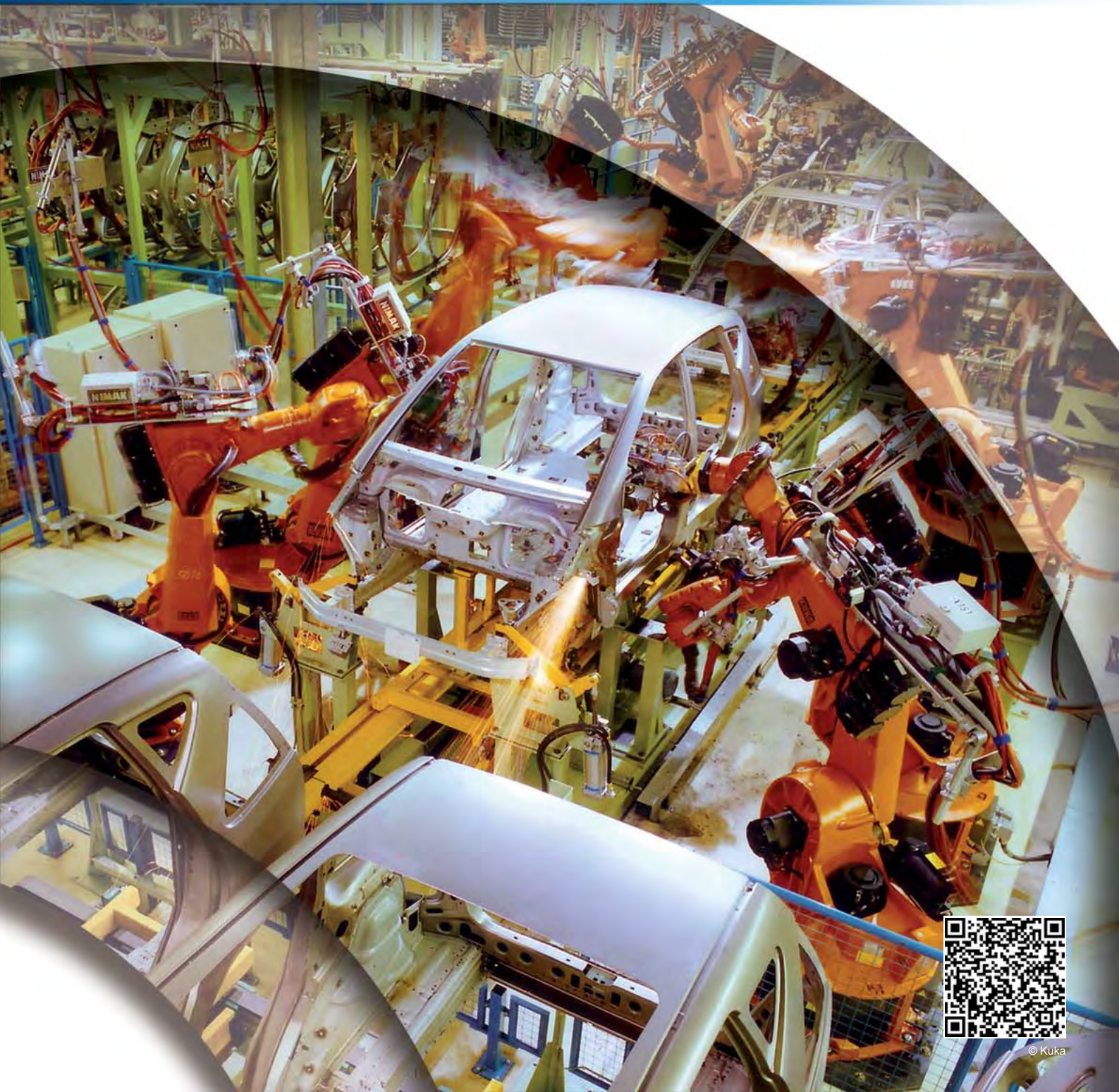


USB 2.0 / 3.0

CABLES



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Application range USB 2.0 and USB 3.0 cables

The SAB robot cables 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; whe-

rever a quick and reliable collection and transmission of data from the camera to the industrial PC are absolutely important.

Our highly flexible robot cables 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.



WHO WE ARE

A SURVEY

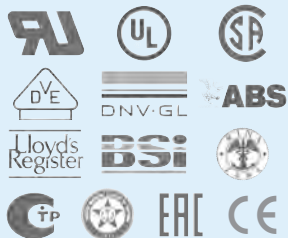
70 years of experience in temperature measurement and control technique as well as in cable production have made a one man business a company with nearly 500 staff members. Our strength is not only the production of standard products but also the development and manufacturing of special products acc. to customers' specifications. Every year we manufacture more than 1500 special products on our customers' request. Every single product is a challenge for our technical team. We at **SAB** Bröckskes see ourselves as manufacturer and service provider - in the sense of real partnership and customer oriented work.

