BUS CABLES

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SPECIAL CABLES
SAB BRÖCKSKES

Content

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Applications

Applications of INTERBUS-S cables · remote bus cables · installation remote bus cables

Interbus has been developed for the sensor/actuator communication in the automation technique. This technically matured system has been standardised in the meantime acc. to IEC 61158 and 61784. For the main application fields different cable types are defined: remote bus cable, installation remote bus cable, S-line and loop.

Applications of Interbus-Loop cables

The two-conductor Interbus-Loop cable is to be applied as a data transmission cable as well as for the supply of sensors. The three-conductor Interbus-Loop cables is applied for supply of actuators. These cables are also suitable for Interbus-Loop 2.

Applications of CAN-Bus cables

Cables for a **C**ontroller **A**rea **N**etwork have been standardised for different application fields. The largest spreading has got the high speed type acc. to ISO 11898-2. The bus is optimised for a band efficient digital information exchange on the controller level.

Applications of DeviceNet™ cables

Based on CAN structures DeviceNet was developed for the industrial process automation on the North American continent. This system is divided into Trunk and Drop cable.

Applications of Profibus cables

PROFIBUS systems are especially made for process automation (PA). PROFIBUS is standardised acc. to IEC 61158 that means best interoperability of components from different manufacturers. The modular peripheral construction (DP: decentralised periphery) of the bus system simplifies installation and maintenance. The PROFIBUS type A is generally used in current systems, cables of PROFIBUS type B are only used for replacement purpose in already existing systems.

Fast Connect cable construction

These cables mostly have a radial symmetric construction. This enables the use of special stripping tools that make possible a quicker and easier harnessing and installation.

Applications of SafetyBUS p cables

SafetyBUS is an open bus system that has been especially optimised for the transmission of data with regard to machine safety: the consistency of data with regard to time and contents have highest priority. SafetyBUS fulfils a variety of highest standards to guarantee the protection of humans and goods during production.

Applications of Hybrid field bus cables

S 670 and S 671 are flexible UL recognized, CSA approval hybrid field bus control cables, suitable for cable continuous flexing with optical fibre and copper conductors. The cable S 670 with its polyurethane outer jacket has a very good resistance against acids, alkalines, solvents hydraulic liquids and oil.

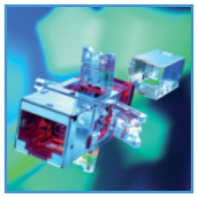
Applications

Applications of USB 2.0 and USB 3.0 cables

The SAB robot cable USB 2.0 and USB 3.0 was developed for high frequency data transmission in industry. In the industry intelligent image processing systems are very important. They are the key to more efficiency, precision and productivity with the installation and treatment by robots for the most different applications. Whether for the identification of parts and components, for visual inspection, welded seam control or for the collection of bar codes or type tests; wherever a quick and reliable collection and transmission of data from the camera to the industrial PC are absolutely important. Our highly flexible robot cable USB 2.0 and USB 3.0 was especially developed for this application. It guarantees excellent transmission characteristics as it is demanded for intelligent image processing under extreme industrial application conditions. The use of PC compatible components make possible the recourse to established standards and simplifies further treatment in electronic data processing systems.





Applications of Industrial ETHERNET cables

Industrial Ethernet is a quickly developing network technology. Ethernet with the worldwide accepted **TCP/IP** (**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol) will be the future connection to the well established field bus or sensor / actuator level. Generally, the following transmission rates are divided into:

SHARED ETHERNET = 10 Mbit/s

FAST ETHERNET = 100 Mbit/s (CAT 5 requirements)

GIGABIT ETHERNET = 1000 Mbit/s (1 Gbit/s)

SAB Bröckskes developed a variety of cable solutions due to the strong innovative force of automation industry. Depending on the application, we are able to offer today CAT 5, CAT 6 and CAT 7 cable solutions for flexible and continuous flexible use, for chemical and thermal stress as well as special cable constructions for reeling purpose and robot operation.

Applications harnessed Profinet cables

For the field bus wiring of Profinet field bus systems in industrial sectors. This cable type is used for example in cable chain applications for automation and machine and plant construction with rough environments. The PUR outer sheath is resistant against rough environmental conditions.

Applications harnessed Profibus cables

For the field bus wiring in automation technique. These bus cables transfer Profibus signals with different cable and plug combinations. The PUR cable for cable chain applications is resistant against rough environmental conditions in industrial applications.

You will find further information about the safe application of cables in chapter N

Selection table

		Cable type	IBS 612	IBS 617	IBS 614	S IBS 616	S IBS 618	SABIX® IBS 610	SABIX® IBS 610 FRNC	SABIX® IBL 600 FRNC	IBL 600	SABIX® IBL 600	S IBL 605	S CB 626	S CB 625	SABIX® CB 620	SABIX® CB 620 FRNC	SABIX® CB 624 FRNC C1	CB 627	S CB 628	DR CB 689 P Highflex
Basic construction	Screened		●	●	●	●	●	●	●					●	●	●	●	●	●	●	●
	Inner sheath																				
	Optical waveguide POF																				
Temperature range fixed laying*	+ 180 °C																				
	+ 90 °C																				
	+ 85 °C																				
	+ 80 °C																				
	+ 75 °C																				
	+ 70 °C																				
	– 30 °C																				
	– 40 °C																				
	– 50 °C																				
	– 90 °C																				
Voltage	Nominal voltage 300/500 V																				
	Peak operating voltage max. 30 V																				
	Peak operating voltage max. 50 V																				
	Peak operating voltage max. 90 V																				
	Peak operating voltage max. 350 V		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Voltage UL 30 V																				
	Voltage UL resp. CSA 300 V			●			●													●	●
	Voltage UL resp. CSA 600 V																				
	Testing voltage 600 V																				
	Testing voltage 750 V																				
	Testing voltage 1000 V		●		●	●	●	●										●			
	Testing voltage 1500 V								●	●	●	●	●	●	●	●	●	●			
	Testing voltage 2000 V																		●	●	●
	Testing voltage 3000 V																				
Standards and approvals	Halogen-free acc. to IEC 60754-1 + VDE 0482-754-1					●	●	●	●	●		●	●		●	●	●	●		●	●
	Halogen-free for rail types																				
Fire performance	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2		●	●	●		●		●		●								●	●	
	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D								●	●							●	●			
	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2																				
	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A																				
	flame retardant ISO 6722 (UN/ECE R118)																				
	UL Horizontal Flame Test FT2																				
	UL VW1																				
	acc. to NF C 32-070 C1																	●			
	Corrosiveness of conflagration gases: in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases							●	●	●		●				●	●	●			
	Smoke density acc. to IEC 61034 + VDE 0482-1034								●	●							●	●			
	Toxicity acc. to EN 50305 + VDE 0260-305																				
	UL recognized			●			●												●	●	
	CSA approved																				
	ABS approved																				
	Rail type acc. to EN 45545-2																				
Characteristics	Oil resistance acc. to internal standard		●		●																
	Oil resistance acc. to VDE			●		●	●				●		●	●	●				●	●	●
	Oil resistance acc. to EN					●	●	●				●	●	●	●					●	●
	Chemical resistance												B	B	B					B	
	Weather resistance		C	C	C	A	A	B	B	B	C	B	A	A	A				C	A	
	Suitable for cable tracks					●	●						●	●	●					●	
	Torsion angle																				
	Flexibility		B	B	B	A	A	A	B	B		A	A	A	A	B	B	B	B	A	

from
to

A = very good
B = good
C = medium

1 = up to ± 360°/m
2 = up to ± 180°/m

*The temperature range for flexible application is mentioned on the corresponding catalogue page

Selection table

	Cable type	DN 650	DN 651	DN 656	DN 657	DN 658	DN 659	DN 658 robot cable/Drop	SABIX® PB 630	SABIX® PB 630 FRNC	PB 630	PB 631	PB 636	PB 637	PB 639	PB 635	S PB 634	PB 633	PB 632	PB 640	PB 640 UL	S PB 640	S PB 640 UL
Basic construction	Screened	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Inner sheath																			●	●	●	●
	Optical waveguide POF																						
Temperature range fixed laying*	+ 180 °C																						
	+ 90 °C																						
	+ 85 °C																						
	+ 80 °C																						
	+ 75 °C																						
	+ 70 °C																						
	– 30 °C																						
	– 40 °C																						
	– 50 °C																						
	– 90 °C																						
Voltage	Nominal voltage 300/500 V																						
	Peak operating voltage max. 30 V																						
	Peak operating voltage max. 50 V																						
	Peak operating voltage max. 90 V																						
	Peak operating voltage max. 350 V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Voltage UL 30 V	●	●			●	●							●									
	Voltage UL resp. CSA 300 V			●				●													●		●
	Voltage UL resp. CSA 600 V																						
	Testing voltage 600 V																						
	Testing voltage 750 V																						
	Testing voltage 1000 V																						
	Testing voltage 1500 V	●	●		●				●	●	●	●	●	●	●	●	●	●	●	●		●	
	Testing voltage 2000 V			●		●	●	●													●		●
	Testing voltage 3000 V																						
Standards and approvals	Halogen-free acc. to IEC 60754-1 + VDE 0482-754-1								●	●		●											
	Halogen-free for rail types																						
Fire performance	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2									●	●		●	●	●	●			●	●	●	●	●
	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D									●													
	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2																						
	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A																						
	flame retardant ISO 6722 (UN/ECE R118)																						
	UL Horizontal Flame Test FT2																						
	UL VW1																						
	acc. to NF C 32-070 C1																						
	Corrosiveness of conflagration gases: in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases								●	●		●						●					
	Smoke density acc. to IEC 61034 + VDE 0482-1034																						
	Toxicity acc. to EN 50305 + VDE 0260-305																						
	UL recognized	●	●	●		●	●	●						●							●		●
	CSA approved																						●
	ABS approved																						
	Rail type acc. to EN 45545-2																						
Characteristics	Oil resistance acc. to internal standard										●								●	●	●		
	Oil resistance acc. to VDE																●					●	●
	Oil resistance acc. to EN								●								●					●	●
	Chemical resistance																						
	Weather resistance								B	B	C	B	B	A	B	B	A	B	C				
	Suitable for cable tracks																					●	●
	Torsion angle							2															
	Flexibility																						

from
to

A = very good
B = good
C = medium

1 = up to ± 360°/m
2 = up to ± 180°/m

*Temperaturbereich bewegt siehe jeweilige Katalogseite

Selection table

	Cable type	PB 642	S PB 644	SBP 680	S SBP 684 Move	S 670	S 671	USB 2.0	USB 2.0 UL	USB 2.0 FRNC	USB 2.0 S	USB 2.0 S UL/CSA	USB 2.0 RT UL/CSA	SABIX® USB 2.0 R flex	USB 3.0 S	USB 3.0 RT	USB 3.0	USB 3.0 M
Basic construction	Screened	●	●		●			●	●	●	●	●	●	●	●	●	●	●
	Inner sheath																	
	Optical waveguide POF					●	●											
Temperature range fixed laying*	+ 180 °C																	
	+ 90 °C																	
	+ 85 °C																	
	+ 80 °C																	
	+ 75 °C																	
	+ 70 °C																	
	– 30 °C																	
	– 40 °C																	
	– 50 °C																	
	– 90 °C																	
Voltage	Nominal voltage 300/500 V					●	●											
	Peak operating voltage max. 30 V													●				
	Peak operating voltage max. 50 V																	●
	Peak operating voltage max. 90 V																	
	Peak operating voltage max. 350 V	●	●	●	●			●	●	●	●	●	●		●	●	●	
	Voltage UL 30 V																	
	Voltage UL resp. CSA 300 V								●			●	●		●	●	●	
	Voltage UL resp. CSA 600 V					●	●											
	Testing voltage 600 V							●						●				●
	Testing voltage 750 V																	
	Testing voltage 1000 V																	
	Testing voltage 1500 V	●	●							●								
	Testing voltage 2000 V								●									
	Testing voltage 3000 V					●	●											
Standards and approvals	Halogen-free acc. to IEC 60754-1 + VDE 0482-754-1			●	●					●	●	●						
	Halogen-free for rail types													●				
Fire performance	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2					●	●			●				●	●	●	●	
	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D																	
	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2													●				
	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A																	
	flame retardant ISO 6722 (UN/ECE R118)													●				
	UL Horizontal Flame Test FT2																	
	UL VW1																	
	acc. to NF C 32-070 C1																	
	Corrosiveness of conflagration gases: in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases																	
	Smoke density acc. to IEC 61034 + VDE 0482-1034													●				
	Toxicity acc. to EN 50305 + VDE 0260-305													●				
	UL recognized					●	●		●			●	●		●	●	●	
	CSA approved					●	●					●	●					
	ABS approved																	
	Rail type acc. to EN 45545-2													●				
Characteristics	Oil resistance acc. to internal standard	●					●	●	●									
	Oil resistance acc. to VDE		●	●	●	●					●	●	●					
	Oil resistance acc. to EN		●	●	●	●					●	●	●			●	●	
	Chemical resistance																	
	Weather resistance	C	A															
	Suitable for cable tracks		●		●							●			●			
	Torsion angle												2			1		
	Flexibility				A													

from
to

A = very good
B = good
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1 = up to ± 360°/m
2 = up to ± 180°/m

*The temperature range for flexible application is mentioned on the corresponding catalogue page

Selection table

	Cable type	PN 662	S PN 668	PN 663	S PN 669	PN 654	PN 654 UL	PN 660	PN 661	S PN 667	PN 678	PN 679	S PN 681	DR PN 689 P Highflex	RT PN 668	PN 668	S PN 668 Hybrid
Basic construction	Screened	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Inner sheath	●	●	●	●		●	●	●	●				●			●
	Optical waveguide POF																
Temperature range fixed laying*	+ 180 °C																
	+ 90 °C																
	+ 85 °C																
	+ 80 °C																
	+ 75 °C																
	+ 70 °C																
	– 30 °C																
	– 40 °C																
	– 50 °C																
	– 90 °C																
Voltage	Nominal voltage 300/500 V																
	Peak operating voltage max. 30 V															●	
	Peak operating voltage max. 50 V																
	Peak operating voltage max. 90 V																
	Peak operating voltage max. 350 V	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●
	Voltage UL 30 V																
	Voltage UL resp. CSA 300 V		●		●		●		●	●						●	●
	Voltage UL resp. CSA 600 V																
	Testing voltage 600 V																
	Testing voltage 750 V																
	Testing voltage 1000 V																
	Testing voltage 1500 V	●		●		●		●			●	●	●		●		
	Testing voltage 2000 V		●		●		●		●	●						●	●
	Testing voltage 3000 V																
Standards and approvals	Halogen-free acc. to IEC 60754-1 + VDE 0482-754-1		●		●			●	●	●		●	●	●	●	●	●
	Halogen-free for rail types																
Fire performance	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2																
	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D																
	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2																
	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A																
	flame retardant ISO 6722 (UN/ECE R118)																
	UL Horizontal Flame Test FT2																
	UL VW1																
	acc. to NF C 32-070 C1																
	Corrosiveness of conflagration gases: in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases																
	Smoke density acc. to IEC 61034 + VDE 0482-1034																
	Toxicity acc. to EN 50305 + VDE 0260-305																
	UL recognized		●		●		●		●							●	●
	CSA approved																
	ABS approved																
	Rail type acc. to EN 45545-2																
Characteristics	Oil resistance acc. to internal standard	●	●			●	●				●						
	Oil resistance acc. to VDE			●	●					●		●	●	●	●	●	●
	Oil resistance acc. to EN			●	●					●		●	●	●	●	●	●
	Chemical resistance																
	Weather resistance																
	Suitable for cable tracks		●		●					●			●				
	Torsion angle														1	1	2
	Flexibility																

from
to

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*The temperature range for flexible application is mentioned on the corresponding catalogue page

