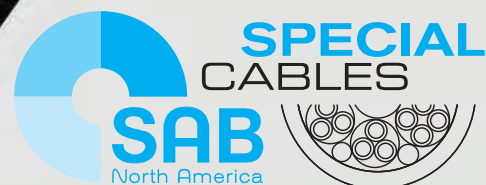


LIFT

CONTROL CABLES



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



Lift Control Cables

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:

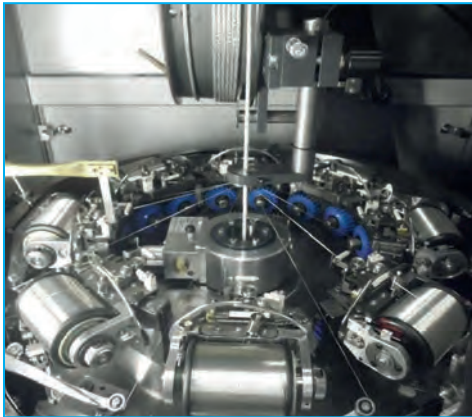
- Hybrid designs for multiple functions
- Harsh environments
- Difficult applications
- Industry-specific requirements



SAB Lift cables are available as round or flat designs for free hanging or festooning systems. Our cables are designed with either a rope or steel-supporting member for applications with longer drops.

Whether you're a valued distribution partner, a manufacturer, an automation house, an integrator, or a contractor, rest assured that our cables 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

Lift Cables

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Lift Cables

SAB Lift

PVC Lift control cable with sisal cord as suspension unit



SAB Lift 24 x 1.0 mm² CE



Marking for SAB Lift 37902410:

SAB BRÖCKSKES · D-VIERSEN · SAB Lift 24 x 1.0 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	special PVC
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green/yellow earth wire from 3 conductors
Strain relief:	sisal cord
Stranding:	sisal cord as core, optimized twisting of the conductors in layers
Wrapping:	non-woven tape on each layer with overlap wrapping
Torsion protecting:	special braid
Jacket material:	special PVC
Jacket color:	black (RAL 9005)

Outstanding features:



- long service life
- elevated economic efficiency
- flame retardant and self-extinguishing

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	15 x O.D.
Temperature range:	<i>static:</i> -30/+70°C <i>flexible:</i> -15/+70°C
Burning characteristics:	flame retardant and self extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Suspended height:	up to 60 m
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø inch	mm	cable weight ≈lbs/ft	ohmic resistance at 20°C max. Ω/km
▶ 18 AWG (≈ 56/34) ▪ 1.00 mm²					
37900510	5	0.437	11.1	101	19.5
37900710	7	0.457	11.6	120	19.5
37900910	9	0.512	13.0	152	19.5
37901210	12	0.606	15.4	207	19.5
37901810	18	0.815	20.7	323	19.5
37902410	24	0.815	20.7	369	19.5
37903010	30	0.862	21.9	439	19.5
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²					
37901215	12	0.717	18.2	282	19.5
37905215	52	1.350	34.3	1150	19.5
▶ 14 AWG (≈ 46/30) ▪ 2.50 mm²					
37901225	12	0.921	23.4	462	19.5

Other dimensions and colors are available on request



Possible on request:

- with overall tinned copper braiding
- with different conductor and jacket colors

Lift Cables

SAB Lift ST

PVC Lift control cable with steel center as suspension unit

highest hanging lengths



Marking for SAB Lift ST 37912410:

SAB BRÖCKSKES · D-VIERSEN · SAB Lift ST 24 x 1.0 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	special PVC
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334
Strain relief:	steel rope in the center
Stranding:	steel rope as core, optimized twisting of the conductors in layers
Wrapping:	non-woven tape on each layer with overlap wrapping
Torsion protecting:	special braid
Jacket material:	special PVC
Jacket color:	black (RAL 9005)

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	15 x O.D.
Temperature range:	<i>static:</i> -30/+70°C <i>flexible:</i> -15/+70°C
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Suspended height:	up to 200 m
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

Outstanding features:



- highest hanging lengths
- long service life
- flame retardant and self-extinguishing

item no.	no. of conductors incl. ground	nominal outer-ø inch	nominal outer-ø mm	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²					
37912407	24	0.673	17.1	280	19.5
▶ 18 AWG (≈ 56/34) ▪ 1.00 mm²					
37910510	5	0.366	9.3	89	19.5
37910710	7	0.409	10.4	117	19.5
37910910	9	0.469	11.9	179	19.5
37911210	12	0.583	14.8	252	19.5
37911810	18	0.685	17.4	309	19.5
37912410	24	0.693	17.6	360	19.5
37913010	30	0.811	20.6	484	19.5

