

Cables for robots



www.sab-worldwide.com



UNION BRÖCKSKES • D-VIERS

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Robot cables

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DIN EN ISO 9001

More than 60 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 customer's 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 of the world. 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 9001:2008. Besides we established an environmental management system for our company acc. to ISO 14001:2004, 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, middle sized company

CEO:

- Peter Bröckskes and Sabine Bröckskes-Wetten

plant/location:

- in Viersen (lower Rhine) 110.000 m² company site
- manufacturing from copper conductor to outer sheath,
- own VDE proofed burnchamber and laboratory

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:

- quality management system acc. to ISO 9001:2008 for every manufacturing field
- environmental management system acc. to ISO 14001:2004
- 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



**MIL, VDE, HAR, IEC, GL, DNV, BV, KR,
ABS, NK, RINA, LR, CE**

VW Ford
 Daimler
Automotive Industry
 Audi Opel
 BMW

KUKA
 ABB Cloos
Robotics industry
 Motoman
 Reis b & m

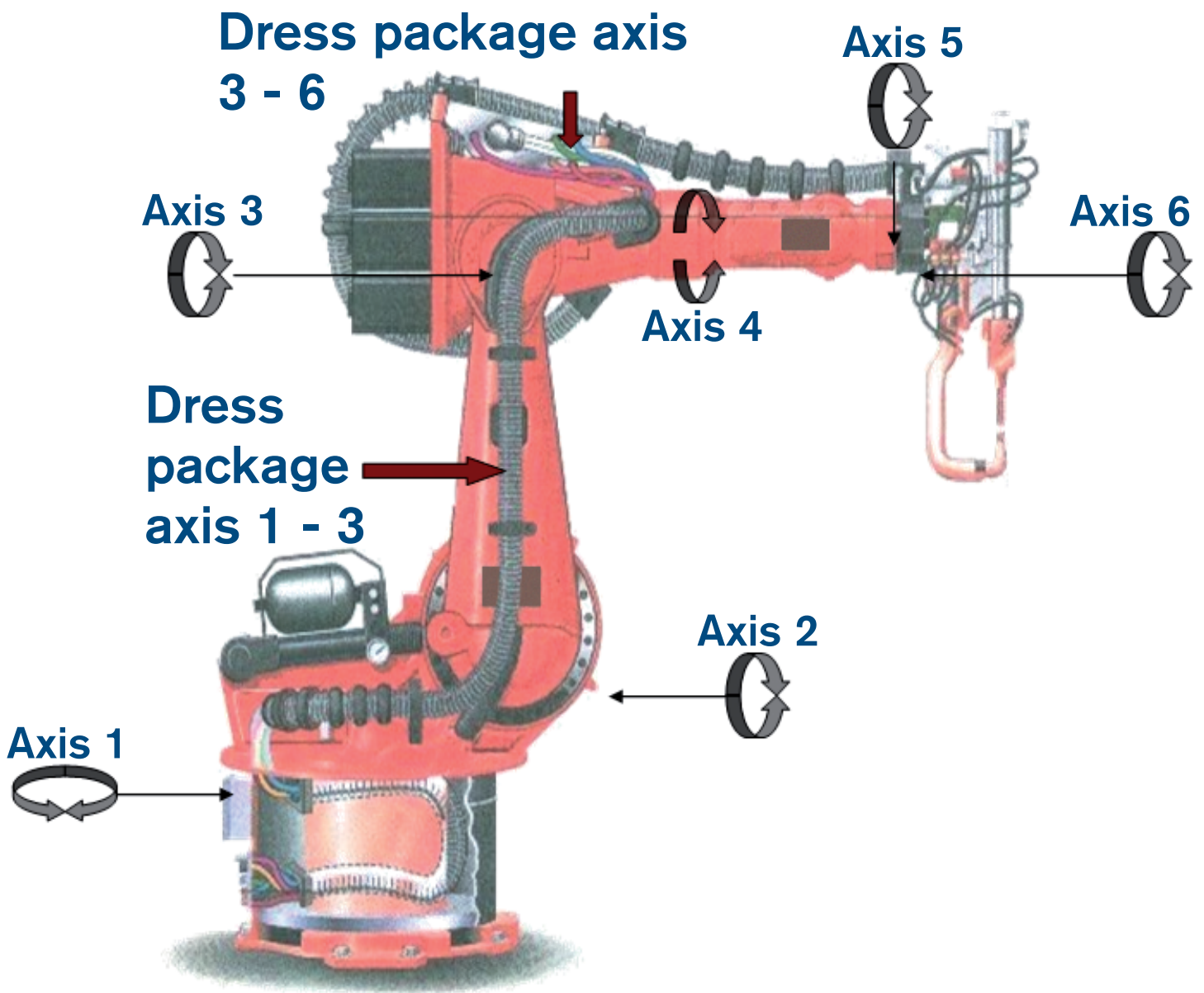
Dürr Schuler
 Liebherr
Automation Technology
 ThyssenKrupp EMAG
 Felsomat

Lenze
 Ferrocontrol
Drive Technology
 Stöber Moeller
 ELAU

Supplier Numbers

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

D-U-N-S® number
 315 499 111
 worldwide



Cables for dress package

- SAB Item no.: 0774-9084 3 x 25,0 mm²
- SAB Item no.: 0737-9005 + 5 x 1,5 mm² +
0664-9001 2 x POF
- SAB Item no.: 0764-9086 7 x 1,0 mm² + (2 x 0,5 mm²)
- SAB Item no.: 0764-9065 23 x 1,0 mm² + (2 x 1,0 mm²) D



From our central stock in Viersen-Süchteln or our external stocks we supply standard lengths as well as special dimensions, often within 24 hours. It is our strength to be at different places at the same time. This shows also our wide product range. Being always ready to deliver our products of constant quality is one of the premises at SAB BRÖCKSKES. Challenge, obligation - but also guarantee at the same time. This is your advantage - we are present whenever you need our assistance.

SAB
BRÖCKSKES
Viersen - Germany
1947

KANSA
KABELTECHNIK
Viersen - Germany
1995

SAB
BENELUX
Bergeijk - Netherlands
1995

CABLERIE
SAB
Auxerre - France
1996

AUXICOM
Nantes - France
1998

SAB
North America
Fairfield - USA
2001

SAB
CHINA
Shanghai - China
2004

KABEL
MEXICO
Zapopan - Mexico
2004

TCC
Thomas Cable
Chung-Buk - Korea
2005

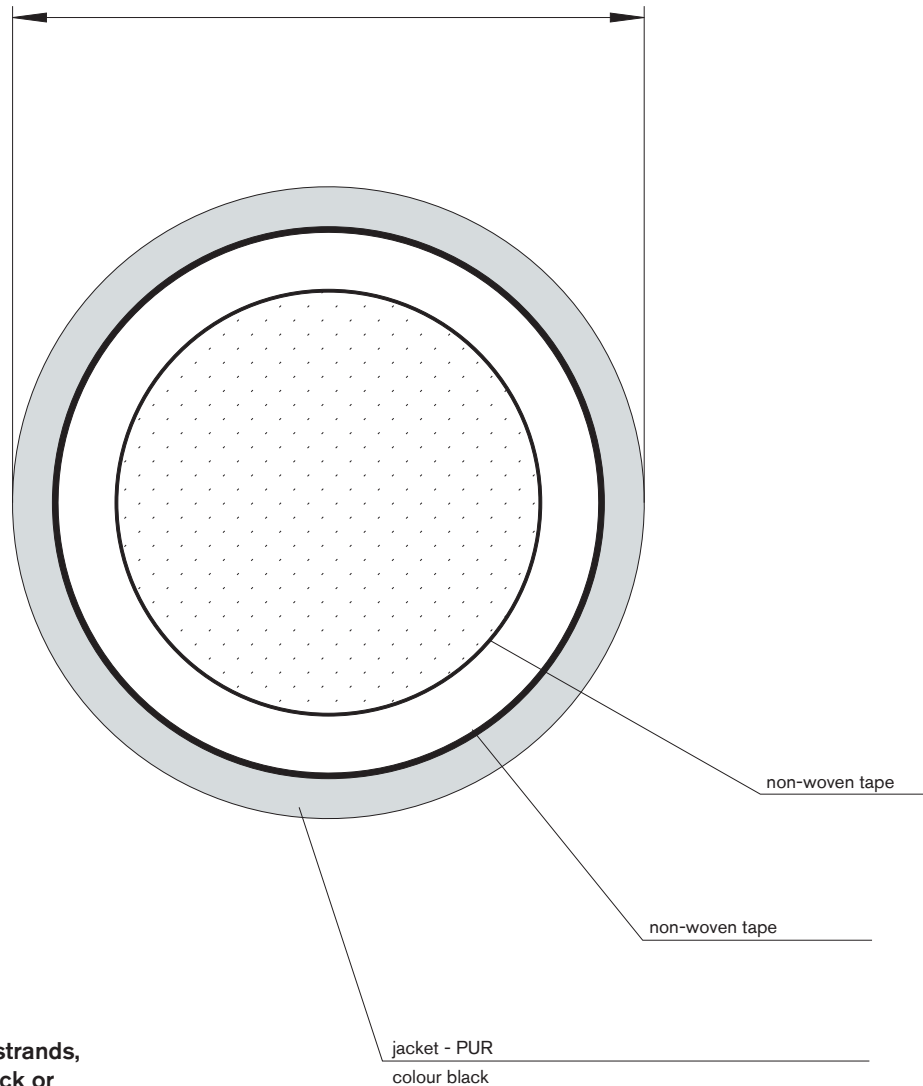
BCH ELECTRIC LIMITED
we care for you
Faridabad - India
2006

POZITRON
Yekaterinburg - Russia
2012

BERUF
Curitiba - Brazil
2013

DeSA
& **teknik GRU**
Ankara / Istanbul - Turkey
2013

Item no.: 0761-9051	1 x 16,0 mm ² black	= approx. Ø 10.1 mm
Item no.: 0761-9052	1 x 25,0 mm ² black	= approx. Ø 11.1 mm
Item no.: 0761-9050	1 x 25,0 mm ² green/yellow	= approx. Ø 11.1 mm
Item no.: 0761-9048	1 x 35,0 mm ² black	= approx. Ø 13.3 mm
Item no.: 0761-9054	1 x 50,0 mm ² black	= approx. Ø 15.8 mm



strand; bare copper strands,
insulation PUR in black or
green/yellow

Technical Data

Operating voltage:	750 V (DC)
Testing voltage:	2000 V (AC)
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	7,5 x outer diameter
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Absence of harmful substances:	acc. to RoHS directive of the European Union