Selection table

	Cable type	CATLine CAT 6 S CATLine CAT 6A S	CATLine CAT 6 RT CATLine CAT 6A RT	CATLine CAT 6A HT	CATLine CAT 7A S	CATLine CAT 7A RT	CATLine CAT 5e DR CATLine CAT 6A DR CATLine CAT 7A DR	CATLine SPE C-Track	CATLine SPE Robot	CATLine SPE HT	CATLine SPE Rugged	CATLine CAT 5e R CATLine CAT 6A R CATLine CAT 7A R	CATLine CAT 5e R flex CATLine CAT 6A R flex CATLine CAT 7A R flex	CATLine CAT 5e BL CATLine CAT 6A BL CATLine CAT 7A BL
Basic construction	Screened	●	●	●	●	●	●	●	●	●	●	●	●	●
	Inner sheath													
	Optical waveguide POF													
Temperature range fixed laying*	+ 180 °C													
	+ 90 °C													
	+ 85 °C													
	+ 80 °C													
	+ 75 °C													
	+ 70 °C													
	– 30 °C													
	– 40 °C													
	– 50 °C													
	– 90 °C													
Voltage	Nominal voltage 300/500 V													
	Peak operating voltage max. 30 V													
	Peak operating voltage max. 50 V													
	Peak operating voltage max. 90 V	●	●	●	●	●	●	●	●	●	●	●	●	●
	Peak operating voltage max. 350 V													
	Voltage UL 30 V													
	Voltage UL resp. CSA 300 V	●	●		●	●		●	●					●
	Voltage UL resp. CSA 600 V			●						●				
	Testing voltage 600 V													
	Testing voltage 750 V						●							
	Testing voltage 1000 V													
	Testing voltage 1500 V											●	●	
	Testing voltage 2000 V			●	●	●		●	●	●	●			
	Testing voltage 3000 V													
Standards and approvals	Halogen-free acc. to IEC 60754-1 + VDE 0482-754-1	●	●		●	●	●	●	●					
	Halogen-free for rail types											●	●	
Fire performance	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	●	●	●	●	●								●
	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D													
	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2											●	●	
	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A													●
	flame retardant ISO 6722 (UN/ECE R118)											●	●	
	UL Horizontal Flame Test FT2	●	●		●	●								
	UL VW1			●										
	acc. to NF C 32-070 C1													
	Corrosiveness of conflagration gases: in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases													●
	Smoke density acc. to IEC 61034 + VDE 0482-1034											●	●	●
	Toxicity acc. to EN 50305 + VDE 0260-305											●	●	
	UL recognized	●	●	●	●	●		●	●	●				●
	CSA approved	●	●		●	●								
	ABS approved													●
	Rail type acc. to EN 45545-2											●	●	
Characteristics	Oil resistance acc. to internal standard													
	Oil resistance acc. to VDE	●	●		●	●	●	●	●	●				
	Oil resistance acc. to EN	●	●		●	●	●	●	●	●	●			
	Chemical resistance			A										
	Weather resistance						A							
	Suitable for cable tracks	●			●			●						
	Torsion angle		2			2			2					
	Flexibility	A	A		A	A						B	B	B

from
to

A = very good
B = good
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1 = up to ± 360°/m
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*The temperature range for flexible application is mentioned on the corresponding catalogue page

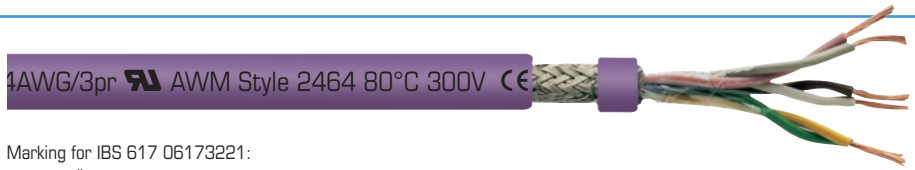
Remote Bus Cables

IBS 612 PVC Interbus-S cable for indoor and outdoor installation

IBS 614 PVC Interbus-S cable

IBS 617 PVC Interbus-S cable with UL recognition

S IBS 616 PUR Interbus-S cable for cable tracks



Marking for IBS 617 06173221:
SAB BRÖCKSKES · D-VIERSEN · 06173221 3x2x0,22mm² IBS 617 24AWG/3pr AWM Style 2464 80°C 300V

Construction:

	IBS 612	IBS 617	IBS 614	S IBS 616*
Dimension:	3 x 2 x 0,22 mm²			3 x 2 x 0,25 mm²
Conductor:	bare copper strands with reference to VDE 0812			
Insulation:	PE, 2YI1 acc. to EN 50290-2-23 + VDE 0819-103			
Colour code:	acc. to DIN 47100			
Stranding:	twisted to pairs			
Wrapping:	PETP foil			non-woven tape
Screen:	tinned copper braiding			
Sheath material:	PVC, TM2 acc. to EN 50363-4-1	PVC, TM5 acc. to EN 50363-4-1	PVC, TM2 acc. to EN 50363-4-1	PUR, TMPU acc. to EN 50363-10-2 with rough surface
Sheath colour:	black (RAL 9005)	redlilac (RAL 4001)		

Technical data:

	IBS 612	IBS 617	IBS 614	S IBS 616*
Item number:	0612-3228	0617-3221	0614-3221	0616-3251
Peak operating voltage:	max. 350 V			
Voltage UL:	---	300 V	---	
Testing voltage core/core: core/screen:	 1000 V 1000 V	 2000 V 2000 V	 1000 V 1000 V	
Min. bending radius:	7,5 x d			
Radiation resistance:	8 x 10^7 cJ/kg			5 x 10^7 cJ/kg
Temperature range fixed laying: flexible application:	 -30/+70 °C -5/+70 °C	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	 -30/+70 °C -5/+70 °C	 -40/+70 °C -40/+70 °C
Halogen-free:	---			acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2			---
Oil resistance:	acc. to internal standard, see chapter N „Technical data“	very good acc. to VDE 0207-5	acc. to internal standard, see chapter N „Technical data“	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance at 0.064 MHz:	120 Ω ± 20%			
Characteristic impedance at > 1 MHz:	100 Ω ± 15 Ω			
Flexibility:	good			very good
Application in cable tracks:	not recommended			recommended
Weather resistance:	medium			very good
Bending characteristics: number of bendings acc. to VDE 0472-603 test methode H	---			min. 1.000.000 single bendings
Direct Burial:	suitable	not suitable		
UL Style:	---	2464	---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	outer-ø ± 10%	copper figure kg/km	cable weight ≈kg/km
06123228	IBS 612	3 x 2 x 0,22 mm²	9,0	31,2	95
06173221	IBS 617	3 x 2 x 0,22 mm²	7,0	31,2	60
06143221	IBS 614	3 x 2 x 0,22 mm²	6,9	31,2	56
06163251	S IBS 616	3 x 2 x 0,25 mm²	8,0	35,9	64

Other dimensions and colours are possible on request.

* Interbus-S remote bus cables 3 x 2 x 0.22 mm² or 3 x 2 x 0.25 mm² are used for the sensor/actuator level of industrial communication

S IBS 618 PUR Interbus-S cable for cable tracks with UL recognition

SABIX® IBS 610 halogen-free Interbus-S cable

SABIX® IBS 610 FRNC halogen-free, flame retardant Interbus-S cable

Marking for S IBS 618 06183251:
SAB BRÖCKSKES · D-VIERSEN · 06183251 3x2x0,25mm² S IBS 618 24 AWG/3pr AWM Style 20235 80°C voltage not specified CE

Construction:	S IBS 618*	SABIX® IBS 610	SABIX® IBS 610 FRNC
Dimension:	3 x 2 x 0,25 mm²	3 x 2 x 0,22 mm²	
Conductor:	bare copper strands with reference to VDE 0812		
Insulation:	PE, 2YI1 acc. to EN 50290-2-23 + VDE 0819-103	SABIX®	
Colour code:	acc. to DIN 47100		
Stranding:	twisted to pairs and pairs together		
Wrapping:	non-woven tape	PETP foil	
Screen:	tinned copper braiding		
Sheath material:	PUR	SABIX®	
Sheath colour:	redlilac (RAL 4001)		

Technical data:	S IBS 618*	SABIX® IBS 610	SABIX® IBS 610 FRNC
Item number:	0618-3251	5610-3221	6610-3221
Peak operating voltage:	max. 350 V		
Voltage UL:	300 V	---	
Testing voltage core/core: core/screen:	 2000 V 2000 V	 1000 V 1000 V	
Min. bending radius:	7,5 x d		
Radiation resistance:	5 x 10^7 cJ/kg	5 x 10^6 cJ/kg	---
Temperature range fixed laying: flexible application:	**UL:** up to +80 °C -40/+70 °C -40/+70 °C	 -50/+90 °C -40/+90 °C	 -40/+85 °C -30/+85 °C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1		
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	---	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D, see chapter N „Technical data“. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Corrosiveness of conflagration gases:	---	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases	
Smoke density:	---		acc. to IEC 61034 + VDE 0482-1034
Oil resistance:	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2	very good acc. to EN 50363-4-1	---
Characteristic impedance at 0.064 MHz:	120 Ω ± 20%		
Characteristic impedance at > 1 MHz:	100 Ω ± 15 Ω		
Flexibility:	very good		good
Application in cable tracks:	recommended	not recommended	
Weather resistance:	very good	good	
Bending characteristics: number of bendings acc. to VDE 0472-603 test methode H	min. 1.000.000 single bendings	---	
Direct Burial:	suitable	not suitable	
UL Style:	20235	---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	outer-ø ± 10%	copper figure kg/km	cable weight ≈kg/km
06183251	S IBS 618	3 x 2 x 0,25 mm²	8,5	35,9	82
56103221	SABIX® IBS 610	3 x 2 x 0,22 mm²	7,0	31,3	53
66103221	SABIX® IBS 610 FRNC	3 x 2 x 0,22 mm²	7,0	31,3	62

Other dimensions and colours are possible on request.

* Interbus-S remote bus cables 3 x 2 x 0.22 mm² or 3 x 2 x 0.25 mm² are used for the sensor/actuator level of industrial communication

Installation Remote Bus Cables

IBS 612 PVC Interbus-S cable for indoor and outdoor installation

IBS 614 PVC Interbus-S cable

IBS 617 PVC Interbus-S cable with UL recognition

S IBS 616 PUR Interbus-S cable for cable tracks

Marking for IBS 617 06176221:
SAB BRÖCKSKES · D-VIERSEN · IBS 617 3x2x0,22mm²+3x1,0mm² AWM Style 2464 80°C 300V

Construction:	IBS 612	IBS 617	IBS 614	S IBS 616*
Dimension:	3 x 2 x 0,22 mm² + 3 x 1,00 mm²			3 x 2 x 0,25 mm² + 3 x 1,00mm²
Conductor 3 x 2 x 0,22 mm² resp. 3 x 2 x 0,25 mm²:	bare copper strands with reference to VDE 0812			
Conductor 3 x 1,00 mm²:	bare copper strands acc. to IEC 60228, VDE 0295, class 5			bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	PE, 2YI1 acc. to EN 50290-2-23 + VDE 0819-103			
Colour code:	acc. to DIN 47100 (pairs), 1,0 mm²: red, blue and green-yellow earth wire			
Stranding:	twisted to pairs (≤ 0,25 mm²)			
Wrapping:	PETP foil			non-woven tape
Screen:	tinned copper braiding			
Sheath material:	PVC, TM2 acc. to EN 50363-4-1	PVC, TM5 acc. to EN 50363-4-1	PVC, TM2 acc. to EN 50363-4-1	PUR, TMPU acc. to EN 50363-10-2 with rough surface
Sheath colour:	black (RAL 9005)	redlilac (RAL 4001)		

Technical data:	IBS 612	IBS 617	IBS 614	S IBS 616*
Item number:	0612-6228	0617-6221	0614-6221	0616-6251
Peak operating voltage:	max. 350 V			
Voltage UL:	---	300 V	---	
Testing voltage core/core: core/screen:	1500 V 1200 V	2000 V 2000 V	1500 V 1200 V	
Min. bending radius:	7,5 x d			
Radiation resistance:	8 x 10^7 cJ/kg			5 x 10^7 cJ/kg
Temperature range fixed laying: flexible application:	-30/+70 °C -5/+70 °C	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	-30/+70 °C -5/+70 °C	-40/+70 °C -40/+70 °C
Halogen-free:	---			acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2			---
Oil resistance:	acc. to internal standard, see chapter N „Technical data“	very good acc. to VDE 0207-5	acc. to internal standard, see chapter N „Technical data“	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance at 0.064 MHz:	120 Ω ± 20%			
Characteristic impedance at > 1 MHz:	100 Ω ± 15 Ω			
Flexibility:	good			very good
Application in cable tracks:	not recommended			recommended
Weather resistance:	medium			very good
Bending characteristics: number of bendings acc. to VDE 0472-603 test methode H	---			min. 1.000.000 single bendings
Direct Burial:	suitable	not suitable		
UL Style:	---	2464	---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	outer-ø ± 10%	copper figure kg/km	cable weight ≈kg/km
06126228	IBS 612	3 x 2 x 0,22 mm² + 3 x 1,00 mm²	10,0	62,0	132
06176221	IBS 617	3 x 2 x 0,22 mm² + 3 x 1,00 mm²	19,0	64,5	106
06146221	IBS 614	3 x 2 x 0,22 mm² + 3 x 1,00 mm²	7,9	62,0	90
06166251	S IBS 616	3 x 2 x 0,25 mm² + 3 x 1,00 mm²	8,0	70,8	101

Other dimensions and colours are possible on request.

* Interbus-S installation remote bus cables 3 x 2 x 0.22 mm² + 3 x 1,0 mm² or 3 x 2 x 0.25 mm² + 3 x 1,0 mm² are used for the sensor/actuator level of industrial communication

Installation Remote Bus Cables

S IBS 618 PUR Interbus-S cable for cable tracks with UL recognition

SABIX® IBS 610 halogen-free Interbus-S cable

SABIX® IBS 610 FRNC halogen-free, flame retardant Interbus-S cable

Marking for S IBS 618 06186251:
SAB BRÖCKSKES · D-VIERSEN · 06186251 3x2x0,25mm²+3x1,0mm² S IBS 618 24 AWG/3pr + 18 AWG/3c AWM Style 20235 80°C voltage not specified

Construction:

	S IBS 618*	SABIX® IBS 610	SABIX® IBS 610 FRNC
Dimension:	3 x 2 x 0,25 mm² + 3 x 1,00 mm²	3 x 2 x 0,22 mm² + 3 x 1,00 mm²	
Conductor:	0,22 mm² resp. 0,25 mm²: bare copper strands with reference to VDE 0812 1,00 mm²: bare copper strands acc. to IEC 60228, VDE 0295, class 6		
Insulation:	0,25 mm²: PE, 2YI1 1,00 mm²: TPE	SABIX®	
Colour code:	acc. to DIN 47100 (pairs), 1,0 mm²: red, blue and green-yellow earth wire		
Stranding:	twisted to pairs (≤ 0,25 mm²) pairs and cores together		
Wrapping:	non-woven tape	PETP foil	
Screen:	tinned copper braiding		
Sheath material:	PUR with rough surface	SABIX®	
Sheath colour:	redlilac (RAL 4001)		

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Technical data:

	S IBS 618*	SABIX® IBS 610	SABIX® IBS 610 FRNC
Item number:	0618-6251	5610-6221	6610-6221
Peak operating voltage:	max. 350 V		
Voltage UL:	300 V	---	
Testing voltage core/core: core/screen:	 2000 V 2000 V	 1500 V 1500 V	
Min. bending radius:	7,5 x d		
Radiation resistance:	5 x 10^7 cJ/kg	5 x 10^6 cJ/kg	---
Temperature range fixed laying: flexible application:	**UL:** up to +80 °C -40/+70 °C -40/+70 °C	 -50/+90 °C -40/+90 °C	 -40/+85 °C -30/+85 °C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1		
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	---	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D, see chapter N „Technical data“. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Corrosiveness of conflagration gases:	---	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases	
Smoke density:	---		acc. to IEC 61034 + VDE 0482-1034
Oil resistance:	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2	very good acc. to EN 50363-4-1	---
Characteristic impedance at 0.064 MHz:	120 Ω ± 20%		
Characteristic impedance at > 1 MHz:	100 Ω ± 15 Ω		
Flexibility:	very good		good
Application in cable tracks:	recommended	not recommended	
Weather resistance:	very good	good	
Bending characteristics: number of bendings acc. to VDE 0472-603 test methode H	min. 1.000.000 single bendings	---	
Direct Burial:	suitable	not suitable	
UL Style:	20235	---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	outer-ø ± 10%	copper figure kg/km	cable weight ≈kg/km
06186251	S IBS 618	3 x 2 x 0,25 mm² + 3 x 1,00 mm²	9,2	71,0	121
56106221	SABIX® IBS 610	3 x 2 x 0,22 mm² + 3 x 1,00 mm²	7,9*	62,0	84
66106221	SABIX® IBS 610 FRNC	3 x 2 x 0,22 mm² + 3 x 1,00 mm²	7,9*	62,0	94

Other dimensions and colours are possible on request.

