further cable types are possible on request for example:

- ✓ jacket material up to +150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and numbers of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Lemo connector
- ODU connector
- Fischer connector
- Yamaichi connector

#### Connection ends for example:

- ✓ round plug connector 5-pole at both sides
- ✓ round plug connector 9-pole at both sides

#### Cable variations for example:

- 2 x AWG 28 + 1 x AWG 28 + 2 x 0.50 mm<sup>2</sup>
- 2 x AWG 28 + 8 x AWG 28

# SAB CABLE ASSEMBLIES OVERVIEW

## Combined cable harness

current supply and connection cable for CAN-Bus interface



### POWER AND CONNECTION IN ONE CABLE ASSEMBLY

Another type is the combination of 2 functions in one cable assembly. You can put the power supply and the connection cable for the CAN BUS interface in one cable assembly. Also, you have the possibility to choose from many components in order to develop an assembly according to the special requirements of the customer.

## CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	polymer
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

## TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free

### Further cable types are possible on request for example:

- ✓ jacket material up to +150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and numbers of conductors (dependant on plug)

### You can choose from the following plug connectors:

- Lemo connector
- ODU connector
- RJ 45 connector
- SUB-D connector
- segment connector

### Construction examples:

- round plug connector  
2 x segment plugs  
+ 1 SUB-D connector
- round plug connector  
2 x segment plugs  
+ 1 round plug connector
- round plug connector  
2 x segment plugs  
+ RJ 45 plug

### Cable variations for example:

- 2 x AWG 28 + 1 x AWG 28 +  
2 x 0.50 mm<sup>2</sup>



# SAB CABLE ASSEMBLIES OVERVIEW

## Adapter cable

for the suitable connection



### DIFFERENT ADAPTERS FOR THE INDIVIDUAL CABLE ASSEMBLY

SAB offers different adapters in its product range. These can be designed according to special requirements. For example, to combine two connection cables so that they have a bigger total length or in order to extend a sensor cable. The adapters are individually made for the corresponding cable assembly or sensor (pin assignment, size, number of poles, etc.)

#### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	polymer
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	black (RAL 9005)

#### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free

#### Further cable types are possible on request for example:

- ✓ jacket material up to +150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and numbers of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Lemo connector
- ODU connector
- Fischer connector
- Yamaichi connector

#### Connection ends for example:

- ✓ round plug connector 5-pole at both sides
- ✓ round plug connector 9-pole at both sides

#### Cable variations for example:

- 2 x AWG 28 + 1 x AWG 28 + 2 x 0.50 mm<sup>2</sup>
- 2 x AWG 28 + 8 x AWG 28
- 2 x 2 x AWG 28 + 1 x AWG 28

# SAB CABLE ASSEMBLIES OVERVIEW

## Patch cable

with RJ 45 connector assembly



Wherever patch or connection cables with RJ 45 connectors are needed for data and network communication with particular requirements on temperature resistance or flexibility, SAB BRÖCKSKES has got the corresponding solution in its portfolio. Due to the selection of different plug connectors and our own cable production, the cable assembly can be designed per exact requirements.

### CABLE CONSTRUCTION

<b>conductor:</b>	silver-plated copper strands
<b>insulation:</b>	PE
<b>shield:</b>	alu foil / tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	blue (RAL 5015)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free, CAT 6

#### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors appropriate for CAT 5, CAT 6, CAT 7

#### You can choose from the following plug connectors:

- Harting
- Weidmüller
- Telegärtner
- Yamaichi

#### Free choice of pin assignment:

- EIA/TIA 568A
- EIA/TIA 568B
- IEC
- REA
- DIN 47.100

Also possible as crossover cable!

#### Cable variations for example:

- 2 x 2 x 0.22 mm<sup>2</sup>
- 4 x 2 x 0.22 mm<sup>2</sup>



# SAB CABLE ASSEMBLIES OVERVIEW

## Sensor cable

with circular connector assembly



### SENSOR CABLE ASSEMBLIES FOR PRESSURE, ACCELERATION AND FLOW SENSORS

For different sensor products, SAB BRÖCKSKES offers harnessed sensor cables. It doesn't matter if it concerns pressure, acceleration, or flow sensors, we have the solution in our product portfolio. One type of assembly is with round connectors. These can be adapted with regard to number of poles, encoding, size, etc. to your special application. We can also offer the cable assembly with one free end.

#### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	polymer
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	white (RAL 9010)

#### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free

#### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Lemo connector
- ODU connector
- Fischer connector
- Yamaichi connector

#### Cable variations for example:

- 2 x 2 x AWG 24 + x AWG 24/7
- 7 x 0.15 mm<sup>2</sup>

# SAB CABLE ASSEMBLIES OVERVIEW

## Sensor cable

with M12 plug connector



### CABLE ASSEMBLIES WITH M12 CONNECTOR

Sensor cable assemblies with a round plug connector and a M12 connector for the linking of the sensor (for example pressure sensor) with a module. The assembly can be designed according to the individual application. There are different plug and cable types available.

#### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	FEP
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	FEP
<b>jacket color:</b>	white (RAL 1013)

#### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-55°C/+180°C
▪ <i>static:</i>	-90°C/+180°C
▪ <i>short-term use:</i>	+205°C
<b>special feature:</b>	silicone free chemical resistance

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

- ✓ jacket material up to + 125°C or + 150°C, silicone free and flexible
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors (dependant on plug)

