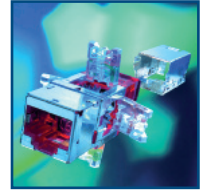
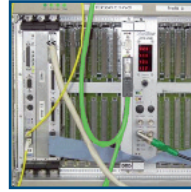


Applications



■ 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

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 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 the 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.

BUS & ETHERNET CABLES

Applications

■ 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 manufactures. 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, 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 optimised 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 harnessed Profinet / Profibus cables

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



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BUS & ETHERNET CABLES

Selection index

		Cable type	PN 655	PN 661	S PN 668	S PN 667	S PN 669	PN 678	PN 679	S PN 681	DR PN 689 P Highflex	S PN 668 Hybrid	RT PN 668	PN 675	S PN 676	CAT ^{Line} CAT 6 S	CAT ^{Line} CAT 6A S	CAT ^{Line} CAT 6 RT	CAT ^{Line} CAT 6A RT	CAT ^{Line} CAT 6A HT	CAT ^{Line} CAT 6A DR	CAT ^{Line} CAT 7A DR		
Application	Industrial Ethernet cable		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	USB 2.0 / 3.0 cable																							
	Remote / Remote installation bus cable																							
	Interbus-Loop cable																							
	CAN-bus cable																							
	DeviceNet™ cable																							
	Profibus cable																							
	SafetyBus p cable																							
	Inner jacket			x	x	x	x					x	x											
Screened		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Temperature range static*	+ 180°C																							
	+ 90°C																							
	+ 85°C																							
	+ 80°C																							
	+ 75°C																							
	+ 70°C																							
	+ 30°C																							
	- 30°C																							
	- 40°C																							
	- 50°C																							
- 90°C																								
Voltage	Voltage acc. to UL 30 V																							
	Voltage acc. to UL resp. CSA 300 V		x	x		x	x					x			x	x	x	x	x					
	Voltage acc. to UL 600 V																				x			
	Peak operating voltage max. 50 V																							
	Peak operating voltage max. 90 V																							
	Peak operating voltage max. 350 V		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	
	Testing voltage 600 V																							
	Testing voltage 750 V																							
	Testing voltage 1000 V																					x	x	
	Testing voltage 1500 V																							
Testing voltage 2000 V																								
Standards and approvals	Zero halogen			x	x	x	x		x	x	x	x	x		x	x	x	x	x	x		x	x	
	Burning characteristics acc. to IEC and EN																x	x	x	x	x			
	Burning characteristics acc. to DIN EN for the railway industry																							
	Corrosivity																							
	Smoke density																							
	Toxicity																							
	UL recognized		x	x		x	x					x		x	x	x	x	x	x	x				
	CSA approved					x									x	x	x	x	x					
	ABS Type Approval																							
	Characteristics	Oil resistant acc. to internal standard		x				x	x															
Oil resistant acc. to DIN VDE					x	x			x	x		x	x	x	x									
Oil resistant acc. to EN											x					x	x	x	x			x	x	
Good chemical resistance																					x			
Weather resistance																							x	x
Application in cable tracks					x	x	x			x		x			x	x	x	x	x					
Torsion up to ± 180° resp. 360°/m																						x	x	
Flexibility			x	x				x	x		x		x	x							x	x	x	
Continuous flex application					x	x	x			x		x			x	x	x	x	x					
Direct burial																								

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page

BUS & ETHERNET CABLES

Selection index

		Cable type																					
		CAT _{Line} CAT 7A S	CAT _{Line} CAT 7A RT	CAT _{Line} CAT 5e R	CAT _{Line} CAT 6A R	CAT _{Line} CAT 7A R	CAT _{Line} CAT 5e R flex	CAT _{Line} CAT 6A R flex	CAT _{Line} CAT 7A R flex	CAT _{Line} CAT 5e BL	CAT _{Line} CAT 6A BL	CAT _{Line} CAT 7A BL	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	USB 3.0 S	USB 3.0 RT	USB 3.0	USB 3.0 M	
Application	Industrial Ethernet cable	x	x	x	x	x	x	x	x	x	x	x											
	USB 2.0 / 3.0 cable												x	x	x	x	x	x	x	x	x	x	x
	Remote / Remote installation bus cable																						
	Interbus-Loop cable																						
	CAN-bus cable																						
	DeviceNet™ cable																						
	Profibus cable																						
	SafetyBus p cable																						
	Inner jacket																						
Temperature range static*	Screened	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	+ 180°C																						
	+ 90°C																						
	+ 85°C																						
	+ 80°C																						
	+ 75°C																						
	+ 70°C																						
	- 30°C																						
	- 40°C																						
	- 50°C																						
- 90°C																							
Voltage	Voltage acc. to UL 30 V																						
	Voltage acc. to UL resp. CSA 300 V	x	x										x										
	Voltage acc. to UL 600 V																						
	Peak operating voltage max. 50 V																						
	Peak operating voltage max. 90 V	x	x	x	x	x	x	x	x	x	x	x											x
	Peak operating voltage max. 350 V													x	x	x	x	x	x	x	x	x	
	Testing voltage 600 V																						x
	Testing voltage 750 V																						
	Testing voltage 1000 V																						
	Testing voltage 1500 V	x	x	x	x	x	x	x	x	x	x	x	x			x							
Testing voltage 2000 V															x		x	x	x	x	x	x	
Standards and approvals	Zero halogen	x	x	x	x	x	x	x	x	x	x	x											
	Burning characteristics acc. to IEC and EN	x	x																				
	Burning characteristics acc. to DIN EN for the railway industry				x	x	x	x	x												x	x	x
	Corrosivity												x	x	x								
	Smoke density			x	x	x	x	x	x	x	x	x											
	Toxicity			x	x	x	x	x	x														
	UL recognized	x	x											x				x	x	x	x	x	
	CSA approved	x	x															x	x				
	ABS Type Approval												x	x	x								
	Characteristics	Oil resistant acc. to internal standard												x	x								
Oil resistant acc. to DIN VDE																	x	x	x				x
Oil resistant acc. to EN		x	x																		x	x	
Good chemical resistance																							
Weather resistance																							
Application in cable tracks																	x	x			x		
Torsion up to ± 180° resp. 360°/m																						x	
Flexibility				x	x	x	x	x	x	x	x	x	x	x	x	x						x	x
Continuous flex application																		x	x			x	x
Direct burial																							