* Interbus-S installation remote bus cables
3 x 2 x 0.22 mm² + 3 x 1,0 mm²
or 3 x 2 x 0.25 mm² + 3 x 1,0 mm²
are used for the sensor/actuator level
of industrial communication

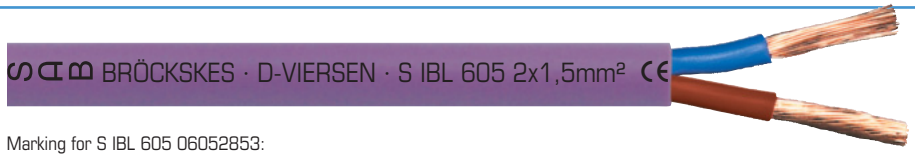
Interbus-Loop Cables

SABIX® IBL 600 FRNC halogen-free, flame retardant Interbus-Loop cable

SABIX® IBL 600 halogen-free Interbus-Loop cable

IBL 600 PVC Interbus-Loop cable

S IBL 605 PUR Interbus-Loop cable for cable tracks



Marking for S IBL 605 06052853:
SAB BRÖCKSKES · D-VIERSEN · S IBL 605 2x1,5mm² *and current meter marking*

Construction:	SABIX® IBL 600 FRNC	IBL 600	SABIX® IBL 600	S IBL 605
Dimension:	2 x 1,50 mm², 3 x 1,50 mm²			
Conductor:	bare copper strands with reference to IEC 60228, VDE 0295, class 5			bare copper strands with reference to IEC 60228, VDE 0295, class 6
Insulation:	SABIX®	PVC, TI2 acc. to EN 50363-3	SABIX®	TPE-E
Colour code:	coloured acc. to HD 308 (VDE 0293-308), green-yellow earth wire from 3 cores			
Stranding:	in layers			specially adjusted layering with netting tape and one additional non-woven tape over the outer layer
Sheath material:	SABIX®	PVC, TM5 acc. to EN 50363-4-1	SABIX®	PUR, TMPU acc. to EN 50363-10-2 with rough surface
Sheath colour:	may green (RAL 6017)			redlilac (RAL 4001)

Technical data:	SABIX® IBL 600 FRNC	IBL 600	SABIX® IBL 600	S IBL 605
Item number:	6601-2853, 6601-3853	0600-2853, 0600-3853	5600-2853, 5600-3853	0605-2853, 0605-3853
Peak operating voltage:	max. 350 V			
Testing voltage:	core/core 1500 V			
Min. bending radius:	15 x d			
Radiation resistance:	---	8 x 10^7 cJ/kg	5 x 10^6 cJ/kg	5 x 10^7 cJ/kg
Temperature range fixed laying: flexible application:	-40/+85 °C -30/+85 °C	-40/+70 °C +5/+70 °C	-50/+90 °C -40/+90 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	---	acc. to IEC 60754-1 + EN 0482-754-1	
Fire performance:	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D, see chapter N „Technical data“	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	---	
Corrosiveness of conflagration gases:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases	---	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases	---
Smoke density:	acc. to IEC 61034 + VDE 0482-1034	---		
Oil resistance:	---	very good acc. to VDE 0207-5	very good acc. to EN 50363-4-1	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2
Chemichal resistance:	---			good against acids, alkalines, solvents, hydraulic liquids etc.
Characteristic impedance at 0,25 MHz - 10 MHz:	for two-core cables 75 Ω ± 15%			
Flexibility:	good	---	very good	
Application in cable tracks:	not recommended			recommended
Weather resistance:	good	medium	good	very good
Continuosly flexible application:	---			very good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
66012853	SABIX® IBL 600 FRNC	2 x 1,50 mm²	6,9	28,8	80
66013853	SABIX® IBL 600 FRNC	3 x 1,50 mm²	7,5	43,2	94
06002853	IBL 600	2 x 1,50 mm²	6,9	28,8	75
06003853	IBL 600	3 x 1,50 mm²	7,5	43,2	94
56002853	SABIX® IBL 600	2 x 1,50 mm²	6,9	28,8	59
56003853	SABIX® IBL 600	3 x 1,50 mm²	7,5	43,2	75
06052853	S IBL 605	2 x 1,50 mm²	7,7	28,8	75
06053853	S IBL 605	3 x 1,50 mm²	8,1	43,2	90

Other dimensions and colours are possible on request.

CAN-Bus Cables acc. to ISO 11898

S CB 626 CAN-Bus cable for cable tracks
SABIX® CB 620 halogen-free CAN-Bus cable
S CB 625 halogen-free CAN-Bus cable for cable tracks
SABIX® CB 620 FRNC halogen-free, flame retardant CAN-Bus cable
SABIX® CB 624 FRNC C1 halogen-free, flame retardant CAN-Bus cable acc. to NF C 32-070 C1

Marking for S CB 626 FRNC 06262251:
SAB BRÖCKSKES · D-VIERSEN · S CB 626 2x0,25mm²

Construction:	S CB 626	S CB 625	SABIX® CB 620	SABIX® CB 620 FRNC	SABIX® CB 624 FRNC C1
Dimension:	2 x 0,25 mm²				2 x 2 x 0,25 mm², 1 x 2 x 0,34 mm², 2 x 2 x 0,50 mm²
Conductor:	bare copper strands, fine wires		bare copper strands acc. to VDE 0812		
Insulation:	FEP	TPE-E	SABIX®		
Colour code:	acc. to DIN 47100				
Wrapping:	non-woven tape	netting tape	PETP foil		non-woven tape
Screen:	tinned copper braiding				
Wrapping:	non-woven tape		---		
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 with rough surface		SABIX®		
Sheath colour:	redlilac (RAL 4001)				

Technical data:	S CB 626	S CB 625	SABIX® CB 620	SABIX® CB 620 FRNC	SABIX® CB 624 FRNC C1
Item number:	0626-2251	0625-2251	5620-2251	6620-2251	6624-2251 6624-2341 6624-4501
Peak operating voltage:	max. 350 V				
Testing voltage core/core: core/screen:	1500 V 1200 V			1000 V 1000 V	1500 V 1200 V
Min. bending radius:	7,5 x d				
Radiation resistance:	5 x 10^6 cJ/kg	1 x 10^7 cJ/kg	---		
Temperature range fixed laying: flexible application:	-50/+90 °C -40/+90 °C			-40/+85 °C -30/+85 °C	-30/+90 °C -20/+90 °C
Halogen-free:	---	acc. to IEC 60754-1 + VDE 0482-754-1			
Fire performance:	---			no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D, see chapter N „Technical data“	
Fire performance:	---				NF C 32-070 C1
Corrosiveness of conflagration gases:	---		in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases		
Smoke density:	---			acc. to IEC 61034 + VDE 0482-1034	
Oil resistance:	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2		very good acc. to EN 50363-4-1	---	
Chemichal resistance:	good against acids, alkalines, solvents, hydraulic liquids etc.		---		
Characteristic impedance:	120 Ω (95 - 140 Ω)				
Flexibility:	very good			good	
Application in cable tracks:	recommended		not recommended		
Weather resistance:	very good		---		
Bending characteristics: number of bendings acc. to VDE 0472-603 test methode H	min. 250.000 single bendings	min. 500.000 single bendings	min. 60.000 single bendings	---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“				

item no.	type	dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
06262251	S CB 626	2 x 0,25 mm²	6,2	20,8	52
06252251	S CB 625	2 x 0,25 mm²	8,1	25,3	68
56202251	SABIX® CB 620	2 x 0,25 mm²	5,8	19,0	35
66202251	SABIX® CB 620 FRNC	2 x 0,25 mm²	5,8	19,0	44
66242251	SABIX® CB 624 FRNC C1	2 x 2 x 0,25 mm²	9,0	42,7	100
66242341	SABIX® CB 624 FRNC C1	1 x 2 x 0,34 mm²	7,7	31,0	77
66244501	SABIX® CB 624 FRNC C1	2 x 2 x 0,50 mm²	11,4	82,6	160

Other dimensions and colours are possible on request.

CAN-Bus Cables acc. to ISO 11898

CB 627 CAN-Bus cable with UL recognition

S CB 628 halogen-free CAN-Bus cable for cable tracks with UL recognition

Marking for S CB 628 06282251:
SAB BRÖCKSKES · D-VIERSEN · 06282251 1x2x0,25mm² S CB 628 24 AWG/1pr AWM Style 20233 80°C 300 V

Construction:	CB 627	S CB 628
Dimension:	2 x 0,25 mm², 2 x 0,34 mm², 2 x 0,50 mm², 2 x 0,75 mm², 2 x 2 x 0,25 mm², 2 x 2 x 0,34 mm², 2 x 2 x 0,50 mm², 2 x 2 x 0,75 mm²	2 x 0,25 mm², 2 x 0,34 mm², 2 x 0,50 mm², 2 x 2 x 0,25 mm², 2 x 2 x 0,34 mm², 2 x 2 x 0,50 mm²
Conductor:	bare copper strands with reference to VDE 0812	bare copper strands, extra fine wires
Insulation:	PE, 2YI1 acc. to EN 50290-2-23 + VDE 0819-103	
Colour code:	acc. to DIN 47100	
Wrapping:	PETP foil	non-woven tape
Inner sheath (nature):	---	SABIX®
Screen:	tinned copper braiding	
Sheath material:	PVC, TM5 acc. to EN 50363-4-1	PUR, TMPU acc. to EN 50363-10-2 with rough surface
Sheath colour:	redlilac (RAL 4001)	

Technical data:	CB 627	S CB 628
Item number:	0627-2251, 0627-2341, 0627-2501, 0627-2751, 0627-4251, 0627-4341, 0627-4501, 0627-4751	0628-2251, 0628-2341, 0628-2501, 0628-4251, 0628-4341, 0628-4501
Peak operating voltage:	max. 350 V	
Voltage UL:	300 V	
Testing voltage core/core: core/screen:	 2000 V 2000 V	
Min. bending radius:	7,5 x d	
Radiation resistance:	8 x 10^7 cJ/kg	5 x 10^7 cJ/kg
Temperature range fixed laying: flexible application:	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	**UL:** up to +80 °C -40/+70 °C -40/+70 °C
Halogen-free:	---	acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	
Oil resistance:	very good acc. to VDE 0207-5	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2
Chemichal resistance:	---	good against acids, alkalines, solvents, hydraulic liquids etc.
Characteristic impedance:	120 Ω (95 - 140 Ω)	
Flexibility:	good	very good
Application in cable tracks:	not recommended	recommended
Weather resistance:	medium	very good
UL Style:	2464	20233
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

item no.	type	dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
06272251	CB 627	2 x 0,25 mm²	6,1	19,0	44
06272341	CB 627	2 x 0,34 mm²	6,4	21,8	48
06272501	CB 627	2 x 0,50 mm²	7,7	28,4	67
06272751	CB 627	2 x 0,75 mm²	9,6	39,6	91
06282251	S CB 628	2 x 0,25 mm²	7,9	20,2	77
06282341	S CB 628	2 x 0,34 mm²	8,3	22,9	84
06282501	S CB 628	2 x 0,50 mm²	8,7	29,0	81
06274251	CB 627	2 x 2 x 0,25 mm²	7,3	27,4	61
06274341	CB 627	2 x 2 x 0,34 mm²	7,7	33,5	67
06274501	CB 627	2 x 2 x 0,50 mm²	9,8	44,4	104
06274751	CB 627	2 x 2 x 0,75 mm²	13,5	80,8	179
06284251	S CB 628	2 x 2 x 0,25 mm²	9,1	27,9	98
06284341	S CB 628	2 x 2 x 0,34 mm²	9,6	32,7	105
06284501	S CB 628	2 x 2 x 0,50 mm²	10,6	44,9	115

Other dimensions and colours are possible on request.

DR CB 689 P Highflex

reeling CAN-Bus cable

Marking for DR CB 689 P Highflex 06899005:
SAB BRÖCKSKES · D-VIERSEN · DR CB 689 P Highflex 2x2x0,50mm² 0689-9005 CE

Construction:

Conductor:	bare copper strands
Insulation:	PE
Colour code:	acc. to DIN 47100
Stranding:	twisted to pairs and pairs together
Wrapping:	non-woven tape
Screen:	tinned copper braiding
Sheath material:	PUR / supporting braid / PUR
Sheath colour:	black (similar RAL 9005)

Technical data:

Peak operating voltage:	max. 350 V
Testing voltage:	core/core 1500 V core/screen 1200 V
Min. bending radius *for laying and installation (fixed laying):* *for repeated winding action (flexible):* *guided on pulleys (flexible):*	 5 x d 7,5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	 -40/+70 °C -40/+70 °C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance:	120Ω (95 - 140Ω)
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km	tensile strength max. N
06899005	DR CB 689 P Highflex	2 x 2 x 0,50 mm²	12,8	48,8	175	39,0	200

Other dimensions and colours are possible on request.

DeviceNet™ Cables

DN 650 PVC DeviceNet™ cable with with overall copper screen and UL recognition

DN 651 flexible PVC DeviceNet™ cable with a static screen and UL recognition

Marking for DN 651 06512241:
SAB BRÖCKSKES · D-VIERSEN · DN 651 2x0,24mm²+2x0,38mm² 06512241 24AWG/1pr+22AWG/1pr
Low Voltage Computer Cable AWM Style 2560 60°C 30V

Construction:	DN 650 Drop Cable	DN 650 Trunk Cable	DN 651 Drop Cable	DN 651 Trunk Cable
Dimension:	2 x 0,24 mm² + 2 x 0,38 mm²	2 x 0,96 mm² + 2 x 1,53 mm²	2 x 0,24 mm² + 2 x 0,38 mm²	2 x 0,96 mm² + 2 x 1,53 mm²
Conductor: 0,24 mm² tinned copper strands 0,38 mm² tinned copper strands	 AWG 24/19 AWG 22/19	 --- ---	 AWG 24/19 AWG 22/19	 --- ---
Conductor: 0,96 mm² tinned copper strands 1,53 mm² tinned copper strands	 --- ---	 AWG 18/19 AWG 15/19	 --- ---	 AWG 18/19 AWG 15/19
Insulation:	0,24 mm²: acc. to EN 50290-2-23 (02YI1) 0,38 mm²: PVC, TI2 acc. to EN 50363-3	0,96 mm²: acc. to EN 50290-2-23 (02YI1) 1,53 mm²: PVC, TI2 acc. to EN 50363-3	0,24 mm²: acc. to EN 50290-2-23 (02YI1) 0,38 mm²: PVC, TI2 acc. to EN 50363-3	0,96 mm²: acc. to EN 50290-2-23 (02YI1) 1,53 mm²: PVC, TI2 acc. to EN 50363-3
Colour code:	0,24 mm²/0,96 mm²: data pair white and light blue 0,38 mm²/1,53 mm²: supply pair black and red			
Wrapping:	cores twisted to pairs stranded with alu foil			
Stranding:	pairs in specially adjusted layering, tinned copper drain wire in core			
Screen:	tinned copper braiding		alu foil	
Wrapping:	non-woven tape			
Sheath material:	PVC, TM1 acc. to EN 50363-4-1 + VDE 0207-363-4-1			
Sheath colour:	redlilac (RAL 4001)			

Technical data:	DN 650 Drop Cable	DN 650 Trunk Cable	DN 651 Drop Cable	DN 651 Trunk Cable
Item number:	0650-2241	0650-2781	0651-2241	0651-2781
Peak operating voltage:	max. 350 V			
Voltage UL:	30 V			
Testing voltage core/core: core/screen:	 1500 V 1200 V			
Min. bending radius fixed laying: flexible application:	 7,5 x d 15 x d			
Temperature range fixed laying: flexible application:	**UL:** up to +60 °C -30/+70 °C -5/+70 °C			
Characteristic impedance:	120 Ω ± 10%			
UL Style:	2560			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

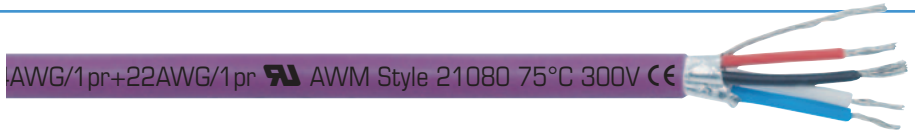
item no.	type	dimension	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
06502241	DN 650 (Drop Cable)	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	41,2	74
06502781	DN 650 (Trunk Cable)	2 x 0,96 mm² + 2 x 1,53 mm²	10,4 - 12,4	98,7	166
06512241	DN 651 (Drop Cable)	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	16,4	57
06512781	DN 651 (Trunk Cable)	2 x 0,96 mm² + 2 x 1,53 mm²	10,4 - 12,4	58,4	116

Other dimensions and colours are possible on request.

DeviceNet™ Cables

DN 656 halogen-free, flexible DeviceNet™ cable with a static screen and UL recognition

DN 657 halogen-free, flexible DeviceNet™ cable with overall copper screen



Marking for DN 656 06562241:
SAB BRÖCKSKES · D-VIERSEN · DN 656 2x0,24mm²+2x0,38mm² 06562241 24AWG/1pr+22AWG/1pr AWM Style 21080 75°C 300V

Construction:	DN 656 Drop Cable	DN 656 Trunk Cable	DN 657 Drop Cable	DN 657 Trunk Cable
Dimension:	2 x 0,24 mm² + 2 x 0,38 mm²	2 x 0,96 mm² + 2 x 1,53 mm²	2 x 0,24 mm² + 2 x 0,38 mm²	2 x 0,96 mm² + 2 x 1,53 mm²
Conductor: 0,24 mm² tinned copper strands 0,38 mm² tinned copper strands	 AWG 24/19 AWG 22/19	 --- ---	 AWG 24/19 AWG 22/19	 --- ---
Conductor: 0,96 mm² tinned copper strands 1,53 mm² tinned copper strands	 --- ---	 AWG 18/19 AWG 15/19	 --- ---	 AWG 18/19 AWG 15/19
Insulation:	0,24 mm²: acc. to EN 50290-2-23 (02YI1) 0,38 mm²: SABIX®	0,96 mm²: acc. to EN 50290-2-23 (02YI1) 1,53 mm²: SABIX®	0,24 mm²: acc. to EN 50290-2-23 (02YI1) 0,38 mm²: SABIX®	0,96 mm²: acc. to EN 50290-2-23 (02YI1) 1,53 mm²: SABIX®
Colour code:	0,24 mm²/0,96 mm²: data pair white and light blue 0,38 mm²/1,53 mm²: supply pair black and red			
Wrapping:	cores twisted to pairs stranded with alu foil			
Stranding:	pairs in specially adjusted layering, tinned copper drain wire in core			
Screen:	alu foil		tinned copper braiding	
Wrapping:	non-woven tape			
Sheath material:	SABIX®			
Sheath colour:	redlilac (RAL 4001)			

Technical data:	DN 656 Drop Cable	DN 656 Trunk Cable	DN 657 Drop Cable	DN 657 Trunk Cable
Item number:	0656-2241	0656-2781	0657-2241	0657-2781
Peak operating voltage:	max. 350 V			
Voltage UL:	300 V		---	
Testing voltage core/core: core/screen:	 2000 V 2000 V		 1500 V 1200 V	
Min. bending radius fixed laying: flexible application:	 7,5 x d 15 x d			
Temperature range fixed laying: flexible application:	**UL:** up to +75 °C -40/+70 °C -30/+70 °C		 -40/+70 °C -30/+70 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1			
Characteristic impedance:	120 Ω ± 10%			
UL Style:	21080		---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

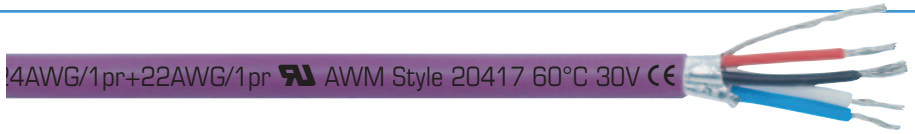
item no.	type	dimension	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
06562241	DN 656 (Drop Cable)	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	16,4	56
06562781	DN 656 (Trunk Cable)	2 x 0,96 mm² + 2 x 1,53 mm²	10,4 - 12,4	58,4	120
06572241	DN 657 (Drop Cable)	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	41,2	74
06572781	DN 657 (Trunk Cable)	2 x 0,96 mm² + 2 x 1,53 mm²	10,4 - 12,4	98,7	183

Other dimensions and colours are possible on request.

