

CABLES FOR ROBOTS



Family business in the third generation

75 years of experience in cable and wire manufacturing as well as in temperature measurement technology turned a one-man business into a company with more than 550 employees. We prove our strength every year with more than 1500 special products according to customers' requirements. Each product is a new challenge for our creative technical team. We at **SAB** see ourselves as a manufacturer and a service provider – in the sense of true partnership and the greatest possible customer orientation.

Today, the quality of our products is known and appreciated in more than 80 countries around the world. In all product ranges, we are certified according to ISO 9001. Furthermore, we have implemented an environmental management system for our company according to ISO 14001, an occupational health and safety management system according to DIN EN ISO 14001 and DIN ISO 45001, and an energy management system according to DIN EN ISO 50001.

And also for the future, our slogan is: **"WE CONTINUE!"**

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. 430 at the plant in Viersen, 550 worldwide
YEARLY SALES:	Approx. 95 Mio. € worldwide
PRODUCTS:	Special Cables Measurement Technology Cable Harnessing

CERTIFICATES AND APPROVALS:



Quality management system acc. to DIN EN ISO 9001 for every manufacturing field

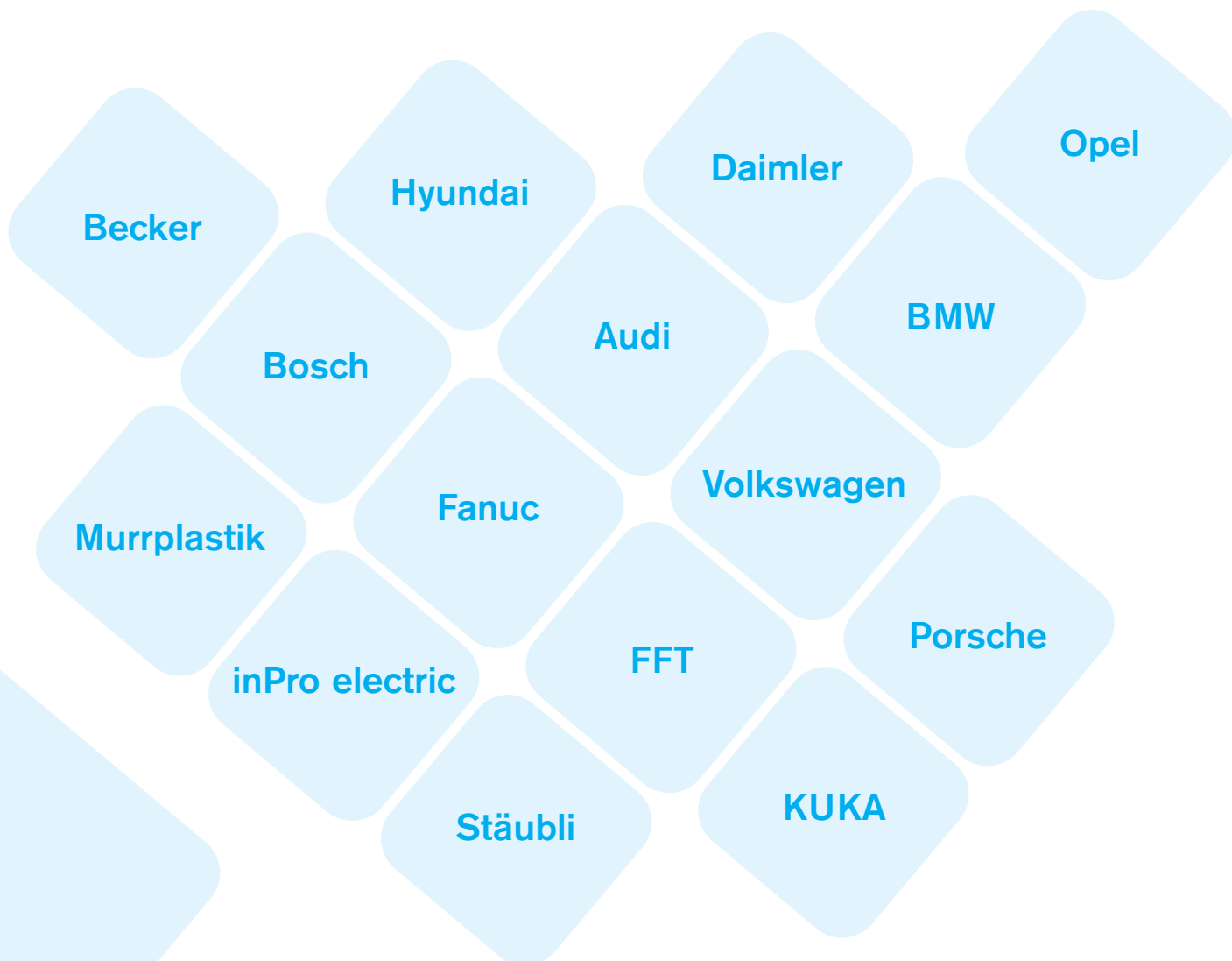
Environmental management system acc. to DIN EN ISO 14001

