

■ Application for Industrial ETHERNET cables

Industrial Ethernet is a quickly developing network technology. Ethernet with the worldwide accepted **TCP/IP** (Transmission Control Protocol/Internet Protocol) 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 forces of the automation industry. Depending on the application, we are able to offer CAT 5, CAT 6 and CAT 7 cable solutions for flexible and continuous flex use, for chemical and thermal stress as well as special cable constructions for reeling and robotic applications.

■ Application for USB 2.0 and USB 3.0 Cables

SAB USB 2.0 and USB 3.0 cables were developed for high frequency data transmission for industrial applications because 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 stringent 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; 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 for INTERBUS-S cables · remote bus cables · remote installation bus cables

Interbus has been developed for sensor/actuator communication for automation technology. This technically matured system has been standardized 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 for Interbus-Loop cables

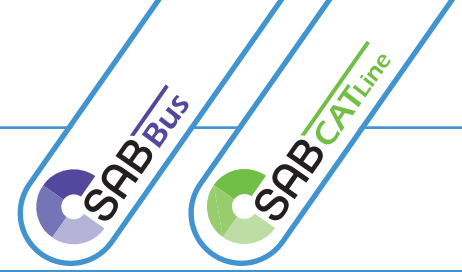
The two-conductor Interbus-Loop cable is to be applied as a data transmission cable as well as for the supply of sensors. The three-conductor Interbus-Loop cable is applied for supply of actuators. These cables are also suitable for Interbus-Loop 2.

■ Applications for CAN-bus cables

Cables for a **Controller Area Network** have been standardized for different application fields. The most common can require high speed in acc. to ISO 11898-2. The bus is optimized for a band efficient digital information exchange on the controller level.

■ Applications for 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 for Profibus cables

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

“Fast Connect” cable construction

These cables have a symmetric construction. This enables the use of special stripping tools that make for quicker field installation.

■ Applications for SafetyBUS p cables

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

■ Applications for 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 fiber 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.

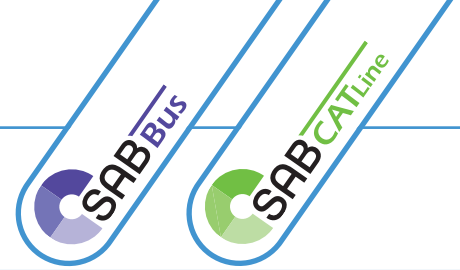
■ Applications for Profinet / Profibus cable assemblies

Profinet cable assemblies are for the wiring of Profinet field bus systems in industrial environments. This cable type is for example used in cable track applications with rough environmental conditions, in automation, machine and plant construction. The PUR jacket is resistant against harsh environmental conditions. Profibus cable assemblies are for the field bus wiring in automation technique. Profibus signals are transmitted by these bus cables with different cable and plug combinations. The PUR cable for cable track applications is resistant against rough environmental conditions in industrial applications. On request we are able to manufacture cable assemblies acc. to UL Wiring Harnesses ZPFW2 and ZPFW8 from the cable to the assembly. In the manufacturer's database (www.ul.com) SAB is listed under file no. E473226 as a qualified and reliable manufacturer.



BUS & Ethernet Cables

Selection Table



		Cable Type																			
		J/14	J/14	J/14	J/15	J/15	J/16	J/16	J/16	J/17	J/17	J/17	J/18	J/18	J/19	J/19	J/20	J/21	J/22	J/22	
		PN 654 UL	PN 661	S PN 668	S PN 667	S PN 669	PN 678	PN 679	S PN 681	DR PN 689 P Hightflex	S PN 668 Hybrid	RT PN 668	PN 675	S PN 676	CATLine CAT 6 S CATLine CAT 6A S	CATLine CAT 6 RT CATLine CAT 6A RT	CATLine CAT 6A HT	CATLine CAT 5e DR CATLine CAT 6A DR CATLine CAT7A DR	CATLine CAT 7A S	CATLine CAT 7A RT	
		Industrial Ethernet Cables																			
Basic construction	Shielded	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	Inner jacket	•	•	•	•	•				•	•										
	Optical waveguide POF																				
Temperature range fixed installation*	+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. 30V																				
	Peak operating voltage max. 50V																				
	Peak operating voltage max. 90V																				
	Peak operating voltage max. 350V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	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																				
	Burning characteristics acc. to IEC + VDE																				
	Fire performance: no flame propagation acc.to IEC 60332-3-24 + IEC 60332-3-25 CAT C resp. D																				
	Fire performance: UL Horizontal Flame Test FT2																				
	Fire performance: UL VW1																				
	Corrosiveness of 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	