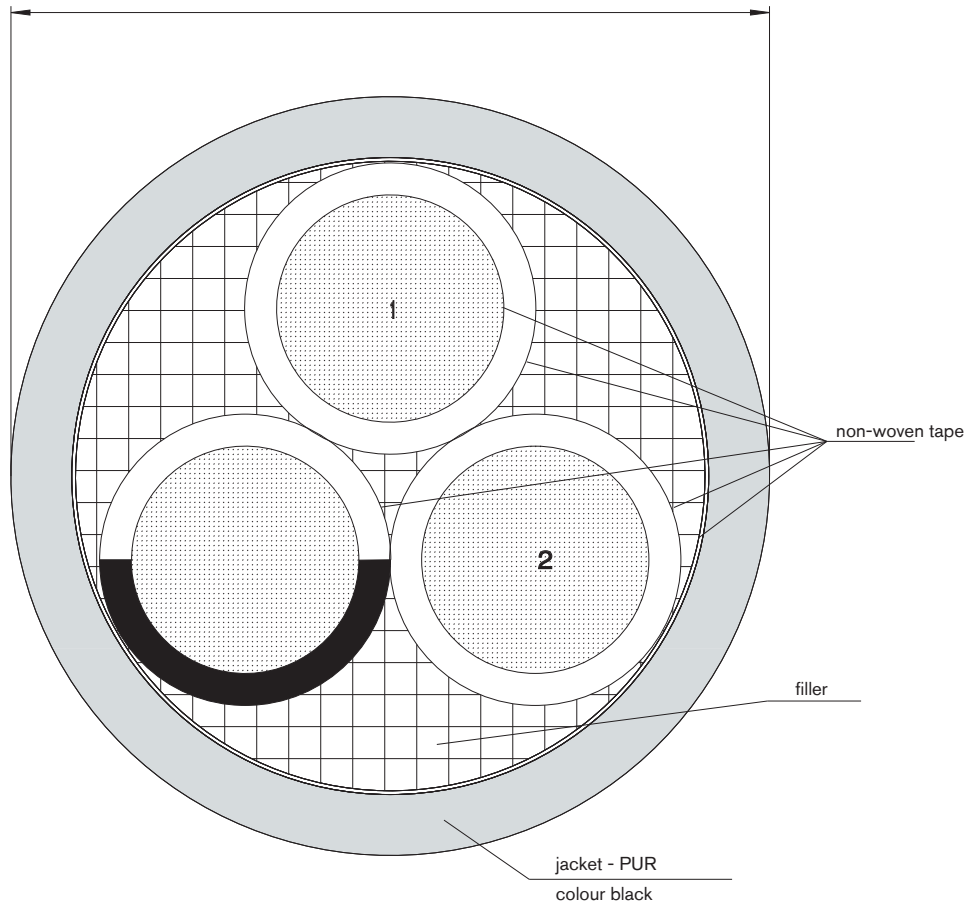
Further technical information on request

Item no: 0774-9111 3 x 16,0 mm² = approx. Ø 19.3 mm

Item no: 0774-9084 3 x 25,0 mm² = approx. Ø 23.3 mm

Item no: 0774-9085 3 x 35,0 mm² = approx. Ø 26.6 mm

Item no: 0774-9088 3 x 50,0 mm² = approx. Ø 30.8 mm



conductors; bare copper strands, insulation PUR in black
with numbers 1 - 2 + green/yellow

Technical Data

Operating voltage: 3 x 16 mm ² 3 x 25 mm ² , 3 x 35 mm ² + 3 x 50 mm ²	500 V (DC) 750 V (DC)
Testing voltage: 3 x 16 mm ² 3 x 25 mm ² , 3 x 35 mm ² + 3 x 50 mm ²	1500 V (AC) 2000 V (AC)
Temperature range: flexible application: fixed laying:	-40°C up to +90°C -50°C up to +90°C
Min. bending radius: static: continuously flexing:	5 x outer diameter 7,5 x outer diameter
Halogen-free:	acc. to DIN VDE 0472 part 815 and IEC 60754-1
Absence of harmful substances:	acc. to RoHS directive of the European Union

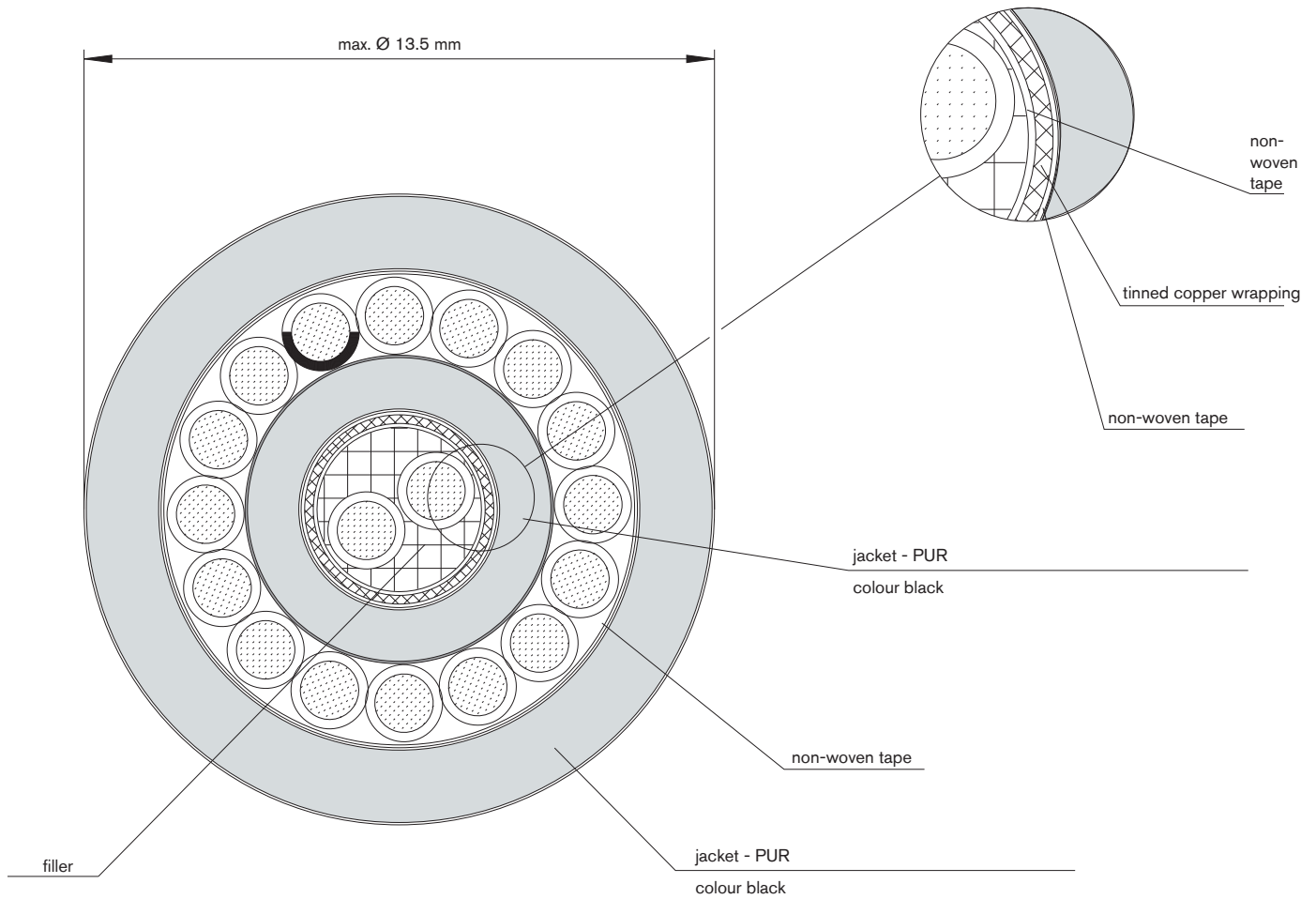


Sheath also possible
in orange or yellow!

Further technical information on request

Item no.: 0764-9079

16 x 1,0 mm² + (2 x 1,0 mm²) D



conductors 1,0 mm²; tinned copper strands,
insulation TPE in black with numbers 1 - 17 + green/yellow

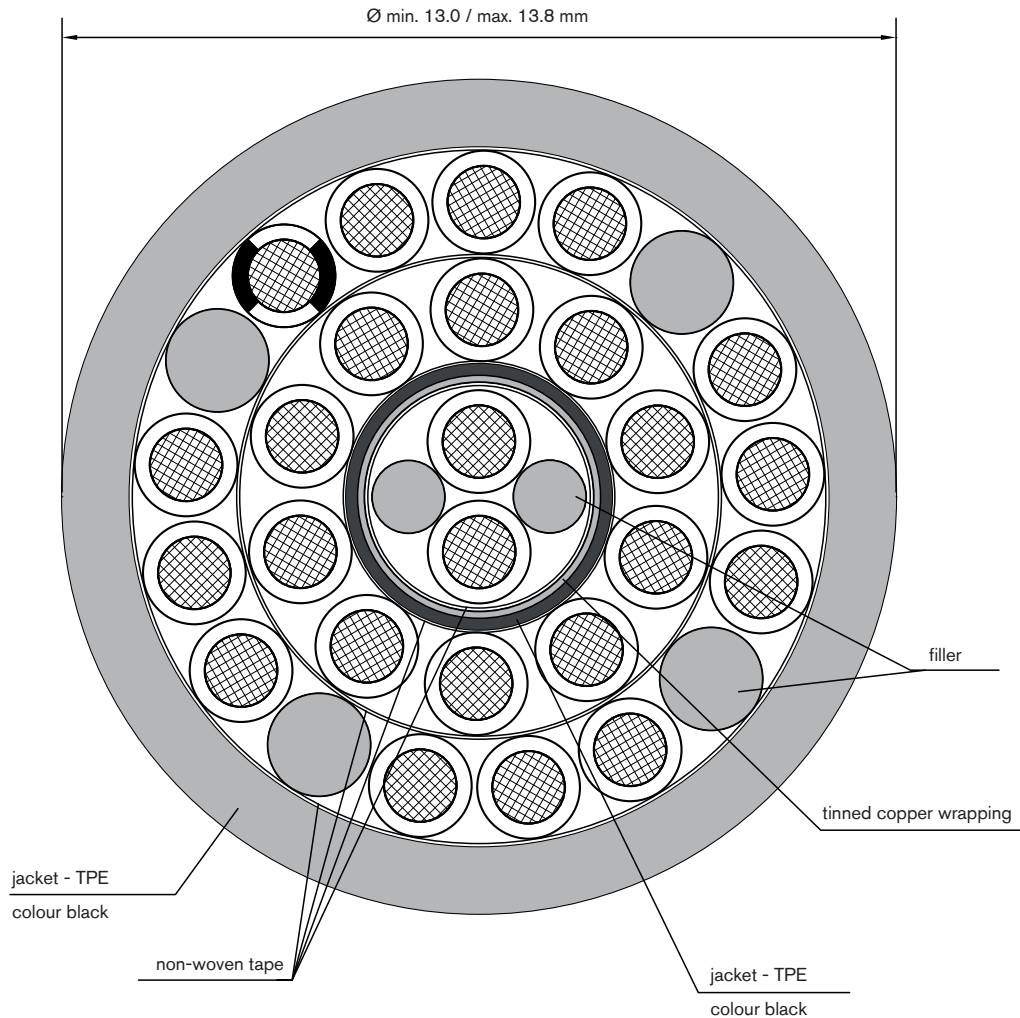
Technical Data

Peak operating voltage:	max. 350 V
Testing voltage:	cond./cond. 1500 V cond./screen 1000 V
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	
flexing:	10 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0764-9065

23 x 1,0 mm² + (2 x 1,0 mm²) D



conductors 1,0 mm²; tinned copper strands,
insulation TPE in white with numbers 1 - 24 + green/yellow

