

# What is new in this manual

Dear Reader,

Welcome to our 2021 manual.  
Thank you for your interest in our products.  
This issue has been expanded with a new product range (see below).

You can also visit our [Internet site](#).

We are certified according to DIN ISO 9001:2015.

On 15/7/2010, the Principal Customs Office in Berlin awarded us certification as an



AEOF – Authorised Economic Operator

which acknowledges our status as an especially reliable and trustworthy supplier. With this status we are setting a clear sign of our commitment to correct and reliable execution of our business and make a contribution to the international reliability of the supply chain.

We have submitted ourselves to this comprehensive examination so that our customers can also benefit from a simplified and faster customs approval process.

In our catalog you will find several articles marked with a red \* and written in italic text.

These articles will be no longer produced and therefore offered to very reduced prices - while stocks last.

New items in this manual:

Page

Halogen-free flame-retardant cable  
temperature-resistant (+ 125°C)

108/109

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## Assembly

08-52

028

28

77

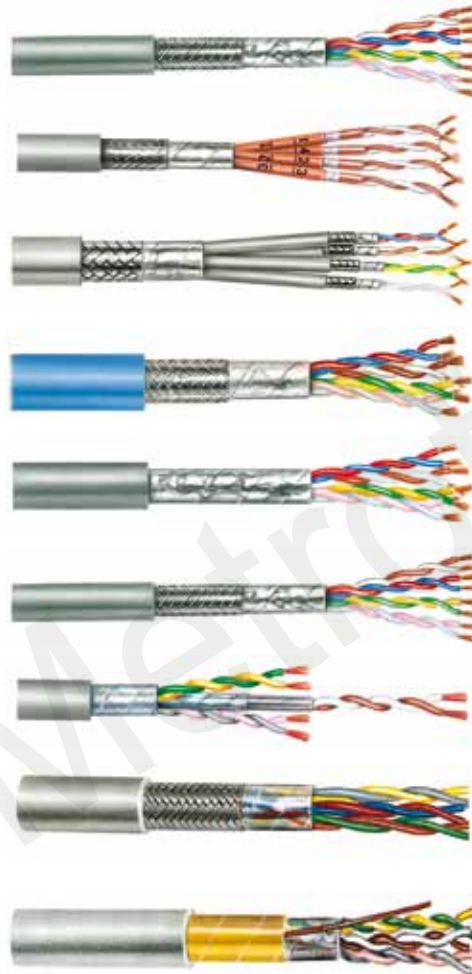
18

118

12

59

06

Colour sequence  
of the assemblies08, 14, 22, 52  
28, 18, 118, 12

Pair No.	Core colour	
	a)	b)
1	wh	bn
2	gn	ye
3	gy	pk
4	bu	rd
5	bk	vt
6	gy-pk	rd-bu
7	wh-gn	bn-gn
8	wh-ye	ye-bn
9	wh-gy	gy-bn
10	wh-pk	pk-bn
11	wh-bu	bn-bu
12	wh-rd	bn-rd
13	wh-bk	bn-bk
14	gy-gn	ye-gy
15	pk-gn	ye-pk
16	gn-bu	ye-bu
17	gn-rd	ye-rd
18	gn-bk	ye-bk
19	gy-bu	pk-bu
20	gy-rd	pk-rd
21	gy-bk	pk-bk
22	bu-bk	rd-bk
23	wh	bn
24	gn	ye
25	gy	pk
26	bu	rd
27	bk	vt
28	gy-pk	rd-bu
29	wh-gn	bn-gn
30	wh-ye	ye-bn
31	wh-gy	gy-bn
32	wh-pk	pk-bn