#### You can choose from the following plug connectors:

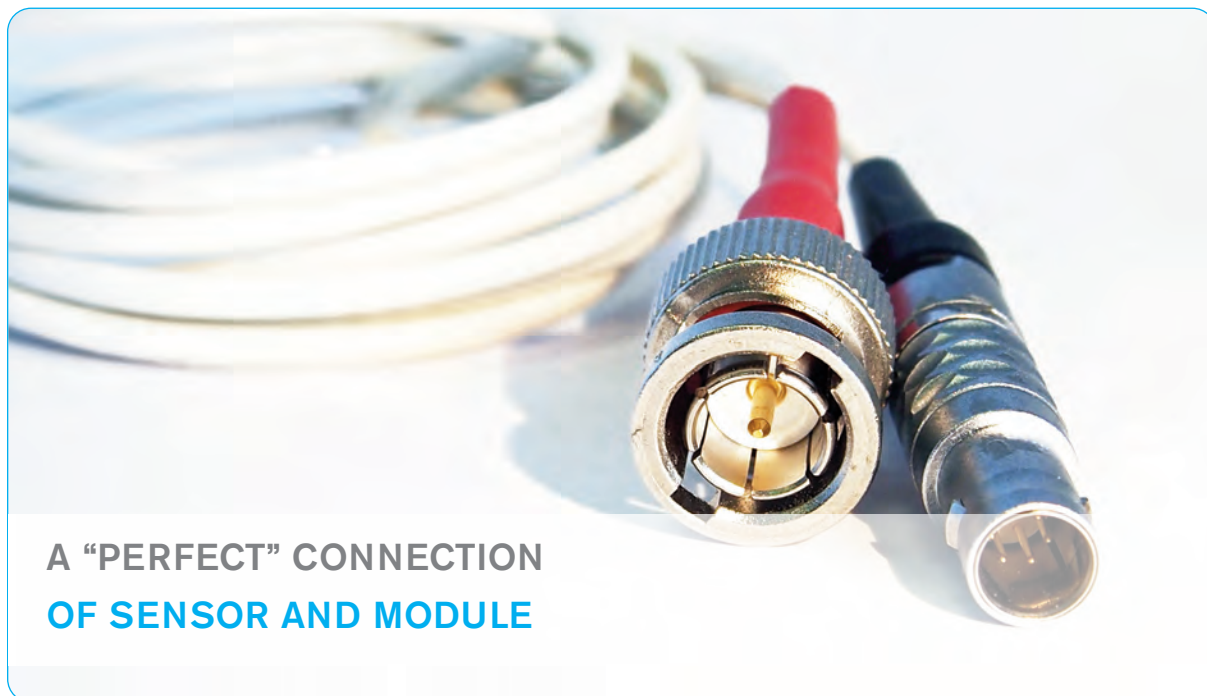
- M12 connector, molded
- Lemo round connector
- ODU round connector



# SAB CABLE ASSEMBLIES OVERVIEW

## BNC Sensor cable

with circular connector assembly



Harnessed sensor cable with a round plug connector and a BNC plug for the linking of the sensor with the module. The assembly can be designed according to the individual application. There are different plug and cable types available.

### CABLE CONSTRUCTION

<b>conductor:</b>	silver-plated copper strands 0.55 mm <sup>2</sup>
<b>insulation:</b>	polymer
<b>shield:</b>	silver-plated copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	white (RAL 9010)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+125°C
▪ <i>static:</i>	-50°C/+125°C
▪ <i>short-term use:</i>	+150°C
<b>special feature:</b>	silicone free, 75 Ω

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

- ✓ RG 316
- ✓ RG 58
- ✓ RG 179
- ✓ coax cables with 50 Ω or 75 Ω
- ✓ cables with heat resistant, silicone free outer jacket up to +125°C

You can choose from the following plug connectors:

- Huber & Suhner BNC plug connector
- Telegärtner BNC plug connector
- Insulated and not insulated BNC plug connector
- Lemo round plug connector
- ODU round plug connector

# SAB CABLE ASSEMBLIES OVERVIEW

## RG 316 - Multiple coaxial cable with total shield

for the easy cabling of 8 or 16 measuring channels



Measuring tasks are becoming more and more complex and with the number of measuring points to be evaluated increasing. This causes a bigger cabling effort. In order to simplify this task, SAB BRÖCKSKES has developed two new cable types. Both cables are highly flexible and robust at the same time. The PUR outer jacket allows for temperatures of up to + 125° C (2500h). For long distances, the cables can be mounted on cable drums which can be handled easily.

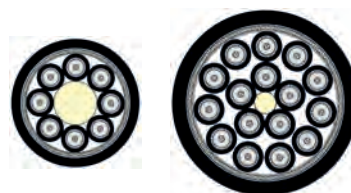
### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	FEP
<b>shield:</b>	tinned copper braiding
<b>inner jacket:</b>	TPE, black numbered
<b>total shield:</b>	tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>voltage:</b>	900 V
<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C (2500h)
<b>characteristic impedance:</b>	50 Ω ± 5 Ω
<b>frequency range:</b>	max. 3 GHz

Item no.	nominal cross-section mm <sup>2</sup>	outer-ø mm	cable weight kg/km
36009025	8 x 26 AWG	11.6	189
36009026	16 x 26 AWG	15.0	339



Available as plug and measuring solution with harnessed BNC connector assembly resp. SUB-D connectors.

# SAB CABLE ASSEMBLIES OVERVIEW

## Connecting cable module/PC

for extreme demands



### DIFFERENT MEASURING VALUES ANALYZE AND DISPLAY

In order to be able to analyze and show the different measurement values on the display unit, a connection between PC and laptop is needed. For this purpose, SAB's large product range allows for assemblies made to individual requirements. For example, the values can be transferred at arctic temperatures with cables that maintain its flexibility even at low temperatures. The application isn't impeded by a rigid cable.

#### CABLE CONSTRUCTION

<b>conductor:</b>	silver-plated copper strands
<b>insulation:</b>	PE
<b>shield:</b>	alu foil / tinned copper braiding
<b>outer jacket:</b>	special material
<b>jacket color:</b>	blue (RAL 5015)

#### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free, CAT 6

#### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors appropriate for CAT 5, CAT 6, CAT 7 (dependant on plug)

#### You can choose from the following plug connectors:

- |   |  |
|---|--|
| <input type="checkbox"/> Harting RJ 45 plug     | <input type="checkbox"/> Weidmüller RJ 45 plug |
| <input type="checkbox"/> Telegärtner RJ 45 plug | <input type="checkbox"/> ODU round connector   |
| <input type="checkbox"/> Lemo round connector   |  |