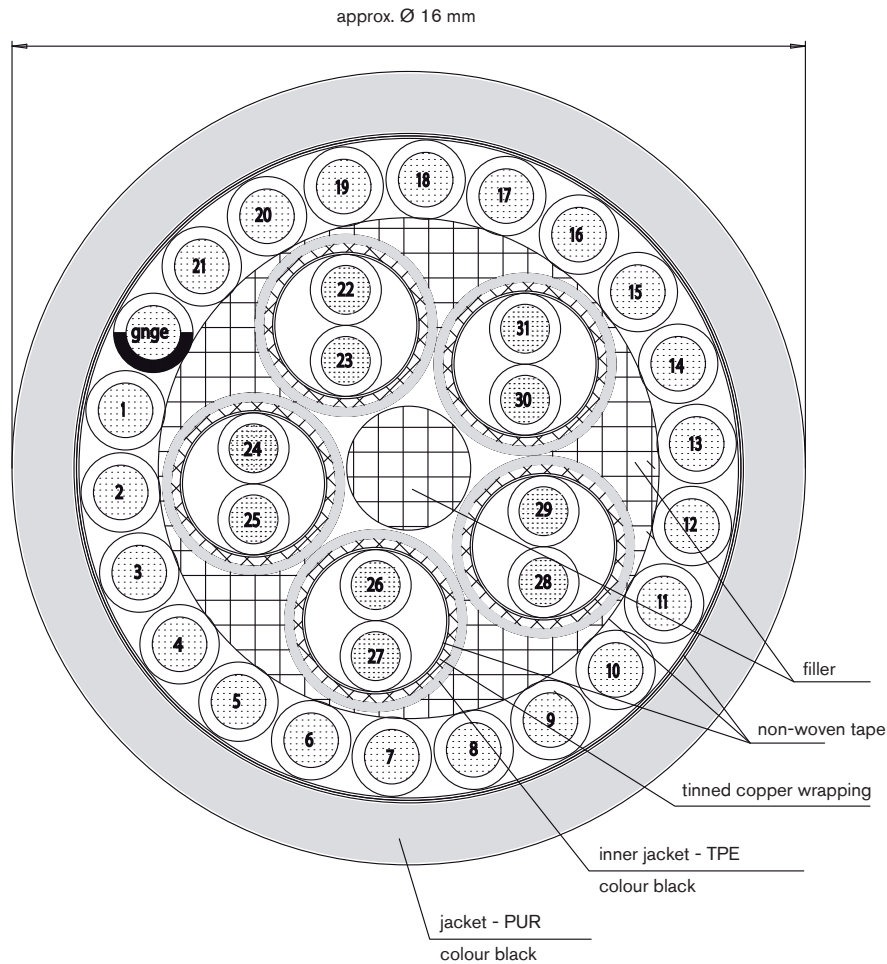
Technical Data

Peak operating voltage:	U _{b max.} 600 V DC (core-core)
Testing voltage:	cond./cond. 2500 V DC cond./screen 1250 V DC
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	
flexible application:	10 x outer diameter
fixed laying:	5 x outer diameter
Torsion angle:	up to ± 180° / 1 m
Oil resistance:	very good - TPU acc. to EN 50363-10-2
Halogen-free:	acc. to DIN VDE 0472 part 815 + IEC 60754-1
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0796-9081

5 x (2 x 0,75 mm²) D + 22 x 0,75 mm²



conductors 0,75 mm²;

insulation TPE in white with numbers 1 - 31 + green/yellow

Technical Data

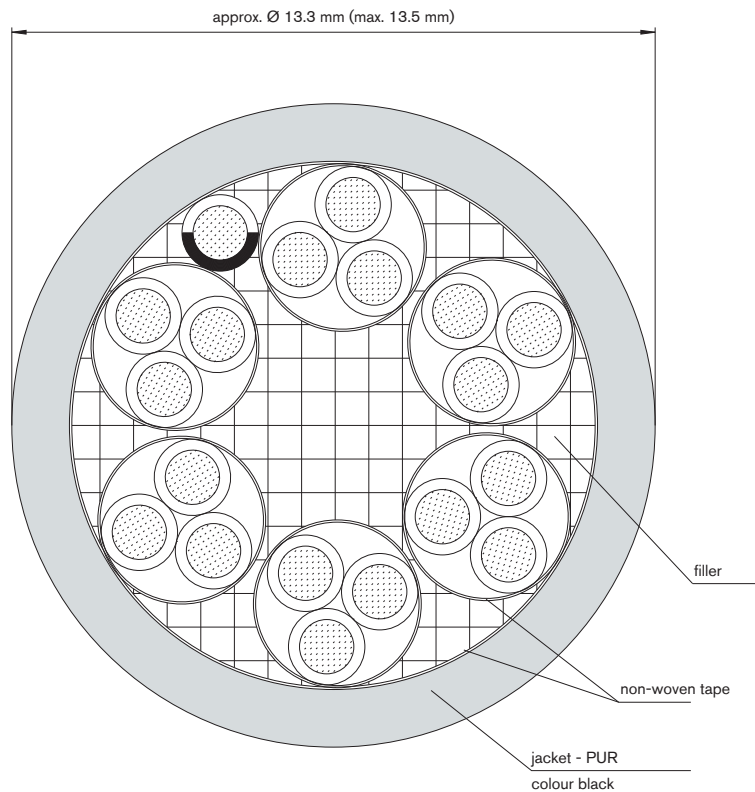
Nominal voltage:	VDE U ₀ /U 300/500 V
Testing voltage:	cond./cond. 2000 V (AC) cond./screen 2000 V (AC)
Temperature range:	
flexible application:	-40°C up to +80°C
fixed laying:	-40°C up to +80°C
Min. bending radius:	
flexing:	10 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

PUR CONTROL CABLE

Item no.: 0760-9056

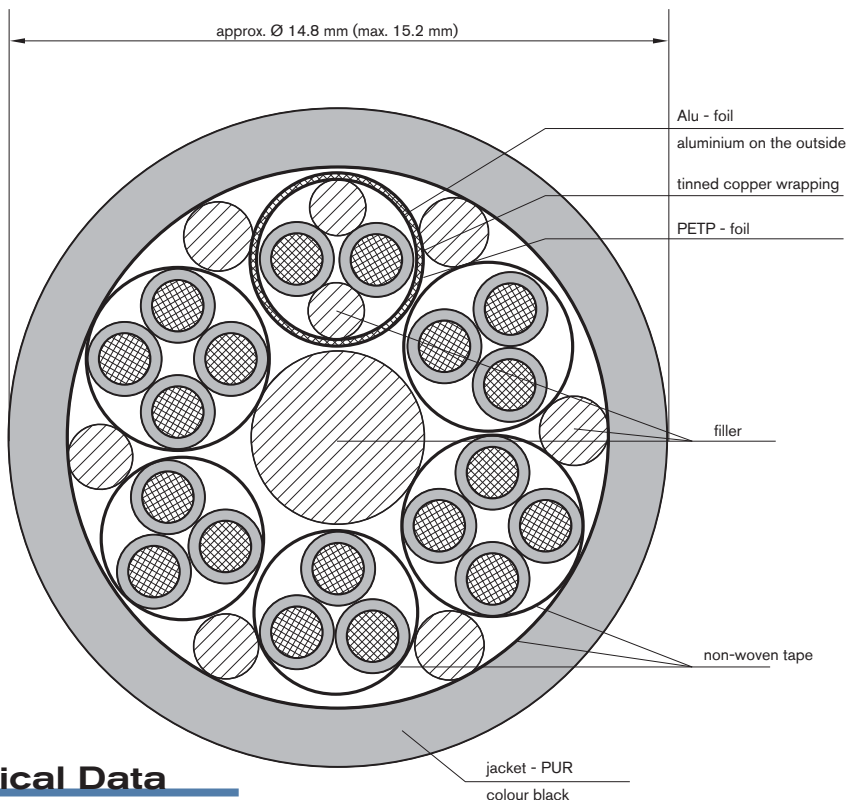
19 x 1,0 mm²



Item no.: 0760-9061

19 x 1,0 mm²

(2 x 1,0 mm²) D +
3 x 3 x 1,0 mm² +
2 x 4 x 1,0 mm²



Technical Data

Peak operating voltage:	max. 350 V
Testing voltage:	cond./cond. 1500 V
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	
flexing:	6 x outer diameter
static:	4 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

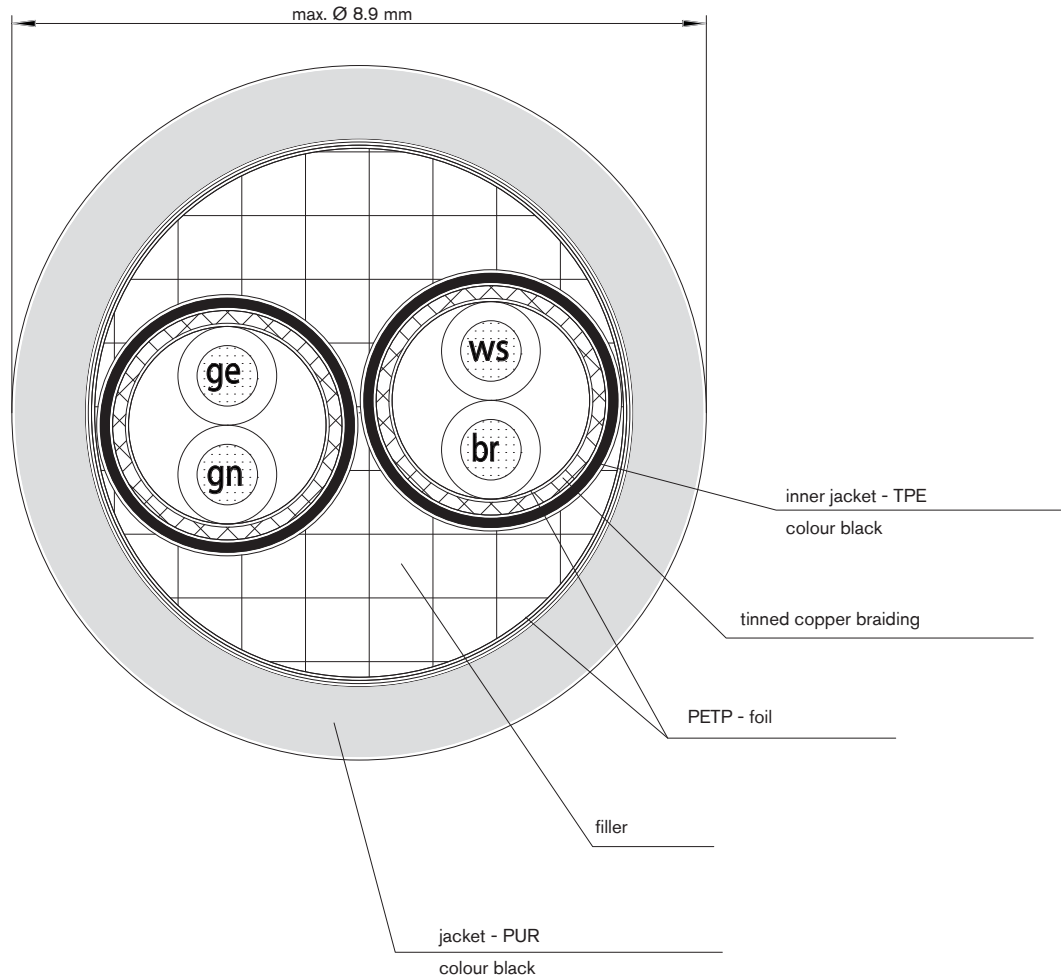
Item no.: 0760-9056:
conductors 1,0 mm²; bare copper strands,
insulation TPE in white, numbers 1 - 18 + green/yellow

Item no.: 0760-9061:
conductors 1,0 mm²; bare copper strands,
insulation TPE in white, numbers 1 - 18 + green/yellow

Further technical information on request

Item no.: L 0795-9035

(2 x 0,50 mm²) D + (2 x 0,50 mm²) D



conductors 0,50 mm²; bare copper strands, wires Ø 0,15 mm,
insulation TPE, colour code DIN 47100