Occupational health and safety management acc. to NLF/ILO-OSH and DIN ISO 45001

Energy management system acc. to DIN EN ISO 50001

Cables for robots

References



D-U-N-S® number
315 499 111 worldwide



	<u>Supplier no.</u>
Audi	1917/0
BMW	609 213-10
Daimler	102 218 10
Ford	DJM5A
Opel	1 950 428
Porsche	11 901
VW	1917-0
VW Mexico	600 200 57 70

Cables for robots




Cables for dress packages

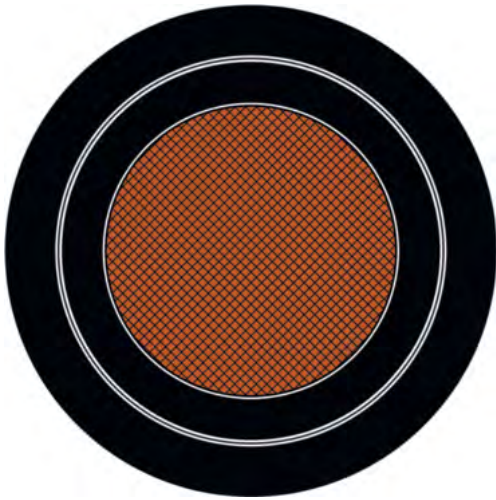


Grafik: Murrplastik Systemtechnik, Oppenweiler



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Construction:

Conductor:	bare copper strands acc. to IEC 60228
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2

item no.	dimension mm ²	colour-coding	outer- \varnothing ≈ mm
0761-9051	1 x 16,0	bk/bk	10,1
0761-9052	1 x 25,0	bk/bk	11,1
0761-9050	1 x 25,0	gnye/bk	11,1
0761-9048	1 x 35,0	bk/bk	13,3
0761-9072	1 x 35,0	gnye/bk	13,3
0761-9054	1 x 50,0	bk/bk	15,8
0761-9096	1 x 95,0	bk/bk	20,7

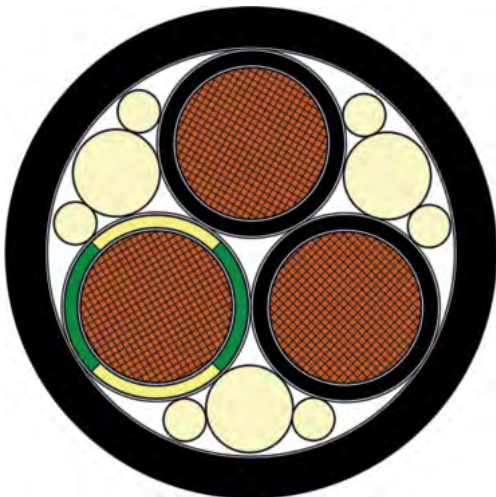
Other dimensions and colours are possible on request.



Preferred type

Technical Data:

Operating voltage	Testing voltage	Temperature range	Min. bending radius	Halogen-free	Absence of harmful substances
750 V (DC)	2000 V (AC)	flexible application: -40/+90 °C	recommended: 7,5 x d	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to RoHS directive of the European Union



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	PUR
Colour code:	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer- \varnothing ≈ mm
0774-9111	3 x 16,0	19,3
0774-9084	3 x 25,0	23,3
0774-9085	3 x 35,0	26,6
0774-9088	3 x 50,0	30,8

Other dimensions and colours are possible on request.

Technical Data:

Operating voltage	Testing voltage	Temperature range	Min. bending radius	Halogen-free	Absence of harmful substances
≤ 16,0 mm ² = 500 V (DC) ≥ 25,0 mm ² = 750 V (DC)	≤ 16,0 mm ² = 1500 V (AC) ≥ 25,0 mm ² = 2000 V (AC)	flexible application: -40/+90 °C	recommended: 7,5 x d	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to RoHS directive of the European Union

Welding cables for robot applications

UL recognized, CSA approved



Construction:

Conductor:	copper strands acc. to IEC 60228
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2

item no.	dimension mm ²	colour-coding	outer-ø ≈ mm
3768-9069	1 x 10,0	bk/gnye	7,0
3768-9010	1 x 16,0	bk/gnye	8,9
0390-9094	1 x 25,0	gnye/bk	11,1
0390-9602	1 x 25,0	bk/bk	11,1
0390-9604	1 x 35,0	bk/bk	13,3
0390-9605	1 x 35,0	bk/gnye	13,3
0390-9582	1 x 50,0	bk/bk	15,8
0390-9583	1 x 70,0	bk/bk	18,0

Other dimensions and colours are possible on request.