#### Cable variations for example:

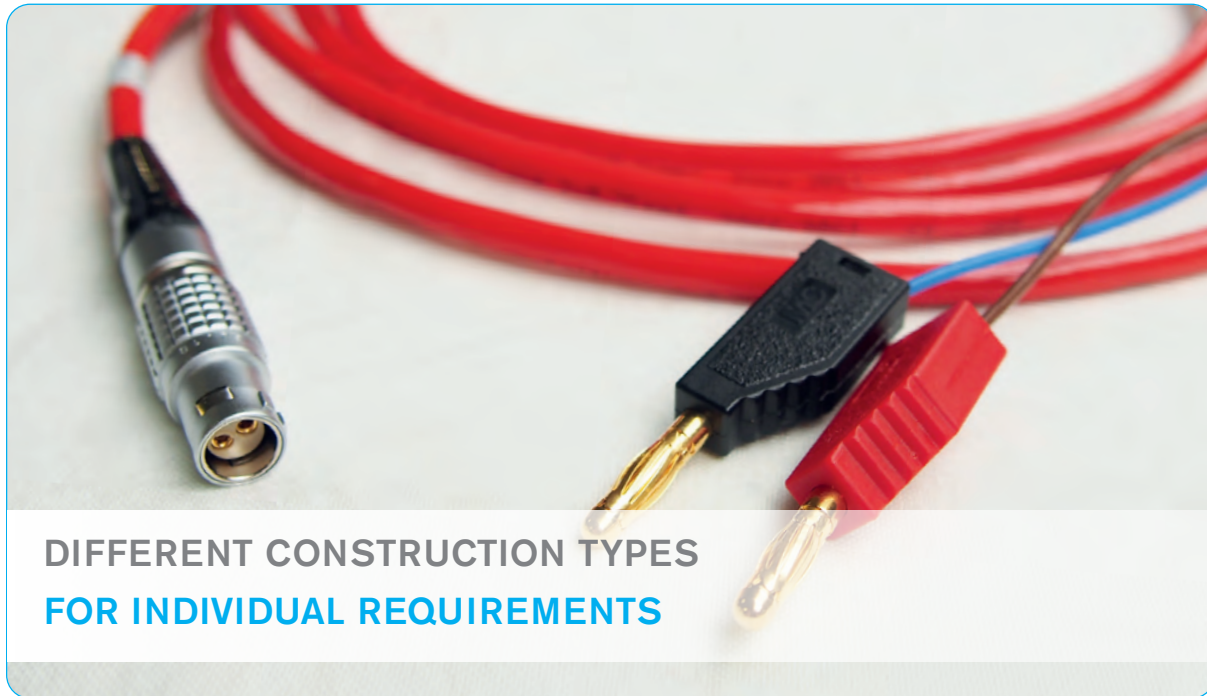
- 2 x 2 x 0.22 mm<sup>2</sup>
- 4 x 2 x 0.22 mm<sup>2</sup>



# SAB CABLE ASSEMBLIES OVERVIEW

## Current supply cable

for data transmission and voltage supply of modules



### DIFFERENT CONSTRUCTION TYPES FOR INDIVIDUAL REQUIREMENTS

Besides different cable assemblies for data transmission, SAB BRÖCKSKES also offers various harnessing products for the current supply of modules. There are also different construction types available that can be adapted to your special requirements.

#### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	FEP
<b>outer jacket:</b>	special material
<b>jacket color:</b>	traffic red (RAL 3020)

#### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+90°C
▪ <i>static:</i>	-50°C/+90°C
▪ <i>short-term use:</i>	+125°C
<b>special feature:</b>	silicone free

#### Further cable types are possible on request for example:

- ✓ jacket material up to +150°C, silicone free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and numbers of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Lemo plug connector
- ODU plug connector
- Fischer plug connector
- Yamaichi plug connector
- segment plug

#### Connection ends for example:

- round plug connector 2-pole  
2 x segment plugs
- Lemo round plug connector 6-pole  
2 x segment plugs

#### Cable variations for example:

- 2 x 0.75 mm<sup>2</sup>
- 2 x AWG 28 + 1 x AWG +  
2 x 0.50 mm<sup>2</sup>

# SAB CABLE ASSEMBLIES OVERVIEW

## Special cable

with male connector and socket plug assembly



### PRODUCT SOLUTIONS FOR ROBOT APPLICATIONS

Another industrial sector in which SAB cable assemblies are used is in robot applications. We offer a variety of product solutions which are adapted to the individual application conditions, for example an assembly for the control of the robot welding tongs. For this cable harness a divided, abrasion resistant servo cable is used that is connected to heavy industrial connectors with a double cable outlet.

### CABLE CONSTRUCTION

<b>conductor:</b>	bare copper strands
<b>insulation:</b>	TPK
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+80°C
▪ <i>static:</i>	-50°C/+80°C
<b>special feature:</b>	abrasion resistant

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

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- Harting plug connector
- Weidmüller plug connector
- Wieland plug connector

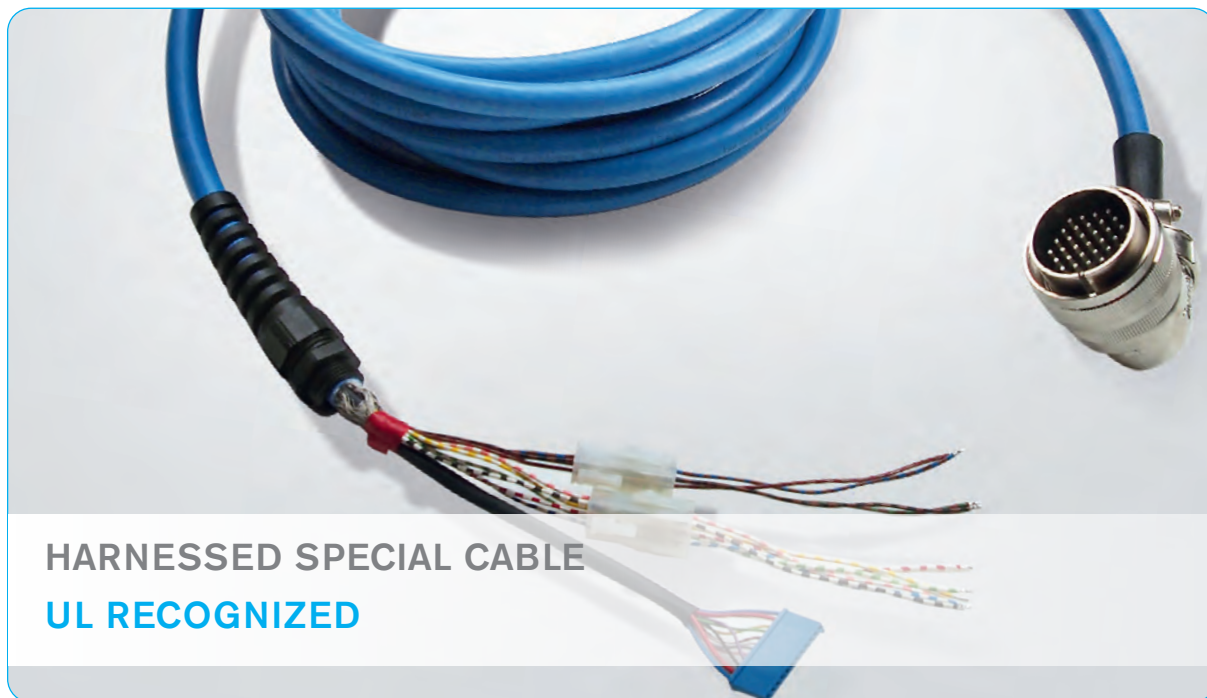
#### Cable variations for example:

- (4 x 2 x 0.25 mm<sup>2</sup>)D + 2 x (2 x 0.50 mm<sup>2</sup>)D + (5 x 0.50 mm<sup>2</sup>)D + (5 x 1.5 mm<sup>2</sup>)D
- (4 x 2 x 0.25 mm<sup>2</sup>)D + 2 x (2 x 0.50 mm<sup>2</sup>)D + (5 x 0.50 mm<sup>2</sup>)D + (4 x 0.75 mm<sup>2</sup>)D

# SAB CABLE ASSEMBLIES OVERVIEW

## Cable harness for robots

with 37-pin angle plug, AMP/Molex connector assembly



The example above is used in robotic applications, particularly for paint robots. This example has a 37-pole angle plug on the one side and an AMP Molex connector on the other side. The cable assembly can be adapted to the customer's requirements.