DeviceNet™ Cables

DN 658 highly flexible DeviceNet™ cable with overall copper screen and UL recognition

DN 659 highly flexible DeviceNet™ cable with a static screen and UL recognition



Marking for DN 659 06592241:
SAB BRÖCKSKES · D-VIERSEN · DN 659 2x0,24mm²+2x0,38mm² 06592241 24AWG/1pr+22AWG/1pr AWM Style 20417 60°C 30V

Construction:	DN 658 Drop Cable	DN 658 Trunk Cable	DN 659 Drop Cable	DN 659 Trunk Cable
Dimension:	2 x 0,24 mm² + 2 x 0,38 mm²	2 x 0,96 mm² + 2 x 1,53 mm²	2 x 0,24 mm² + 2 x 0,38 mm²	2 x 0,96 mm² + 2 x 1,53 mm²
Conductor: 0,24 mm² tinned copper strands 0,38 mm² tinned copper strands	 fine wires fine wires	 --- ---	 fine wires fine wires	 --- ---
Conductor: 0,96 mm² tinned copper strands 1,53 mm² tinned copper strands	 --- ---	 fine wires fine wires	 --- ---	 fine wires fine wires
Insulation:	0,24 mm²: acc. to EN 50290-2-23 (02YI1) 0,38 mm²: PVC, TI2 acc. to EN 50363-3	0,96 mm²: acc. to EN 50290-2-23 (02YI1) 1,53 mm²: PVC, TI2 acc. to EN 50363-3	0,24 mm²: acc. to EN 50290-2-23 (02YI1) 0,38 mm²: PVC, TI2 acc. to EN 50363-3	0,96 mm²: acc. to EN 50290-2-23 (02YI1) 1,53 mm²: PVC, TI2 acc. to EN 50363-3
Colour code:	0,24 mm²/0,96 mm²: data pair white and light blue 0,38 mm²/1,53 mm²: supply pair black and red			
Wrapping:	cores twisted to pairs stranded with alu foil			
Stranding:	pairs in specially adjusted layering, tinned copper drain wire in core			
Screen:	tinned copper braiding		alu foil	
Wrapping:	non-woven tape			
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with rough surface			
Sheath colour:	redlilac (RAL 4001)			

Technical data:	DN 658 Drop Cable	DN 658 Trunk Cable	DN 659 Drop Cable	DN 659 Trunk Cable
Item number:	0658-2241	0658-2781	0659-2241	0659-2781
Peak operating voltage:	max. 350 V			
Voltage UL:	30 V			
Testing voltage core/core: core/screen:	 2000 V 2000 V			
Min. bending radius fixed laying: flexible application:	 7,5 x d 15 x d			
Temperature range fixed laying: flexible application:	**UL:** up to +60 °C -30/+70 °C -5/+70 °C			
Characteristic impedance:	120 Ω ± 10%			
UL Style:	20417			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
06582241	DN 658 (Drop Cable)	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	41,2	74
06582781	DN 658 (Trunk Cable)	2 x 0,96 mm² + 2 x 1,53 mm²	10,4 - 12,4	98,7	183
06592241	DN 659 (Drop Cable)	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	16,4	56
06592781	DN 659 (Trunk Cable)	2 x 0,96 mm² + 2 x 1,53 mm²	10,4 - 12,4	58,4	115

Other dimensions and colours are possible on request.

DN 658 robot cable/Drop

highly flexible DeviceNet™ cable, suitable for robots with overall copper screen and UL recognition

Marking for DN 658 06589007:
SAB BRÖCKSKES · D-VIERSEN · DN 658 robot cable/Drop 2x0,24mm²+2x0,38mm² 24AWG/1pr+22AWG/1pr AWM Style 21198 80°C 300V 06589007 CE

Construction:

Conductor:	tinned copper strands, fine wires
Insulation:	0,24 mm²: Foam-Skin-PE 0,38 mm²: SABIX®
Colour code:	0,24 mm²: white, blue 0,38 mm²: black, red
Wrapping:	cores twisted to pairs stranded with alu foil
Stranding:	pairs in specially adjusted layering, tinned copper drain wire in core
Screen:	tinned copper braiding
Wrapping:	non-woven tape
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	redlilac (RAL 4001)

Technical data:

Peak operating voltage:	max. 350 V
Voltage UL:	300 V
Testing voltage:	core/core 2000 V core/screen 2000 V
Min. bending radius *fixed laying:* *flexible application:*	 7,5 x d 15 x d
Temperature range *fixed laying:* *flexible application:*	**UL:** up to +80 °C -40/+80 °C -30/+80 °C
Torsion angle:	up to ± 180°/m
Characteristic impedance:	120 Ω ± 10%
UL Style:	21198
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

item no.	dimension	outer-ø mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C max. Ω/km
06589007	2 x 0,24 mm² + 2 x 0,38 mm²	6,1 - 7,1	32,9	64	83,3

Other dimensions and colours are possible on request.

Profibus-DP Cables acc. to IEC 61158-2

SABIX® PB 630 halogen-free Profibus-DP cable
SABIX® PB 630 FRNC halogen-free, flame retardant Profibus-DP cable

PB 630 PVC Profibus-DP cable for fixed installation
PB 631 halogen-free PE Profibus-DP cable for fixed installation

Marking for SABIX® PB 630 FRNC 66302341:
SAB BRÖCKSKES · D-VIERSEN · SABIX PB 630 FRNC 2x0,34mm²

Construction:

	SABIX® PB 630	SABIX® PB 630 FRNC	PB 630	PB 631
Dimension:	2 x 0,34 mm²		2 x AWG 22	
Conductor:	bare copper strands acc. to VDE 0812		bare copper wire AWG 22, single wire	
Insulation:	acc. to EN 50290-2-23 + VDE 0819-103 (02YI1)			
Colour code:	red, green			
Stranding:	in layers			
Screen:	alu foil and tinned copper braiding			
Sheath material:	SABIX®		PVC, TM2 acc. to EN 50363-4-1	PE, 2YM1 acc. to EN 50290-2-24
Sheath colour:	redlilac (RAL 4001)			

Technical data:

	SABIX® PB 630	SABIX® PB 630 FRNC	PB 630	PB 631
Item number:	5630-2341	6630-2341	0630-2331	0631-2331
Peak operating voltage:	max. 350 V			
Testing voltage core/core: core/screen:	1500 V 1500 V			
Min. bending radius:	12 x d			
Radiation resistance:	---		7 x 10^6 cJ/kg	
Temperature range fixed laying: flexible application:	-40/+80 °C -40/+80 °C	-40/+80 °C -30/+80 °C	-30/+70 °C -5/+70 °C	-40/+70 °C -40/+70 °C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1		---	acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance:	---	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D, see chapter N „Technical data". Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	---
Corrosiveness of conflagration gases:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases		---	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
Smoke density:	---	very low	---	low
Oil resistance:	very good acc. to EN 50363-4-1	---	acc. to internal standard, see chapter N „Technical data"	---
Characteristic impedance 3 - 20 MHz:	150 Ω ± 10%			
For fixed installation:	suitable			
For flexible application:	suitable	not suitable		
Weather resistance:	good		medium	good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data"			

item no.	type	dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
56302341	SABIX® PB 630	2 x 0,34 mm²	7,5	30,4	50
66302341	SABIX® PB 630 FRNC	2 x 0,34 mm²	7,5	30,4	62
06302331	PB 630	2 x 22 AWG	7,1	23,8	49
06312331	PB 631	2 x 22 AWG	7,1	23,8	44

Other dimensions and colours are possible on request.

Profibus-DP and **Profibus-FMS** apply the same transmission technology and a uniform bus access log. Therefore, both types can be used simultaneously on one cable.

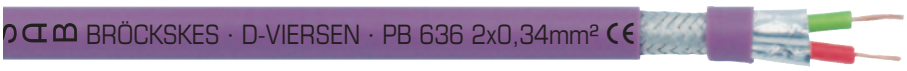
Profibus-DP Cables acc. to IEC 61158-2

PB 636 flexible PVC Profibus-DP cable for outdoor installation

PB 637 PVC Profibus-DP cable with UL recognition

PB 639 PVC Profibus-DP cable applyable in ground

PB 635 PVC Profibus-DP cable for outdoor installation



Marking for PB 636 06362348:
SAB BRÖCKSKES · D-VIERSEN · PB 636 2x0,34mm²

Construction:	PB 636	PB 637	PB 639	PB 635
Dimension:	2 x 0,34 mm²	2 x AWG 22		
Conductor:	bare copper strands acc. to VDE 0812	bare copper wire AWG 22, single wire		
Insulation:	acc. to EN 50290-2-23 + VDE 0819-103 (02YI1)			
Colour code:	red, green			
Stranding:	in layers			
Screen:	alu foil and tinned copper braiding			
Sheath material:	PVC, TM2 acc. to EN 50363-4-1	PVC, TM5 acc. to EN 50363-4-1	PVC, TM2 acc. to EN 50363-4-1	
Sheath colour:	redlilac (RAL 4001)			

Technical data:	PB 636	PB 637	PB 639	PB 635
Item number:	0636-2348	0637-2331	0639-2338	0635-2338
Peak operating voltage:	max. 350 V			
Voltage UL:	---	30 V	---	
Testing voltage core/core: core/screen:	1500 V 1500 V			
Min. bending radius:	12 x d			
Temperature range fixed laying: flexible application:	-30/+70 °C -5/+ 70 °C	**UL:** up to +60°C -30/+70 °C -5/+ 70 °C	-30/+70 °C -5/+ 70 °C	
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2			
Oil resistance:	acc. to internal standard, see chapter N „Technical data“	very good acc. to VDE 0207-5	acc. to internal standard, see chapter N „Technical data“	
Characteristic impedance 3 - 20 MHz:	150 Ω ± 10%			
For fixed installation:	suitable			
For flexible application:	suitable	not suitable		
Weather resistance:	good	very good	good	
Outdoor installation:	suitable	not suitable	suitable	
Direct Burial:	not suitable		suitable	not suitable
UL Style:	---	2560	---	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
06362348	PB 636	2 x 0,34 mm²	8,8	23,8	81
06372331	PB 637	2 x 22 AWG	7,5	23,8	57
06392338	PB 639	2 x 22 AWG	9,2	23,8	94
06352338	PB 635	2 x 22 AWG	8,4	23,8	81

Other dimensions and colours are possible on request.

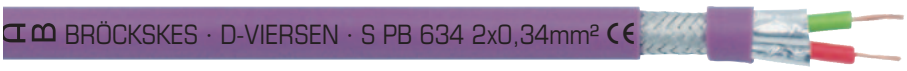
Profibus-DP and **Profibus-FMS** apply the same transmission technology and a uniform bus access log. Therefore, both types can be used simultaneously on one cable.

Profibus-DP Cables acc. to IEC 61158-2

S PB 634 PUR Profibus-DP cable for cable tracks

PB 633 halogen-free, flexible PE Profibus-DP cable

PB 632 flexible PVC Profibus-DP cable



Marking for S PB 634 06342341:
SAB BRÖCKSKES · D-VIERSEN · S PB 634 2x0,34mm²

Construction:	S PB 634	PB 633	PB 632
Dimension:	2 x 0,34 mm², 2 x 0,34 mm² + 3 x 1,00 mm²		
Conductor:	0,34 mm²: bare copper strands acc. to VDE 0812 1,00 mm²: bare copper strands acc. to IEC 60228, VDE 0295, class 6	0,34 mm²: bare copper strands acc. to VDE 0812 1,00 mm²: bare copper strands acc. to IEC 60228, VDE 0295, class 5	
Pairwise wrapping:	non-woven tape/alu foil	alu foil	
Pairwise sheathing:	TPE	---	
Insulation:	0,34 mm²: EN 50290-2-23 + VDE 0819-103 (02YI1) 1,00 mm²: TPE	0,34 mm²: EN 50290-2-23 + VDE 0819-103 (02YI1) 1,00 mm²: PE 2YI1 acc. to EN 50290-2-23	0,34 mm²: EN 50290-2-23 + VDE 0819-103 (02YI1) 1,00 mm²: PVC TI2 acc. to EN 50363-3
Colour code:	red, green (0,34 mm²), brown, light blue and green-yellow earth wire (1,0 mm²)		
Pairwise screening:	tinned copper braiding		
Stranding:	in layers		
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 with rough surface	PE, 2YM1 acc. to EN 50290-2-24	PVC, TM2 acc. to EN 50363-4-1
Sheath colour:	redlilac (RAL 4001)		

Technical data:	S PB 634	PB 633	PB 632
Item number:	0634-2341, 0634-4341	0633-2341, 0633-4341	0632-2341, 0632-4341
Peak operating voltage:	max. 350 V		
Testing voltage core/core: core/screen:	 1500 V 1500 V		
Min. bending radius:	12 x d		
Temperature range fixed laying: flexible application:	 -40/+80 °C -40/+80 °C	 -40/+70 °C -40/+70 °C	 -30/+70 °C -5/+70 °C
Fire performance:	---		flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Corrosiveness of conflagration gases:	---	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases	---
Oil resistance:	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2	---	acc. to internal standard, see chapter N „Technical data“
For fixed installation:	suitable		
For flexible application:	suitable		
Application in cable tracks:	recommended	not recommended	
Weather resistance:	very good	good	medium
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
06342341	S PB 634	2 x 0,34 mm²	7,6	30,9	58
06344341	S PB 634	2 x 0,34 mm² + 3 x 1,00 mm²	10,2	58,8	108
06332341	PB 633	2 x 0,34 mm²	7,5	25,8	50
06334341	PB 633	2 x 0,34 mm² + 3 x 1,00 mm²	10,1	58,8	101
06322341	PB 632	2 x 0,34 mm²	7,5	25,8	56
06324341	PB 632	2 x 0,34 mm² + 3 x 1,00 mm²	10,1	58,8	122

Other dimensions and colours are possible on request.

Profibus-DP and **Profibus-FMS** apply the same transmission technology and a uniform bus access log. Therefore, both types can be used simultaneously on one cable.

Profibus-DP Cables

PB 640 flexible PVC Profibus-DP cable

S PB 640 highly flexible PUR Profibus-DP cable

PB 640 UL flexible PVC Profibus-DP cable with UL recognition

S PB 640 UL highly flexible PUR Profibus-DP cable with UL recognition, CSA approval

with „Fast Connect" construction

SAB Bus

Marking for S PB 640 UL 06402611:
SAB BRÖCKSKES · D-VIERSEN · S PB 640 UL 24 AWG/2c 06402611 AWM Style 21198 80°C 300V CSA AWM I/II A/B 80°C 300V FT2

Construction:	PB 640	PB 640 UL	S PB 640	S PB 640 UL
Dimension:	2 x AWG 24			
Conductor:	bare copper strands AWG 24			
Insulation:	acc. to EN 50290-2-23 + VDE 0819-103 (02YI1)			
Colour code:	red, green			
Stranding:	in layers			
Inner sheath (nature):	PVC		SABIX®	
Screen:	alu foil und tinned copper braiding			
Sheath material:	PVC, TM2 acc. to EN 50363-4-1		PUR, TMPU acc. to EN 50363-10-2 with matt surface	
Sheath colour:	redlilac (RAL 4001)			

Technical data:	PB 640	PB 640 UL	S PB 640	S PB 640 UL
Item number:	0640-2421	0640-2631	0640-2601	0640-2611
Peak operating voltage:	max. 350 V			
Voltage UL:	---	300 V	---	300 V
Voltage CSA:	---			300 V
Testing voltage core/core: core/screen:	 1500 V 1500 V	 2000 V 2000 V	 1500 V 1500 V	 2000 V 2000 V
Min. bending radius fixed laying: flexible application: continuously flexible:	12 x d		 5 x d 10 x d 15 x d	
Temperature range fixed laying: flexible application:	 -30/+70 °C -5/+70 °C	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	 -40/+80 °C -30/+80 °C	**UL/CSA:** up to +80 °C -40/+80 °C -30/+80 °C
Halogen-free:	---		acc. to IEC 60754-1 + VDE 0482-754-1	
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332 + VDE 0482-332-1-2			
Oil resistance:	acc. to internal standard, see chapter N „Technical data"		very good EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance 3 - 20 MHz:	150 Ω ± 10%			
For fixed installation:	suitable			
For flexible application:	suitable			
Application in cable tracks:	not recommended		recommended	
UL Style:	---	2464	---	21198
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data"			

Outstanding features:

- short assembling time
- avoidance of connection errors

item no.	type	dimension	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
06402421	PB 640	2 x 24 AWG	8,0 ± 0,4	31,2	63
06402631	PB 640 UL	2 x 24 AWG	8,0 ± 0,4	31,2	62
06402601	S PB 640	2 x 24 AWG	8,0 ± 0,4	31,2	57
06402611	S PB 640 UL	2 x 24 AWG	8,0 ± 0,4	31,2	62

Other dimensions and colours are possible on request.