Other dimensions and colors are available on request



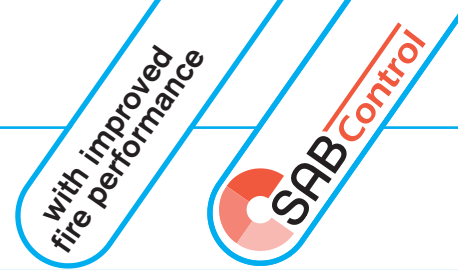
Possible on request:

- with overall tinned copper braiding
- with different conductor and jacket colors

Lift Cables

SABIX® Lift

Lift control cable with sisal cord as supporting member



Marking for SABIX® Lift 53902410:

SAB BRÖCKSKES · D-VIERSEN · SABIX® Lift 24 x 1.0 mm² CE

Application: Our halogen-free lift cables are used whenever there are highest safety requirements, especially in public buildings and institutions as for example department stores, hospitals, railway and airport facilities, etc.

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	special SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green/yellow ground
Strain relief:	sisal cord
Stranding:	sisal cord as core, optimized twisting of the conductors in layers
Wrapping:	non-woven tape on each layer with overlap wrapping
Torsion protecting:	special braid
Jacket material:	thermoplastic special elastomer
Jacket color:	black (RAL 9005)

Outstanding features:



- halogen-free
- long service life
- elevated economic efficiency
- flame retardant and self-extinguishing

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	15 x O.D.
Temperature range:	
<i>static:</i>	-40/+90°C
<i>flexible:</i>	-30/+90°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 cat. C resp. D, see chapter O
Suspended height:	up to 60 m
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø inch	mm	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km
▶ 18 AWG (≈ 56/34) • 1.00 mm ²					
53900510	5	0.421	10.7	89	19.5
53900710	7	0.421	10.7	89	19.5
53900910	9	0.488	12.4	134	19.5
53901210	12	0.567	14.4	175	19.5
53901810	18	0.783	19.9	283	19.5
53902410	24	0.783	19.9	330	19.5
53903010	30	0.823	20.9	390	19.5

Other dimensions and colors are available on request



Possible on request:

- with overall tinned copper braiding
- with different conductor and jacket colors

Lift Cables

SABIX® Lift ST

Lift control cable with steel center as supporting member



Marking for SABIX® Lift 53902410:

SAB BRÖCKSKES · D-VIERSEN · SABIX® Lift 24 x 1.0 mm² CE

Application: Our halogen-free lift cables are used whenever there are highest safety requirements, especially in public buildings and institutions as for example department stores, hospitals, railway and airport facilities, etc.

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	special SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green/yellow ground
Strain relief:	steel rope in the center
Stranding:	steel rope as core, optimized twisting of the conductors in layers
Wrapping:	non-woven tape on each layer with overlap wrapping
Torsion protecting:	special braid
Jacket material:	thermoplastic special elastomer
Jacket color:	black (RAL 9005)

Outstanding features:



- halogen-free
- highest hanging lengths
- long service life
- flame retardant and self-extinguishing

item no.	no. of conductors incl. ground	nominal outer-ø inch	mm	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km
▶ 18 AWG (≈ 56/34) • 1.00 mm²					
53910510	5	0.343	8.7	77	19.5
53910710	7	0.386	9.8	103	19.5
53910910	9	0.453	11.5	165	19.5
53911210	12	0.551	14.0	227	19.5
53911810	18	0.654	16.6	279	19.5
53912410	24	0.661	16.8	332	19.5
53913010	30	0.780	19.8	452	19.5

Other dimensions and colors are available on request

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	15 x O.D.
Temperature range:	
<i>static:</i>	-40/+90°C
<i>flexible:</i>	-30/+90°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 cat. C resp. D, see chapter O
Suspended height:	up to 200 m
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30



Possible on request:

- with overall tinned copper braiding
- with different conductor and jacket colors

PVC Flat Cables

H05VVH6-F

PVC flat festoon power and control cable, 300/500V



<VDE> <HAR> H05VVH6-F 24G0.75 mm² CE



Marking for PVC Flat cable 2142407:

SAB BRÖCKSKES · D-VIERSEN · <VDE> <HAR> H05VVH6-F 24G0.75 mm² CE

Application: H05VVH6-F is a flexible, flame retardant, PVC festoon power and control cable designed for use on overhead crane and material handling systems. The flat construction allows cables to be stacked for applications where space is limited.