### CABLE CONSTRUCTION

<b>conductor:</b>	bare copper strands
<b>insulation:</b>	TPK
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	black

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-40°C/+80°C
▪ <i>static:</i>	-50°C/+80°C
<b>special feature:</b>	UL recognized

#### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- |   |  |
|---|--|
| <input type="checkbox"/> Molex plug connector   | <input type="checkbox"/> Weidmüller plug connector |
| <input type="checkbox"/> Wieland plug connector | <input type="checkbox"/> ITT plug connector        |

#### Cable variations for example:

- (8 x 0.50 mm<sup>2</sup>)C + (4 x 0.50 mm<sup>2</sup>)C + 4 x 2 x 0.25 mm<sup>2</sup> + 4 x 0.50 mm<sup>2</sup> + 6 x 1 x 0.50 mm<sup>2</sup>D



# SAB CABLE ASSEMBLIES OVERVIEW

## Cable harness for robots

with Harting connector assembly and signal socket connector assembly



### HARNESSING PRODUCTS FOR ROBOT INDUSTRY

The example above is used in robotic applications. This example shows a Harting plug connector on one side and a signal socket connector on the other. The cable assembly can be adapted to the customer's requirements.

## CABLE CONSTRUCTION

<b>conductor:</b>	bare copper strands
<b>insulation:</b>	TPK
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	black

## TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-15°C/+80°C
▪ <i>static:</i>	-50°C/+80°C
<b>special feature:</b>	UL recognized, CSA approved

### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors (dependant on plug)

### You can choose from the following plug connectors:

- |   |  |
|---|--|
| <input type="checkbox"/> Harting plug connector     | <input type="checkbox"/> Weidmüller plug connector |
| <input type="checkbox"/> Wieland plug connector     | <input type="checkbox"/> ITT plug connector        |
| <input type="checkbox"/> Intercontec plug connector |  |

### Cable variations for example:

- 8 x (2 x 2 x 0.14 mm<sup>2</sup> + 2 x 0.34 mm<sup>2</sup>)C + 4 x 0.50 mm<sup>2</sup>

# SAB CABLE ASSEMBLIES OVERVIEW

## Multi bus cable

with 17-pole socket and plug connector



**HIGH FLEXIBILITY WITH FULL PROTECTION  
AGAINST ELECTRO MAGNETIC INTERFERENCE**

This cable assembly is used in robotic applications such as for the highly flexible cable-hose assemblies or as standard flexible assembly connected to the robot base. Both types guarantee full protection against electro magnetic interference. M23 round plug connectors in straight and angle version are used. Metal or plastic type connectors are available.

### CABLE CONSTRUCTION

<b>conductor:</b>	bare copper strands
<b>insulation:</b>	TPK
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	red lilac

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-20°C/+70°C
▪ <i>static:</i>	-30°C/+70°C
<b>special feature:</b>	EMC protected

#### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors (dependant on plug)

#### You can choose from the following plug connectors:

- |  |   |
|--|---|
| <input type="checkbox"/> Binder plug connector     | <input type="checkbox"/> Hummel plug connector      |
| <input type="checkbox"/> Weidmüller plug connector | <input type="checkbox"/> Intercontec plug connector |
| <input type="checkbox"/> Phoenix plug connector    |   |

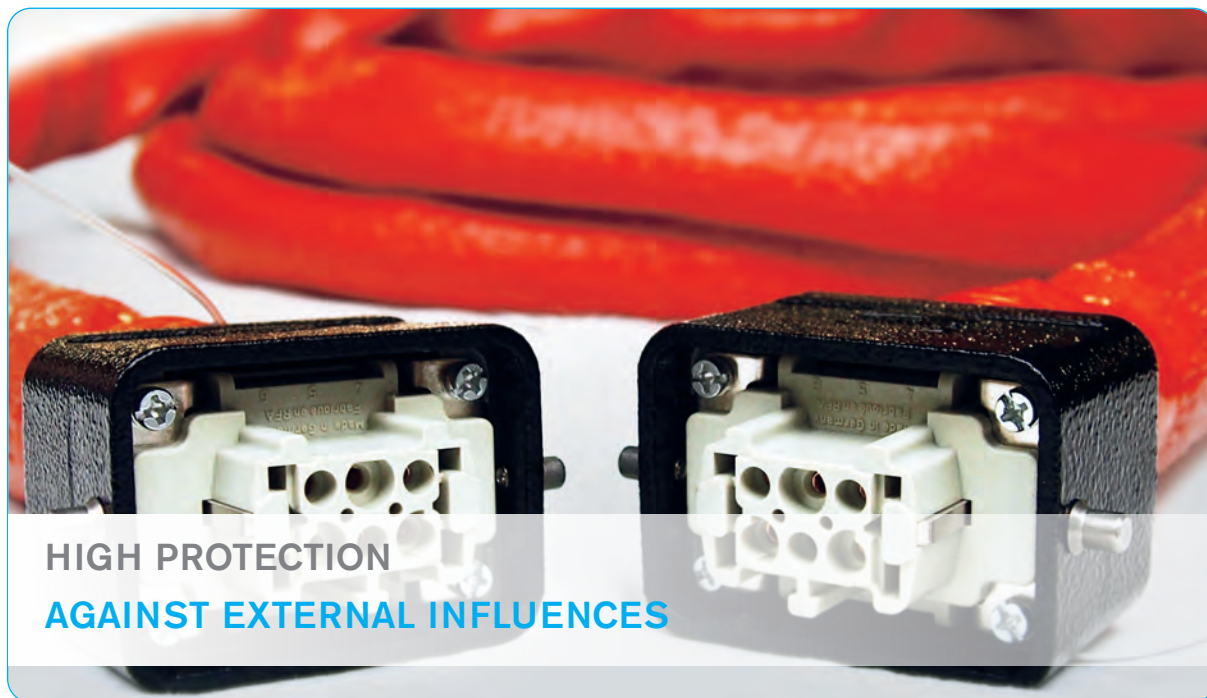
#### Cable variations for example:

- 2 x (2 x 0.25 mm<sup>2</sup>)D + 2 x (2 x 0.34 mm<sup>2</sup>)D + 1.0 mm<sup>2</sup> + (2 x 0.29 mm<sup>2</sup>)D + 2 x (2 x 1.0 mm<sup>2</sup>)D

# SAB CABLE ASSEMBLIES OVERVIEW

## FEP insulated hybrid cable

with connector housing



The steel industry is another field where SAB BRÖCKSKES cable harnessing products are used. The cable assembly above consists of a hybrid cable and 2 connector housings. Additionally a heat shrinkable sleeve protects the cable against external influences (for example fire). This special combination transfers data (Profibus) and power at the same time.

### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	FEP
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	FEP

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-55°C/+180°C
▪ <i>static:</i>	-55°C/+180°C

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

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors

#### Cable variations for example:

- ☐ 2 x 0.22 mm<sup>2</sup> + 3 x 1.50 mm<sup>2</sup>

#### You can choose from the following plug connectors:

- ☐ Binder plug connector
- ☐ Weidmüller plug connector
- ☐ Phoenix Contact plug connector
- ☐ Harting plug connector



# SAB CABLE ASSEMBLIES OVERVIEW

## Cable harness with valve connector

for special machine construction



Machine construction is another field where products from SAB BRÖCKSKES are used. Cable assemblies are for example installed in textile machines. The above shown product contains a current-carrying cable to supply an energy-efficient textile machine. On one side, a valve connector is mounted and on the other side a conductor plate. For special machine construction, SAB offers a variety of product solutions.

### CABLE CONSTRUCTION

<b>conductor:</b>	bare copper strands
<b>insulation:</b>	PVC
<b>shield:</b>	tinned copper braiding
<b>outer jacket:</b>	PVC
<b>jacket color:</b>	grey

### TECHNICAL DATA

<b>temperature range</b>	
▪ flexible:	+ 5°C/+70°C
▪ static:	-40°C/+70°C

#### Further cable types are possible on request for example:

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors

#### Cable variations for example:

- 3 x 1.0 mm<sup>2</sup>

#### You can choose from the following plug connectors:

- |   |  |
|---|--|
| <input type="checkbox"/> Harting plug connector | <input type="checkbox"/> Weidmüller plug connector |
| <input type="checkbox"/> Wieland plug connector | <input type="checkbox"/> ITT plug connector        |

# SAB CABLE ASSEMBLIES OVERVIEW

## Reeling CAT 5 cable

highly flexible with 8-pole RJ45 plug on a cable drum with angle plug



Besides the cables and cable assemblies for flexible application, SAB also offers harnessed products with reeling cables. Due to a special construction, it is possible to produce a reeling type Ethernet cable which is used for speed measurement devices and is appropriate for outdoor use. On request, SAB also offers customized solutions for a broad range of applications.

### CABLE CONSTRUCTION

<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	special material
<b>shield:</b>	alu foil / tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	black (RAL 9005)

### TECHNICAL DATA

<b>temperature range</b>	
▪ <i>flexible:</i>	-20°C/+90°C
▪ <i>static:</i>	-20°C/+90°C
<b>special feature:</b>	silicone free, CAT 5

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

- ✓ Besilen® flexible with cold temperatures to -40°C / Besilen® heat resistant up to +220°C
- ✓ jacket material up to 150°C, silicone-free
- ✓ different cable lengths
- ✓ various jacket colors and marking
- ✓ different dimensions, sections and number of conductors suitable for CAT 5/ CAT 6/ CAT 7

#### Cable variations for example:

- 4 x 2 x 0.75 mm<sup>2</sup>

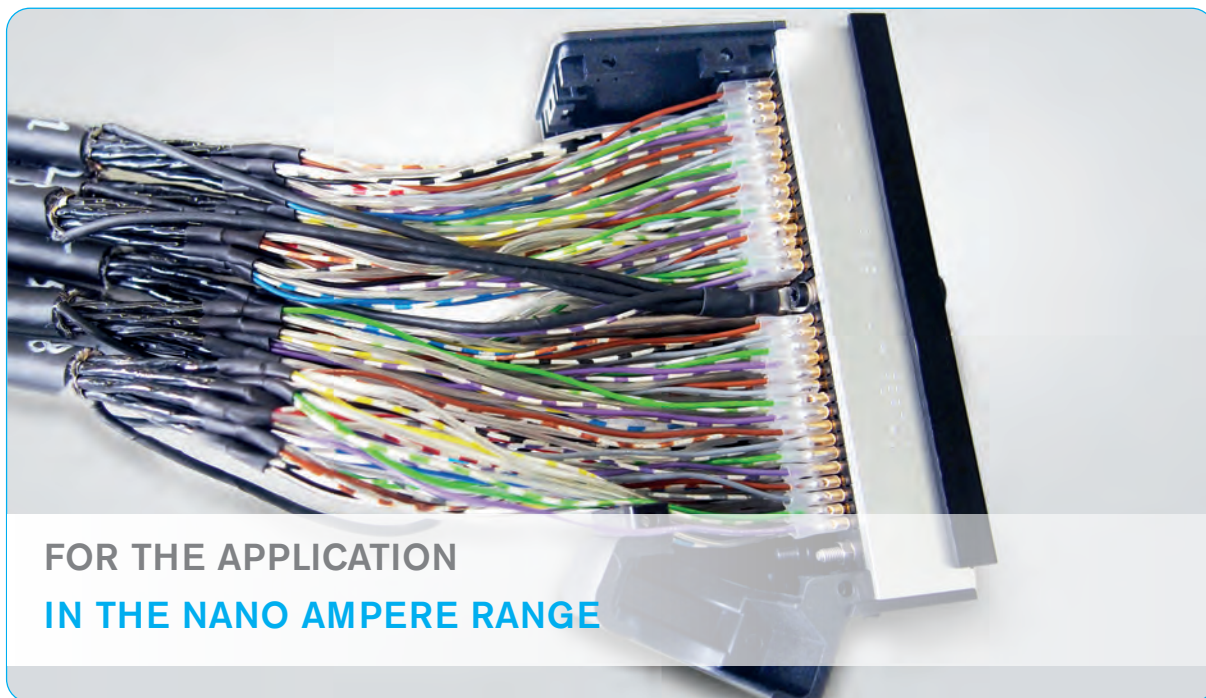
#### You can choose from the following plug connectors:

- Harting RJ 45 plug
- Weidmüller RJ 45 plug
- Telegärtner RJ 45 plug
- different cable drums

# SAB CABLE ASSEMBLIES OVERVIEW

## Special connection cable

with 320-pin port connector and 50-pin Sub-D male connector



FOR THE APPLICATION  
IN THE NANO AMPERE RANGE

This cable assembly range is used in test equipment. This test equipment is used for the electric function control with the production of wafers. The SAB cable assembly is applied to transfer the voltage from the electronics to the specimen. Herewith, currents within the Nano ampere range are treated. It is important for this cable assembly that a constant current is available and the avoidance of soiling of the contact surface by greases.