The quality of our products is known in more than 40 countries worldwide. Our customers have tested our products intensively and confirm that they have a longer service life than others. In all product ranges we are certified acc. to ISO 9001:2015. Besides we established an environmental management system for our company acc. to ISO 14001:2015, an occupational health and safety management acc. to NLF/ILO-OSH 2001 and OHSAS 18001:2007 as well as an energy management system acc. to DIN EN ISO 50001:2011. And our future slogan is:

WE GO FORWARD!

FOUNDED:	1947 by Peter Bröckskes sen. an independent, medium-sized company.
CEO:	Peter Bröckskes and Sabine Bröckskes-Wetten
PLANT/LOCATION:	In Viersen (Lower Rhine) 110.000 m ² company site. Own manufacturing from copper conductor to outer sheath. VDE proved burnchamber and laboratory within the company.
EMPLOYEES/WORKERS:	Approx. 420 at the plant in Viersen, 500 worldwide
YEARLY SALES:	Approx. 95 Mio. € worldwide
PRODUCTS:	Special Cables Temperature Measurement Cable Harnessing

CERTIFICATES AND APPROVALS:



HAR EN IEC ISO

Quality management system acc. to ISO 9001:2015
for every manufacturing field

Environmental management system acc. to ISO 14001:2015

Occupational health and safety management
acc. to NLF/ILO-OSH 2001 and OHSAS 18001:2007

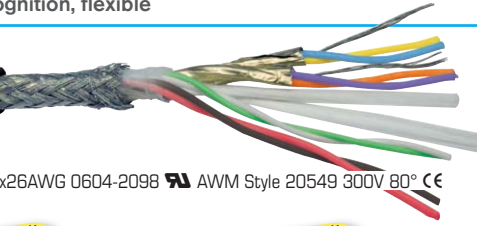
Energy management system acc. to DIN EN ISO 50001:2011

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



26AWG 0604-2098 AWM Style 20549 300V 80° CE



Marking for USB 3.0 S 06042098:

SAB BRÜCKSKES · D-VIERSEN · USB 3.0 S 3x(2x28AWG)ST+2x26AWG 0604-2098 AWM Style 20549 300V 80° CE



Construction:	USB 3.0 S <i>suitable for cable tracks</i>	USB 3.0 RT <i>suitable for robots</i>	USB 3.0 <i>flexible</i>
Dimension:	3 x (2 x 28 AWG)ST + 2 x 26 AWG		2 x (2 x 28 AWG)ST + 2 x 28 AWG + 2 x 26 AWG
Conductor:	silver-plated strands (AWG 28) · tinned copper strands (AWG 26)		
Insulation:	special polymer		
Colour code:	yellow, blue + orange, violet (USB 3.0), green, white (USB 2.0), red, black (power supply)		
Stranding:	pairs AWG28 twisted to pairs and 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 (similar RAL 9005)		

Technical data:	USB 3.0 S <i>suitable for cable tracks</i>	USB 3.0 RT <i>suitable for robots</i>	USB 3.0 <i>flexible</i>
Item number:	0604-2098	0604-3098	0603-0078
Peak operating voltage:	max. 350 V		
Voltage UL:	300 V		
Testing voltage:	core/core 2000 V - core/screen 2000 V		
Temperature range VDE fixed laying: flexible application:	UL: up to +80 °C -50 °C / +90 °C -40 °C / +90 °C		UL: up to +80 °C -30 °C / +70 °C -5° C / +70 °C
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	---
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 DIN VDE 0281 part 1 + HD 22.1
Absence of harmful substances:	acc. to RoHS directive of the European Union		

item no.	type	dimension mm ²	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km	ohmic resistance at 20°C max.Ω/km	
						28 AWG	26 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
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.



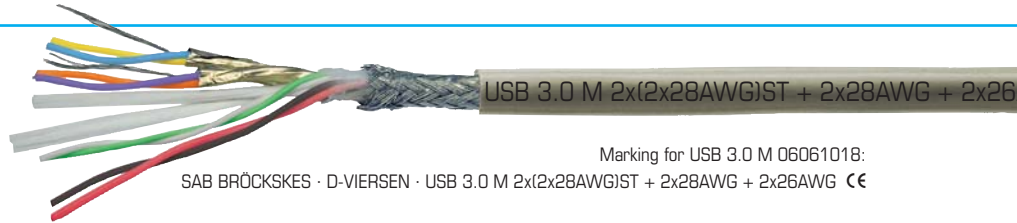
For transmission lengths more than 3 m, please contact us!