Computer cables, 0.08 mm<sup>2</sup>, 0.14 mm<sup>2</sup>, 0.20 mm<sup>2</sup>, 0.5 mm<sup>2</sup>,  
highly flexible, outer shield. 1 to 32 pairsData transfer cables, 0.08 mm<sup>2</sup>,  
highly flexible, individually shielded and insulated twisted pairs, outer shield.  
2 to 12 pairsData transfer cables, 0.25 mm<sup>2</sup>,  
individually shielded and insulated twisted pairs, outer shield. 1 to 32 pairsControl signal cables, 0.75 mm<sup>2</sup>,  
outer shield, jacket light blue as per RAL 5015. 2 and 3 cores,  
2 to 6 pairsFlexible connection wires, 0.14 mm<sup>2</sup>,  
unshielded, DIN 47414, VDE 0814. 4 to 32 pairsFlexible connection wires, 0.14 mm<sup>2</sup>,  
outer shield, DIN 47414, VDE 0814. 6 and 8 pairsFlexible connection wires, 0.14 mm<sup>2</sup>,  
one shielded pair in each cable. 3 to 16 pairsInstallation cables, 0.5 mm<sup>2</sup>, for industrial electronic systems and  
power station systems, Simatic colour code, outer shield. 2 to 12 pairsCommunication cables, solid wire, 0.6 mm  $\phi$ ,  
foil shielded with drain wire, VDE 0815, DIN 57815. 2 to 12 pairs

Page

8 - 15

16 + 17

18 + 19

20 + 21

22 + 23

22 + 23

24 + 25

26

27

## Table of contents

Assembly

UL-11Y  
paired

222

228

AWG 28  
to  
AWG 20

Colour code  
of the cables  
from page 28 to 45

1st core pair	black + brown
2nd core pair	black + red
3rd core pair	black + orange
4th core pair	black + yellow
5th core pair	black + green
6th core pair	black + blue
7th core pair	black + purple
8th core pair	black + grey
9th core pair	black + white
10th core pair	brown + red
11th core pair	brown + orange
12th core pair	brown + yellow
13th core pair	brown + green
14th core pair	brown + blue
15th core pair	brown + purple
16th core pair	brown + grey
17th core pair	brown + white
18th core pair	red + orange

Data/control signal cables, shielded, with small outer diameters.  
AWG 24 and AWG 22 with up to 6 pairs.

Control signal cables, 7-wire strands,  
0.22 mm<sup>2</sup> (AWG 24), twisted pairs,  
halogen-free, for applications requiring high durability,  
with polyurethane outer jacket 1 to 8 pairs

Control signal cables as previously described but  
with additional shielding of the core pairs.  
1 to 4 pairs

Control signal cables with fine-wire strands, 0.09 mm<sup>2</sup> to 0.56 mm<sup>2</sup>  
(AWG 28 to AWG 20), especially for insulation displacement  
connectors (IDC) with PVC insulation and UL certification.  
1 to 18 pairs

Page

28 + 29

30 + 31

30 + 31

32 - 41

**Technical data**

**Highly flexible - twisted-pair - full shielding**

**Preferred application**

Pulse and data transfer connection cables for electronic systems, control and regulation systems, measurement and signalling systems and as interconnection cables for paging and intercom systems.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.  
The full shielding prevents interference and external influences.

**Construction data**

**Cores:** of fine-wire plain copper strands, 40 x 0.05 mm Ø

**Core insulation:** PVC, coloured, second colour as abrasion-resistant coloured rings. Core Ø 0.8 ± 0.05 mm.

**Twisted structure:** 2 cores are tightly twisted to a pair and the pairs are twisted to a cable.

Twisted and colour structure on page 5.

**Wrapping:** one layer of polyester-based insulating film.

**Full shielding:** tinned copper wires with a visual coverage of approx. 85%.

**Outer jacket:** PVC, light grey as per RAL 7032.

**Electrical and thermal properties at 20°C:**

Conductor resistance max. 235 Ω/km

Conductor insulation resistance ≥ 20 M Ω x km

**Capacitance:** core/core, approx. 80 pF at 1 kHz

(core/core, shield earthed, max 60 pF/m)

Operating voltage max. 100 V~

Test voltage Core/Core > 1000 V

Core/Shield > 500 V

Current rating max. 0.5 A (ambient temp. up to 25°C).