Technical Data:

Operating voltage	Voltage UL/CSA	Testing voltage	Temperature range	Min. bending radius	Halogen-free	Absence of harmful substances
750 V (DC)	1000 V	10000 V	flexible application: -40/+90 °C UL : up to +80 °C	recommended: 7,5 x d	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to RoHS directive of the European Union



Foto: Murrplastik Systemtechnik GmbH



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	white cores with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green-yellow earth wire
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2 with mat surface
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer-ø ≈ mm
0796-9081	5 x (2 x 0,75) D + 22 x 0,75	16,0

Other dimensions and colours are possible on request.

Technical Data:

Nominal voltage	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
U ₀ /U 300/500 V	core/core 2000 V (AC) core/screen 2000 V (AC)	flexible application: -40/+80 °C	recommended: 10 x d	acc. to RoHS directive of the European Union

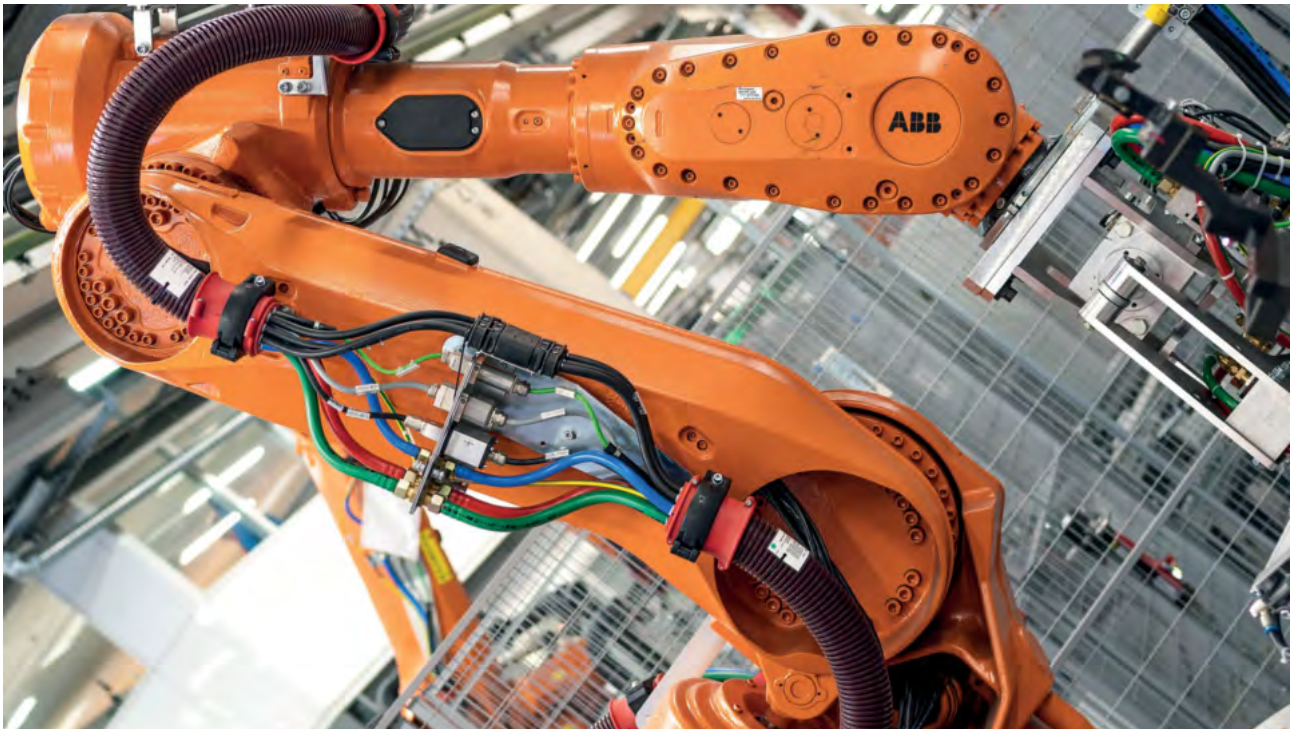


Foto: Becker GmbH, Dülmen



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	white cores with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green-yellow earth wire
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	sky blue (RAL 5015)

item no.	dimension mm ²	outer-ø ≈ mm
0399-0157	3 x 1,0 + 4 x 0,5 + 3 x 3 x 0,5 + (2 x 0,5) D	12,1

Other dimensions and colours are possible on request.