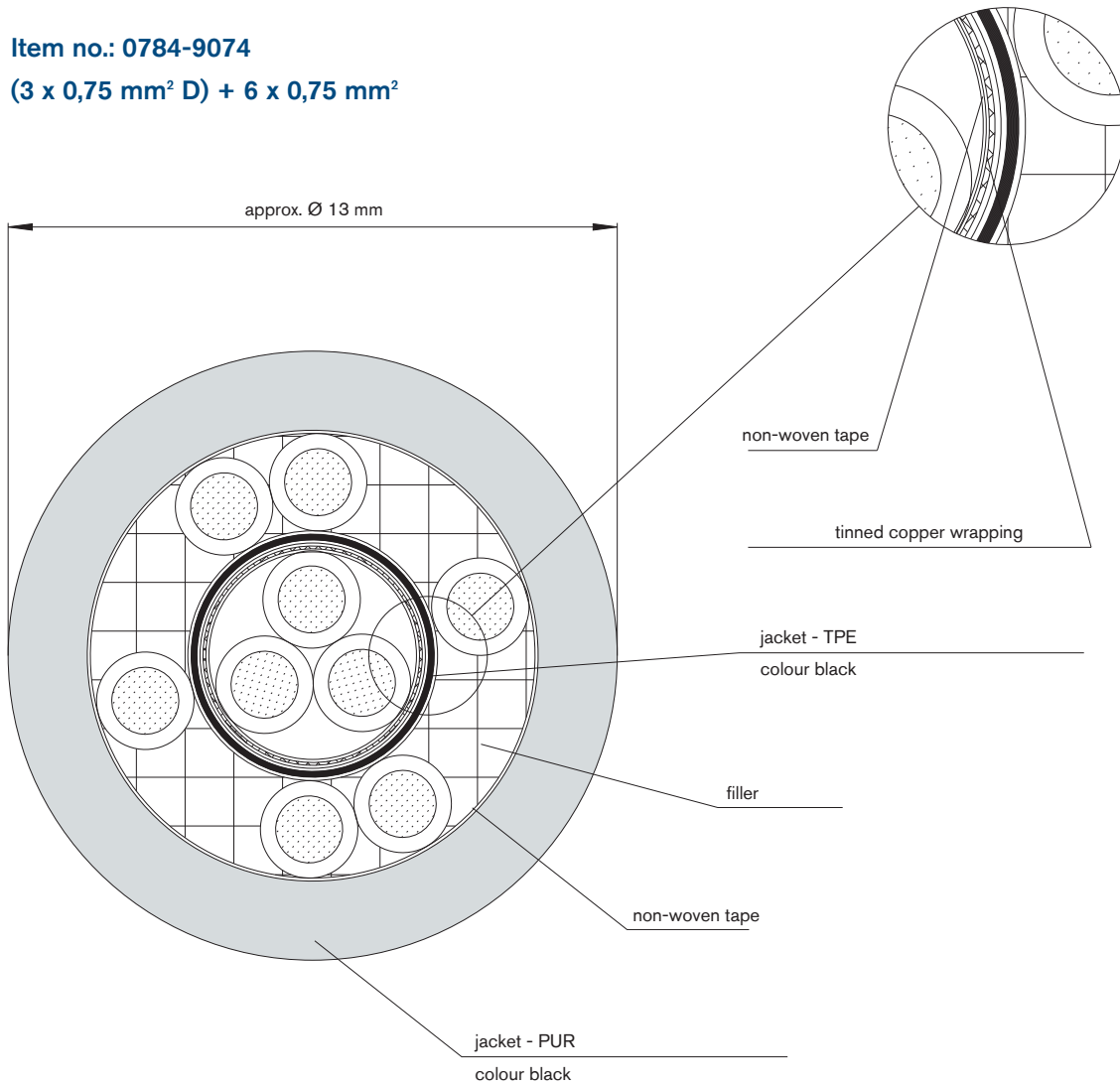
Technical Data

Operating voltage $U_{b \max}$:	600 V DC (conductor-conductor)
AC testing voltage:	core/core 2500 V DC core/screen 1250 V DC
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	
flexing:	10 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0784-9074

(3 x 0,75 mm² D) + 6 x 0,75 mm²



conductors 0,75 mm²; tinned copper strands,
insulation TPE in white with numbers 1 - 9

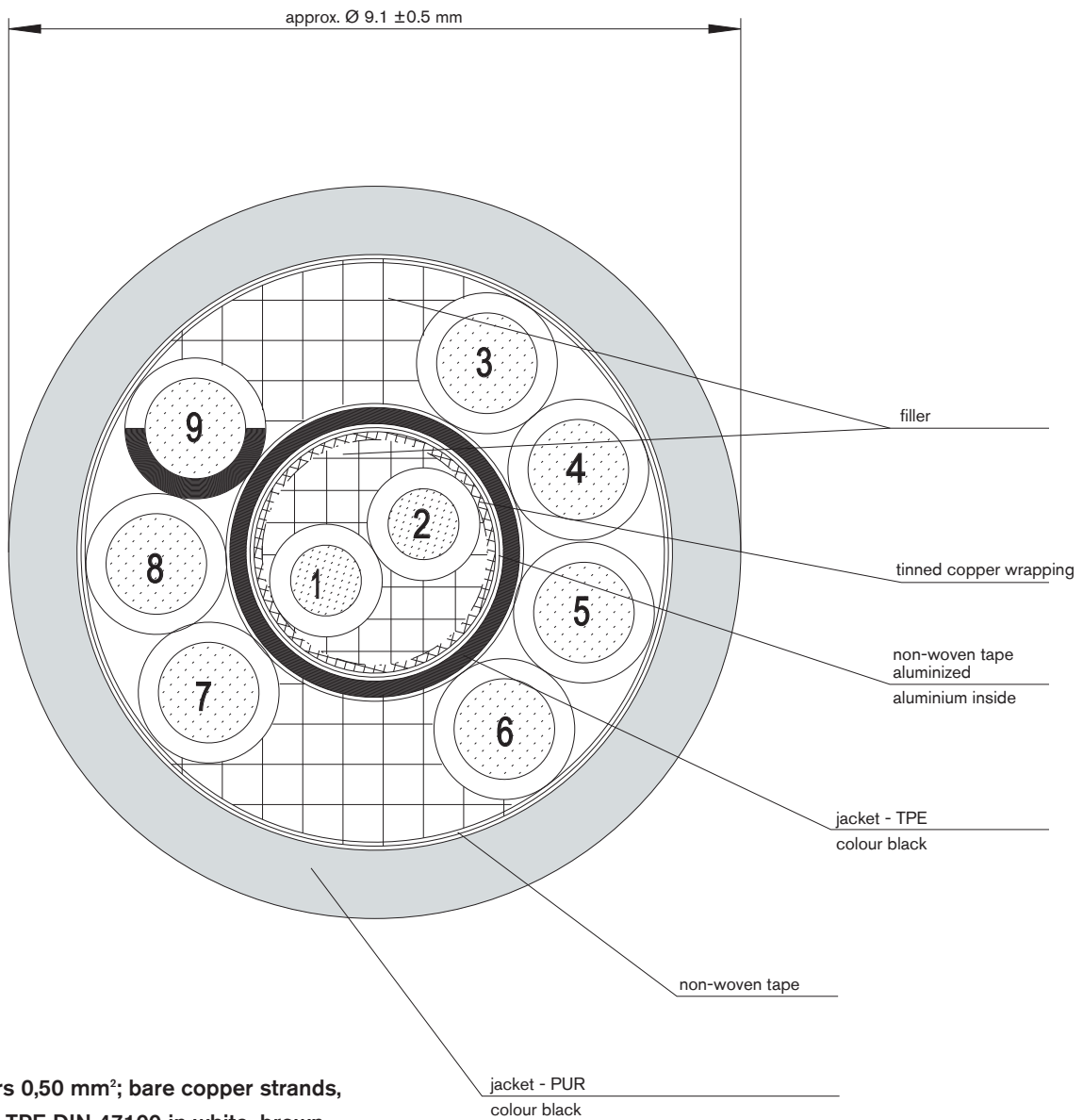
Technical Data

Peak operating voltage:	max. 350 V
Testing voltage:	cond./cond. 1500 V cond./screen 1000 V
Temperature range: flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius: continuously flexing:	12 x outer diameter
flexing:	7,5 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0764-9086

(2 x 0,50 mm²) D + 7 x 1,0 mm²



conductors 0,50 mm²; bare copper strands,
insulation TPE DIN 47100 in white, brown

conductors 1,0 mm²; bare copper strands,
insulation TPE in black with numbers 1 - 6 + green/yellow

Technical Data

Peak operating voltage:	max. 600 V
Testing voltage:	cond./cond. 3000 V cond./screen 2000 V
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
short-time use:	+125°C
Min. bending radius:	7,5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

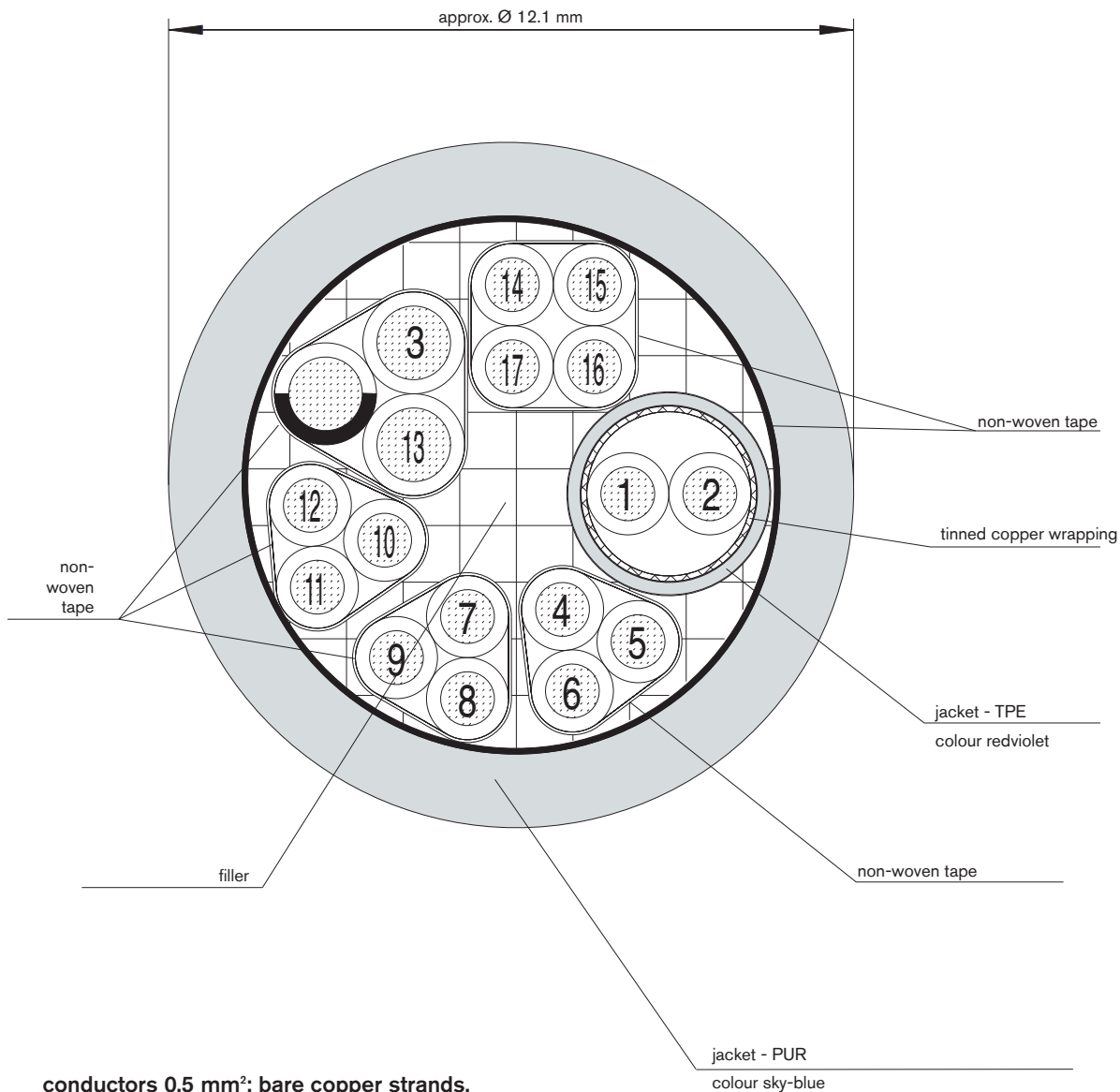
Further technical information on request

PUR HYBRID CABLE (PNZ CABLE FOR WELDING CONTROL)