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	PVC
Color code:	black conductors with white numbers and a green/yellow ground
Stranding:	conductors parallel side by side in groups
Jacket material:	PVC
Jacket color:	black (RAL 9005)

Outstanding features:



smaller bending radius in contrast to round cables

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Min. bending radius:	10 x height
Temperature range:	
<i>static:</i>	-40/+70°C
<i>flexible:</i>	0/+70°C
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Oil resistance:	acc. to internal standard, see page O/29
Approvals:	VDE, HAR, CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	dimension		cable weight ≈lbs/mft
		width x height inch	width x height mm	
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²				
2140607	6	0.701 x 0.165	17.8 x 4.2	92
2140907	9	1.016 x 0.165	25.8 x 4.2	134
2141207	12	1.539 x 0.165	39.1 x 4.2	175
2141607	16	1.712 x 0.165	43.5 x 4.2	230
2141807	18	1.906 x 0.165	48.4 x 4.2	257
2142007	20	2.122 x 0.165	53.9 x 4.2	286
2142407	24	2.531 x 0.165	64.3 x 4.2	342
▶ 18 AWG (≈ 30/32) ▪ 1.00 mm²				
2140410	4	0.500 x 0.169	12.7 x 4.3	71
2140510	5	0.602 x 0.169	15.3 x 4.3	87
2140610	6	0.724 x 0.169	18.4 x 4.3	103
2140910	9	1.051 x 0.169	26.7 x 4.3	151
2141210	12	1.350 x 0.169	34.3 x 4.3	196
2141610	16	1.776 x 0.169	45.1 x 4.3	259
2141810	18	1.976 x 0.169	50.2 x 4.3	289
2142010	20	2.201 x 0.169	55.9 x 4.3	322
2142410	24	2.626 x 0.169	66.7 x 4.3	384

Other dimensions and colors are available on request



Application example: in elevators up to 35 m freely suspended or in fitted vehicles for cranes and hoisting systems with one level bending

PVC Flat Cables

H07VVH6-F

PVC flat festoon power and control cable, 450/750V



SKES · D-VIERSEN · <VDE> <HAR> H07VVH6-F 12G1.5 mm² CE



Marking for PVC Flat cable 2491215:

SAB BRÖCKSKES · D-VIERSEN · <VDE> <HAR> H07VVH6-F 12G1.5 mm² CE

Application: H07VVH6-F is a flexible, flame retardant, PVC festoon power and control cable designed for use on overhead crane and material handling systems. The flat construction allows cables to be stacked for applications where space is limited.

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	PVC
Color code:	colored acc. to HD 308 (VDE 0293-308), see below from 6 conductors: black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334 from 3 conductors a green/yellow ground
Stranding:	conductors parallel side by side in groups
Jacket material:	PVC
Jacket color:	black (RAL 9005)

Technical data:

Nominal voltage:	U ₀ /U 450/750 V
Min. bending radius:	10 x height
Temperature range:	
<i>static:</i>	-40/+70°C
<i>flexible:</i>	0/+70°C
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Oil resistance:	acc. to internal standard, see page O/29
Approvals:	VDE, HAR, CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

Outstanding features:



• smaller bending radius in contrast to round cables

item no.	no. of conductors incl. ground	dimension		cable weight ≈ lbs/mft
		width x height inch	width x height mm	
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²				
2490415	4	0.602 x 0.205	15.3 x 5.2	97
2490715	7	1.008 x 0.205	25.6 x 5.2	168
2490815	8	1.126 x 0.205	28.6 x 5.2	190
2491215	12	1.650 x 0.205	41.9 x 5.2	283
▶ 14 AWG (≈ 46/30) ▪ 2.50 mm²				
2490425	4	0.720 x 0.228	18.3 x 5.8	138
2491225	12	1.996 x 0.228	50.7 x 5.8	406
▶ 12 AWG (≈ 52/28) ▪ 4.00 mm²				
2491240	12	2.260 x 0.268	57.4 x 6.8	576
▶ 10 AWG (≈ 78/28) ▪ 6.00 mm²				
2490460	4	0.894 x 0.287	22.7 x 7.3	253
2490560	5	1.083 x 0.287	27.5 x 7.3	295
▶ 8 AWG (≈ 77/26) ▪ 10.00 mm²				
2490570	5	1.406 x 0.366	35.7 x 9.3	542
▶ 4 AWG (≈ 190/26) ▪ 25.00 mm²				
2490490	4	1.673 x 0.508	42.5 x 12.9	945