Profibus-DP and **Profibus-FMS** apply the same transmission technology and a uniform bus access log. Therefore, both types can be used simultaneously on one cable.

Profibus Cables acc. to IEC 61158-2

PB 642 PVC Profibus cable

S PB 644 PUR Profibus cable for cable tracks

Marking for S PB 644 06442251:
SAB BRÖCKSKES · D-VIERSEN · S PB 644 2x0,25mm²

Construction:	PB 642	S PB 644
Dimension:	2 x 0,22 mm², 2 x 2 x 0,22 mm², 2 x 0,25 mm², 2 x 2 x 0,25 mm², 2 x 0,82 mm²	2 x 0,25 mm², 2 x 2 x 0,25 mm²
Conductor:	bare copper strands with reference to VDE 0812	bare copper strands, extra fine wires
Insulation:	PE, 2YI1 acc. to EN 50290-2-23 + VDE 0819-103	
Colour code:	red, green (PA) DIN 47100 (type B)	
Stranding:	in layers	
Wrapping:	PETP foil, non-woven tape	
Screen:	tinned copper braiding	
Sheath material:	PVC, TM2 acc. to EN 50363-4-1	PUR, TMPU acc. to EN 50363-10-2 with rough surface
Sheath colour:	see table below	redlilac (RAL 4001)

Technical data:	PB 642	S PB 644
Item number:	0642-2221, 0642-4221, 0642-2251, 0642-4251, 0642-2767, 0642-2768	0644-2251, 0644-4251
Peak operating voltage:	max. 350 V	
Testing voltage core/core: core/screen:	 1500 V 1200 V	
Min. bending radius continuously flexible:	7,5 x d	7,5 x d 12 x d
Temperature range fixed laying: flexible application:	 -30/+70 °C -5/+70 °C	 -40/+70 °C -40/+70 °C
Oil resistance:	acc. to internal standard, see chapter N „Technical data“	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance type B: PA:	 at > 100 kHz 100 Ω - 130 Ω 100 Ω ± 20%	
For fixed installation:	suitable	
For flexible application:	suitable	
Application in cable tracks:	not recommended	recommended
Weather resistance:	medium	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

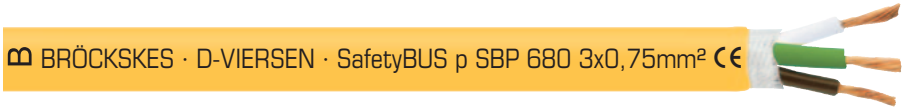
item no.	type	sheath colour		dimension	outer-ø ± 5%	copper figure kg/km	cable weight ≈kg/km
06422221	PB 642	redlilac	(RAL 4001)	2 x 0,22 mm²	4,4	14,7	26
06424221	PB 642	redlilac	(RAL 4001)	2 x 2 x 0,22 mm²	6,2	22,4	45
06422251	PB 642	redlilac	(RAL 4001)	2 x 0,25 mm²	4,9	15,4	30
06424251	PB 642	redlilac	(RAL 4001)	2 x 2 x 0,25 mm²	6,7	26,5	52
06422767	PB 642	blau	(RAL 5015)	2 x 0,82 mm²	7,3	38,1	68
06422768	PB 642	black	(RAL 9005)	2 x 0,82 mm²	7,3	38,1	68
06442251	S PB 644	redlilac	(RAL 4001)	2 x 0,25 mm²	5,2	15,9	33
06444251	S PB 644	redlilac	(RAL 4001)	2 x 2 x 0,25 mm²	6,8	26,4	57

Other dimensions and colours are possible on request.

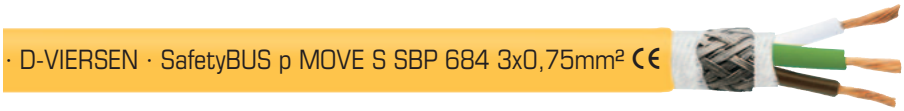
SafetyBUS p Cables

SBP 680 SafetyBUS p cable for fixed installation

S SBP 684 Move SafetyBUS p cable for flexible applications



Marking for SBP 680 06803754:
SAB BRÖCKSKES · D-VIERSEN · SafetyBUS p SBP 680 3x0,75mm² CE *and current meter marking*



Marking for S SBP 684 Move 06843754:
SAB BRÖCKSKES · D-VIERSEN · SafetyBUS p MOVE S SBP 684 3x0,75mm² CE *and current meter marking*

Construction:	SBP 680	S SBP 684 Move
Dimension:	3 x 0,75 mm²	
Conductor:	bare copper strands acc. to VDE class 5	bare copper strands acc. to VDE class 6
Insulation:	acc. to EN 50290-2-23 + VDE 0819-103 (02YI1)	
Colour code:	acc. to DIN 47100	
Wrapping:	non-woven tape	
Screen:	---	tinned copper braiding
Wrapping:	non-woven tape	
Sheath material:	PUR	
Sheath colour:	signal yellow (RAL 1003)	

Technical data:	SBP 680	S SBP 684 Move
Item number:	0680-3754	0684-3754
Peak operating voltage:	max. 350 V	
Testing voltage core/core: core/screen:	 1500 V 1200 V	
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d	 5 x d 10 x d 12 x d
Temperature range:	-40/+80 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	
Oil resistance:	very good - TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance at 1 MHz:	100 - 120 Ω	
Application in cable tracks:	not recommended	recommended
Continuosly flexible application:	---	very good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

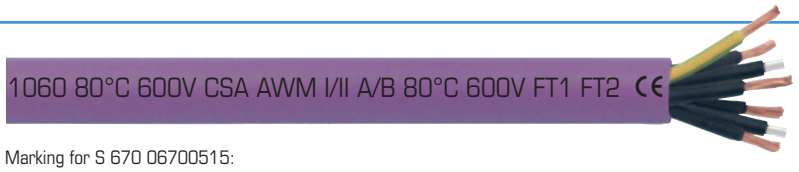
item no.	type	dimension	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
06803754	SBP 680	3 x 0,75 mm²	7,8 ± 0,4	43,2	74
06843754	S SBP 684 Move	3 x 0,75 mm²	7,8 ± 0,4	43,2	74

Other dimensions and colours are possible on request.

Hybrid Fieldbus Cables

S 670 PUR hybrid field bus control cable with two optical waveguides, suitable for cable tracks

S 671 PVC hybrid field bus control cable with two optical waveguides, suitable for cable tracks



Marking for S 670 06700515:
SAB BRÖCKSKES · D-VIERSEN · S 670 5x1,5mm²+2xPOF
AWM Style 21060 80°C 600V CSA AWM I/II A/B 80°C 600V FT1 FT2

Marking for S 671 06710515:
SAB BRÖCKSKES · D-VIERSEN · S 671 5x1,5mm²+2xPOF
AWM Style 21047 75°C 600V CSA AWM I/II A/B 75°C 600V FT1 FT2

optical waveguide + copper conductors

Construction:	S 670	S 671
Dimension:	4 x 1,50 mm², 5 x 1,50 mm² 4 x 2,50 mm², 5 x 2,50 mm²	2 x 1,00 mm², 3 x 1,00 mm² 2 x 1,50 mm², 5 x 1,50 mm²
Conductor:	bare copper strands, extra fine wires	
Insulation:	PVC, TI2 acc. to EN 50363-3	
Colour code:	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores	
Optical waveguide:	POF (polymeric optical fibres)	
Colour code POF:	black	
Stranding:	cores and POF in specially adjusted layering	
Wrapping:	non-woven tape	
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with matt surface	PVC, TM2 acc. to EN 50363-4-1 + VDE 0207-363-4-1, reinforced wall-thickness
Sheath colour:	redlilac (RAL 4001)	silver grey (RAL 7001)

Technical data:	S 670	S 671
Item number:	0670-0415, 0670-0515, 0670-0425, 0670-0525	0671-0210, 0671-0310, 0671-0215, 0671-0515
Nominal voltage:	Uo/U 300/500 V	
Voltage UL/CSA:	600 V	
Testing voltage:	core/core 3000 V	
Min. bending radius fixed laying: flexible application: continuously flexible:	4 x d 7,5 x d 10 x d	
Temperature range fixed laying: flexible application:	**UL/CSA:** up to +80 °C -40/+70 °C +5/+70 °C	**UL/CSA:** up to +75 °C -40/+70 °C +5/+70 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	
Oil resistance:	very good acc. to EN 50363-10-2 + VDE 0207-363-10-2	acc. to internal standard, see chapter N „Technical data“
Attenuation POF measured at 650 nm:	max. 10 dBm / 20 m	
Diameter:	**POF:** Centre 900/1000 µm - outside 2,2 mm	
UL Style:	21060	21047
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

S 670

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
06700415	4 x 1,50	0,16	10,0	57,6	132
06700515	5 x 1,50	0,16	10,6	72,0	156
06700425	4 x 2,50	0,16	12,2	96,0	197
06700525	5 x 2,50	0,16	13,1	120,0	239

each + 2 x POF (polymeric optical fibres)

Other dimensions are possible on request.

S 671

item no.	no. of cores x cross section n x mm²	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
06710210	2 x 1,00	0,16	7,2	19,2	64
06710310	3 x 1,00	0,16	8,0	28,8	80
06710215	2 x 1,50	0,16	7,7	28,8	73
06710515	5 x 1,50	0,16	10,7	72,0	165

each + 2 x POF (polymeric optical fibres)

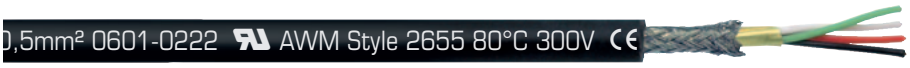
Other dimensions are possible on request.

USB 2.0 cables

USB 2.0 flexible USB 2.0 cable
USB 2.0 UL flexible USB 2.0 cable with UL recognition
USB 2.0 FRNC halogen-free flexible USB 2.0 cable

transmission length up to 10 m

SAB Bus



Marking for USB 2.0 UL 06010222:
SAB BRÖCKSKES · D-VIERSEN · USB 2.0 Leitung · (2x0,22mm²)ST+2x0,5mm² 0601-0222 AWM Style 2655 80°C 300V

Construction:	USB 2.0 *flexible*	USB 2.0 UL *flexible*	USB 2.0 FRNC *flexible*
Dimension:	(2 x 0,22 mm²) ST + 2 x 0,5 mm²		
Conductor:	bare copper strands (0,50 mm²), silver-plated strands (0,22 mm²)		
Insulation:	SABIX®		
Colour code:	black, red (0,50 mm²), white, green (0,22 mm²)		
Stranding:	2 x 0,22 mm² wrapped with alu foil, together with 0,5 mm²		
Wrapping:	non-woven tape		
Screen:	tinned copper braiding		
Sheath material:	PVC		SABIX®
Sheath colour:	black (RAL 9005)		

Technical data:	USB 2.0 *flexible*	USB 2.0 UL *flexible*	USB 2.0 FRNC *flexible*
Item number:	0601-0122	0601-0222	0601-9001
Peak operating voltage:	max. 350 V		
Voltage UL:	---	300 V	---
Testing voltage core/core: core/screen:	 600 V 600 V	 2000 V 2000 V	 1500 V 1200 V
Min. bending radius fixed laying: flexible application:	 5 x d 10 x d		
Temperature range VDE fixed laying: flexible application:	 -30/+70 °C -5/+70 °C	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	 -40/+90 °C -30/+90 °C
Halogen-free:	---		acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance:	---		flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Oil resistance:	acc. to internal standard, see chapter N „Technical data“		---
UL Style:	---	2655	---
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km
06010122	USB 2.0	(2 x 0,22 mm²)ST + 2 x 0,50 mm²	6,8	34,0	60
06010222	USB 2.0 UL	(2 x 0,22 mm²)ST + 2 x 0,50 mm²	7,0	34,0	64
06019001	USB 2.0 FRNC	(2 x 0,22 mm²)ST + 2 x 0,50 mm²	6,8	34,0	62

Other dimensions and colours are possible on request.

Also possible as harnessed cable with USB type A and USB type B plug!

CABLE ASSEMBLY POSSIBLE

USB 2.0 cables

USB 2.0 S USB 2.0 cable, continuously flexible, suitable for cable tracks
USB 2.0 S UL/CSA USB 2.0 cable with UL recognition, CSA approval, continuously flexible, suitable for cable tracks
USB 2.0 RT UL/CSA USB 2.0 cable with UL recognition, CSA approval, continuously flexible, suitable for robots

transmission length up to 10 m

SAB Bus

Marking for USB 2.0 S UL/CSA 06011122:
SAB BRÖCKSKES · D-VIERSEN · USB 2.0 Leitung · (2x0,22mm²)ST+2x0,5mm² 0601-1122 AWM Style 21198 80°C 300V CSA AWM I/II A/B 80°C 300V FT2

Construction:	USB 2.0 S *suitable for cable tracks*	USB 2.0 S UL/CSA *suitable for cable tracks*	USB 2.0 RT UL/CSA *suitable for robots*
Dimension:	(2 x 0,22 mm²) ST + 2 x 0,5 mm²		
Conductor:	bare copper strands (0,50 mm²), silver-plated strands (0,22 mm²)		
Insulation:	SABIX®		
Colour code:	black, red (0,50 mm²), white, green (0,22 mm²)		
Stranding:	2 x 0,22 mm² wrapped with alu foil, together with 0,5 mm²		
Wrapping:	non-woven tape		PTFE foil
Screen:	tinned copper braiding		wrapping with tinned copper round wires
Wrapping:	non-woven tape		
Sheath material:	PUR		
Sheath colour:	black (RAL 9005)		

Technical data:	USB 2.0 S *suitable for cable tracks*	USB 2.0 S UL/CSA *suitable for cable tracks*	USB 2.0 RT UL/CSA *suitable for robots*
Item number:	0601-1022	0601-1122	0601-2022
Peak operating voltage:	max. 350 V		
Voltage UL/CSA:	---	300 V	
Testing voltage core/core: core/screen:	 600 V 600 V	 2000 V 2000 V	
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 6 x d 7,5 x d		 5 x d 7,5 x d 10 x d
Torsion angle:	---		up to ±180°/m
Temperature range VDE fixed laying: flexible application:	 -50/+90 °C -40/+90 °C	**UL/CSA:** up to +80 °C -50/+90 °C -40/+90 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1		---
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2		
UL Style:	---	21198	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km
06011022	USB 2.0 S	(2 x 0,22 mm²)ST + 2 x 0,50 mm²	7,0	34,1	59
06011122	USB 2.0 S UL/CSA	(2 x 0,22 mm²)ST + 2 x 0,50 mm²	7,2	34,1	66
06012022	USB 2.0 RT UL/CSA	(2 x 0,22 mm²)ST + 2 x 0,50 mm²	7,0	34,3	64

Other dimensions and colours are possible on request.

Also possible as harnessed cable with USB type A and USB type B plug!

CABLE ASSEMBLY POSSIBLE

SABIX® USB 2.0 R flex

halogen-free continuously flexible SABIX® USB 2.0 Rail cable

EN 45545-2 · UN/ECE R118 · SAB Rail

RoHS

D-VIERSEN · SABIX USB 2.0 R flex 4x28AWG 0601-9013

Marking for SABIX® USB 2.0 R flex 06019013:
SAB BRÖCKSKES · D-VIERSEN · SABIX USB 2.0 R flex 4x28AWG 0601-9013

Construction:

Conductor:	bare copper strands, fine wires
Insulation:	SABIX®
Colour code:	white, green, red, black
Screen:	alu foil and tinned copper braiding, Drain AWG 30 of tinned copper under the braid
Sheath material:	SABIX®
Sheath colour:	black (RAL 9005)

Outstanding features:

- **halogen-free**
- **continuously flexible**
- **no flame propagation**
- **flame retardant and self-extinguishing**
- **good oil and fuel resistance**
- **fulfils fire protection requirements R15 (EL1A) and R16 (EL1B) acc. to EN 45545-2 for hazard levels HL1-3**
- **flame retardant acc. to UN/ECE R118**

Technical data:

Peak operating voltage:	max. 30 V
Testing voltage:	core/core 600 V core/screen 600 V
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	 -50/+90 °C -50/+90 °C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0,5% acc. to IEC 60754-1. pH-value is > 4,3 acc. to IEC 60754-2. Conductivity is < 10,0 µS/mm acc. to IEC 60754-2. Fluoric content < 0,1% acc. to IEC 60684-2.
Fire performance:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2. Flame retardant acc. to ISO 6722 (UN/ECE R118)
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Oil and fuel resistance:	acc. to EN 50264-1 + VDE 0260-264-1
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

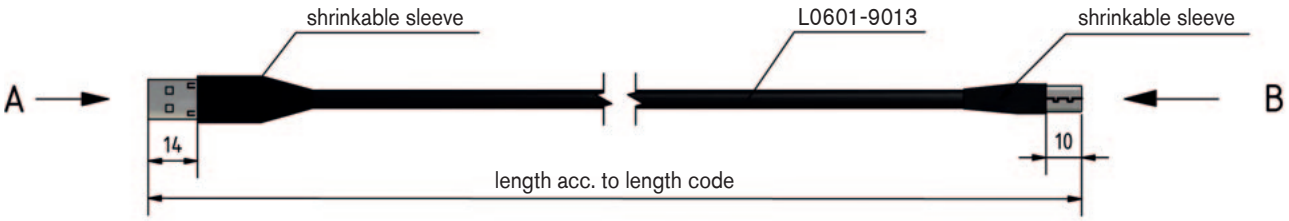
Art.-Nr.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C max. Ω/km
06019013	SABIX® USB 2.0 R flex	4 x 28/7 AWG	5,2	14,3	41	223,8

Other dimensions and colours are possible on request.