Technical Data:

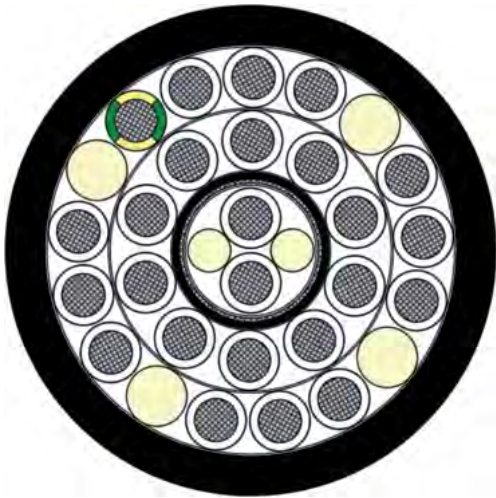
Peak operating voltage	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
max. 500 V	core/core 1500 V core/screen 1200 V	flexible application: -40/+90 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



Further welding gun cables on request!



Foto: KUKA AG



Construction:

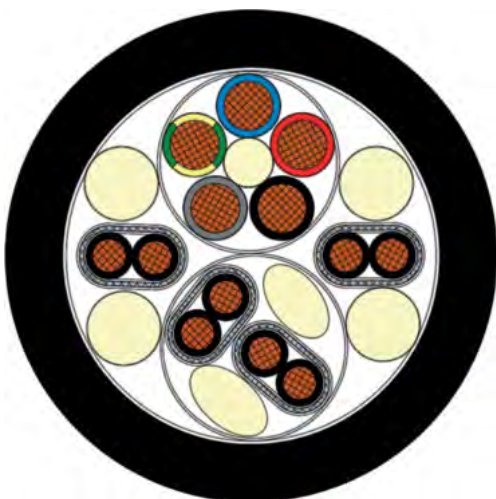
Conductor:	tinned copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	white cores with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green-yellow earth wire
Inner sheath:	TPE
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer- ϕ \approx mm
0764-9065	23 x 1,0 + (2 x 1,0) D	13,2
0764-9079	16 x 1,0 + (2 x 1,0) D	13,4

Other dimensions and colours are possible on request.

Technical Data:

Peak operating voltage	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
max. 600 V	core/core 2000 V core/screen 1200 V	flexible application: -40/+90 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



Construction:

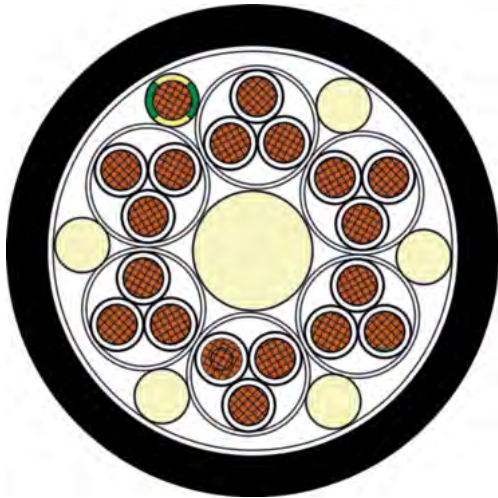
Conductor:	bare copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	coloured acc. to specification
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer- ϕ \approx mm
0796-9210	5 x 1,0 + 4 x (2 x 0,5) D	13,7

Other dimensions and colours are possible on request.

Technical Data:

Min. bending radius	Torsion angle	Temperature range	PWIS uncritical	Absence of harmful substances
recommended: 10 x d	up to $\pm 180^\circ/0,5$ m	flexible application: -40/+90 °C	all our robot cables are free from paint-wetting impairment substances	acc. to RoHS directive of the European Union



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	white cores with consecutive numbers acc. to EN 50334 + VDE 0293-334 and a green-yellow earth wire
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer- \varnothing \approx mm
0760-9151	19 x 0,75	12,4
0760-9056	19 x 1,00	13,3

Other dimensions and colours are possible on request.

Technical Data:

Nominal voltage	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
max. 350 V	core/core 1500 V	flexible application: -40/+90 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



Your haven't found your special cable?

Please contact our specialists!



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	acc. to specification
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer-ø ≈ mm
0764-9120	4 x 0,75 + 2 x (2 x 0,34)	9,7
0779-9043	4 x 2,5 + 2 x 1,0	12,1
0841-9193	4 x 2,5 + (2 x 1,0) C	12,1
0841-9202	4 x 2,5 + (2 x 1,5) C	12,9

Technical Data:

Nominal voltage	Temperature range	Halogen-free	Absence of harmful substances
U ₀ /U 450/750 V	flexible application: -40/+90 °C	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to RoHS directive of the European Union



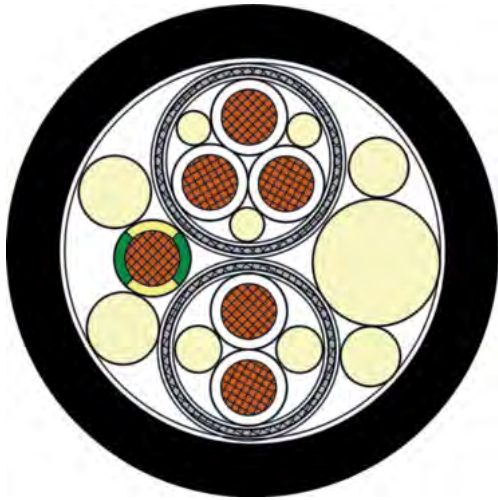
Our testing machines



Further robot motor cables on request!