### CABLE CONSTRUCTION

**conductor:** tinned copper strands  
**insulation:** TPK  
**shield:** alu foil  
**outer jacket:** PUR  
**jacket color:** black (RAL 9005)

### TECHNICAL DATA

**temperature range**

- *flexible:* -20°C/+60°C
- *static:* -20°C/+60°C

#### Cable variations for example:

- multi conductor cables, shielded



# SAB CABLE ASSEMBLIES OVERVIEW



## Harnessed Profinet cable

suitable for cable tracks with M12 male connector assembly



### INNOVATIVE SOLUTIONS FOR PROFINET CABLING

This assembly is used for the field bus cabling of Profinet field bus systems in industrial sectors. This cable type is used in cable track applications for automation and machine and plant construction with rough environments. The PUR outer jacket is resistant against rough environmental conditions.

#### CABLE CONSTRUCTION

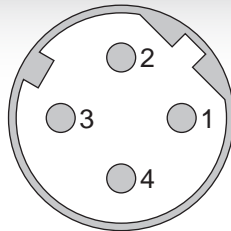
<b>conductor:</b>	tinned copper strands
<b>insulation:</b>	special polymer
<b>shield:</b>	alu foil and tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	green (RAL 6018)

#### TECHNICAL DATA

<b>min. bending radius:</b>	
continuously flexible:	15 x O.D.
<b>temperature range</b>	
▪ flexible:	-20/+70°C
▪ static:	-30/+70°C
<b>special feature:</b>	<i>characteristic impedance:</i> 100Ω ± 10Ω CAT 5 with reference to EN 50173-1, oil resistant, suitable for cable tracks

#### Pin configuration:

<b>pin1:</b>	yellow
<b>pin2:</b>	white
<b>pin3:</b>	orange
<b>pin4:</b>	blue
<b>housing:</b>	shield



#### Plug types:

- M12 plug(male) 4-pole, D-coded
- M12 socket (female) 4-pole, D-coded straight or tilted molded or mounted

## Profibus cable assembly

suitable for cable tracks with M12 male connector assembly



### PROFIBUS CABLES FOR CABLE CHAIN APPLICATIONS

This assembly can be used for the field bus wiring in automation. These bus cables transfer Profibus signals with different cable and plug combinations. The PUR cable for cable track applications is resistant against rough environmental conditions in industrial applications.

#### CABLE CONSTRUCTION

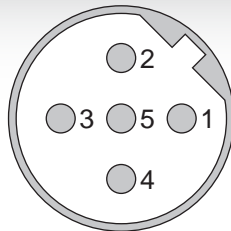
<b>conductor:</b>	bare copper strands
<b>insulation:</b>	TPK
<b>shield:</b>	alu foil under tinned copper braiding
<b>outer jacket:</b>	PUR
<b>jacket color:</b>	red lilac (RAL 4001)

#### TECHNICAL DATA

<b>min. bending radius:</b>	continuously flexible: 12 x O.D.
<b>temperature range</b>	
▪ flexible:	-40/+80°C
▪ static:	-40/+80°C
<b>special feature:</b>	<i>characteristic impedance:</i> at 3 - 20 MHz: 150Ω ± 10% with reference to EN 50170, oil resistant, suitable for cable tracks

#### Pin configuration:

<b>pin1:</b>	n.b.
<b>pin2:</b>	green
<b>pin3:</b>	n.b.
<b>pin4:</b>	red
<b>pin5:</b>	n.b.
<b>housing:</b>	shield



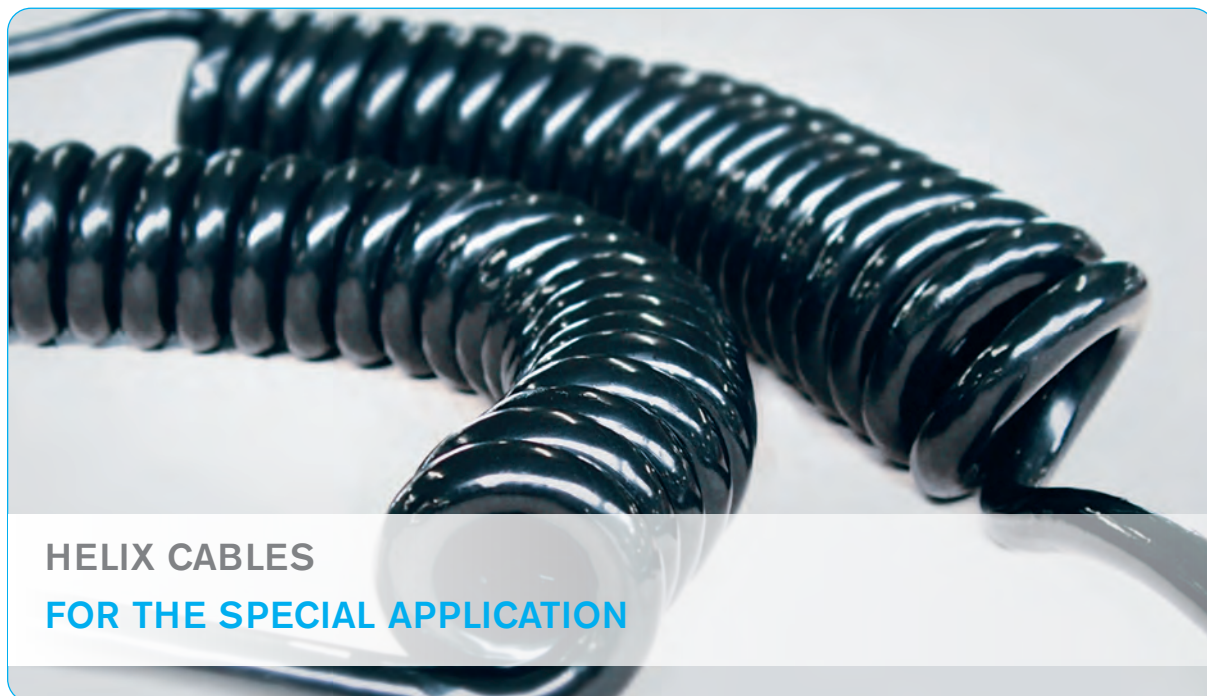
#### Plug types:

- M12 plug(male) 5-pole, B-coded
- M12 socket (female) 4-pole, D-coded straight or tilted molded or mounted

# SAB CABLE ASSEMBLIES OVERVIEW

## Helix cable

with axial and radial outgoing cable ends



SAB BRÖCKSKES also designs cable assemblies with spiral cables. The construction of the assembly can be adapted to your special demands. In order to fix detailed parameters, we offer this contact form on the next page.