Temperature range - 10°C to + 70°C (installation and operation)

- 30°C to + 80°C (transport and storage)

Characteristic impedance (at a frequency above 100 kHz): 80 to 90 Ω

**Mechanical properties:**

Once-only bending radius

8 X outer diameter

Repeated bending radius

15 X outer diameter

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
2.8	4.6	2 pairs = 4 cores	2.50	168.00	126.00	84.00	<a href="#">2 x 2 - 08</a>
3.2	4.7	3 pairs = 6 cores	3.00	200.00	150.00	100.00	<a href="#">3 x 2 - 08</a>
3.7	5.0	4 pairs = 8 cores	3.40	224.00	168.00	112.00	<a href="#">4 x 2 - 08</a>
4.8	5.7	6 pairs = 12 cores	4.00	268.00	201.00	134.00	<a href="#">6 x 2 - 08</a>
5.0	6.0	8 pairs = 16 cores	4.90	328.00	246.00	164.00	<a href="#">8 x 2 - 08</a>
8.4	7.7	12 pairs = 24 cores	7.80	520.00	390.00	260.00	<a href="#">12 x 2 - 08</a>
11.1	8.8	18 pairs = 36 cores	5.00	—	—	—	<a href="#">18 x 2 - 08*</a>
15.9	11.6	32 pairs = 64 cores	7.50	506.00	380.00	—	<a href="#">32 x 2 - 08*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



\* Items to be sold off

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**Technical data**

**Highly flexible - twisted-pair - full shielding**

**Preferred application**

Pulse and data transfer connection cables for electronic systems, control and regulation systems, measurement and signalling systems and as interconnection cables for paging and intercom systems.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.  
The full shielding prevents interference and external influences.

**Construction data**

**Conductors:** of fine-wire plain copper strands, 72 x 0.05 mm = 0.14 mm<sup>2</sup>  
**Core insulation:** PVC, coloured, second colour as abrasion-resistant coloured rings. Core Ø 1.05 ± 0.05 mm.

**Twisted structure:** 2 cores are tightly twisted to a pair and the pairs are twisted to a cable.  
Twisting and colour sequences on page 5.

**Wrapping:** one layer of polyester-based insulating foil.  
**Full shielding:** tinned copper wires with a visual coverage of approx. 85%.  
**Shield wire:** with 72 x 0.05 mm Ø plain Cu strands under the shield.  
**Outer jacket:** PVC, light grey as per RAL 7032.

**Electrical and thermal properties at 20°C:**

Conductor resistance max. 131 Ω/km  
Core insulation resistance ≥ 20 M.Ω x km  
Capacitance at 800 Hz 110 pF/m ± 20%  
(core/core, shield earthed)  
Operating voltage max. 150 V~  
Test voltage 800 V~  
Current rating max. 1 A (ambient temp. up to 25°C).  
Temperature range -10°C to + 70°C (installation and operation)  
-30°C to + 80°C (transport and storage)

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.

**Mechanical properties:** Once-only bending radius 8 X outer diameter  
Repeated bending radius 15 X outer diameter

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
2.4	3.8	1 pair = 2 cores	2.30	156.00	117.00	78.00	<a href="#">1 x 2 - 14</a>
4.3	5.5	2 pairs = 4 cores	2.80	184.00	138.00	92.00	<a href="#">2 x 2 - 14</a>
4.8	5.7	3 pairs = 6 cores	3.40	224.00	168.00	112.00	<a href="#">3 x 2 - 14</a>
5.3	6.2	4 pairs = 8 cores	4.00	268.00	201.00	134.00	<a href="#">4 x 2 - 14</a>
7.3	7.6	6 pairs = 12 cores	5.00	332.00	249.00	166.00	<a href="#">6 x 2 - 14</a>
8.7	8.2	8 pairs = 16 cores	6.50	436.00	327.00	218.00	<a href="#">8 x 2 - 14</a>
11.8	9.6	12 pairs = 24 cores	4.00	264.00	—	—	<a href="#">12 x 2 - 14*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**



\* Item to be sold off

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**Technical data**

**Highly flexible - twisted-pair - full shielding**

**Preferred application**

Pulse and data transfer connection cables for electronic systems, control and regulation systems, measurement and signalling systems and as interconnection cables for paging and intercom systems.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.  
The full shielding prevents interference and external influences.