Our modern testing machines comply with the current standards of automotive industry and enable us to reproduce nearly all customer-specific requirements.





Construction:

Conductor:	copper strands acc. to IEC 60228
Insulation:	TPE
Colour code:	acc. to specification
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer-ø ≈ mm
0795-9035	(2 x 0,5) D + (2 x 0,5) D	8,8
0760-9055	(2 x 0,5) D + 2 x 0,5	8,2
0796-9101	(3 x 1,0) D + (2 x 1,0) D + 1 x 1,0	10,4
0796-9217	4 x (2 x 0,50) D + 1 x 0,50	9,6
0784-9074	6 x 0,75 + (3 x 0,75) D	9,8
0784-9212	2 x (2 x 0,75) D + (3 x 0,75) D	10,3
0764-9086	1 x (2 x 0,50) D + 7 x 1,0	9,1

Other dimensions and colours are possible on request.

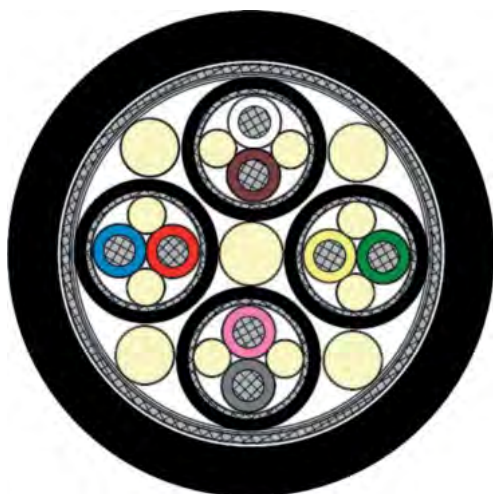
Technical Data:

PWIS uncritical	Temperature range	Min. bending radius	Absence of harmful substances
all our robot cables are free of paint-wetting interfering substances	flexible application: -40/+90 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



Further KSR cables on request!





Construction:

Conductor:	tinned copper strands, fine wires acc. to IEC 60228
Colour code:	with reference to DIN 47100
Stranding:	twisted pairs wrapped with tinned copper wires
Inner sheath:	TPE
Stranding:	pairs together
Total screen:	wrapped with tinned copper wires
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer- ϕ \approx mm
0390-9449	[4 x (2 x 0,25) D] D	9,1

Other dimensions and colours are possible on request.

Technical Data:

Peak operating voltage	PWIS uncritical	Halogen-free	Temperature range	Min. bending radius	Absence of harmful substances
max. 350 V	free of paint-wetting interfering substances	acc. to IEC 60754-1 + VDE 0482-754-1	flexible application: -40/+70 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



Construction:

Conductor:	bare copper strands, fine wires acc. to IEC 60228
Insulation:	TPE
Colour code:	with reference to DIN 47100
Stranding:	cores twisted to pairs, pairs in layers
Screen:	wrapped with tinned copper wires
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer- ϕ \approx mm
0789-9041	8 x (2 x 0,22) D	12,2
0796-9237	8 x 2 x 0,25	8,9

Other dimensions and colours are possible on request.

Technical Data:

Peak operating voltage	Testing voltage	Temperature range	Min. bending radius	Torsion angle	Absence of harmful substances
max. 350 V	core/core 1500 V core/screen 1200 V	flexible application: -40/+90 °C	recommended: 10 x d	up to $\pm 180^\circ/0,5$ m	acc. to RoHS directive of the European Union



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	special Polymer / TPE
Colour code:	with reference to DIN 47100 + black, blue, red, brown, green-yellow
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	redlilac (RAL 4001)

item no.	dimension mm ²	outer- ϕ \approx mm
0367-9048	4 x 1,0 + 5 x 2 x 0,25 + 1 x 1,0	13,2

Other dimensions and colours are possible on request.

Technical Data:

Nominal voltage	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
max. 350 V	core/core 1700 V core/screen 1000 V	flexible application: -40/+70 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



**Your haven't found
your special cable?**

Please contact our specialists!