Also possible as harnessed cable with USB type A and USB type B plug!

CABLE ASSEMBLY POSSIBLE

USB 2.0 cable with USB type A and USB type B plug

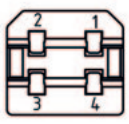


view A (2:1)

Pin configuration

USB A	colour code	USB B
1	red	1
2	white	2
3	green	3
4	black	4
housing	screen	housing

view B (3:1)



view soldering side

SPECIAL CABLES SAB BRÖCKSKES

USB 3.0 cables

USB 3.0 S USB 3.0 cable with UL recognition, continuously flexible, suitable for cable tracks
USB 3.0 RT USB 3.0 cable with UL recognition, continuously flexible, suitable for robots
USB 3.0 USB 3.0 cable with UL recognition, flexible

transmission length up to 3 m

SAB Bus

Marking for USB 3.0 S 06042098:
SAB BRÖCKSKES · D-VIERSEN · USB 3.0 S 3x(2x28AWG)ST+2x26AWG 0604-2098
AWM Style 20549 80° 300V

Construction:	USB 3.0 S *suitable for cable tracks*	USB 3.0 RT *suitable for robots*	USB 3.0 *flexible*
Dimension:	3 x (2 x 28 AWG)ST + 2 x 26 AWG	3 x (2 x 28 AWG)ST + 2 x 26 AWG, 3 x (2 x 26 AWG)ST + 2 x 24 AWG	2 x (2 x 28 AWG)ST + 2 x 28 AWG + 2 x 26 AWG
Conductor:	silver-plated strands and tinned copper strands		
Insulation:	special polymer		
Colour code:	yellow, blue + orange, violet (USB 3.0), green, white (USB 2.0), red, black (power supply)		
Stranding:	twisted pairs and datapairs screened, all elements together		USB 3.0 twisted and screened pairs, USB 2.0 twisted pairs, all elements together
Wrapping:	non-woven tape	netting tape + non-woven tape	non-woven tape
Screen:	tinned copper braiding		
Wrapping:	non-woven tape		
Sheath material:	PUR		PVC
Sheath colour:	black (RAL 9005)		

Technical data:	USB 3.0 S *suitable for cable tracks*	USB 3.0 RT *suitable for robots*	USB 3.0 *flexible*
Item number:	0604-2098	0604-3098, 0604-3096	0603-0078
Peak operating voltage:	max. 350 V		
Voltage UL:	300 V		
Testing voltage core/core: core/screen:	 2000 V 2000 V		
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d 12 x d	 5 x d 10 x d 15 x d	 5 x d 10 x d
Torsion angle:	---	up to ±360°/m	---
Temperature range VDE fixed laying: flexible application:	**UL:** up to +80 °C -50/+90 °C -40/+90 °C		**UL:** up to +80 °C -30/+70 °C -5/+70 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2		
Oil resistance:	very good, TMPU acc. to EN 50363-10-2		very good - TM5 acc. to EN 50363-4-1
UL Style:	20549		21083
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km	ohmic resistance at 20°C max.Ω/km 28 AWG	26 AWG	24 AWG
06042098	USB 3.0 S	3 x (2 x 28 AWG)ST + 2 x 26 AWG	6,1	26,5	45	223	140	–
06043098	USB 3.0 RT	3 x (2 x 28 AWG)ST + 2 x 26 AWG	6,4	28,1	50	223	140	–
06043096	USB 3.0 RT	3 x (2 x 26 AWG)ST + 2 x 24 AWG	8,0	38,9	73	–	130	83,3
06030078	USB 3.0	2 x (2 x 28 AWG)ST + 2 x 28 AWG + 2 x 26 AWG	6,1	25,5	48	223	140	–

Other dimensions and colours are possible on request.

For transmission lengths more than 3 m, please contact us!

Also possible as harnessed cable with USB type A and USB type B plug!

CABLE ASSEMBLY POSSIBLE

transmission length up to 3 m

SAB MEDLine

USB 3.0 M

USB 3.0 cable for the application in medical technology, flexible

CE EAC RoHS

Marking for USB 3.0 M 06061018:
SAB BRÖCKSKES · D-VIERSEN · USB 3.0 M 2x(2x28AWG)ST+2x28AWG+2x26AWG 0606-1018 CE

Construction:

Conductor:	28 AWG: silver-plated strands, fine wires 26 AWG: tinned copper strands, fine wires
Insulation:	FEP
Colour code:	28 AWG: yellow, blue + orange, violet (USB 3.0), green, white (USB 2.0), 26 AWG: red, black (power supply)
Stranding:	USB 3.0 twisted and screened pairs, USB 2.0 twisted pairs, all elements together
Drain wire:	bare copper strands, fine wires
Screen:	alu foil
Stranding:	all USB 3.0 elements together
Wrapping:	foil
Screen:	tinned copper braiding
Sheath material:	SABmed S
Sheath colour:	grey (RAL 7000)

Technical data:

Peak operating voltage:	max. 50 V
Testing voltage:	core/core 600 V core/screen 600 V
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	 -40/+180 °C -25/+180 °C
Impedance of data pairs:	nom. 90Ω
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

Outstanding features:

- **biocompatible sheath material**
- **biological harmlessness acc. to EN ISO 10993-1, cytotoxicity acc. to EN ISO 10993-5**
- **high temperature resistant**
- **high notch and tear resistance**
- **very good flexibility**
- **surface not adhesive**

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km	ohmic resistance at 20°C max.Ω/km 28 AWG	26 AWG
06061018	USB 3.0 M	2 x (2 x 28 AWG)ST + 2 x 28 AWG + 2 x 26 AWG	5,6	25,4	48	223	140

Other dimensions and colours are possible on request.

For transmission lengths more than 3 m, please contact us!

Also possible as harnessed cable with USB type A and USB type B plug!

CABLE ASSEMBLY POSSIBLE

Industrial Ethernet Cables Profinet

PN 662 Profinet type B, for flexible applications
PN 663 Profinet type B, for flexible applications with UL recognition

S PN 668 Profinet type C, continuously flexible
S PN 669 Profinet type C, continuously flexible with UL recognition

Marking for S PN 669 06692202:
SAB BRÖCKSKES · D-VIERSEN · S PN 669 Profinet CAT 5 Typ C 2x2x22AWG AWM Style 21198 80° 300V

Construction:	PN 662 Profinet type B *flexible*	S PN 668 Profinet type C *continuously flexible*	PN 663 Profinet type B *flexible*	S PN 669 Profinet type C *continuously flexible*
Dimension:	2 x 2 x 22 AWG			
Conductor:	tinned copper strands, fine wires with reference to VDE 0812	tinned copper strands, extra fine wires	tinned copper strands, fine wires with reference to VDE 0812	tinned copper strands, extra fine wires
Insulation:	PE, L/MD acc. to EN 50290-2-23	PE	PE, L/MD acc. to EN 50290-2-23	PE
Colour code:	blue, yellow, white, orange			
Stranding:	in layers			
Wrapping:	PETP foil			
Inner sheath:	thermoplastic material			
Screen:	alu foil and tinned copper braiding			
Wrapping:	---	non-woven tape	---	non-woven tape
Sheath material:	PVC	PUR	PVC	PUR
Sheath colour:	green (similar RAL 6018)			

Technical data:	PN 662 Profinet type B *flexible*	S PN 668 Profinet type C *continuously flexible*	PN 663 Profinet type B *flexible*	S PN 669 Profinet type C *continuously flexible*
Item number:	0662-2202	0668-2202	0663-2202	0669-2202
Peak operating voltage:	max. 350 V			
Voltage UL:	---		300 V	
Testing voltage core/core: core/screen:	1500 V 1200 V		2000 V 2000 V	
Min. bending radius fixed laying: flexible application: continuously flexible:	5 x d 10 x d	5 x d 10 x d 15 x d	5 x d 10 x d	5 x d 10 x d 15 x d
Temperature range VDE fixed laying: flexible application:	-30/+70 °C -5/+70 °C	-40/+70 °C -30/+70 °C	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	**UL:** up to +80 °C -30/+70 °C -20/+70 °C
Halogen-free:	---	acc. to IEC 60754-1 + VDE 0482-754-1	---	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance:	acc. to internal standard, see chapter N „Technical data“	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	acc. to internal standard, see chapter N „Technical data“	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance:	100Ω ± 5Ω, fulfils the electrical and transmission requirements with high frequency acc. to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173-1)			
UL Style:	---		20601	21198
Application:	suitable for EtherCAT and EtherNET/IP applications			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06622202	PN 662	2 x 2 x 22 AWG	1,55	6,1	33,9	57	58,0
06682202	S PN 668	2 x 2 x 22 AWG	1,55	6,4	36,7	58	58,0
06632202	PN 663	2 x 2 x 22 AWG	1,55	6,5	36,2	66	58,0
06692202	S PN 669	2 x 2 x 22 AWG	1,55	6,9	36,7	69	58,0

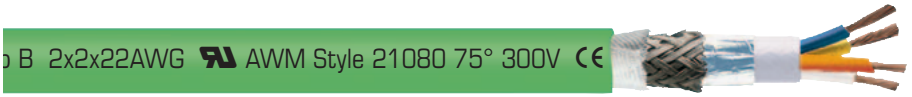
Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!
CABLE ASSEMBLY POSSIBLE

Industrial Ethernet Cables Profinet

PN 654 Profinet type A, for fixed installation
PN 654 UL Profinet type A, for fixed installation UL recognition

PN 660 Profinet type B, for flexible applications
PN 661 Profinet type B, for flexible applications UL recognition



Marking for PN 661 06612202:
SAB BRÖCKSKES · D-VIERSEN · S PN 661 Profinet CAT 5 Typ B 2x2x22AWG AWM Style 21080 80° 300V

with „Fast Connect" construction

Construction:	PN 654 Profinet type A *fixed laying*	PN 654 UL Profinet type A *fixed laying*	PN 660 Profinet type B *flexible*	PN 661 Profinet type B *flexible*
Dimension:	2 x 2 x 22 AWG			
Conductor:	bare copper wire		bare copper strands, fine wires with reference to VDE 0812	
Insulation:	PE, L/MD acc. to EN 50290-2-23	SABIX®	PE, L/MD acc. to EN 50290-2-23	
Colour code:	blue, yellow, white, orange			
Stranding:	star quad			
Wrapping:	PETP foil			
Inner sheath:	---	PVC	thermoplastic material	
Screen:	tinned copper braiding	alu foil and tinned copper braiding		
Wrapping:	---		non-woven tape	
Sheath material:	PVC		SABIX®	
Sheath colour:	green (similar RAL 6018)			

Technical data:	PN 654 Profinet type A *fixed laying*	PN 654 UL Profinet type A *fixed laying*	PN 660 Profinet type B *flexible*	PN 661 Profinet type B *flexible*
Item number:	0654-2202	0654-9002	0660-2202	0661-2202
Peak operating voltage:	max. 350 V			
Voltage UL:	---	300 V	---	300 V
Testing voltage core/core: core/screen:	 1500 V 1200 V	 2000 V 2000 V	 1500 V 1200 V	 2000 V 2000 V
Min. bending radius fixed laying: flexible application:	5 x d		5 x d 12 x d	
Temperature range VDE fixed laying: flexible application:	 -30/+70 °C -5/+70 °C	**UL:** up to +80 °C -30/+70 °C -5/+70 °C	 -30/+70 °C -20/+70 °C	**UL:** up to +75 °C -40/+70 °C -30/+70 °C
Halogen-free:	---		acc. to IEC 60754-1 + VDE 0482-754-1	
Oil resistance:	acc. to internal standard, see chapter N „Technical data"		---	
Characteristic impedance:	100Ω ± 5Ω, fulfils the electrical and transmission requirements with high frequency acc. to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173-1)			
UL Style:	---	2464	---	21080
Application:	suitable for EtherCAT and EtherNET/IP applications			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data"			

item no.	type	dimension	max. core-ø mm	outer-ø mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06542202	PN 654	2 x 2 x 22 AWG	1,55	5,3 ± 5%	28,0	43	54,1
06549002	PN 654 UL	2 x 2 x 22 AWG	1,55	6,5 ± 0,2 mm	32,2	66	54,1
06602202	PN 660	2 x 2 x 22 AWG	1,55	6,6 ± 5%	36,2	67	55,4
06612202	PN 661	2 x 2 x 22 AWG	1,55	6,6 ± 5%	36,2	70	55,4

Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!
CABLE ASSEMBLY POSSIBLE

with „Fast Connect" construction

SAB Bus

S PN 667

Profinet type C, continuously flexible with UL recognition, CSA approval

198 80°C 300V CSA AWM I/II A/B 80°C 300V FT2 CE

Marking for S PN 667 06672202:
SAB BRÖCKSKES · D-VIERSEN · S PN 667 Industrial Ethernet FC Cat 5 Typ C 2x2x22AWG AWM Style 21198 80°C 300V CSA AWM I/II A/B 80°C 300V FT2 CE

Construction:

Conductor:	tinned copper strands, 7 wires
Insulation:	special polymer
Colour code:	blue, yellow, white, orange
Stranding:	in layers
Wrapping:	PETP foil
Inner sheath:	thermoplastic material
Screen:	alu foil and tinned copper braiding
Wrapping:	non-woven tape
Sheath material:	PUR
Sheath colour:	green (similar RAL 6018)

Technical data:

Peak operating voltage:	max. 350 V
Voltage UL/CSA:	300 V
Testing voltage:	core/core 2000 V core/screen 2000 V
Min. bending radius *fixed laying:* *flexible application:* *continuously flexible:*	 5 x d 10 x d 15 x d
Temperature range *fixed laying:* *flexible application:*	**UL/CSA:** up to +80 °C -40/+70 °C -40/+70 °C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance:	100Ω ± 5Ω, fulfils the electrical and transmission requirements with high frequency acc. to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173)
UL Style:	21198
Application:	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data"

item no.	type	dimension	max. core-ø mm	outer-ø mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06672202	S PN 667	2 x 2 x 22 AWG	1,55	6,5 ± 0,2	33,8	60	58,8

Other dimensions and colours are possible on request.