**Construction data**

Conductors of fine-wire plain copper strands, 102 x 0.05 mm = 0.20 mm<sup>2</sup>

**Core insulation:** PVC, coloured, second colour as abrasion-resistant coloured rings.

Ø of copper strands per core = 0.6 mm, insulation wall thickness = 0.3 mm, Ø of each insulated core = 1.2 mm.

2 cores are **tightly** twisted to a pair, twist length of 20 mm, i.e. 50 twists per metre.

Twisting and colour sequences on page 5.

The cable bundle is wrapped with a layer of transparent polyester foil (15 x 0.019 mm).

The full shielding lies on top of this foil; the braiding of the tinned copper wires provides a visual coverage of 86 to 90%.

The shield is covered by a PVC jacket that is largely resistant to splashes of common machine oils.

This jacket is light grey as per RAL 7032.

**Electrical and thermal properties at 20°C:**

Conductor resistance approx. 92 Ω/km

Core insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz (core/core, shield earthed): 110 pF/m ± 20%

Operating voltage (VDE 0812) max. 300 V-/ 250 V~

Test voltage (core/core + shield) 500 V

Current rating (ambient temp. 25 °C) max. 2 A

Characteristic impedance (at a frequency above 100 kHz) 70 to 100 Ω

Inductance (measured at 800 Hz) core/core approx. 0.7 mH/km

core/shield approx. 0.5 mH/km

Capacitive coupling (measured at 800 Hz) approx. 200 pF/100 m

Temperature range -10°C to + 70°C (installation and operation)

-30°C to + 80°C (transport and storage)

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.

**Mechanical properties:**

Once-only bending radius

8 X outer diameter

Repeated bending radius

15 X outer diameter

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
5.0	6.0	2 pairs = 4 cores	3.00	200.00	150.00	100.00	<a href="#">2 x 2 - 22</a>
5.7	6.5	3 pairs = 6 cores	3.60	240.00	180.00	120.00	<a href="#">3 x 2 - 22</a>
6.9	7.0	4 pairs = 8 cores	4.30	288.00	216.00	144.00	<a href="#">4 x 2 - 22</a>
10.2	8.5	6 pairs = 12 cores	5.70	380.00	285.00	190.00	<a href="#">6 x 2 - 22</a>
11.3	9.2	8 pairs = 16 cores	7.30	484.00	363.00	242.00	<a href="#">8 x 2 - 22</a>
23.2	13.0	18 pairs = 36 cores	12.70	844.00	633.00	422.00	<a href="#">18 x 2 - 22</a>
31.0	14.7	24 pairs = 48 cores	8.50	570.00	428.00	—	<a href="#">24 x 2 - 22*</a>
40.7	16.6	32 pairs = 64 cores	11.00	722.00	—	—	<a href="#">32 x 2 - 22*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



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**Technical data**

**Highly flexible - twisted-pair - full shielding**

**Preferred application**

Pulse and data transfer connection cables for electronic systems, control and regulation systems and as interconnection cables for paging and intercom systems.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.  
The full shielding prevents interference and external influences.

**Construction data**

Conductors of fine-wire plain copper strands, 256 x 0.05 mm = 0.50 mm<sup>2</sup>

**Core insulation**

PVC, coloured, second colour as abrasion-resistant coloured rings.

Ø of the copper strands in each core = 1.0 mm.

Insulation wall thickness = 0.4 mm.

Ø of the insulated core = 1.8 mm.

2 cores are **tightly** twisted to a pair, twist length of approx. 35 mm, i.e. approx. 28 twists per metre.