Item no.: 0399-0157

13 x 0,5 mm² + 3 x 1,0 mm² + (2 x 0,5 mm²) D



conductors 0,5 mm²; bare copper strands,
 insulation TPE in white with numbers 1 - 2, 4 - 12, 14 - 17

conductors 1,0 mm²; bare copper strands,
 insulation TPE in white with numbers 3, 13 + green/yellow

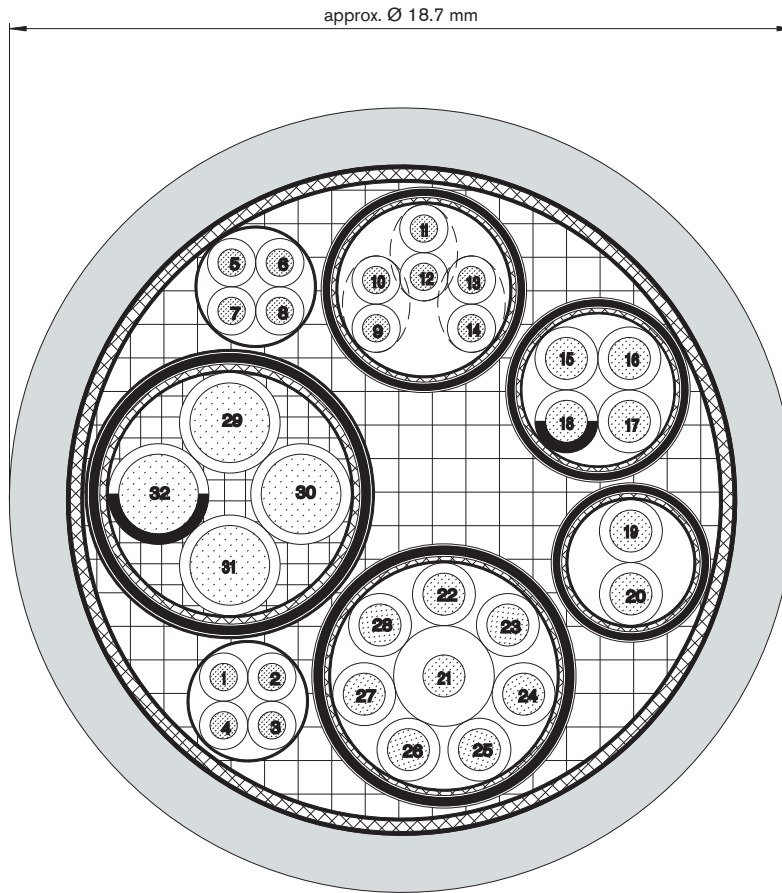
Technical Data

Peak operating voltage:	max. 500 V
Testing voltage:	cond./cond. 1500 V cond./screen 1000 V
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	10 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

32 conductors

Item no.: 0803-9081 $(3 \times 2 \times 0,25 \text{ mm}^2) D + 2 \times 4 \times 0,25 \text{ mm}^2 + (4 \times 0,5 \text{ mm}^2) D + (2 \times 0,5 \text{ mm}^2) D + (4 \times 1,5 \text{ mm}^2) D + (8 \times 0,5 \text{ mm}^2) D$



Pos. 1 - 14 conductors $0,25 \text{ mm}^2$; bare copper strands, DIN 47100 1-8, DIN 47100 1-6

Pos. 15 - 28 conductors $0,5 \text{ mm}^2$; bare copper strands, in black conductors with numbers 1-3, 7-8, 10-16 and green/yellow

Pos. 29 - 32 conductors $1,5 \text{ mm}^2$; bare copper strands, in black conductors with numbers 4-6 and green/yellow

Technical Data

Nominal voltage U_0/U :	300/500 V
Testing voltage:	cond./cond. 3000 V (DC) cond./screen 1500 V (DC) screen/screen 2000 V (DC)
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius for continuously flexible application:	10 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Also available as version
with 31 conductors!

Item no. 0803-9123

Dimension:

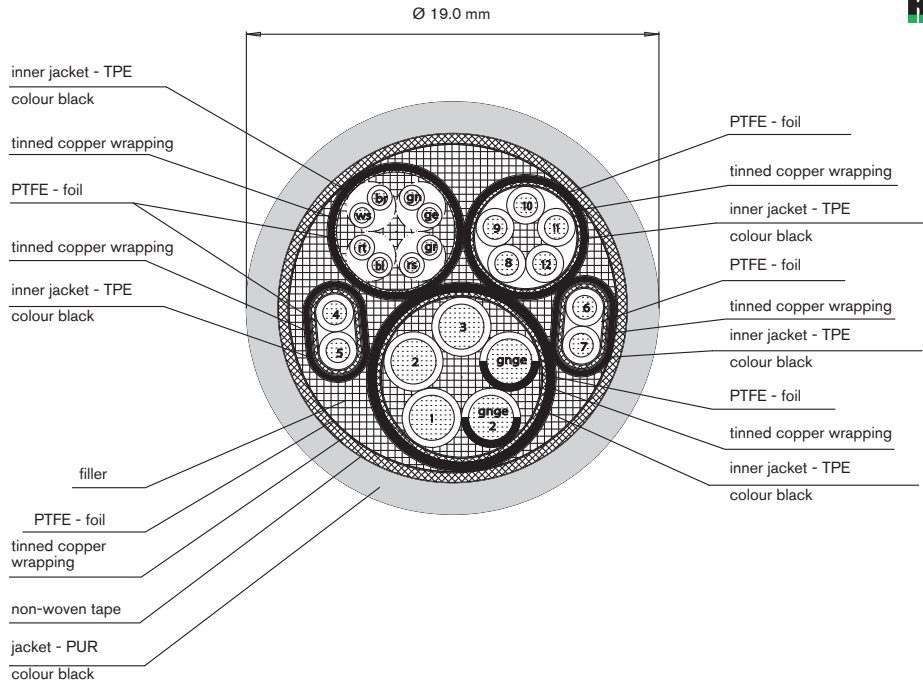
$(3 \times 2 \times 0,25 \text{ mm}^2) D + 2 \times 4 \times 0,25 \text{ mm}^2 + (4 \times 0,5 \text{ mm}^2) D + 2 \times (2 \times 0,5 \text{ mm}^2) D + (4 \times 1,5 \text{ mm}^2) D + (5 \times 0,5 \text{ mm}^2) D$



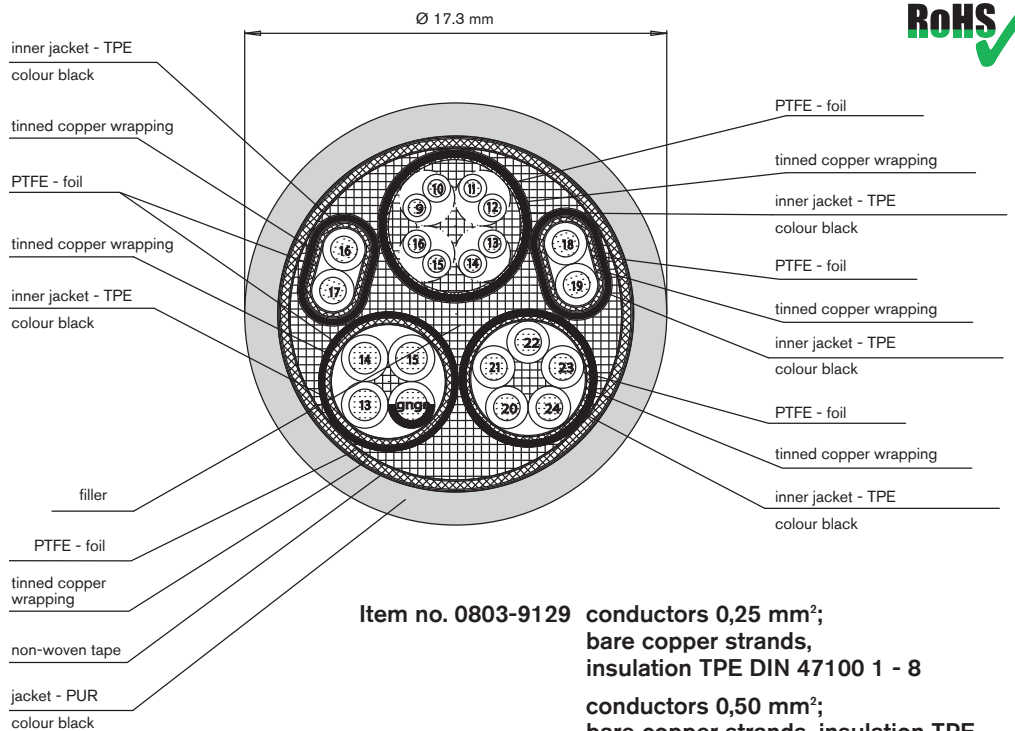
PUR HYBRID CABLE (DIVIDED EMZ CABLE FOR WELDING CONTROL)



Item no.: 0803-9129
(4 x 2 x 0,25 mm²)D +
2 x (2 x 0,50 mm²)D +
(5 x 0,50 mm²)D +
(5 x 1,50 mm²)D



Item no.: 0803-9130
(4 x 2 x 0,25 mm²)D +
2 x (2 x 0,50 mm²)D +
(5 x 0,50 mm²)D +
(4 x 0,75 mm²)D



Item no. 0803-9129 conductors 0,25 mm²; bare copper strands, insulation TPE DIN 47100 1 - 8
 conductors 0,50 mm²; bare copper strands, insulation TPE in white with numbers 4 - 12
 conductors 1,50 mm²; bare copper strands, insulation TPE in white with numbers 1 - 3 + green/yellow + green/yellow

Item no. 0803-9130 conductors 0,25 mm²; bare copper strands, insulation TPE DIN 47100 9 - 16
 conductors 0,50 mm²; bare copper strands, insulation TPE in white with numbers 16 - 24
 conductors 0,75 mm²; bare copper strands, insulation TPE in white with numbers 13 - 15 + green/yellow