Foto: KUKA AG



Construction:

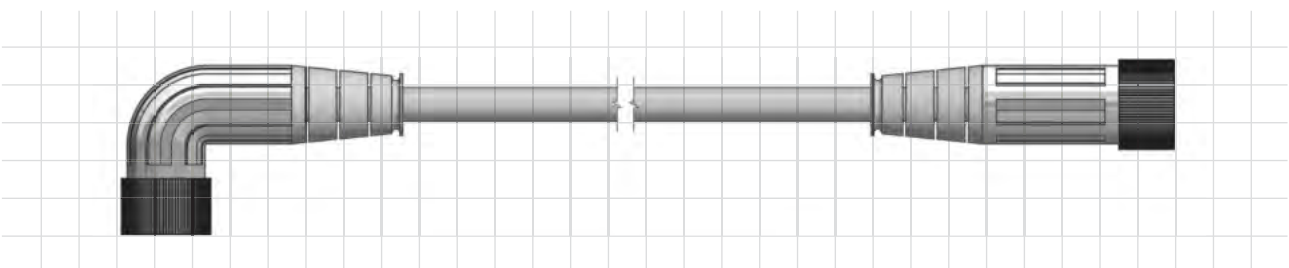
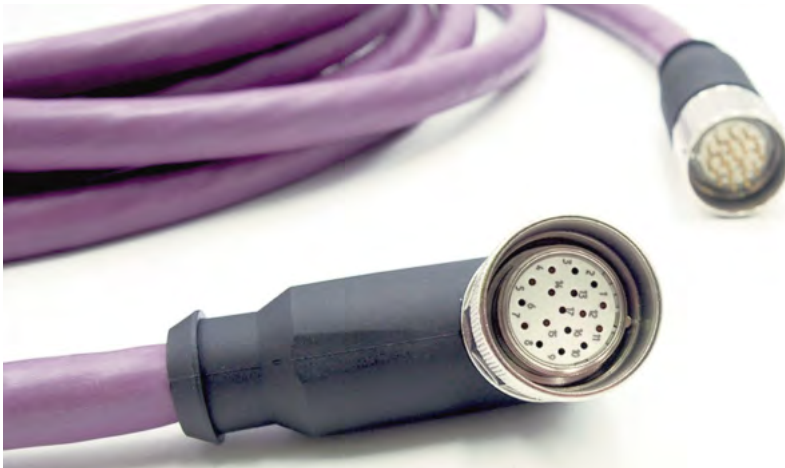
Conductor:	bare resp. tinned copper strands acc. to IEC 60228
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	redlilac (RAL 4001)

item no.	dimension mm ²	outer- ϕ \approx mm
0616-9028	$2 \times (2 \times 0,25) D + 2 \times (2 \times 0,34) D + 1,0 + (2 \times 0,29) D + 2 \times (2 \times 1,0) D$	13,9

Other dimensions and colours are possible on request.

Technical Data:

Operating voltage	Voltage UL	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
max. 350 V	30 V	core/core 1000 V core/screen 700 V	flexible application: -40/+70 °C UL: up to +80 °C	recommended: 12 x d	acc. to RoHS directive of the European Union





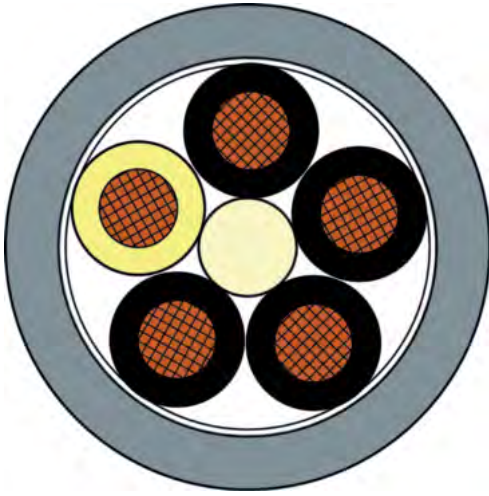
item no.	dimension mm ²	outer- ϕ \approx mm
0625-9019	(2 x 0,34) D CB + 3 x (2 x 0,50) D + 1 x 0,50	9,4
0796-9217	4 x (2 x 0,50) D + 1 x 0,50	9,7
0796-9238	4 x (2 x 0,25) D + (2 x 0,50) D	10,4
1639-9009	4 x (2 x AWG 24) D Cat.6 + (4 x 0,50) D	11,6

Other dimensions and colours are possible on request.



Power cable

5 x 1,5 mm²



item no.	dimension mm ²	outer- ϕ \approx mm
0737-9005	5 x 1,5	9,9

Other dimensions and colours are possible on request.



We assemble our cables with your requested plugs even for small quantities. Please contact us!