Colour and twisting sequences on page 5.

The collection of cores is wrapped with a layer of transparent polyester foil (15 x 0.019 mm).

The full shielding lies on top of this foil; the braiding of the tinned copper wires provides a visual coverage of approx 85%.

The shield is covered by a PVC jacket that is largely resistant to splashes of common machine oils.

This jacket is light grey as per RAL 7032.

**Electrical and thermal properties at 20°C:**

Conductor resistance max. 39 Ω/km

Core insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz (core/core, shield earthed) 110 pF/m ± 20%

Operating voltage (VDE 0812) max. 500 V

Test voltage Core/Core > 2000 V  
Core /Shield > 1500 V

Current rating (ambient temp. 25°C) max. 2.6 A

Characteristic impedance (at a frequency above 100 kHz) 75 to 105 Ω

Inductance (measured at 800 Hz) core/core approx. 0.7 mH/km  
core/shield approx. 0.5 mH/km

Capacitive coupling (measured at 800 Hz) approx. 200 pF/100 m

Temperature range -10°C to + 70°C (installation and operation)  
-30°C to + 80°C (transport and storage)

**Mechanical properties:**

Once-only bending radius 8 X outer diameter  
Repeated bending radius 15 X outer diameter

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.



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**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
11.6	9.0	2 pairs = 4 cores	2.00	136.00	—	—	<a href="#">2 x 2 - 52*</a>
12.9	9.7	3 pairs = 6 cores	5.40	360.00	270.00	180.00	<a href="#">3 x 2 - 52</a>
14.0	10.5	4 pairs = 8 cores	6.80	456.00	342.00	228.00	<a href="#">4 x 2 - 52</a>
22.2	12.7	6 pairs = 12 cores	8.70	580.00	435.00	290.00	<a href="#">6 x 2 - 52</a>
25.3	13.0	8 pairs = 16 cores	6.00	400.00	300.00	—	<a href="#">8 x 2 - 52*</a>
33.0	15.8	12 pairs = 24 cores	7.10	474.00	356.00	—	<a href="#">12 x 2 - 52*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

**No copper surcharge.**



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**Technical data**

**Highly flexible data transfer cables**

Pairs tightly twisted, each pair shielded and insulated, full shielding.

**Preferred application**

Interference-free transfer of data at low currents; pulse connection cables in electronic systems and control and regulation systems.

**Special features**

Highly flexible core structure, tightly twisted pairs. Each pair is individually shielded and insulated from external earthing via the shield. The cables are protected from external influences by an additional outer jacket.

**Construction data**

Conductors of fine-wire plain copper strands, 40 x 0.05 mm = 0.08 mm<sup>2</sup>.

**Core insulation:** PVC, coloured. One core in each pair has white insulation and the other core has brown insulation. Ø of the insulated core approx. 0.9 mm.

**Twisted structure:** 2 cores (white and brown) are **tightly** twisted to a pair; twist length approx. 20 mm.

**Shield:** each pair is shielded with braided plain copper wire (48 x 0.10 mm); visual coverage approx. 95%.

**Wrapping:** an overlapping layer of transparent polyester foil is wrapped around the pair shield.

**Core pair insulation:** PVC, orange; wall thickness approx. 0.4 mm.

Total Ø of each shielded and jacketed pair is approx. 3 mm.

**Pair labelling:** clearly legible black numbers on the orange pair sheath, starting with number 1.

**Twisting and wrapping of all pairs:** the shielded and insulated pairs are twisted around a PVC core; the resulting cable bundle is then wrapped with a transparent polyester foil.

**Full shielding and jacket:** under the PVC outer jacket, light grey as per RAL 7032, wall thickness of 0.7 to 1.2 mm, increasing with the number of pairs.

Full shield of densely braided, tinned copper wire; visual coverage ≥ 86%.