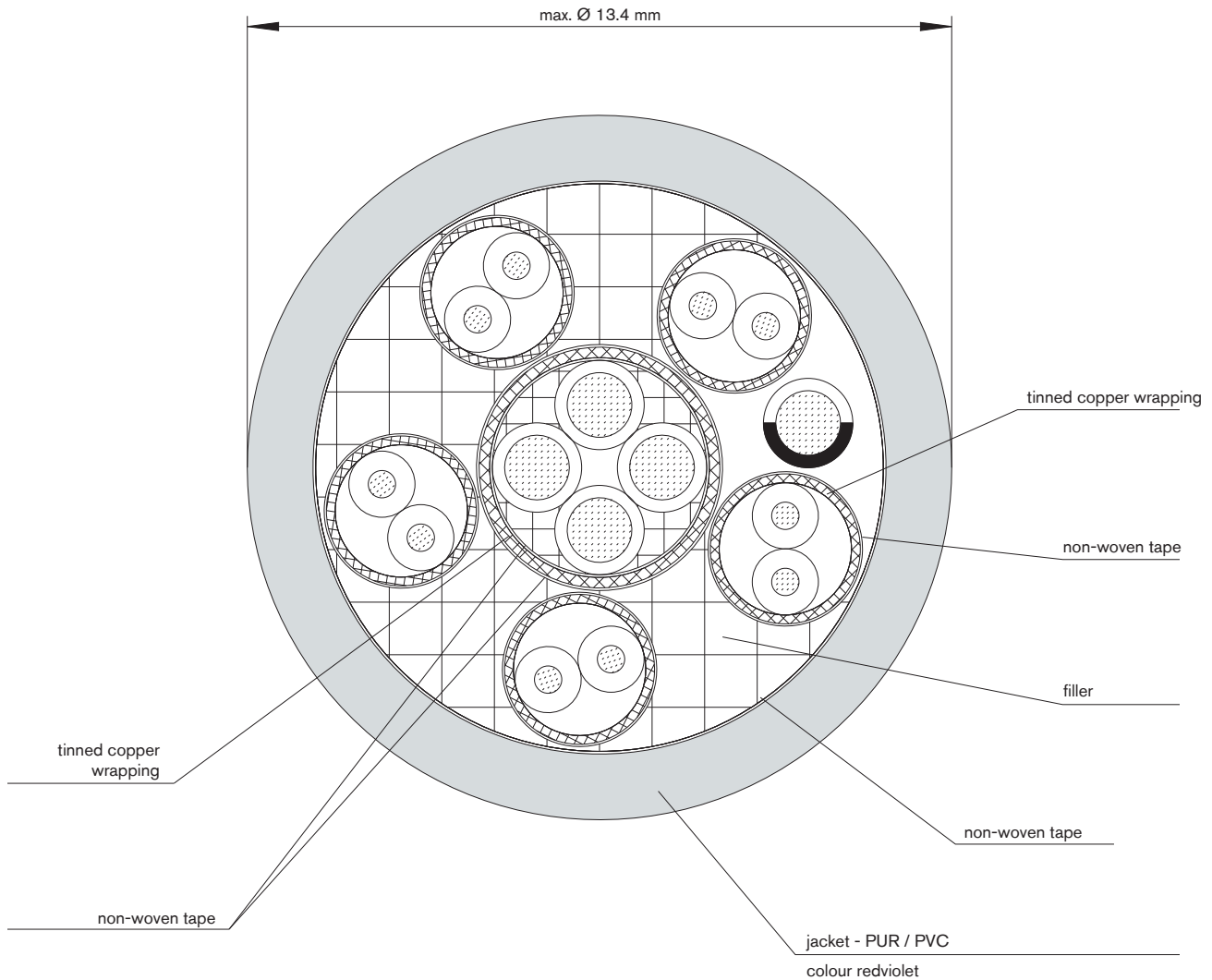
Technical Data

Peak operating voltage:	max. 450 V (0,25 mm ²) max. 600 V (0,50 mm ² + 1,50 mm ²)
AC testing voltage:	cond./cond. 2500 V (0,25 mm ²) 3000 V (0,50 mm ² + 1,50 mm ²) cond./screen 1500 V (0,25 mm ²) 2000 V (0,50 mm ² + 1,50 mm ²) screen/screen 2000 V
Temperature range:	
flexible application:	-40°C up to +80°C
fixed laying:	-50°C up to +80°C
Min. bending radius:	
flexing:	10 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0367-9048

4 x 1,00 mm² + 5 x 2 x 0,25 mm² + 1 x 1,00 mm²



conductors 0,25 mm²; bare copper strands,
insulation special Polymer colour code DIN 47100 1 - 10

conductors 1,00 mm²; bare copper strands,
insulation TPE in black, blue, red, brown, green/yellow

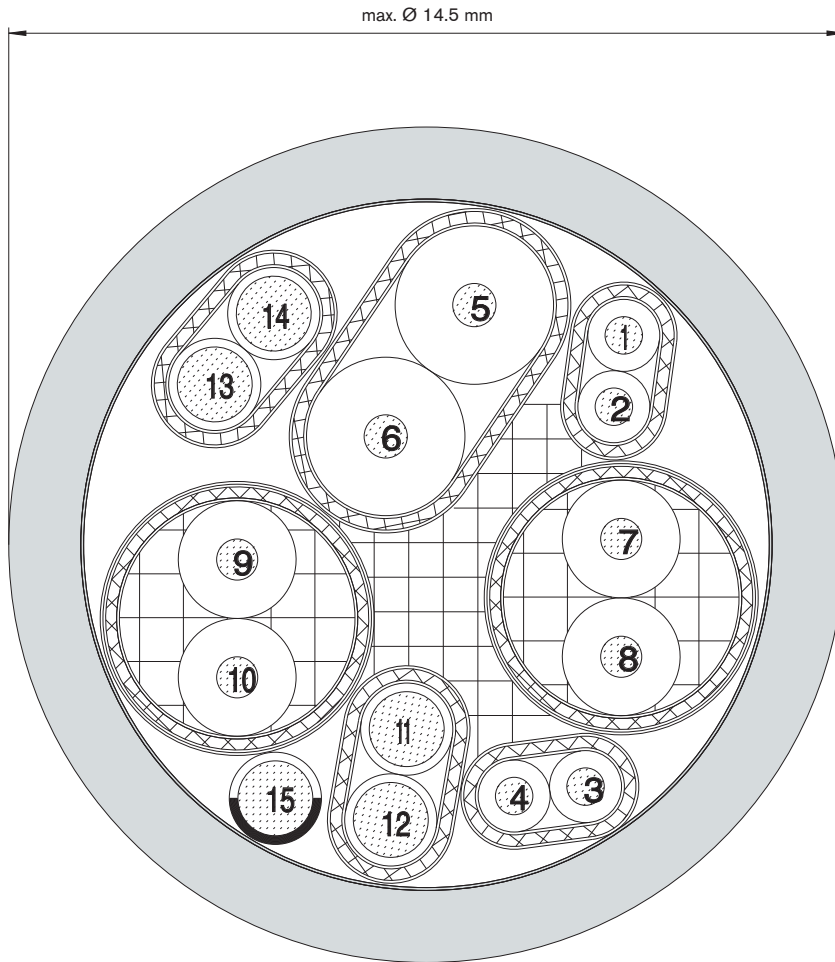
Technical Data

Peak operating voltage:	max. 350 V
Testing voltage:	screen/screen 1700 V (AC) cond./screen 1000 V (AC) cond./cond. 2500 V (DC) cond./screen 1500 V (DC)
Temperature range: flexible application: fixed laying:	-40°C up to +70°C -40°C up to +70°C
Min. bending radius:	7,5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request



Item no.: 0616-9028 2 x (2 x 0,25 mm²) D + 2 x (2 x 0,34 mm²) D +
1,0 mm² + (2 x 0,29 mm²) D + 2 x (2 x 1,0 mm²) D



Interbus-S	Pos. 1 - 4	conductors 0,25 mm ² ; bare copper strands, in green, yellow, grey, pink
Profibus-DP	Pos. 5 - 6	conductors 0,29 mm ² ; bare copper strands, in red, green
DeviceNet	Pos. 7 - 10	conductors 0,34 mm ² ; bare copper strands, in blue + white, blue + red
	Pos. 11 - 15	conductors 1,0 mm ² ; bar copper strands, in red + black, brown + blue, green/yellow

Technical Data

Voltage:	UL 30 V
Temperature range:	
flexible application:	-40°C up to +80°C
fixed laying:	-40°C up to +80°C
Min. bending radius:	10 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union



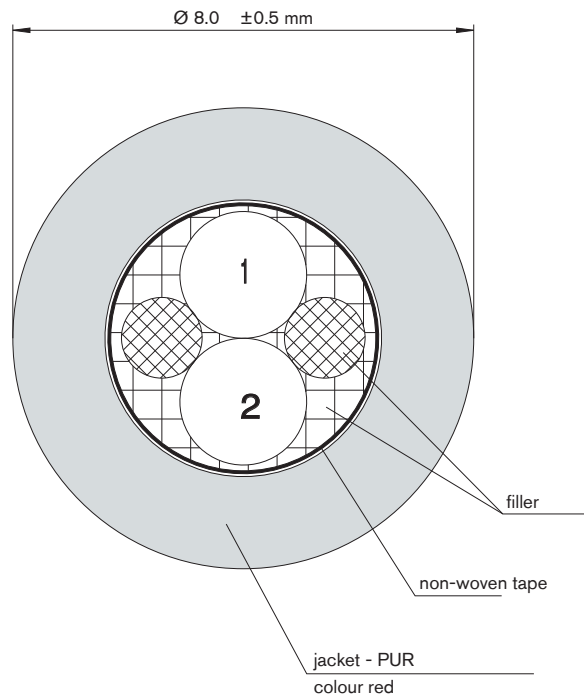
**Also available
for fixed installation!**

Item no. 0616-9032

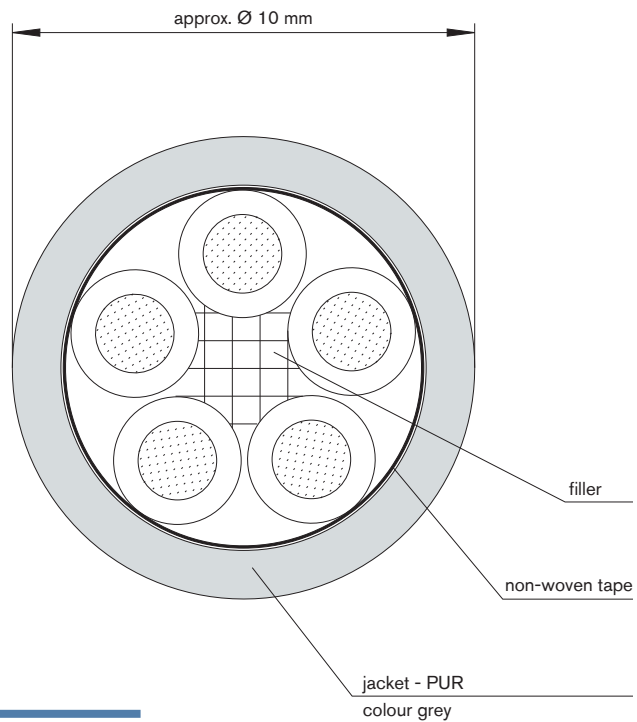
Further technical information on request

Item no.: 0664-9001 and 0737-9005
 2 x POF and 5 x 1,5 mm²

Pos. 1 - 2 POF polymeric optical fibers in black and orange



conductors 1,5 mm²; bare copper strands, insulation special Polymer in black, with numbers 1 to 4 and one yellow with numbers 5 in black