Besides the existing cables in the SAB catalog, “Flexible Control & Automation Cables” also special cables can be offered. For such an inquiry, we kindly ask you to furnish all details available (for new productions please note possible minimum order quantities).

It doesn't matter if radial or axial outgoing cables, end sleeves, M12, or special connectors, the cables can be chosen individually. This is also valid for the required cable lengths and spiral parameters. We would be glad to submit to you our individual offer.



# SAB CABLE ASSEMBLIES OVERVIEW

## Spiral Cable Assembly

E-Mail: [info@sabcable.com](mailto:info@sabcable.com)

Company/Name: \_\_\_\_\_

### INFORMATION ABOUT THE CABLE

SAB cable item no. (if available): \_\_\_\_\_

(otherwise): \_\_\_\_\_

dimension: \_\_\_\_\_

construction: \_\_\_\_\_

application (temperature, voltage where appropriate motion profile): \_\_\_\_\_

### INFORMATION ABOUT HARNESSING

**SIDE 1**

#### END OPEN

- smooth cut off
- length jacket removed [mm]
- stripped length [mm]
- cable end sleeves (if yes, which requirement)

#### PLUG

- identify connector (manufacturer, item number, reference sources)
- plug (male) or socket (female)
- number of poles
- type of contact (solder/crimp/insulation displacement connector)
- encoding
- housing type (plastic/metal)
- cable exit (angled/straight)
- mounted/molded

#### CONFIGURATION

- pin assignment
- shield (if any) applied (on the housing / on pin) or cut off

**SIDE 2**

#### END OPEN

- smooth cut off
- length jacket removed [mm]
- stripped length [mm]
- cable end sleeves (if yes, which requirement)

#### PLUG

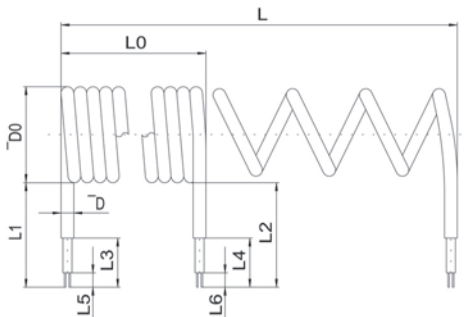
- identify connector (manufacturer, item number, reference sources)
- plug (male) or socket (female)
- number of poles
- type of contact (solder/crimp/insulation displacement connector)
- encoding
- housing type (plastic/metal)
- cable exit (angled/straight)
- mounted/molded

#### CONFIGURATION

- pin assignment
- shield (if any) applied (on the housing / on pin) or cut off

OTHER  quantity / O series required

### HELIX DATA



L = \_\_\_\_\_ mm      L2 = \_\_\_\_\_ mm

L0 = \_\_\_\_\_ mm      L3 = \_\_\_\_\_ mm

øD = \_\_\_\_\_ mm      L4 = \_\_\_\_\_ mm

øD0 = \_\_\_\_\_ mm      L5 = \_\_\_\_\_ mm

L1 = \_\_\_\_\_ mm      L6 = \_\_\_\_\_ mm

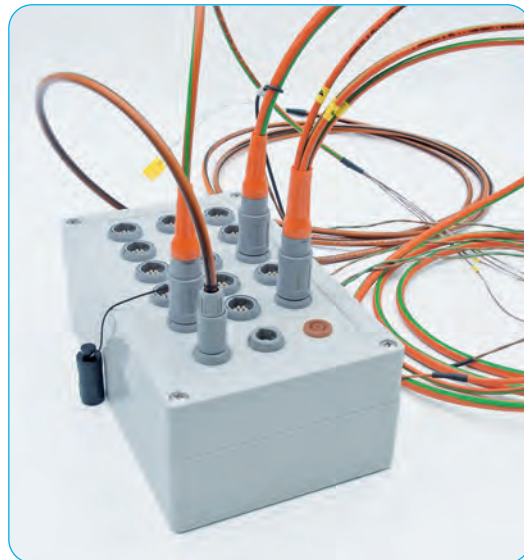
screen:  yes       no

cable ends:  radial       axial       other

# SAB CABLE ASSEMBLIES OVERVIEW

## HV measurement technology / connection box

equipotential bonding of installed HV sensors type K / NTC



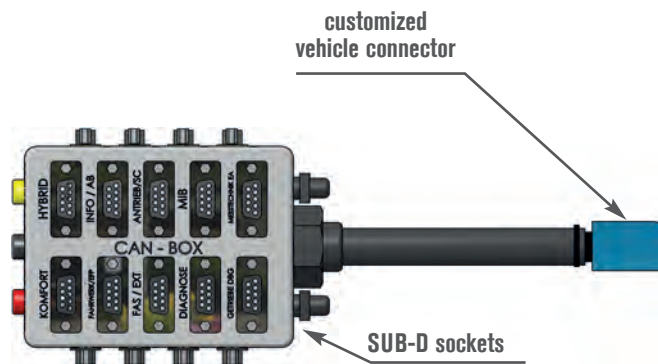
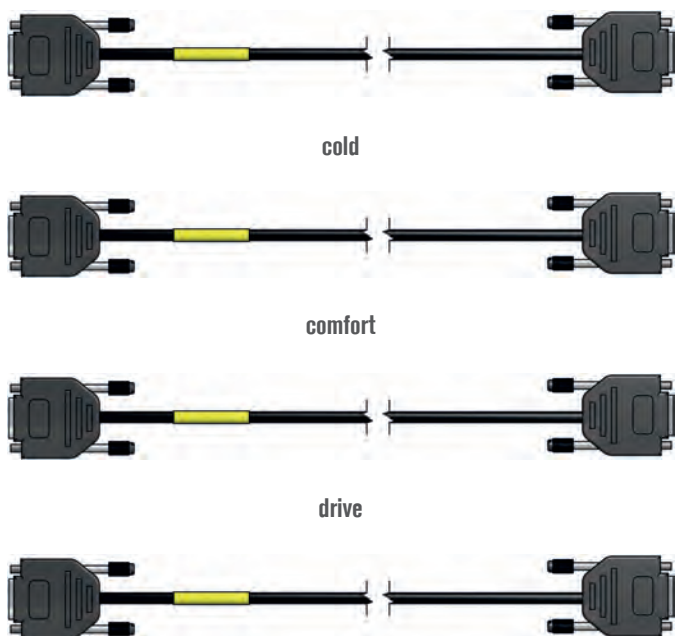
Connection box with fifteen 8-pole Redel sockets for thermal contacts and 2 NTC connections with 5-pole Redel socket. The box is used to connect HV sensors and to bundle all contacts on one potential. The voltage tap is made by a 4 mm safety socket.