**Electrical and thermal properties at 20°C:**

Conductor resistance approx. 235 Ω/km

Core insulation resistance ≥ 20 M Ω x km

Capacitance (core/core) approx. 80 pF/m

(core/core + shield) approx. 160 pF/m (measured at 1 kHz)

Operating voltage max. 100 V~

Text voltage: max. 800 V~ (VDE 0812)

Current rating (ambient temp. 25°C) max. 500 mA

Temperature range -10°C to +70°C (installation and operation)

-30°C to +80°C (transport and storage)

Impedance 70 Ω at 10 MHz

80 - 85 Ω at 200 MHz

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
				100 m	500 m	
10.9	9.0	2 pairs = 4 cores	2.10	140.00	105.00	<a href="#">2 x 2 - 028*</a>
11.7	9.4	3 pairs = 6 cores	2.25	152.00	114.00	<a href="#">3 x 2 - 028*</a>
14.0	10.2	4 pairs = 8 cores	3.10	208.00	156.00	<a href="#">4 x 2 - 028*</a>
18.7	12.0	6 pairs = 12 cores	3.95	264.00	198.00	<a href="#">6 x 2 - 028*</a>
26.5	13.8	8 pairs = 16 cores	4.40	294.00	220.00	<a href="#">8 x 2 - 028*</a>
32.4	15.4	12 pairs = 24 cores	6.45	432.00	324.00	<a href="#">12 x 2 - 028*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



\* Items to be sold off

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**Technical data**

Data transfer cables with shielded and jacketed core pairs and additional full shielding.

**Preferred application**

Movable connection cables for electronic systems, especially for interference-free transfer of control pulses in data transfer systems.

**Special features**

Each core pair is shielded to prevent interference between different cable circuits and sheathed with a PVC jacket to prevent interference from external earthing. The core pairs are also surrounded by an additional full shield to provide protection from external influences.

**Construction data**

**Conductors and cross-sections:** tinned, fine-wire copper strands, 14 x 0.15 mm Ø = 0.25 mm<sup>2</sup>  
**Individual core insulation:** PVC, coloured, second colour as abrasion-resistant coloured rings. Core Ø 1.30 ± 0.05 mm.

**Twisted pair:** 2 cores are twisted to a pair with 25 - 30 twists per metre.  
**Wrapping:** 1 layer of polyester-based insulating foil applied with a tight spiral overlap.  
**Shield:** braided shield of tinned Cu wire, 16 x 5 x 0.10 mm with approx. 75% visual coverage.  
**Wrapping:** PVC hose jacket with a wall thickness of 0.40 mm.  
Total Ø of a shielded pair is 3.90 ± 0.10 mm;  
Jacket colour light grey as per RAL 7032.

**Twisted structure:** 1 to 32 of these shielded and insulated core pairs are twisted to form the cable.  
Twisting and colour sequences on page 5.

**Full shielding:** The twisted core pairs are additionally shielded by an outer braid of tinned copper wires with a visual coverage of approx. 85%.

**Outer jacket:** PVC, colour light grey as per RAL 7032.  
The 1-pair cable is black!

**Electrical and thermal properties at 20°C:**

Conductor resistance max. 75 Ω/km  
Insulation resistance ≥ 20 MΩ x km  
Capacitance approx. 120 pF/m core/core  
Operating voltage max. 250 V  
Test voltage 1,000 V (core/core) 500 V (core/shield)  
Current rating (ambient temperature 25°C) max. 2.5 A  
Temperature range -10°C to + 70°C (installation and operation)  
-30°C to + 80°C (transport and storage)

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
6.3	6.3	1 pair = 2 cores	3.20	216.00	162.00	108.00	<a href="#">1 x 2 - 28</a>
14.0	10.2	2 pairs = 4 cores	5.80	384.00	288.00	192.00	<a href="#">2 x 2 - 28</a>
16.7	11.0	3 pairs = 6 cores	3.35	224.00	168.00	—	<a href="#">3 x 2 - 28*</a>
28.1	15.1	6 pairs = 12 cores	5.30	—	—	—	<a href="#">6 x 2 - 28*</a>
36.7	16.5	8 pairs = 16 cores	6.70	—	—	—	<a href="#">8 x 2 - 28*</a>
47.0	19.5	10 pairs = 20 cores	8.10	540.00	—	—	<a href="#">10 x 2 - 28*</a>
62.4	22.8	16 pairs = 32 cores	11.60	774.00	—	—	<a href="#">16 x 2 - 28*</a>
122.0	29.5	32 pairs = 64 cores	21.95	1,464.00	1,098.00	—	<a href="#">32 x 2 - 28*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