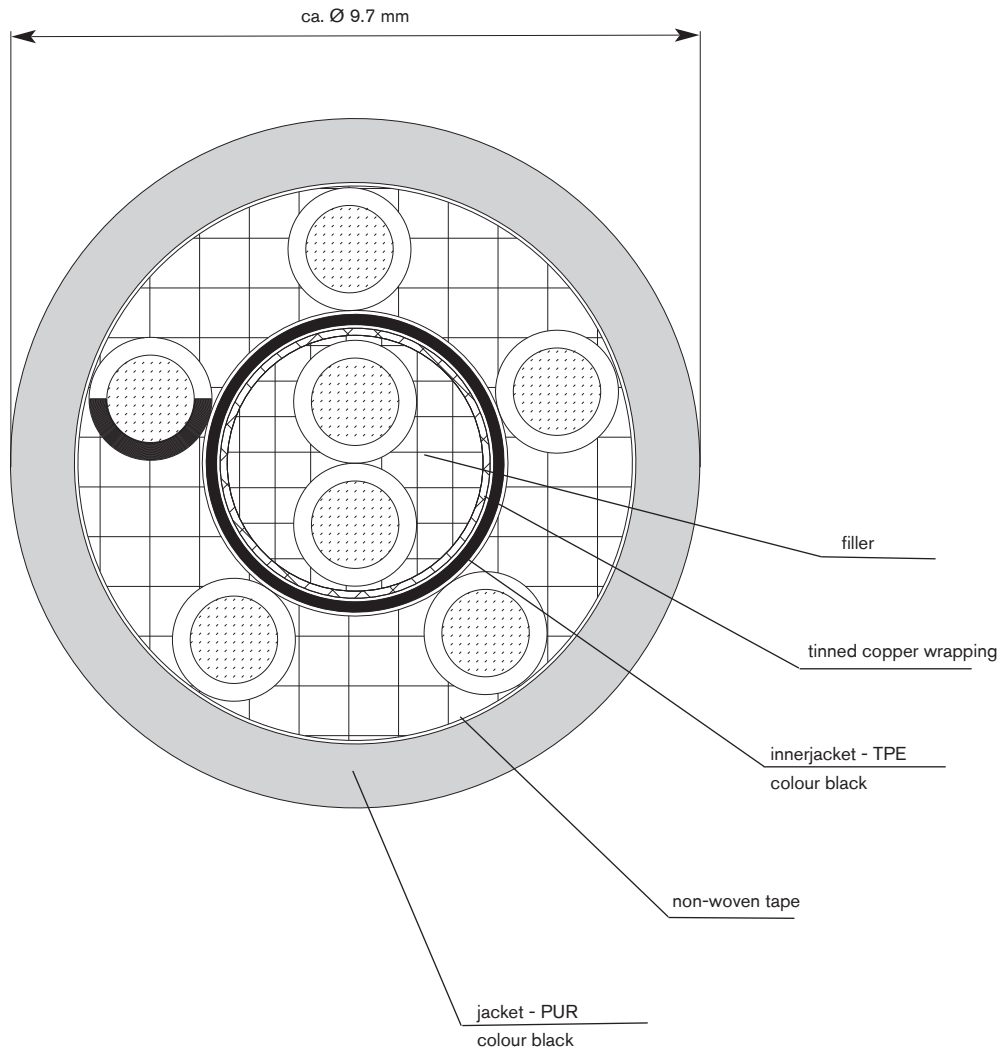
Technical Data

	item no. 0664-9001	item no. 0737-9005
Nominal voltage:		DIN VDE Uo/U 300/500 V
Testing voltage:		2000 V
Temperature range:		
flexible application:	+ 5°C up to +50°C	-30°C up to +70°C
fixed laying:	-20°C up to +70°C	-30°C up to +70°C
Min. bending radius:	POF min. 30 mm	7,5 x outer diameter
Overall cable:	10 x outer diameter	
Absence of harmful substances:	acc. to RoHS directive of the European Union	

Further technical information on request

Item no.: 0760-9057

(2 x 1,0 mm²) D + 5 x 1,0 mm²



conductors 1.0 mm²; bare copper strands,
insulation TPE in black with numbers 1 - 6 + green/yellow

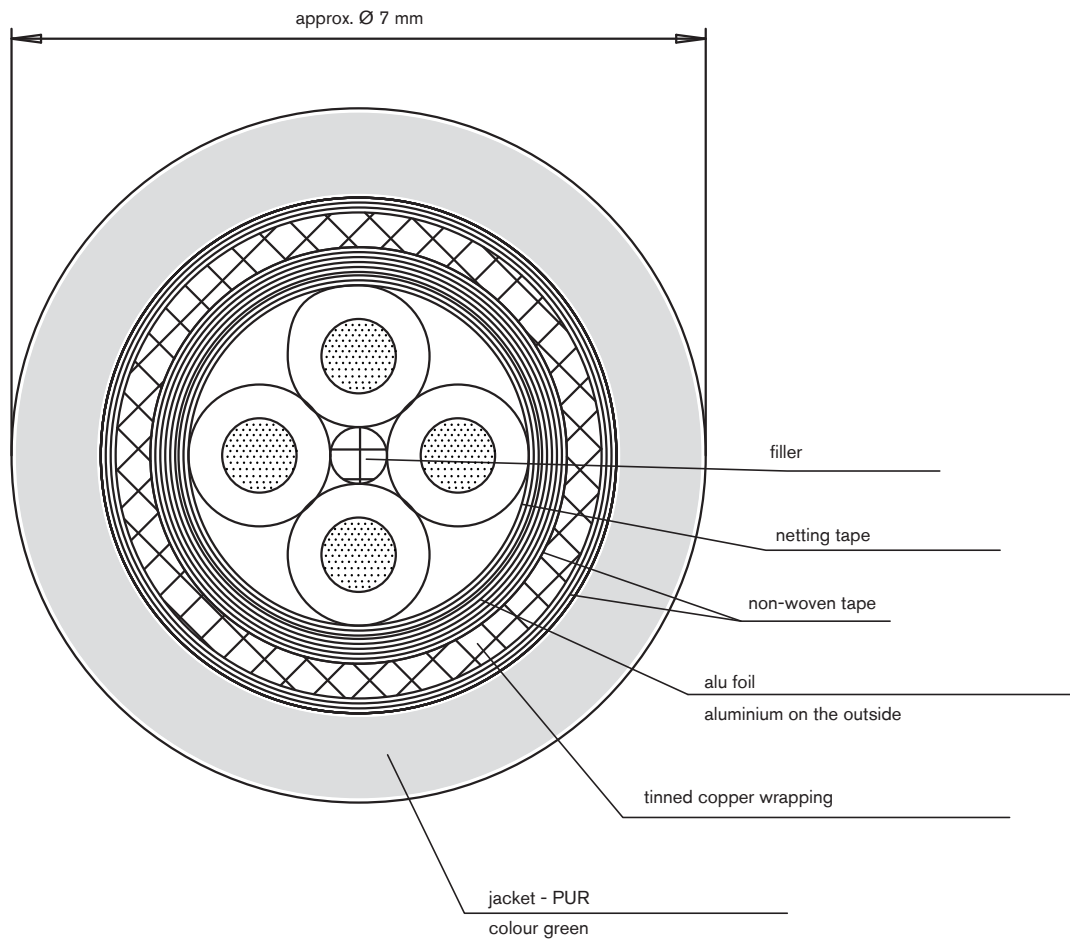
Technical Data

Peak operating voltage:	max. 350 V
Testing voltage:	conductor/conductor 1500 V conductor/screen 1200 V
Temperature range :	
flexing:	-40°C up to +90°C
static:	-50°C up to +90°C
Min. bending radius:	
flexing:	10 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0668-9001

2 x 2 x AWG 22



conductors AWG 22; tinned copper strands,
insulation PE in white, blue, orange, yellow

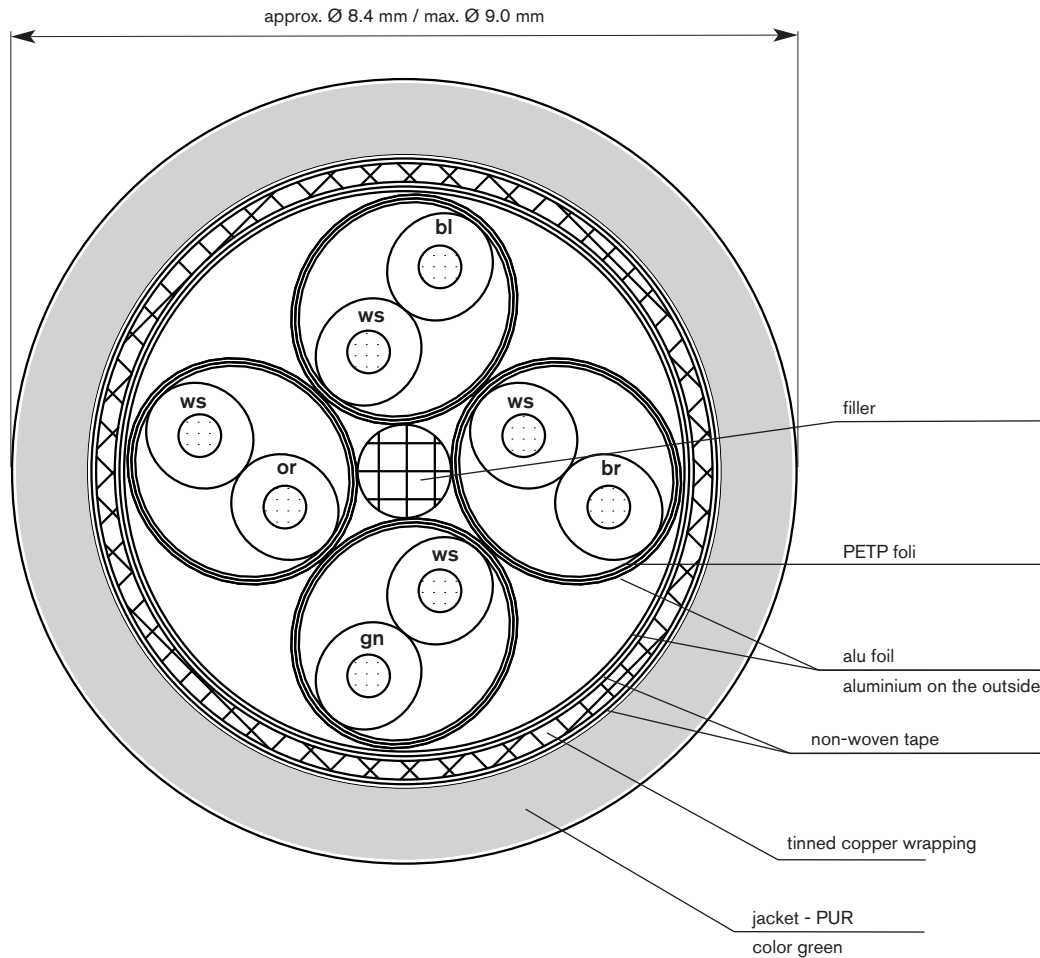
Technical Data

Peak operating voltage:	max. 350 V
Testing voltage:	cond./cond. 1500 V cond./screen 1200 V
Temperature range:	
flexible application:	-30°C up to +90°C
fixed laying:	-40°C up to +90°C
Min. bending radius:	
flexing:	10 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0694-2604

4 x 2 x AWG 26



conductors 4 x 2 x AWG 26 tinned copper strands
insulation PE in white with numbers 1 - 4, bl, or, gn, bn

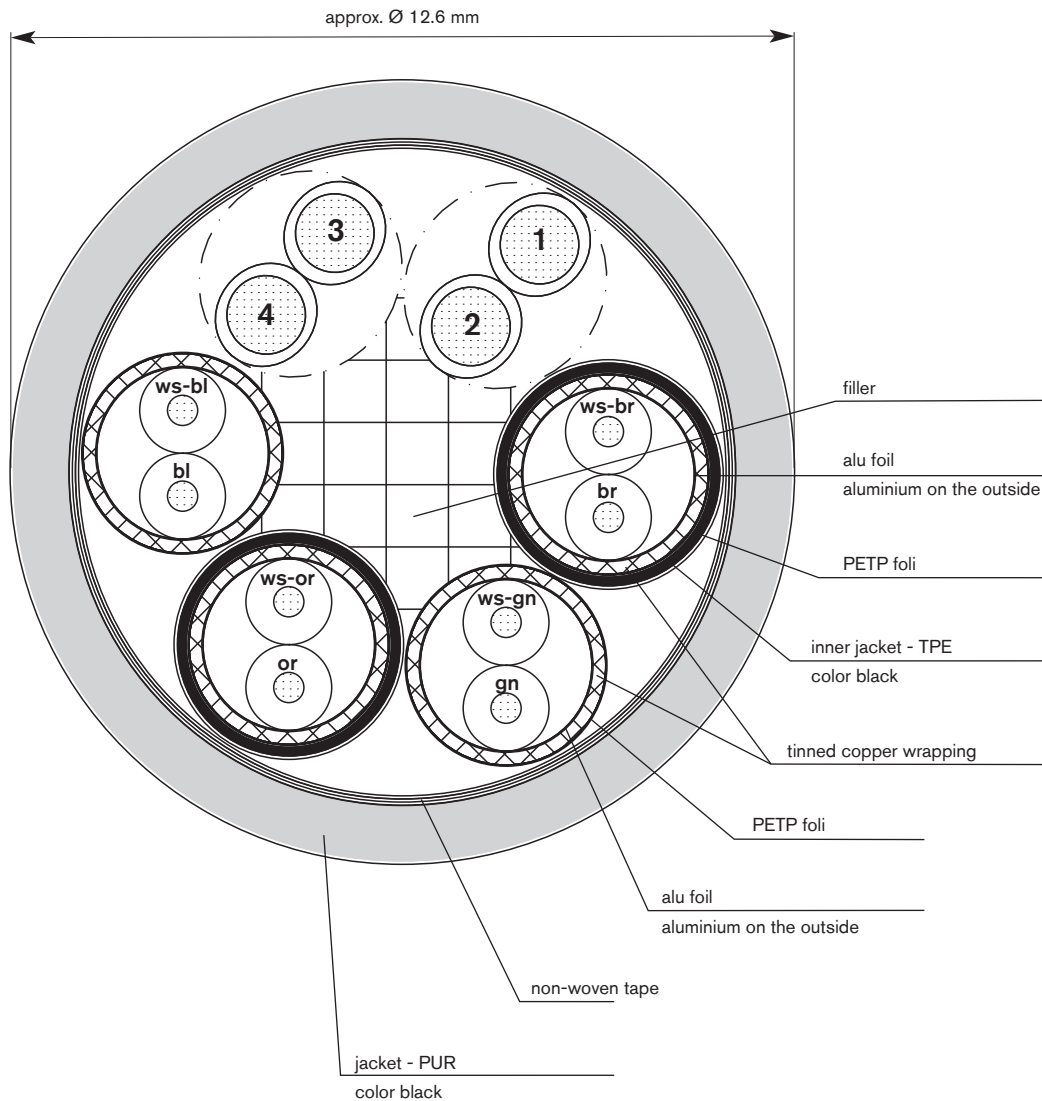
Technical Data

Peak operating voltage:	max. 350 V
Voltage UL/CSA:	300 V
Testing voltage:	cond./cond. 1500 V cond./screen 1200 V
Temperature range:	
flexible application:	-30°C up to +70°C
fixed laying:	-40°C up to +70°C
Min. bending radius:	
flexing:	10 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0694-9001