- **connections: sensor connections (IN)**
  - 15 x 8-pole Redel HV connector for connection of HV thermosensors
  - 2 x 5-pole Redel HV connector for connection of NTC
  
- **sensors: connections (OUT)**
  - 1 x 4 mm safety socket brown
  
- **dimensions:**
  - 202 x 122 x 74 (l x w x h)
  
- **item number:**
  - S0005-9013-00000
  
- **part number MB:**
  - HEI999344N008

**Other configuration possible!**  
**Please contact us!**

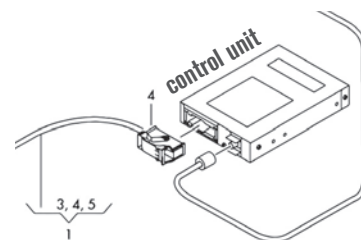
# SAB CABLE ASSEMBLIES OVERVIEW

Products for voltage tap of CAN signals in the vehicle



customized vehicle connector

SUB-D sockets



distribution by CAN-FD cables with SUB - D connectors

S0620-4001-00010

other lengths and colored identification also possible

voltage tap by vehicle connector and distribution to individual CAN bus signals (cold, comfort, drive etc.)

S0992-5114-00000

vehicle plugs can vary, as well as the number of CAN channels.



# SAB CABLE ASSEMBLIES OVERVIEW



## UL certified cable harness

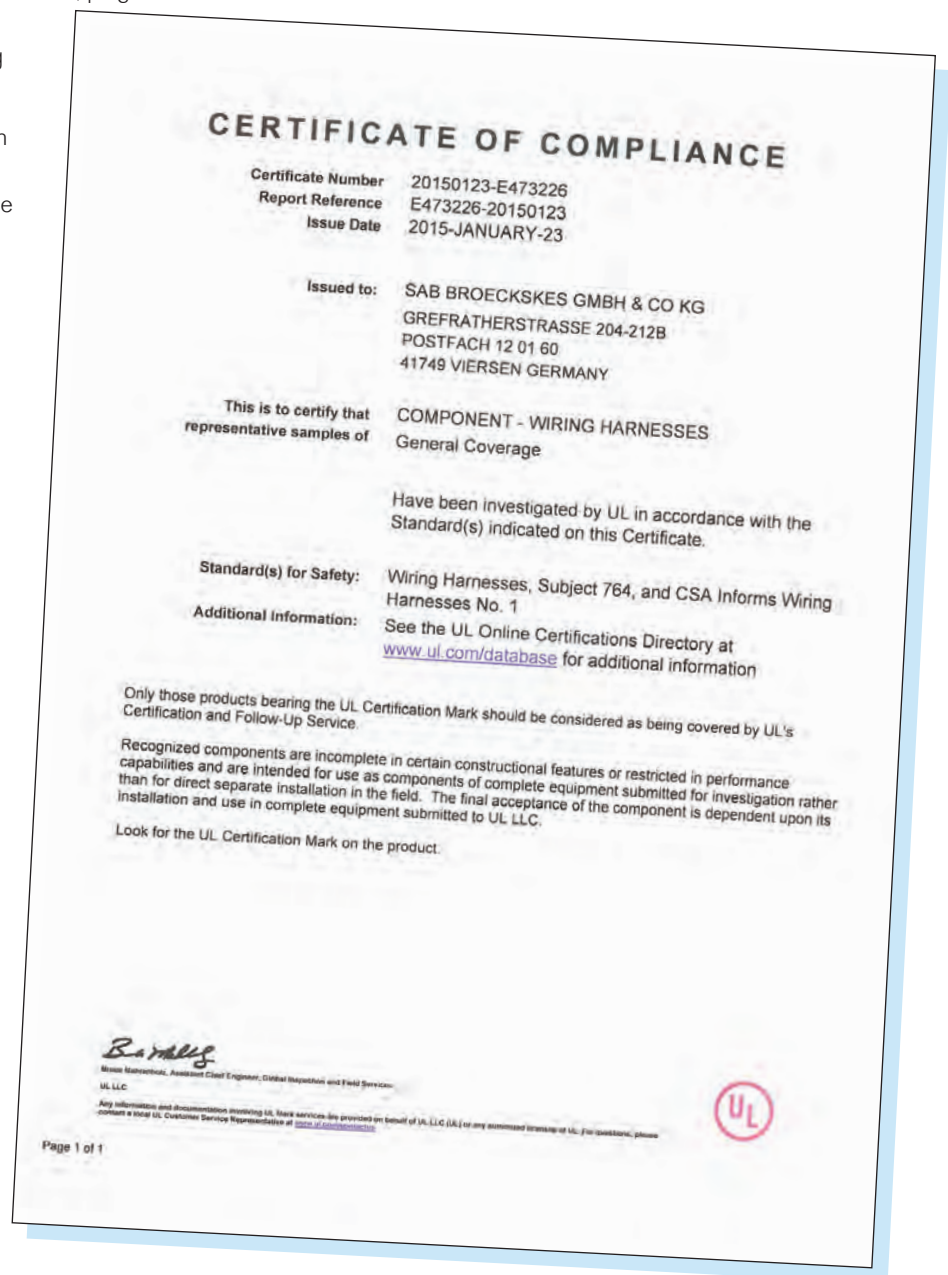
**SAB** Bröckskes has completed its range of harnessed cables with the certification acc. to UL Standard Wiring Harness "category ZPFW2 (UL)" and "ZPFW8 (Canada)" and herewith strengthens its position as cable specialist for cable harness acc. to customer's specification.

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.

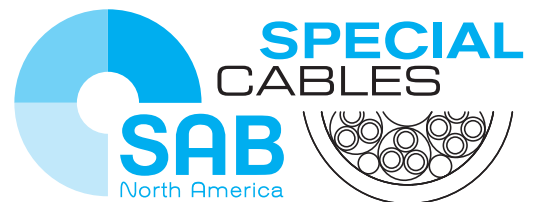
The requirements for UL certified cable harness are controlled by external audits every three months in order to guarantee the high requirements of the UL standards. Besides our cables, also harnessed versions, are tested in our own laboratory with regard to safety and reliability and are marked with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





June 2023



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