Push-Pull

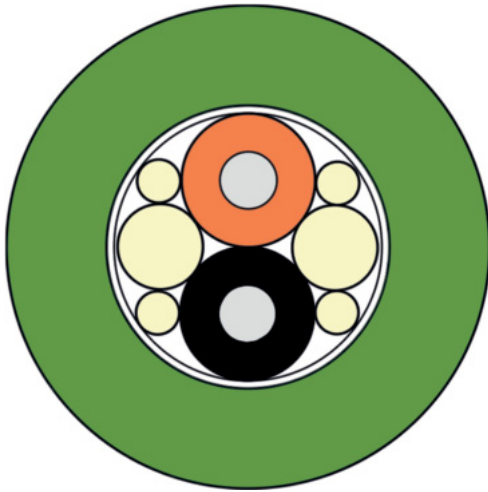


7/8"



M12





Construction:

Optical waveguide:	POF - polymer optical fibre
Colour code:	black + orange
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	0664-9001 blazing red (RAL 3000) 0671-9013 green (RAL 6018)

item no.	dimension	colour	outer- ϕ \approx mm
0664-9001	2 x POF	red	8,0
0671-9013	2 x POF	green	8,0

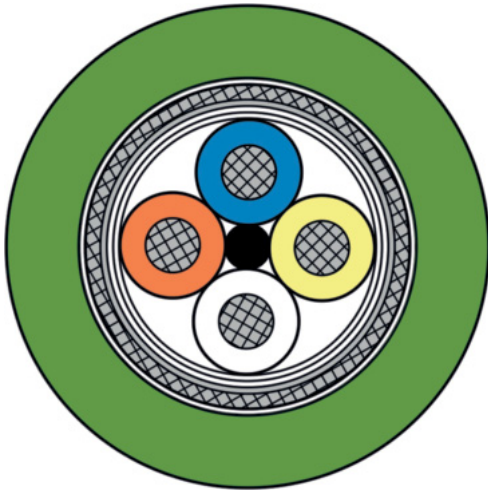
Other dimensions and colours are possible on request.

Technical Data:

Temperature range	Min. bending radius	Absence of harmful substances
flexible application: -20/+70 °C	POF mind. 30 mm recommended for the complete cable: 10 x d	acc. to RoHS directive of the European Union



Foto: Becker GmbH, Dülmen



Construction:	
Conductor:	tinned copper strands acc. to IEC 60228
Colour code:	white, blue, orange, yellow
Stranding:	twisted paires, resp. twisted to star quad
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	green (RAL 6018)

item no.	dimension mm ²	category	outer-ø ≈ mm	stranding
0668-9001	2 x 2 x 22 AWG	CAT 5	7,0	star quad
0668-9039	2 x 2 x 22 AWG	CAT 5	7,8	paired

Other dimensions and colours are possible on request.

Technical Data:

Peak operating voltage	Testing voltage	Temperature range	Torsion angle	Absence of harmful substances
max. 350 V	core/core 1500 V core/screen 1200 V	flexible application: -30/+70 °C	recommended: ±180°/m	acc. to RoHS directive of the European Union

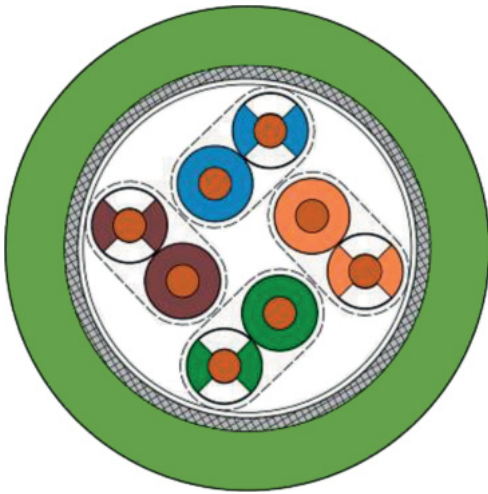
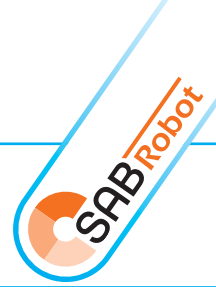


We assemble our cables with connectors of all well-known manufacturers



Cables for robots

RT Ethernet cables CAT 6A



Construction:

Conductor:	copper strands acc. to IEC 60228
Colour code:	coloured acc. to specification
Stranding:	cores twisted to pairs
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	green (RAL 6018)

item no.	dimension mm ²	category	outer-ø ≈ mm	stranding
1687-4631	4 x 2 x 26 AWG	CAT 6A	7,1	paired

Other dimensions and colours are possible on request.

Technical Data:

Peak operating voltage	Testing voltage	Temperature range	Torsion angle	Absence of harmful substances
max. 90 V	core/core 2000 V core/screen 2000 V	flexible application: -30/+70 °C	recommended: ±180°/m	acc. to RoHS directive of the European Union



Foto: Adobe Stock



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	4 x 2 x AWG 26: FEP 4 x 1,0 mm ² : TPE
Colour code:	4 x 2 x AWG 26: white-blue/blue, white-orange/orange, white-green/green, white-brown/brown 4 x 1,0 mm ² : black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334
Sheath material:	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer-ø ≈ mm
0694-9001	4 x 2 x AWG 26 + 4 x 1,0	12,6

Other dimensions and colours are possible on request.