\* Items to be sold off

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**Technical data**

Twisted-pair control signal cable with full shielding and light blue jacket (RAL 5015)

**Preferred application**

Pulse and data transfer connection cables for electronic systems, control and regulation systems.

**Special features**

The full shielding prevents interference and external influences.

**Construction data**

Conductors of tinned, fine-wire copper strands 24 x 0.20 mm Ø, core cross-section 0.75 mm<sup>2</sup>; core preparation as per VDE 0812. Core insulation from PVC, coloured, second colour as abrasion-resistant coloured rings. Ø of the copper strands in each core = 1.2 mm. Insulation wall thickness = 0.4 mm, Ø of the insulated core = 2.0 mm. If the cores are twisted in pairs, the twist length is 20 mm, which results in 50 twists per metre. Colour and twisting sequences at right. The collection of cores is wrapped with a layer of transparent polyester foil (15 x 0.019 mm). The full shielding lies on top of this foil; the braiding of the tinned copper wires provides a visual coverage of approx 85%. The shield is covered by a PVC jacket that is largely resistant to splashes of common machine oils. This jacket is light blue as per RAL 5015.

**Electrical and thermal properties at 20°C:**

Conductor resistance max. 26,7 Ω/km  
Core insulation resistance ≥ 20 M Ω x km

**Capacitance at 1 kHz:**

(core/core) 110 pF/m ± 20%  
(core/core, shield earthed) approx. 35-40 pF/m  
Operating voltage (VDE 0812) max. 500 V~  
Test voltage Core/Core > 1500 V  
Core/Shield > 1000 V  
Current rating (ambient temp. 25°C) max. 10 A  
Characteristic impedance (at a frequency above 100 kHz) 70 to 80 Ω (1-core core/shield 25 Ω)  
Inductance (measured at 1 kHz) Core approx. 0.7 mH/km  
Temperature range -10°C to + 70°C (installation and operation)  
-30°C to + 80°C (transport and storage)

**Colour sequence**

1st core = white  
2nd core = brown  
3rd core = green  
  
1st pair = white+brown  
2nd pair = green+yellow  
3rd pair = grey+pink  
4th pair = blue+red  
5th pair = black+purple  
6th pair = grey/pink + red/blue

**Please note:**

gn = green  
gr = grey  
All LiYCY cables are flame-retardant as per IEC 60332-1-2 or DIN VDE 0482 Part 332-1-2



**On-time · Fast · Reliable**

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
5.2	5.7	2 cores	2.30	152.00	114.00	76.00	<a href="#">2 x 0.75 - 77</a>
6.4	6.0	3 cores	1.60	108.00	81.00	—	<a href="#">3 x 0.75 - 77*</a>
11.2	8.9	2 pairs = 4 cores	4.10	272.00	204.00	136.00	<a href="#">2 x 2 - 77</a>
13.5	9.4	3 pairs = 6 cores	2.05	138.00	—	—	<a href="#">3 x 2 - 77*</a>
17.4	10.8	4 pairs = 8 cores	5.80	384.00	288.00	192.00	<a href="#">4 x 2 - 77</a>
24.2	13.3	6 pairs = 12 cores	3.80	256.00	—	—	<a href="#">6 x 2 - 77*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



\* Items to be sold off

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**LiYY (4 x 2 to 32 x 2) x 0.14 mm<sup>2</sup>  
LiYCY (6 x 2 and 8 x 2) x 0.14 mm<sup>2</sup>**

**Technical data**

Flexible connection wires, based on DIN 47414, twisted pairs

**Preferred application**

Connection cables for electronic systems (e.g. computers, printers, etc.), control and regulation systems, measurement and signalling systems and as interconnection cables for paging and intercom systems.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.