For extreme bending stress - conductor construction 19 wires:

item no.	type	dimension	max. core-ø mm	outer-ø mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06679001	S PN 667	2 x 2 x 22 AWG	1,55	6,5 ± 0,2	33,8	58	58,8

Other dimensions and colours are possible on request.

short assembling time by „Fast Connect" construction (7 wires)

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

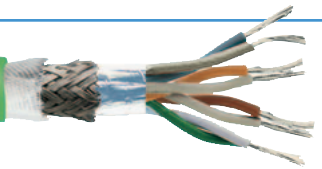
Industrial Ethernet Cables CAT 5

PN 678 Ethernet cable type A, for fixed installation

PN 679 Ethernet cable type B, for flexible applications

S PN 681 Ethernet cable type C, continuously flexible

D-VIERSEN · S PN 681 CAT 5 Typ C 4x2x26AWG CE



Marking for S PN 681 06812604:
SAB BRÖCKSKES · D-VIERSEN · S PN 681 CAT 5 Typ C 4x2x26AWG CE

Construction:	PN 678 Ethernet cable type A *fixed laying*	PN 679 Ethernet cable type B *flexible*	S PN 681 Ethernet cable type C *continuously flexible*
Dimension:	4 x 2 x 26 AWG		
Conductor:	tinned copper wire	tinned copper strands, fine wires with reference to VDE 0812	tinned copper strands, extra fine wires
Insulation:	PE, L/MD acc. to EN 50290-2-23		SABIX®
Colour code:	white cores with numbers 1 - 4 + (blue, orange, green, brown)		
Stranding:	twisted to pairs and pairs together		
Wrapping:	---	PETP foil	non-woven tape
Screen:	alu foil and tinned copper braiding		
Wrapping:	---	non-woven tape	
Sheath material:	PVC	PUR	
Sheath colour:	green (similar RAL 6018)		

Technical data:	PN 678 Ethernet cable type A *fixed laying*	PN 679 Ethernet cable type B *flexible*	S PN 681 Ethernet cable type C *continuously flexible*
Item number:	0678-2604	0679-2604	0681-2604
Peak operating voltage:	max. 350 V		
Testing voltage core/core: core/screen:	 1500 V 1200 V		
Min. bending radius fixed laying: flexible application: continuously flexible:	5 x d	5 x d 10 x d	5 x d 10 x d 12 x d
Temperature range VDE fixed laying: flexible application:	 -30/+70 °C -5/+70 °C	 -40/+70 °C -40/+70 °C	 -40/+90 °C -30/+90 °C
Halogen-free:	---	acc. to IEC 60754-1 + VDE 0482-754-1	
Oil resistance:	acc. to internal standard, see chapter N „Technical data“	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173-1)		
Application:	suitable for EtherCAT and EtherNET/IP applications		
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06782604	PN 678	4 x 2 x 26 AWG	1,10	6,2	33,0	48	150
06792604	PN 679	4 x 2 x 26 AWG	1,05	6,9	35,0	54	148
06812604	S PN 681	4 x 2 x 26 AWG	1,10	7,2	35,5	58	145

Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

DR PN 689 P Highflex

reeling Profinet cable / CAT 5 cable

Marking for DR PN 689 P Highflex 06892202:
SAB BRÖCKSKES · D-VIERSEN · DR PN 689 P Highflex 2x2x22AWG CE

Construction:	DR PN 689 P Highflex *reeling Profinet cable*	DR PN 689 P Highflex *reeling CAT 5 cable*
Dimension:	2 x 2 x 22 AWG	4 x 2 x 26 AWG
Conductor:	tinned copper strands, fine wires	
Insulation:	SABIX®	
Colour code:	blue, yellow, white, orange	blue, orange, green, brown + 4 white cores with consecutive numbers
Stranding:	in layers	twisted to pairs and pairs together
Wrapping:	PETP foil	
Inner sheath:	SABIX®	
Screen:	alu foil and tinned copper braiding	
Wrapping:	non-woven tape	
Sheath material:	PUR / supporting braid / PUR	
Sheath colour:	green (similar RAL 6018)	black (similar RAL 9005)

Technical data:	DR PN 689 P Highflex *reeling Profinet cable*	DR PN 689 P Highflex *reeling CAT 5 cable*
Item number:	0689-2202	0689-9001
Peak operating voltage VDE:	max. 350 V	
Testing voltage core/core: core/screen:	 1500 V 1200 V	
Min. bending radius	for laying and installation (fixed laying): 5 x d for repeated winding action (flexible application): 10 x d guided on pulleys (flexible application): 12 x d	
Temperature range VDE fixed laying: flexible application:	 -40/+90 °C -30/+90 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173-1)	
Application:	suitable for EtherCAT and EtherNET/IP applications	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

item no.	type	dimension	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km	tensile strength max. N	characteristic impedance
06892202	DR PN 689 P Highflex	2 x 2 x 22 AWG	8,2	36,2	83	58,8	200	100Ω
06899001	DR PN 689 P Highflex	4 x 2 x 26 AWG	8,7	34,3	85	139	200	100Ω

Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

RT PN 668 PUR Profinet cable, suitable for robots

PN 668 PUR Profinet cable type R, suitable for robots with UL recognition

2x2x22AWG 0668-9039 AWM Style 21198 80° 300V

Marking for PN 668 06689039:
SAB BRÖCKSKES · D-VIERSEN · PN 668 Typ R 2x2x22AWG 0668-9039 AWM Style 21198 80° 300V

Construction:	RT PN 668 Profinet *suitable for robots*	RT PN 668 Profinet type R *suitable for robots*
Dimension:	2 x 2 x 22 AWG	
Conductor:	tinned copper strands, extra fine wires	
Insulation:	special polymer	
Colour code:	blue, yellow, white, orange	
Stranding:	star quad	cores twisted to pairs and pairs together
Wrapping:	tape	non-woven tape
Screen:	alu foil and tinned copper braiding	tinned copper braiding
Wrapping:	non-woven tape	special non-woven tape
Sheath material:	PUR	
Sheath colour:	green (similar RAL 6018)	

Technical data:	RT PN 668 Profinet *suitable for robots*	RT PN 668 Profinet type R *suitable for robots*
Item number:	0668-9001	0668-9039
Peak operating voltage:	max. 350 V	max. 30 V
Voltage UL:	---	300 V
Testing voltage core/core: core/screen:	 1500 V 1200 V	 2000 V 2000 V
Min. bending radius fixed laying: flexible application:	 10 x d	 3 x d 10 x d
Temperature range fixed laying: flexible application:	 -40/+70 °C -30/+70 °C	 **UL:** up to +80 °C -40/+70 °C -30/+70 °C
Torsion angle:	up to ±360°/m	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173-1)	
UL Style:	---	21198
Application:	suitable for EtherCAT and EtherNET/IP applications	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

item no.	type	dimension	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06689001	RT PN 668	2 x 2 x 22 AWG	7,0	36,3	62	58,8
06689039	PN 668	2 x 2 x 22 AWG	7,8	36,7	68	58,8

Other dimensions and colours are possible on request.

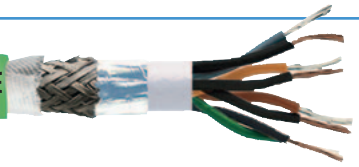
Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

S PN 668 Hybrid

Hybrid cable type C, continuously flexible, suitable for cable tracks with UL recognition

AWM Style 20233 80°C 300V 0668-9010 CE



Marking for S PN 668 Hybrid 06689010:
SAB BRÖCKSKES · D-VIERSEN · S PN 668 Hybrid (2x2x22 AWG) + 4x1,5mm² AWM Style 20233 80°C 300V 0668-9010 CE

Construction:

Conductor:	22 AWG: tinned copper strands, extra fine wires 1,5 mm²: bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	22 AWG: SABIX® 1,5 mm²: TPE
Colour code:	22 AWG: blue, yellow, white, orange 1,5 mm²: black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334
Stranding:	22 AWG: in layers, together in layers
Wrapping:	22 AWG: PETP foil
Inner sheath:	22 AWG: SABIX®
Screen:	22 AWG: alu foil and tinned copper braiding
Wrapping:	22 AWG: non-woven tape
Wrapping:	non-woven tape
Sheath material:	PUR
Sheath colour:	green (similar RAL 6018)

Technical data:

Peak operating voltage:	max. 350 V
Voltage UL:	300 V
Testing voltage:	core/core 2000 V core/screen 2000 V
Min. bending radius *fixed laying:* *flexible application:* *continuously flexible:*	 5 x d 10 x d 12 x d
Temperature range *fixed laying:* *flexible application:*	**UL/CSA:** up to +80 °C -40/+90 °C -30/+90 °C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173)
UL Style:	20233
Application:	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C acc. to VDE 0812 max. Ω/km
06689010	S PN 668 Hybrid	2 x 2 x 22 AWG + 4 x 1,5 mm²	1,50 / 2,15	10,0	94,1	158	58,0 / 13,3

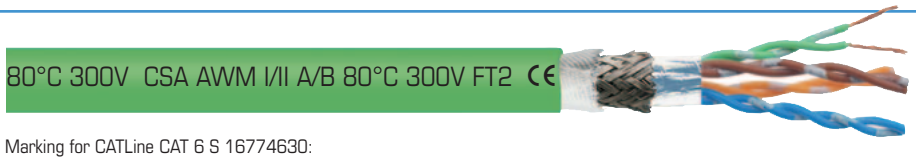
Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

CATLine CAT 6 S / CAT 6A S Gigabit Ethernet cable, suitable for cable tracks

CATLine CAT 6 RT / CAT 6A RT Gigabit Ethernet cable, suitable for cable tracks, suitable for robots



Marking for CATLine CAT 6 S 16774630:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.6 S 4x2x26AWG 1677-4630 AWM Style 20549 80°C 300V CSA AWM I/II A/B 80°C 300V FT2

Construction:	CATLine CAT 6 S *suitable for cable tracks*	CATLine CAT 6A S *suitable for cable tracks*	CATLine CAT 6 RT *suitable for cable tracks/ suitable for robots*	CATLine CAT 6A RT *suitable for cable tracks/ suitable for robots*
Dimension:	4 x 2 x 26 AWG			
Conductor:	bare copper strands, fine wires			
Insulation:	special polymer			
Colour code:	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown			
Stranding:	cores twisted to pairs, pairs together			
Wrapping:	non-woven tape			
Screen:	alu foil and tinned copper braiding			
Wrapping:	non-woven tape			
Sheath material:	PUR			
Sheath colour:	green (similar RAL 6018)			

Technical data:	CATLine CAT 6 S *suitable for cable tracks*	CATLine CAT 6A S *suitable for cable tracks*	CATLine CAT 6 RT *suitable for cable tracks/ suitable for robots*	CATLine CAT 6A RT *suitable for cable tracks/ suitable for robots*
Item number:	1677-4630	1677-4631	1687-4630	1687-4631
Peak operating voltage:	max. 90 V			
Voltage UL/CSA:	300 V			
Testing voltage core/core: core/screen:	 2000 V 2000 V			
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d 15 x d			
Torsion angle:	---		up to ± 180°/m	
Temperature range VDE fixed laying: flexible application:	**UL/CSA:** up to +80 °C -40/+70 °C -40/+70 °C			
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1			
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 UL Horizontal Flame Test FT2			
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2			
Characteristic impedance (100 MHz):	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-5-2 / CAT 6	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-5-2 / CAT 6	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A
Flexibility:	very good			
UL Style:	20549			
Application:	suitable for EtherCAT and EtherNET/IP applications			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km
16774630	CATLine CAT 6 S	4 x 2 x 26 AWG	1,05	7,1	32,0	57
16774631	CATLine CAT 6A S	4 x 2 x 26 AWG	1,05	7,1	32,0	57
16874630	CATLine CAT 6 RT	4 x 2 x 26 AWG	1,05	7,1	32,0	57
16874631	CATLine CAT 6A RT	4 x 2 x 26 AWG	1,05	7,1	32,0	57

Other dimensions and colours are possible on request.

+90°C on request!

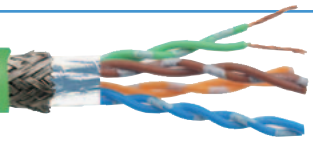
Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

CATLine CAT 6A HT

Gigabit Ethernet cable – high temperature resistant

1631-4631 AWM Style 21618 150°C 600V



Marking for CATLine CAT 6A HT 16314631:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.6A HT 4x2x26AWG 1631-4631 AWM Style 21618 150°C 600V

Construction:

Conductor:	bare copper strands, fine wires
Insulation:	FEP
Colour code:	white/blue, white/orange, white/green, white/brown
Stranding:	twisted to pairs
Wrapping:	PETP foil
Screen:	alu foil and tinned copper braiding
Sheath material:	FEP
Sheath colour:	green (similar RAL 6018)

Outstanding features:

- **high temperature resistant**
- **low temperature resistant**
- **flame retardant and self-extinguishing**
- **oil- and chemical resistant**
- **UL recognized**

Technical data:

Peak operating voltage:	max. 90 V
Voltage UL:	600 V
Testing voltage:	core/core 2000 V core/screen 2000 V
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	**UL:** up to +150 °C -90/+180 °C -55/+180 °C
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL VW1
Oil resistance:	very good
Chemical resistance:	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 (CAT 6A)
UL Style:	21618
Application:	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km
16314631	CATLine CAT 6A HT	4 x 2 x 26 AWG	1,05	5,7	30,0	52

Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

CATLine CAT 7A S Gigabit Ethernet cable, suitable for cable tracks with UL recognition, CSA approval

CATLine CAT 7A RT Gigabit Ethernet cable, suitable for cable tracks, suitable for robots with UL recognition, CSA approval

549 80°C 300V CSA AWM I/II A/B 80°C 300V FT2 CE

Marking for CATLine CAT 7A S 17774631:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A S 4x2x26AWG 1777-4631 AWM Style 20549 80°C 300V CSA AWM I/II A/B 80°C 300V FT2 CE

Construction:	CATLine CAT 7A S *suitable for cable tracks*	CATLine CAT 7A RT *suitable for robots*
Dimension:	4 x 2 x 26 AWG, 4 x 2 x 24 AWG	
Conductor:	bare copper strands, fine wires	
Insulation:	special polymer	
Colour code:	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown	
Stranding:	cores twisted to pairs, pairs screened with foil, pairs together	
Screen:	aluminized non-woven tape and tinned copper braiding	
Wrapping:	non-woven tape	
Sheath material:	PUR	
Sheath colour:	green (similar RAL 6018)	

Technical data:	CATLine CAT 7A S *suitable for cable tracks*	CATLine CAT 7A RT *suitable for robots*
Item number:	1777-4631, 1777-4431	1787-4631, 1787-4431
Peak operating voltage:	max. 90 V	
Voltage UL/CSA:	300 V	
Testing voltage core/core: core/screen:	 2000 V 2000 V	
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d 15 x d	 5 x d 10 x d
Torsion angle:	---	up to ± 180°/m
Temperature range VDE fixed laying: flexible application:	**UL/CSA:** up to +80 °C -40/+70 °C -40/+70 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 UL Horizontal Flame Test FT2	
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance (100 MHz):	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 + VDE 0819-9-2 / CAT 7A	
Flexibility:	very good	
UL Style:	20549	
Application:	suitable for EtherCAT and EtherNET/IP applications	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km
17774631	CATLine CAT 7A S	4 x 2 x 26 AWG	1,50	8,5	38,5	81
17774431	CATLine CAT 7A S	4 x 2 x 24 AWG	1,60	10,4	46,6	101
17874631	CATLine CAT 7A RT	4 x 2 x 26 AWG	1,50	8,9	38,5	83
17874431	CATLine CAT 7A RT	4 x 2 x 24 AWG	1,60	9,3	44,0	98

Other dimensions and colours are possible on request.

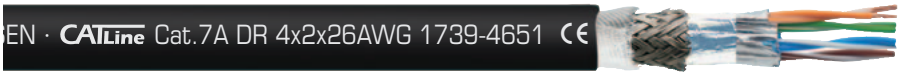
+90°C on request!

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

Industrial Ethernet Cables

CATLine CAT 5e DR reeling CAT 5e Industrial Ethernet cable
CATLine CAT 6A DR reeling CAT 6A Gigabit Ethernet cable
CATLine CAT 7A DR reeling CAT 7A Gigabit Ethernet cable



Marking for CATLine CAT 7A DR 17394651:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A DR 4x2x26AWG 1739-4651 CE

Construction:	CATLine CAT 5e DR *reeling Ethernet cable*	CATLine CAT 6A DR *reeling Ethernet cable*	CATLine CAT 7A DR *reeling Ethernet cable*
Dimension:	4 x 2 x 26 AWG		
Conductor:	bare copper strands, fine wires		
Insulation:	special polymer		
Colour code:	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		
Stranding:	cores twisted to pairs, pairs together		cores twisted to pairs, pairs screened with foil, pairs together
Wrapping:	non-woven tape		---
Screen:	alu foil and tinned copper braiding		aluminized non-woven tape and tinned copper braiding
Wrapping:	non-woven tape		
Sheath material:	PUR / supporting braid / PUR		
Sheath colour:	black (RAL 9005)		

Technical data:	CATLine CAT 5e DR *reeling Ethernet cable*	CATLine CAT 6A DR *reeling Ethernet cable*	CATLine CAT 7A DR *reeling Ethernet cable*
Item number:	1539-4651	1639-4651	1739-4651
Peak operating voltage:	max. 90 V		
Testing voltage core/core: core/screen:	 750 V 750 V		
Min. bending radius	for laying and installation (fixed laying): 5 x d for repeated winding action (flexible application): 10 x d guided on pulleys (flexible application): 12 x d		
Temperature range VDE fixed laying: flexible application:	 -50/+90 °C -40/+90 °C		
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1		
Oil resistance:	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2		
Characteristic impedance (100 MHz):	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 / CAT 7A
Weather resistance:	very good		
Application:	suitable for EtherCAT and EtherNET/IP applications		
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“		

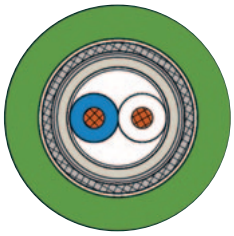
item no.	type	dimension	max. core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km	tensile strength max. N
15394651	CATLine CAT 5e DR	4 x 2 x 26 AWG	1,05	8,5	32,0	79	200
16394651	CATLine CAT 6A DR	4 x 2 x 26 AWG	1,05	8,5	32,0	81	200
17394651	CATLine CAT 7A DR	4 x 2 x 26 AWG	1,60	10,5	38,5	117	200

Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!
CABLE ASSEMBLY POSSIBLE

CATLine SPE C-Track Single Pair Ethernet cable, suitable for cable tracks UL recognition

CATLine SPE Robot Single Pair Ethernet cable, suitable for robots UL recognition



Marking for CATLine SPE C-Track 17771630:
SAB BRÖCKSKES · D-VIERSEN · CATLine SPE C-Track 2xAWG26/7 1777-1630 AWM Style 20549 80°C 300V

Construction:	CATLine SPE C-Track *suitable for cable tracks*	CATLine SPE Robot *suitable for robots*
Dimension:	2 x 26/7 AWG, 2 x 22/19 AWG	
Conductor:	bare copper strands	
Insulation:	special polymer	
Colour code:	white, blue	
Stranding:	twisted to pairs	
Inner sheath:	SABIX®	
Screen:	alu foil and tinned copper braiding	
Wrapping:	non-woven tape	
Sheath material:	PUR	
Sheath colour:	green (similar RAL 6018)	

Technical data:	CATLine SPE C-Track *suitable for cable tracks*	CATLine SPE Robot *suitable for robots*
Item number:	1777-1630, 1777-1230	1787-1630, 1787-1230
Peak operating voltage:	max. 90 V	
Voltage UL:	300 V	
Testing voltage core/core: core/screen:	 2000 V 2000 V	
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 10 x d 15 x d	
Torsion angle:	---	up to ± 180°/m
Temperature range fixed laying: flexible application:	**UL:** up to +80 °C -40/+70 °C -40/+70 °C	
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	
Oil resistance:	very good - TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to IEC 61156-12. Bandwidth 1 - 600 MHz.	
UL Style:	20549	
Application:	suitable for EtherCAT and EtherNET/IP applications	
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“	

item no.	type	dimension	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈kg/km
17771630	CATLine SPE C-Track	2 x 26/7 AWG	4,6	16,9	29
17771230	CATLine SPE C-Track	2 x 22/19 AWG	5,7	22,7	40
17871630	CATLine SPE Robot	2 x 26/7 AWG	4,6	16,9	29
17871230	CATLine SPE Robot	2 x 22/19 AWG	5,7	22,7	40

Other dimensions and colours are possible on request.