Other dimensions and colors are available on request

HD 308 color code:

#1- nature, #2- blue-brown, #3- green/yellow - blue - brown, #4- green/yellow - brown - black - gray, #5- green/yellow - blue - brown - black - gray



Application example: in elevators up to 35 m freely suspended or in fitted vehicles for cranes and hoisting systems with one level bending

Guidelines for installing lift control cables

■ Installation instructions of lift control cables SABIX® Lift and SABIX® Lift ST

■ Application and use in buildings

1. In case that the cables are placed in shafts, two different methods are recommended:
 - *Placement of cables from machine room:*
The placement of the cables from the machine room has to be executed in a way that the cable is led into the shaft in winding direction. In order to avoid upsetting deformation, it is advisable that a second person is in the pit and enables a perfect installation with the help of a cord.
 - *Placement of the cables from the shank pit or the first stop:*
Herewith, the winding direction for unwinding has to be observed.
Note: With both methods the pulling-in of the cables has to be done with a minimum of bend. In order to avoid torsion or buckling, the placement of the cable has to be done carefully.
2. In order to guarantee a torsion-free installation, the cable has to be suspended freely for 12 h in the shaft before being finally fixed. The lower cable end is not allowed to lie on or to be in contact with the pit sole. If the cable is longer, the lower cable end (min. 0.3 m above the sole) must be looped or put up with a weight. Any material can be used as weight but it should not come to more than 15% of the cable weight. After having been suspended the cables shall be marked parallel towards the shaft wall and on the same side. Thus a twist-free fixing of the cable is afterwards possible.

■ Hanging up of the cable

1. If the cables are pulled into the shaft, they have to be unwound tangentially from the drum. An axial unwinding from the drum causes torsions of the cable and finally can lead to operational disturbances.
2. The free space between lift cabin and shaft bottom shall be big enough and has to be fully used for the loop height of the cable. The cables have to be suspended at the lift cabin in the course of the natural bow.
3. A natural hanging diameter of the loop has to be guaranteed.

■ Fixing of the cables

1. At any rate large-surface clamps have to be used for the fixing of the cable. The jacket shall not be squeezed, the clamp must be seated firmly on a large surface. There should be at least one suspension at the shaft head and at the lift cabin. Additionally the carrying element has to be supported separately (at both cable ends). In case that the suspended cable length is more than 40 m, an additional suspension should be in the middle of the shaft.
2. The fixing point at the shaft wall has to be at least 2 m above the middle of the travel. At the same time the fixing points of the cables at the lift or at the shaft wall have to be arranged rectangular towards the runoff plane of the cable and with the same distance parallel to the rail axis.
3. With unsteady running behavior that means the cable moves out of the fall line during operation, the control cable has to be slightly twisted at one of the fixing points until a perfect run of the cable is given.
Note: Additionally the run of the cable has to be controlled again after the initial operation of the lift.
4. If the lift installation requires the installation of several control cables, it is recommended due to operational reasons that the individual cables have to be hanged up in a way that the different loops have a level difference of approx. 15 cm (hang up step-by-step).
5. The cables are not allowed to be tied up over their suspended length, as otherwise their free run is impeded.