4 x 2 x AWG 26 + 4 x 1,0 mm²



conductors 4 x 2 x AWG 26 + 4 x 1,0 mm²: tinned copper strands

insulation 4 x 1,0 mm²: TPE in black with numbers 1 - 4

insulation conductors 4 x 2 x AWG 26: FEP, wt-bl/bl, wt-or/or, wt-gn/gn, wt-bn/bn

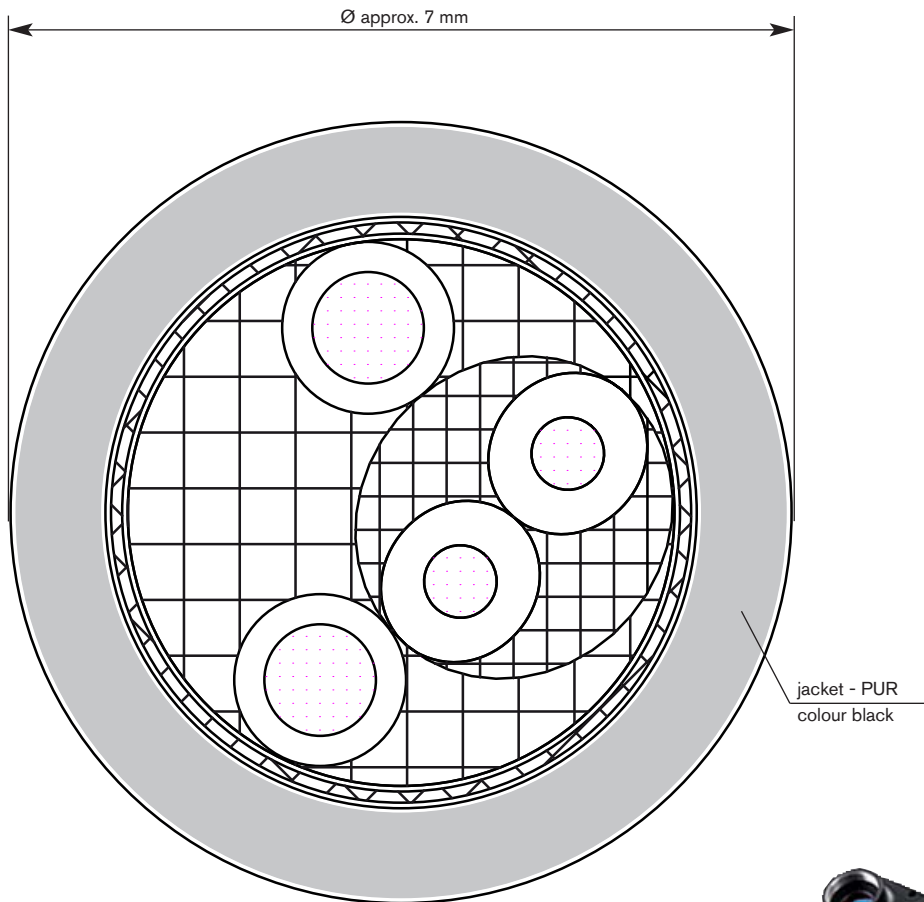
Technical Data

Peak operating voltage:	AWG 26: max. 350 V
Nominal voltage:	1,0 mm ² : 300/500 V
Testing voltage:	cond./cond. 1500 V (AWG 26) 2000 V (1,0 mm ²) cond./screen 1200 V (AWG 26)
Temperature range:	
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	
flexing:	10 x outer diameter
static:	5 x outer diameter
Absence of harmful substances:	acc. to RoHS directive of the European Union

Further technical information on request

Item no.: 0601-2022

(2 x 0,22 mm²) ST + 2 x 0,50 mm²



conductors (2 x 0,22 mm²) ST: silver-plated strands, insulation SABIX[®], wt, gn
conductors 2 x 0,50 mm²: bare copper strands, insulation SABIX[®], bk, rd



Technical Data	
Peak operating voltage:	max. 350 V
Voltage UL:	300 V
Testing voltage:	cond./cond. 2000 V cond./screen 2000 V
Temperature range:	UL: up to +80°C
flexible application:	-40°C up to +90°C
fixed laying:	-50°C up to +90°C
Min. bending radius:	
flexing:	7,5 x outer diameter
static:	5 x outer diameter
continuously flexible:	10 x outer diameter
Torsion angle:	up to ± 180°/m
Absence of harmful substances:	acc. to RoHS directive of the European Union

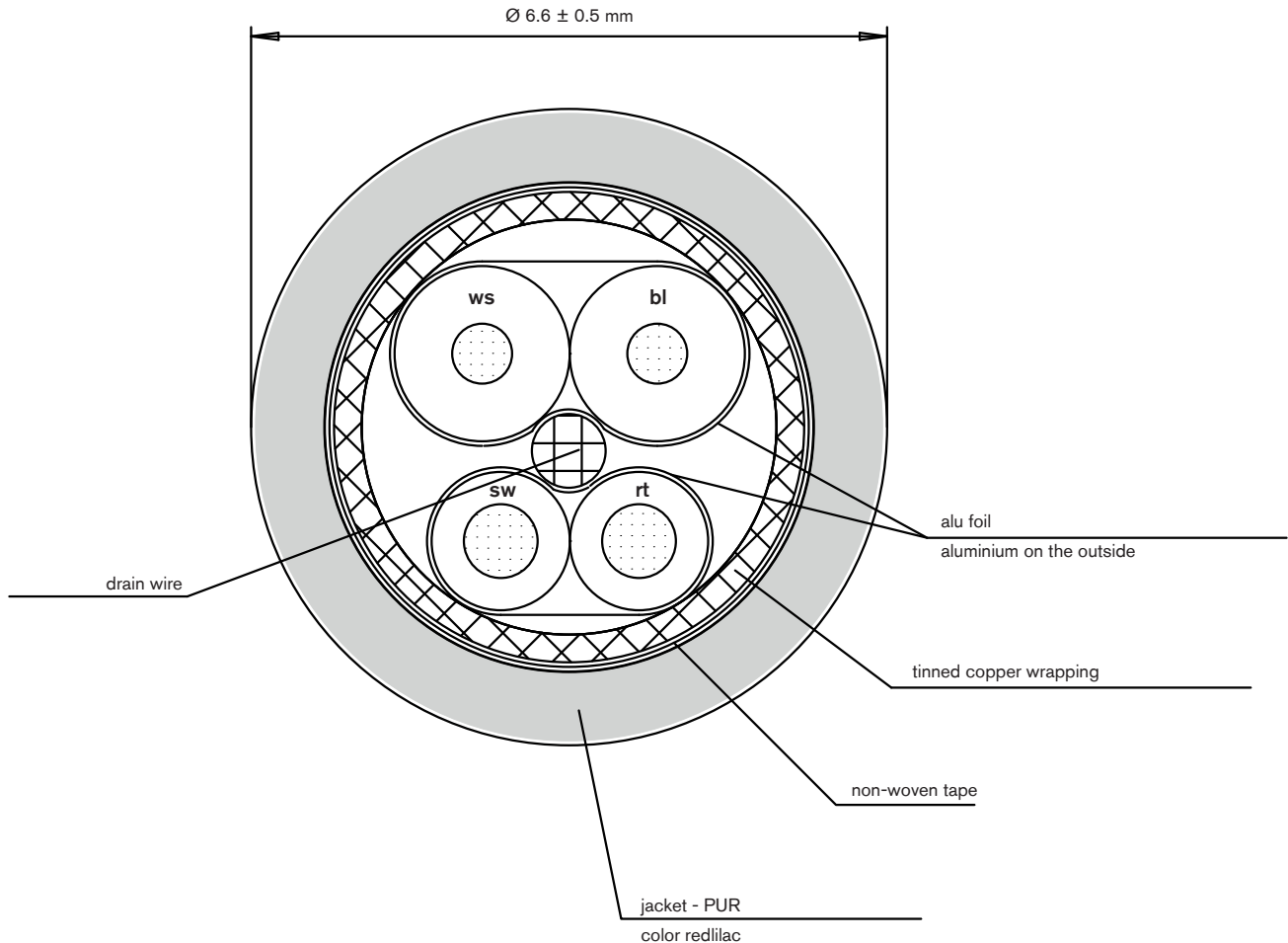


transmission length
up to 10m!

Further technical information on request

Item no.: 0658-9007

2 x 0,24 mm² + 2 x 0,38 mm²



conductors 2 x 0,24 mm²: tinned copper strands, insulation Foam-Skin, wt, bl

conductors 2 x 0,38 mm²: tinned copper strands, insulation SABIX®, bk, rd

Technical Data

Peak operating voltage:	max. 350 V
Voltage UL:	300 V
Testing voltage:	cond./cond. 2000 V cond./screen 1200 V
Temperature range:	UL: up to +80°C
flexible application:	-30°C up to +80°C
fixed laying:	-40°C up to +80°C
Min. bending radius:	
flexing:	15 x outer diameter
static:	7,5 x outer diameter
Torsion angle:	up to ± 180°/m
Characteristic impedance at 1 MHz:	120 Ω ± 10%
Absence of harmful substances:	acc. to RoHS directive of the European Union



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

Further technical information on request



FLEXIBLE CABLES

- Halogen-free cables ■ Cable track cables
- Servo motor cables ■ ETFE, FEP, PFA cables
 - Bus cables ■ Torsion cables
- Hybrid and special cables ■ Control and connection cables
 - Data cables ■ Besilen® (Silicone) cables
- Compensating and extension cables ■ Tray cables

TEMPERATURE MEASUREMENT

- Protecting armatures and gauge slides
- Mineral insulated thermocouples and Mineral insulated resistance thermometers
- Temperature measurement in plastics processing industry/Hot runner technique
 - Diesel thermocouples ■ Probe with stainless steel sleeve
 - Temperature measurement in test vehicles
 - Transmitter ■ HV sensors
 - Measurement techniques

CABLE HARNESSING

- Harnessed cables acc. to customer's specification
 - Harnessed cable track cables
 - Helix cables ■ Cable harnesses
- Harnessed motor and transmission cables for Siemens and Indramat drives