Technical Data:

Peak operating voltage	Nominal voltage	Testing voltage	Temperature range	Min. bending radius	Absence of harmful substances
4 x 2 x AWG 26: max. 350 V	4 x 1,0 mm ² : 300/500 V	4 x 2 x AWG 26: core/core 1500 V core/screen 1200 V 4 x 1,0 mm ² : core/core 2000	flexible application: -40/+90 °C	recommended: 10 x d	acc. to RoHS directive of the European Union



**Teach Pendant cables
on request!**



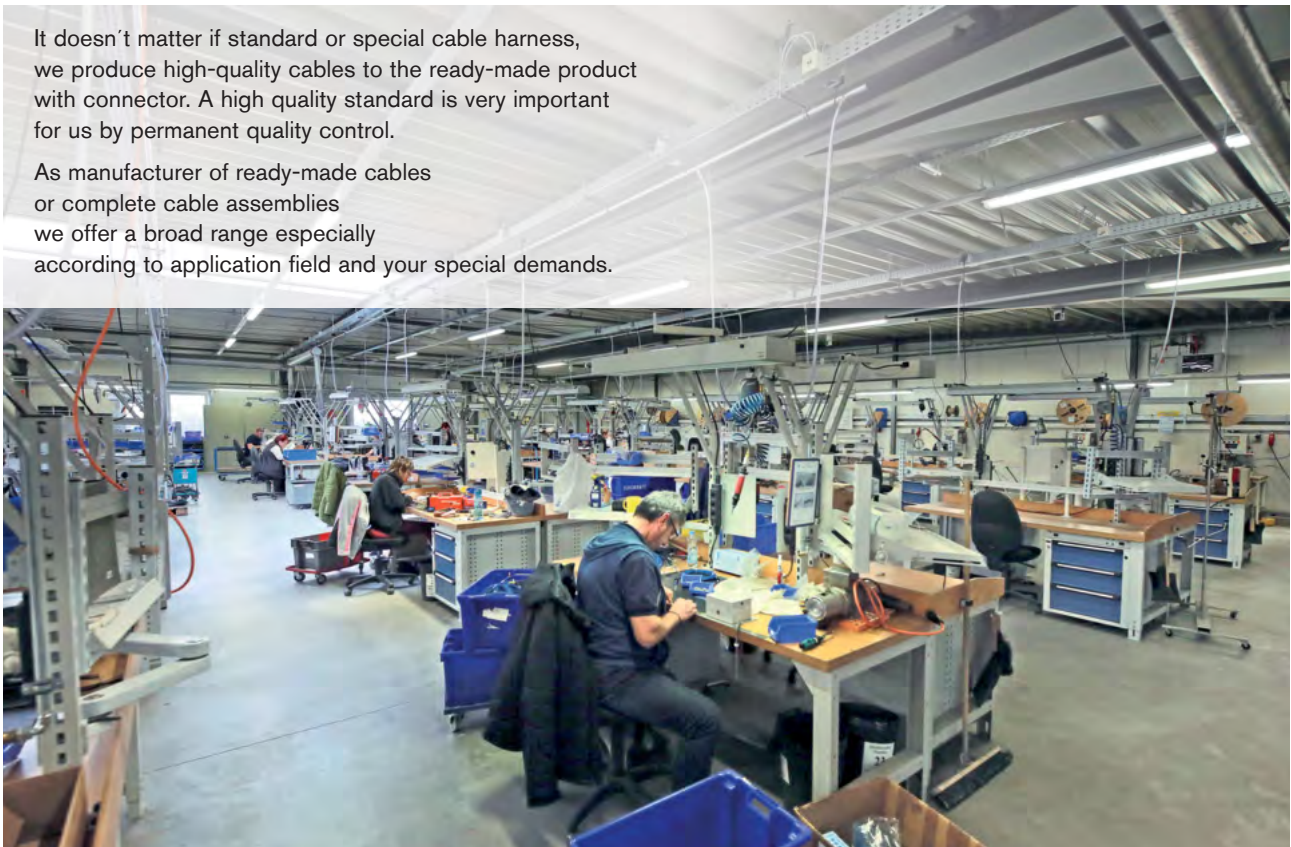
Cables ready for connection

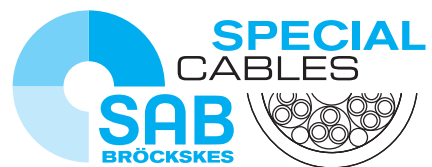
Our cable harnessing workshop



It doesn't matter if standard or special cable harness, we produce high-quality cables to the ready-made product with connector. A high quality standard is very important for us by permanent quality control.

As manufacturer of ready-made cables or complete cable assemblies we offer a broad range especially according to application field and your special demands.





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