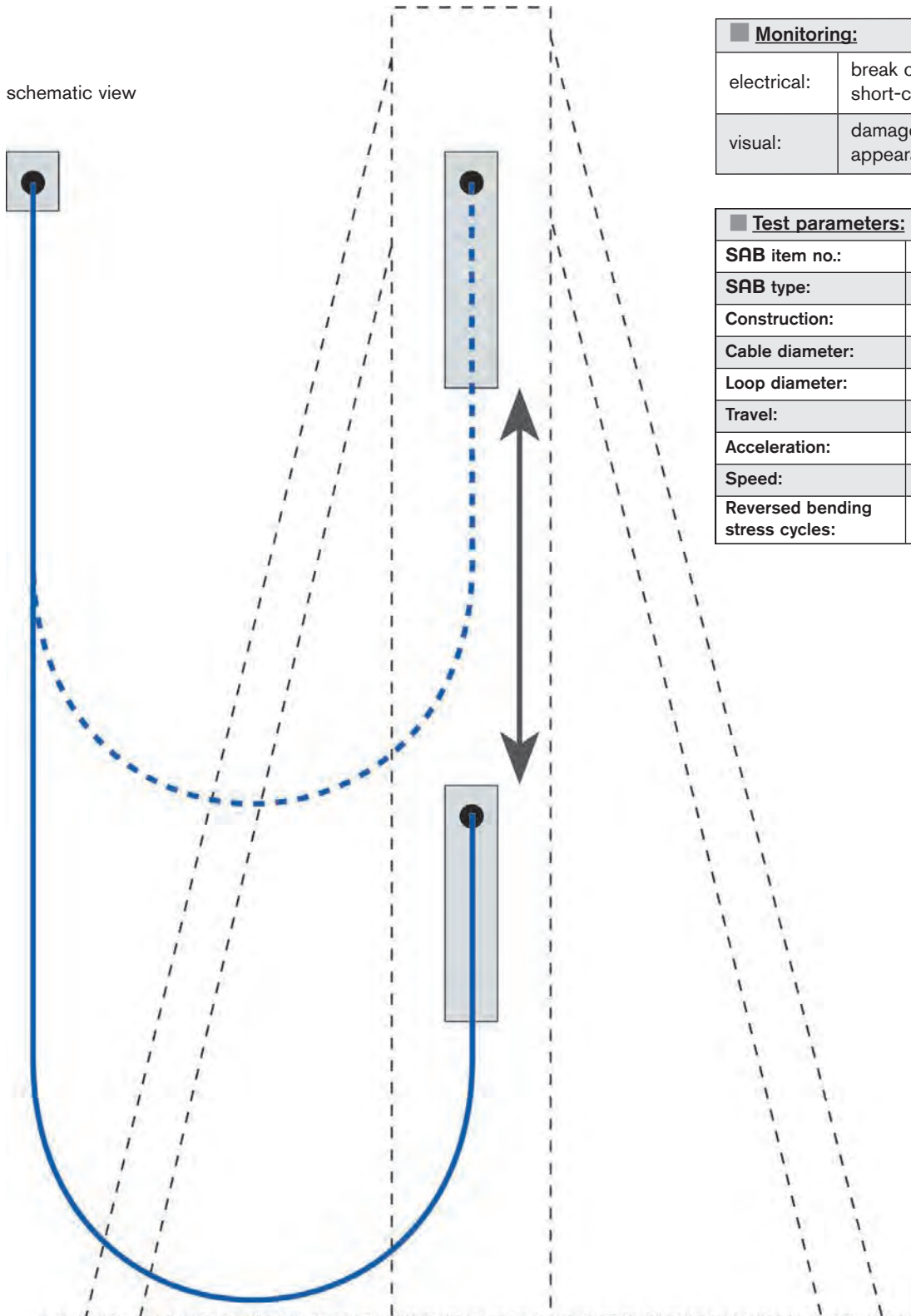
■ General notes

1. The cables are only allowed to be applied with temperature ranges mentioned in their specifications.
2. The inner bending radius is not allowed to be lower than the cable diameter mentioned in the specification. Furthermore, the given bending radius of the cable (equally mentioned in the cable specification) has to be kept.
3. The max. hang up length is dependant on the corresponding carrying element in the cable (mentioned in the cable specification) and is not allowed to be exceeded.
4. In order to reach a perfect and long service life of the lift control cables, they have to be treated and installed with the utmost care.

Directional Cycle Life Test for Lift Control Cables

■ Life cycle test SABIX® Lift

schematic view

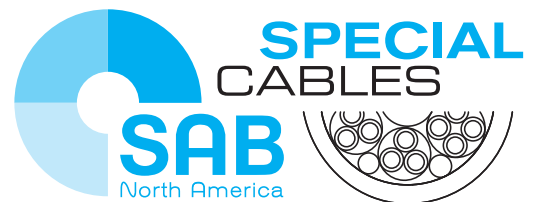


■ Monitoring:

electrical:	break of a single conductor short-circuit
visual:	damage of jacket, appearance of kinks

■ Test parameters:

SAB item no.:	5390-2410
SAB type:	SABIX® Lift
Construction:	24 x 1.0 mm ² · 18 AWG/24c
Cable diameter:	22.0 mm · 0.868 inch
Loop diameter:	90 cm · 2.95 feet
Travel:	1.9 m · 6.23 feet
Acceleration:	40 m/s ² · 131.23 feet/s ²
Speed:	1.4 m/s · 4.59 feet/s
Reversed bending stress cycles:	2,000,000



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