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page

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		Cable type																
		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	
Application	Industrial Ethernet cable																	
	USB 2.0 / 3.0 cable																	
	Remote / Remote installation bus cable	x	x	x	x	x	x											
	Interbus-Loop cable							x	x	x	x							
	CAN-bus cable											x	x	x	x	x	x	
	DeviceNet™ cable																	
	Profibus cable																	
	SafetyBus p cable																	
	Inner jacket																	
Temperature range static*	Screened	x	x	x	x	x	x	x										
	+ 180°C																	
	+ 90°C																	
	+ 85°C																	
	+ 80°C																	
	+ 75°C																	
	+ 70°C																	
	+ 30°C																	
	- 30°C																	
	- 40°C																	
Voltage	- 50°C																	
	- 90°C																	
	Voltage acc. to UL 30 V																	
	Voltage acc. to UL resp. CSA 300 V															x	x	
	Voltage acc. to UL 600 V																	
	Peak operating voltage max. 50 V																	
	Peak operating voltage max. 90 V																	
	Peak operating voltage max. 350 V	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Testing voltage 600 V																	
	Testing voltage 750 V																	
Standards and approvals	Testing voltage 1000 V							x	x	x	x							
	Testing voltage 1500 V	x	x	x	x	x	x				x	x	x	x	x	x	x	
	Testing voltage 2000 V																	
	Zero halogen																	
	Burning characteristics acc. to IEC and EN	x	x	x														
	Burning characteristics acc. to DIN EN for the railway industry																	
	Corrosivity				x		x	x		x	x				x	x		
	Smoke density								x							x		
	Toxicity																	
	UL recognized			x	x												x	x
Characteristics	CSA approved																	
	ABS Type Approval																	
	Oil resistant acc. to internal standard	x																
	Oil resistant acc. to DIN VDE		x	x	x				x	x	x	x	x	x		x	x	
	Oil resistant acc. to EN																	
	Good chemical resistance											x	x				x	
	Weather resistance			x	x	x	x	x		x	x	x	x	x	x		x	
	Application in cable tracks			x	x						x	x	x					x
	Torsion up to ± 180° resp. 360°/m																	
	Flexibility	x	x	x	x	x	x	x		x					x	x	x	
Continuous flex application										x	x	x					x	
Direct burial	x																	

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page

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Selection index

		Cable type	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	PB 640	PB 640 UL	S PB 640	S PB 640 UL	PB 642	S PB 644	SBP 680	S SBP 680 Move			
Application	Industrial Ethernet cable																														
	USB 2.0 / 3.0 cable																														
	Remote / Remote installation bus cable																														
	Interbus-Loop cable																														
	CAN-bus cable																														
	DeviceNet™ cable		x	x	x	x	x	x	x																						
	Profibus cable										x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				
	SafetyBus p cable																												x	x	
	Inner jacket																														
	Screened		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Temperature range static*	+ 180°C																														
	+ 90°C																														
	+ 85°C																														
	+ 80°C																														
	+ 75°C																														
	+ 70°C																														
	+ 30°C																														
	- 30°C																														
	- 40°C																														
	- 50°C																														
- 90°C																															
Voltage	Voltage acc. to UL 30 V		x	x			x	x											x												
	Voltage acc. to UL resp. CSA 300 V				x				x													x		x							
	Voltage acc. to UL 600 V																														
	Peak operating voltage max. 50 V																														
	Peak operating voltage max. 90 V																														
	Peak operating voltage max. 350 V		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Testing voltage 600 V																														
	Testing voltage 750 V																														
	Testing voltage 1000 V																														
	Testing voltage 1500 V		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Testing voltage 2000 V																															
Standards and approvals	Zero halogen				x	x				x	x	x																			
	Burning characteristics acc. to IEC and EN										x				x	x	x	x			x	x	x	x	x						
	Burning characteristics acc. to DIN EN for the railway industry																														
	Corrosivity										x	x	x	x																	
	Smoke density																														
	Toxicity																														
	UL recognized		x	x	x			x	x	x																					
	CSA approved																														
	ABS Type Approval																														
	Characteristics	Oil resistant acc. to internal standard														x	x	x	x			x	x	x				x			
Oil resistant acc. to DIN VDE											x																				
Oil resistant acc. to EN																															
Good chemical resistance																															
Weather resistance																															
Application in cable tracks																															
Torsion up to ± 180° resp. 360°/m																															
Flexibility																															
Continuous flex application																															
Direct burial																															

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page