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



BUS & Ethernet Cables

Selection Table



		Cable Type	J/23	J/24	J/25	J/26	J/26	J/26	J/27	J/28	J/28	J/28	J/29	J/29	J/29	J/30	J/31	J/31	J/31	J/32						
			CATLine CAT 5e R	CATLine CAT 6A R	CATLine CAT7A R	CATLine CAT 5e, 6A, & 7A R Flex	CATLine CAT 5e BL	CATLine CAT 6A BL	CATLine CAT7A BL	CATLine SPE C-Track	CATLine SPE Robot	CATLine SPE HT	CATLine SPE Rugged	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 flex	USB 3.0 S	USB 3.0 RT	USB 3.0	USB 3.0 M		
			Industrial Ethernet Cables							USB 2.0 Cables							USB 3.0 Cables									
Basic construction	Shielded		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	Inner jacket																									
	Optical waveguide POF																									
Temperature range fixed installation*	+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. 30V																									
	Peak operating voltage max. 50V																									
	Peak operating voltage max. 90V		•	•	•	•	•	•	•																	
	Peak operating voltage max. 350V																									
	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		•	•																						
	Burning characteristics acc. to IEC + VDE		•	•	•																					
	Fire performance: no flame propagation acc.to IEC 60332-3-24 + IEC 60332-3-25 CAT C resp. D																									
	Fire performance: UL Horizontal Flame Test FT2																									
	Fire performance: UL VW1																									
	Corrosiveness of 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																									
	Flexibility		B	B	B																					



A = very good
B = good
C = medium

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2 = up to ± 180°/m

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BUS & Ethernet Cables

Selection Table



		Cable Type	J/33 & 34	J/33 & 34	J/33 & 34	J/33 & 34	J/35	J/35	J/36	J/36	J/36	J/36	J/37	J/37	J/37	J/38	J/38	
			IBS 612	IBS 617	S IBS 618	S IBS 616	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	CB 627	S CB 628
			Interbus-S Cables				Interbus-Loop Cables				CAN-BUS Cables							
Basic construction	Shielded		•	•	•		•	•					•	•	•	•	•	•
	Inner jacket																	
	Optical waveguide POF																	
Temperature range fixed installation*	+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. 30V																	
	Peak operating voltage max. 50V																	
	Peak operating voltage max. 90V																	
	Peak operating voltage max. 350V		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	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																	
	Burning characteristics acc. to IEC + VDE		•	•	•		•		•								•	•
	Fire performance: no flame propagation acc.to IEC 60332-3-24 + IEC 60332-3-25 CAT C resp. D							•	•							•		
	Fire performance: UL Horizontal Flame Test FT2																	
	Fire performance: UL VW1																	
	Corrosiveness of 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	A	A	B	B	B	C	B	A	A	A			C	A
	Suitable for cable tracks				•	•						•	•	•				•
	Torsion angle																	
	Flexibility		B	B	A	A	A	B	B	B		A	A	A	A	B	B	B



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BUS & Ethernet Cables

Selection Table



		J/39	J/39	J/40	J/40	J/41	J/41	J/42	J/43	J/43	J/43	J/43	J/44	J/44	J/44	J/44	J/45	J/45	J/45	
		DeviceNet Cables								Profibus-DP Cables										
		DN 651	DN 650	DN 656	DN 657	DN 659	DN 658	DN 658 robot cable/Drop	SABIX PB 630	SABIX PB 630 FRNC	PB 631	PB 633	PB 630	PB 639	PB 636	PB 635	PB 637	S PB 634	PB 632	
Basic construction	Shielded	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Inner jacket																			
	Optical waveguide POF																			
Temperature range fixed installation*	+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. 30V																			
	Peak operating voltage max. 50V																			
	Peak operating voltage max. 90V																			
	Peak operating voltage max. 350V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	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																			
	Burning characteristics acc. to IEC + VDE									●			●	●	●	●	●			
	Fire performance: no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 CAT C resp. D									●										
	Fire performance: UL Horizontal Flame Test FT2																			
	Fire performance: UL VW1																			
	Corrosiveness of 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	B	B	C	B	B	B	A	A	C
	Suitable for cable tracks																			
	Torsion angle								2											
	Flexibility																			



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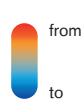
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BUS & Ethernet Cables

Selection Table



		Cable Type										
		J/46	J/46	J/46	J/46	J/47	J/47	J/48	J/48	J/49	J/49	
		PB 640	PB 640 UL	S PB 640	PB 640 UL	PB 642	S PB 644	SBP 680	S SBP 684 Move	S 670	S 671	
		Profibus-DP Cables				Profibus		SafetyBus p		Hybrid Field Bus		
Basic construction	Shielded	•	•	•	•	•	•		•			
	Inner jacket	•	•	•	•							
	Optical waveguide POF									•	•	
Temperature range fixed installation*	+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. 30V											
	Peak operating voltage max. 50V											
	Peak operating voltage max. 90V											
	Peak operating voltage max. 350V	•	•	•	•	•	•	•	•			
	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											
	Burning characteristics acc. to IEC + VDE	•	•	•	•					•	•	
	Fire performance: no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 CAT C resp. D											
	Fire performance: UL Horizontal Flame Test FT2											
	Fire performance: UL VW1											
	Corrosiveness of 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											
	Flexibility								A			



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

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