USB 3.0 CABLES

transmission
length up to 3 m

USB 3.0 cables M

flexible



Marking for USB 3.0 M 06061018:

SAB BRÖCKSKES · D-VIERSEN · USB 3.0 M 2x(2x28AWG)ST + 2x28AWG + 2x26AWG CE

Construction:

Conductor:	28 AWG: silver-plated copper 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
Tracer:	bare copper strands, fine wires
Screen:	alu foil
Stranding:	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	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
Temperature range	
<i>fixed laying:</i>	-40/+180 °C
<i>flexible application:</i>	-25/+180 °C
Impedance of data pairs:	nom. 90Ω
Absence of harmful substances:	acc. to RoHS directive of the European Union

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 mm ²	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!



especially for
the application
in medical
technology

USB 2.0 CABLES

USB 2.0

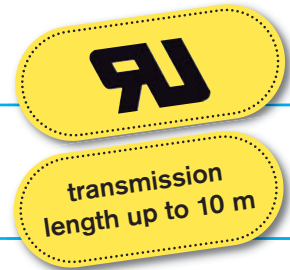
flexible USB 2.0 cable

USB 2.0 UL

flexible USB 2.0 cable with UL recognition

USB 2.0 FRNC

halogen-free flexible USB 2.0 cable



Marking for USB 2.0 06010122:

SAB BRÖCKSKES · D-VIERSEN · USB 2.0 (2x0,22mm²) ST + 2x0,5mm² 0601-0122 CE



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

Technical data:	USB 2.0 <i>flexible</i>	USB 2.0 UL <i>flexible</i>	USB 2.0 FRNC <i>flexible</i>
Item number:	0601-0122	0601-0222	0601-9001
Peak operating voltage VDE:	max. 350 V		
Voltage UL:	---	300 V	---
Testing voltage:	core/core 1500 V core/screen 1200 V	core/core 2000 V core/screen 2000 V	core/core 1500 V core/screen 1200 V
Temperature range VDE fixed laying: flexible application:	-30 °C / +70 °C -5 °C / +70 °C	UL: up to +80 °C -30 °C / +70 °C -5 °C / +70 °C	-40 °C / +90 °C -30 °C / +90 °C
Min. bending radius fixed laying: flexible application:	5 x d 10 x d		
Halogen-free:	---		acc. to DIN VDE 0472 part 815 + IEC 60754-1
Fire performance:	---		flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
Oil resistance:	acc. to internal standard		---
Absence of harmful substances:	acc. to RoHS directive of the European Union		

item no.	type	dimension mm ²	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km
06010122	USB 2.0	(2x0,22) ST + 2x0,50	6,8	34,0	60
06010222	USB 2.0 UL	(2x0,22) ST + 2x0,50	7,0	34,0	63
06019001	USB 2.0 FRNC	(2x0,22) ST + 2x0,50	6,8	34,0	62

Other dimensions and colours are possible on request.

USB 2.0 CABLES

USB 2.0 S

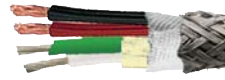
USB 2.0 cable, continuously flexible, suitable for cable tracks

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



USB 2.0 (2x0,22mm²) ST + 2x0,5mm² 0601-0122 CE

Marking for USB 2.0 06010122:

SAB BRÖCKSKES · D-VIERSEN · USB 2.0 (2x0,22mm²) ST + 2x0,5mm² 0601-0122 CE

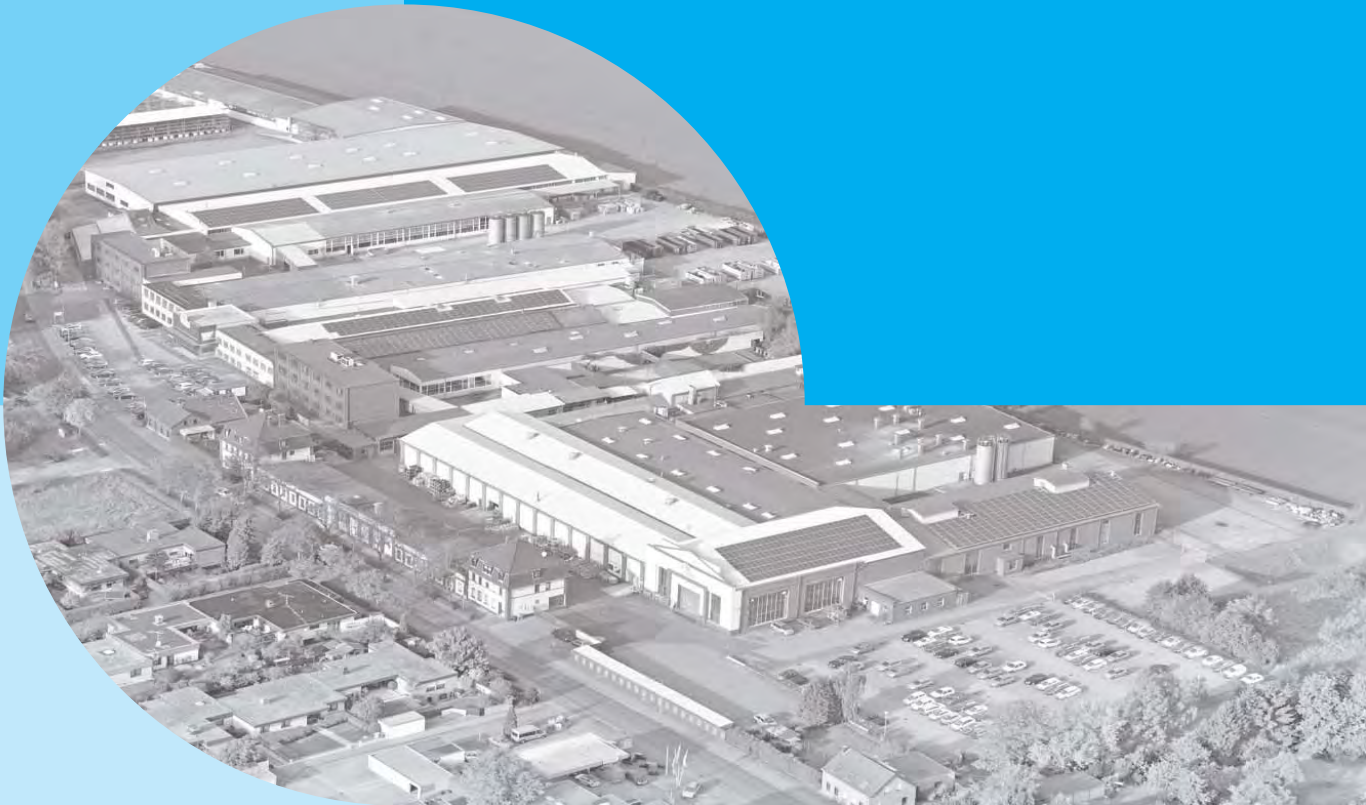


Construction:	USB 2.0 S <i>suitable for cable tracks</i>	USB 2.0 S UL/CSA <i>suitable for cable tracks</i>	USB 2.0 RT UL/CSA <i>suitable for robots</i>
Dimension:	(2 x 0,22 mm ²) ST + 2 x 0,5 mm ²		
Conductor:	bare copper strands (0,50 mm ²), silver-plated strands (0,22 mm ²)		
Insulation:	SABIX®		
Colour code:	black, red (0,50 mm ²), white, green (0,22 mm ²)		
Stranding:	2 x 0,22 mm ² wrapped with alu foil, together with 0,5 mm ²		
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 <i>suitable for cable tracks</i>	USB 2.0 S UL/CSA <i>suitable for cable tracks</i>	USB 2.0 RT UL/CSA <i>suitable for robots</i>
Item number:	0601-1022	0601-1122	0601-2022
Peak operating voltage VDE:	max. 350 V		
Voltage UL/CSA:	---	300 V	
Testing voltage:	core/core 2000 V - core/screen 2000 V		
Temperature range VDE	UL/CSA: up to +80 °C		
fixed laying:	-50 °C / +90 °C	-50 °C / +90 °C	
flexible application:	-40 °C / +90 °C	-40 °C / +90 °C	
Min. bending radius			
fixed laying:	5 x d		5 x d
flexible application:	6 x d		7,5 x d
continuously flexible:	7,5 x d		10 x d
torsion angle:			up to +/- 180°/m
Halogen-free:	acc. to DIN VDE 0472 part 815 + IEC 60754-1		---
Oil resistance:	TMPU acc. to DIN VDE 0282 part 10 + HD 22.10		
Absence of harmful substances:	acc. to RoHS directive of the European Union		

item no.	type	dimension mm ²	outer-ø approx. mm	copper figure kg/km	cable weight ≈kg/km
06011022	USB 2.0 S	(2x0,22) ST + 2x0,50	7,0	34,1	59
06011122	USB 2.0 S UL/CSA	(2x0,22) ST + 2x0,50	7,2	34,1	66
06012022	USB 2.0 RT UL/CSA	(2x0,22) ST + 2x0,50	7,0	34,3	64

Other dimensions and colours are possible on request.



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