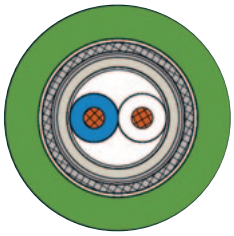
Outstanding features:

- **UL recognized**
- **low cabling effort**
- **short latency periods**
- **small outer diameter**
- **PWIS uncritical**

(PWIS = paint-wetting impairment substances)

CATLine SPE HT

Single Pair Ethernet cable, high temperature resistant



Marking for CATLine SPE HT 17211620:
SAB BRÖCKSKES · D-VIERSEN · CATLine SPE HT 2xAWG26/7 1721-1620 CE

Construction:

Conductor:	bare copper strands
Insulation:	TPFP
Colour code:	white, blue
Stranding:	twisted to pairs
Inner sheath:	TPFP
Screen:	alu foil and tinned copper braiding
Sheath material:	Besilen®
Sheath colour:	green

Outstanding features:

- **high temperature resistant**
- **flame retardant and self-extinguishing**
- **very easy installation**

Technical data:

Peak operating voltage:	max. 90 V
Testing voltage:	core/core 2000 V core/screen 2000 V
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 10 x d
Temperature range *fixed laying:* *flexible application:*	 -40/+180 °C -25/+180 °C
Temperature range conductor:	up to +180 °C
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to IEC 61156-12. Bandwidth 1 - 600 MHz.
Application:	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

item no.	type	dimension	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈kg/km
17211620	CATLine SPE HT	2 x 26/7 AWG	4,4	14,3	34
17211220	CATLine SPE HT	2 x 22/7 AWG	5,3	22,6	45

Other dimensions and colours are possible on request.

CATLine SPE Rugged

Single Pair Ethernet cable for robust indoor and outdoor use

Marking for CATLine SPE Rugged 17191620:
SAB BRÖCKSKES · D-VIERSEN · CATLine SPE Rugged 2xAWG26/7 1719-1620 CE

Construction:

Conductor:	bare copper strands, 7 wires
Insulation:	TPFP
Colour code:	white, blue
Stranding:	twisted to pairs
Inner sheath:	SABIX®
Screen:	alu foil and tinned copper braiding
Wrapping:	non-woven tape
Sheath material:	PUR 420 with mat surface
Sheath colour:	black (RAL 9005)

Outstanding features:

- **flexible up to -40 °C**
- **absolutely weather resistant**
- **very easy installation**
- **small bending radius**

Technical data:

Peak operating voltage:	max. 90 V
Testing voltage:	core/core 750 V core/screen 750 V
Min. bending radius *fixed laying:* *flexible application:*	 5 x d 12 x d
Temperature range *fixed laying:* *flexible application:*	 -50/+90 °C / +125 °C/2500 h -40/+90 °C / +125 °C/2500 h
Temperature range conductor:	up to +180 °C
Oil resistance:	very good - TMPU acc. to EN 50363-10-2
Fuel resistance:	good
Battery acid resistance:	good
UV resistance:	acc. to HD 605
Ozone resistance:	acc. to EN 50396
Saltwater resistance:	acc. to UL 1309
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to IEC 61156-12. Bandwidth 1 - 600 MHz.
Application:	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

item no.	type	dimension	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈kg/km
17191620	CATLine SPE Rugged	2 x 26/7 AWG	4,5	16,9	29
17191220	CATLine SPE Rugged	2 x 22/7 AWG	5,4	22,7	39

Other dimensions and colours are possible on request.

Industrial Ethernet Cables

CATLine CAT 5e R
CATLine CAT 6A R
CATLine CAT 7A R

halogen-free Industrial Ethernet Cables for Railway Technology

EN 45545-2 · UN / ECE R118 · SAB Rail

CE EAC RoHS

Marking for CATLine CAT 7A R 17674621:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A R 4x2x24AWG 1767-4621 CE

Construction:	CATLine CAT 5e R *flexible*		CATLine CAT 6A R *flexible*	CATLine CAT 7A R *flexible*
Dimension:	2 x 2 x 26 AWG 2 x 2 x 24 AWG 2 x 2 x 22 AWG	4 x 2 x 24 AWG	4 x 2 x 26 AWG	
Conductor:	bare copper strands, fine wires			
Insulation:	PE			
Colour code:	blue, yellow, white, orange	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		
Stranding:	star quad	cores twisted to pairs, pairs together		twisted to pairs with alu foil, pairs together
Wrapping:	foil			---
Screen:	alu foil und tinned copper braiding			tinned copper braiding
Sheath material:	special SABIX®			
Sheath colour:	green (similar RAL 6018)			

Technical data:	CATLine CAT 5e R *flexible*		CATLine CAT 6A R *flexible*	CATLine CAT 7A R *flexible*
Item number:	1567-2625 1567-9002 1567-9004	1567-4421	1667-4621	1767-4621
Peak operating voltage:	max. 90 V			
Testing voltage core/core: core/screen:	 750 V 750 V			
Min. bending radius fixed laying: flexible application:	 5 x d 12 x d			
Temperature range VDE fixed laying: flexible application:	 -40/+70 °C -30/+70 °C			
Halogen-free:	acc. to EN 50306-1 + EN 50264-1. Development of HCl is ≤ 0,5% acc. to IEC 60754-1. pH-value is ≥ 4,3 acc. to IEC 60754-2. Conductivity is ≤ 10,0 µS/mm acc. to IEC 60754-2. Fluoric content ≤ 0,1% acc. to IEC 60684-2			
Fire performance:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2. Flame retardant acc. to ISO 6722 (UN/ECE R118)			
Smoke density:	acc. to IEC 61034 + VDE 0482-1034			
Toxicity:	acc. to EN 50305 + VDE 0260-305			
Characteristic impedance:	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 / CAT 5		100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 / CAT 7A
Flexibility:	good			
Application:	suitable for EtherCAT and EtherNET/IP applications			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	max. core-ø mm	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
15672625	CATLine CAT 5e R	2 x 2 x 26 AWG	1,05	4,0 ± 5%	16,4	25
15679002	CATLine CAT 5e R	2 x 2 x 24 AWG	1,30	5,2 ± 5%	22,7	41
15679004	CATLine CAT 5e R	2 x 2 x 22 AWG	1,60	5,9 ± 5%	29,1	52
15674421	CATLine CAT 5e R	4 x 2 x 24 AWG	1,30	8,0 ± 10%	41,2	70
16674621	CATLine CAT 6A R	4 x 2 x 26 AWG	1,05	6,8 ± 10%	31,9	55
17674621	CATLine CAT 7A R	4 x 2 x 26 AWG	1,60	7,8 ± 10%	38,5	75

Other dimensions and colours are possible on request.

fulfils fire protection requirements R15 (EL1A) acc. to EN 45545-2 for hazard levels HL1-3

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

Industrial Ethernet Cables

CATLine CAT 5e R flex
CATLine CAT 6A R flex
CATLine CAT 7A R flex

continuously flexible halogen-free Industrial Ethernet Cables for Railway Technology

EN 45545-2 · UN / ECE R118 · SAB Rail

CE EAC RoHS

Marking for CATLine CAT 7A R flex 17694431:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A R flex 4x2x24AWG 1769-4431 CE

Application: Suitable for flexible and protected installation in the interior for door control or in protecting tubes for outdoor laying at the bogie. Appropriate for light and medium mechanical stress.

Construction:	CATLine CAT 5e R flex *continuously flexible*		CATLine CAT 6A R flex *continuously flexible*	CATLine CAT 7A R flex *continuously flexible*
Dimension:	2 x 2 x 24 AWG 2 x 2 x 22 AWG	4 x 2 x 26 AWG 4 x 2 x 24 AWG	4 x 2 x 26 AWG / 4 x 2 x 24 AWG	
Conductor:	bare copper strands, fine wires			
Insulation:	special SABIX®			
Colour code:	blue, yellow, white, orange	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		
Stranding:	star quad	cores twisted to pairs, pairs together		twisted to pairs with alu foil, pairs together
Wrapping:	foil			---
Screen:	alu foil und tinned copper braiding			tinned copper braiding
Sheath material:	special SABIX®			
Sheath colour:	green (similar RAL 6018)			

Technical data:	CATLine CAT 5e R flex *continuously flexible*		CATLine CAT 6A R flex *continuously flexible*	CATLine CAT 7A R flex *continuously flexible*
Item number:	1569-2435 1569-2235	1569-4431 1569-4631	1669-4431 1669-4631	1769-4431 1769-4631
Peak operating voltage:	max. 90 V			
Testing voltage core/core: core/screen:	 750 V 750 V			
Min. bending radius fixed laying: flexible application: continuously flexible:	 5 x d 12 x d 15 x d			
Temperature range VDE fixed laying: flexible application:	 -50/+90 °C -40/+90 °C			
Halogen-free:	acc. to EN 50306-1 + EN 50264-1. Development of HCl is ≤ 0,5% acc. to IEC 60754-1. pH-value is ≥ 4,3 acc. to IEC 60754-2. Conductivity is ≤ 10,0 µS/mm acc. to IEC 60754-2. Fluoric content ≤ 0,1% acc. to IEC 60684-2			
Fire performance:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2. Flame retardant acc. to ISO 6722 (UN/ECE R118)			
Smoke density:	acc. to IEC 61034 + VDE 0482-1034			
Toxicity:	acc. to EN 50305 + VDE 0260-305			
Oil and fuel resistance:	acc. to EN 50264-1 + VDE 0260-264-1			
Characteristic impedance:	100Ω ± 5Ω with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω with reference to EN 50288-9-2 / CAT 7A
Flexibility:	good			
Application:	suitable for EtherCAT and EtherNET/IP applications			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	max. core-ø mm	outer-ø mm	copper figure kg/km	cable weight ≈kg/km
15692435	CATLine CAT 5e R flex	2 x 2 x 24 AWG	1,25	5,1	22,8	40
15692235	CATLine CAT 5e R flex	2 x 2 x 22 AWG	1,55	5,8	29,2	53
15694431	CATLine CAT 5e R flex	4 x 2 x 24 AWG	1,29	7,8	42,3	81
15694631	CATLine CAT 5e R flex	4 x 2 x 26 AWG	0,99	6,5	29,7	55
16694431	CATLine CAT 6A R flex	4 x 2 x 24 AWG	1,29	7,9	42,2	80
16694631	CATLine CAT 6A R flex	4 x 2 x 26 AWG	0,99	6,5	29,7	56
17694431	CATLine CAT 7A R flex	4 x 2 x 24 AWG	1,71	9,7	46,6	109
17694631	CATLine CAT 7A R flex	4 x 2 x 26 AWG	1,45	8,6	35,8	92

Other dimensions and colours are possible on request.

fulfils fire protection requirements R15 (EL1A) and R16 (EL1B) acc. to EN 45545-2 for hazard levels HL1-3

Also possible as harnessed cable with M12 or RJ 45 plug!

CABLE ASSEMBLY POSSIBLE

CATLine CAT 5e BL
CATLine CAT 6A BL
CATLine CAT 7A BL

halogen-free Ethernet cable for maritime use

Marking for CATLine CAT 7A BL 17474621:
SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A BL 4x2x26/7AWG 1747-4621 AWM Style 21080 75°C 300V

Construction:	CATLine CAT 5e BL		CATLine CAT 6A BL	CATLine CAT 7A BL
Dimension:	2 x 2 x 24 AWG 2 x 2 x 22 AWG	4 x 2 x 26 AWG	4 x 2 x 24 AWG, 4 x 2 x 26 AWG	
Conductor:	bare copper strands, fine wires			
Insulation:	special polymer			
Colour code:	blue, yellow, white, orange	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		
Stranding:	star quad	cores twisted to pairs, pairs together		cores twisted to pairs, pairs screened with foil, pairs together
Screen:	alu foil and tinned copper braiding			tinned copper braiding
Sheath material:	special SABIX®			
Sheath colour:	black			

Technical data:	CATLine CAT 5e BL		CATLine CAT 6A BL	CATLine CAT 7A BL
Item number:	1547-9001 1547-9002	1547-4621	1647-4621, 1647-4421	1747-4621, 1747-4421
Peak operating voltage:	max. 90 V			
Voltage UL:	300 V			
Testing voltage core/core: core/screen:	 2000 V 2000 V			
Min. bending radius fixed laying: flexible application (only 7 wires):	 5 x d 10 x d			
Temperature range VDE fixed laying: flexible application:	**UL:** up to +75 °C -40/+70 °C -30/+70 °C			
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1			
Fire performance:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A, UL Horizontal Flame Test FT2, UL AWM Style 21080			
Corrosiveness of conflagration gases:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases			
Smoke density:	acc. to IEC 61034 + VDE 0482-1034			
Characteristic impedance (100 MHz):	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 / CAT 5		100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 / CAT 7A
Flexibility:	good			
UL Style:	21080			
Application:	suitable for EtherCAT and EtherNET/IP applications			
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“			

item no.	type	dimension	core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km
15479001	CATLine CAT 5e BL	2 x 2 x 24/7 AWG	approx. 1,25	5,7	22,7	48
15479002	CATLine CAT 5e BL	2 x 2 x 22/7 AWG	max. 1,60	6,4	29,7	61
15474621	CATLine CAT 5e BL	4 x 2 x 26/7 AWG	max. 1,05	7,3	31,9	64
16474621	CATLine CAT 6A BL	4 x 2 x 26/7 AWG	max. 1,05	7,3	31,9	64
16474421	CATLine CAT 6A BL	4 x 2 x 24/7 AWG	approx. 1,33	8,3	41,1	81
17474621	CATLine CAT 7A BL	4 x 2 x 26/7 AWG	max. 1,60	8,9	38,5	85
17474421	CATLine CAT 7A BL	4 x 2 x 24/7 AWG	approx. 1,60	10,5	65,0	116

Other dimensions and colours are possible on request.

Also possible as harnessed cable with M12 or RJ 45 plug!

CATLine Profinet cable

suitable for cable tracks with M12 male connectors

INNOVATIVE SOLUTIONS
FOR PROFINET WIRING

Application: For the field bus wiring of Profinet field bus systems in industrial sectors. This cable type is used for example in cable chain applications for automation and machine and plant construction with rough environments. The PUR outer sheath is resistant against rough environmental conditions.

Construction:

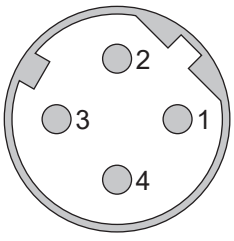
Conductor:	tinned copper strands
Insulation:	special polymer
Screen:	alu foil and tinned copper braiding
Sheath material:	PUR
Sheath colour:	green (RAL 6018)

Technical Data:

Min. bending radius *continuously flexible:*	15 x d
Temperature range *flexible application:* *fixed laying:*	-20/+70 °C -30/+70 °C
Special feature:	Characteristic impedance 100Ω ± 10Ω CAT 5 with reference to EN 50173-1, oil resistant, suitable for cable tracks

Pin configuration:

Pin1:	yellow
Pin2:	white
Pin3:	orange
Pin4:	blue
Housing:	screen



Plug types:

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

Profibus cable

suitable for cable tracks with M12 male connectors

PROFIBUS CABLES
FOR CABLE CHAIN APPLICATIONS

Application: For the field bus wiring in automation technique. These bus cables transfer Profibus signals with different cable and plug combinations. The PUR cable for cable chain applications is resistant against rough environmental conditions in industrial applications.

Construction:

Conductor:	bare copper strands
Insulation:	TPK
Screen:	alu foil and tinned copper braiding
Sheath material:	PUR
Sheath colour:	redlilac (RAL 4001)

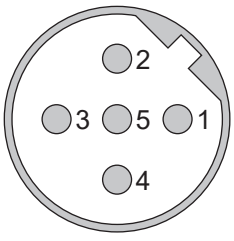
Technical Data:

Min. bending radius *continuously flexible:*	12 x d
Temperature range *flexible application:* *fixed laying:*	-40/+80 °C -40/+80 °C
Special feature:	Characteristic impedance at 3 - 20 MHz: 150Ω ± 10% with reference to IEC 61158-2, oil resistant, suitable for cable tracks

Pin configuration:

Pin1:	n.a.*
Pin2:	green
Pin3:	n.a.*
Pin4:	red
Pin5:	n.a.*
Housing:	screen

*n.a. - no allocation



Plug types:

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