**Construction data**

Conductors and cross-sections: fine-wire plain copper strands 18 x 0.10 mm = 0.14 mm<sup>2</sup>

**Core insulation:** PVC, coloured, second colour as abrasion-resistant coloured rings.  
Core Ø 1.05 ± 0.05mm.

**Twisted structure:** 2 cores are tightly twisted to a pair, twist length 20 mm, i.e. 50 twists per metre.  
Colour and twisting sequences on page 5.

**Wrapping:** 1 layer of polyester-based insulating foil.

**Jacket:** PVC, light grey RAL 7032, jacket wall thickness 0.80 mm, or 1.0 mm for 24 pairs or more. Does not migrate.

**Electrical and thermal properties at 20°C:**

Conductor resistance max. 135 Ω/km.  
Insulation resistance ≥ 20 M Ω x km  
(measured after 24 hours immersed in water)  
Capacitive coupling max. 300 pF (measured at 800 Hz for 100 m) BG 18.  
Capacitive coupling max. 200 pF (measured at 800 Hz for 100 m) BG 118.  
Capacitance core/core approx. 80 pF/m (measured at 1 kHz) BG 18  
Capacitance core/core approx. 100 pF/m (measured at 1 kHz) BG 118  
Test voltage 1,000 V.  
Operating voltage max. 250 V.  
Current rating 1.5 A (at ambient temp. 25°C)  
Temperature range -10°C to + 70°C (installation and operation)  
-30°C to + 80°C (transport and storage)  
Characteristic impedance approx. 70 Ω/km

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
				100 m	500 m	
<b>Unshielded</b>						
3.7	5.6	4 pairs = 8 cores	0.85	58.00	44.00	<a href="#">4 x 2 - 18*</a>
6.1	7.4	8 pairs = 16 cores	1.50	100.00	75.00	<a href="#">8 x 2 - 18*</a>
9.3	8.6	12 pairs = 24 cores	2.20	148.00	111.00	<a href="#">12 x 2 - 18*</a>
18.6	12.3	24 pairs = 48 cores	4.10	276.00	—	<a href="#">24 x 2 - 18*</a>
20.6	14.4	32 pairs = 64 cores	5.30	354.00	266.00	<a href="#">32 x 2 - 18*</a>
<b>Shielded</b>						
7.8	7.4	6 pairs = 12 cores	1.70	114.00	86.00	<a href="#">6 x 2 - 118*</a>
8.7	7.8	8 pairs = 16 cores	2.10	—	—	<a href="#">8 x 2 - 118*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**



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**Technical data**

Similar to VDE 0812 and DIN 47414, twisted pairs  
The 1st core pair in each cable has a braided shield.

**Preferred application**

Connection cables for electronic systems, control and regulation systems, interconnection cables for paging and intercom systems.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.  
One core pair in each cable (white and brown) is especially protected from electrical interference and external influences by almost 100% braiding with plain copper wire.

**Construction data**

Conductors of plain copper strands 18 x 0.10 mm Ø,  
Core cross-section 0.14 mm<sup>2</sup>  
Core insulation from PVC, coloured, second colour as abrasion-resistant coloured rings.  
Core Ø 1.05 ± 0.05 mm.  
2 cores are **tightly** twisted to a pair; twist length approx. 20 mm. Colour and twisting sequences on page 5.  
The 1st core pair in each cable (white and brown) is wrapped with a layer of transparent polyester foil (15 x 0.019 mm) and almost 100% shielded by braided, plain copper wire over this foil.  
The unshielded pairs are twisted with the shielded pairs and the entire bundle is wrapped in transparent foil.  
The outer jacket is of PVC, light grey as per RAL 7032.  
This is largely resistant to splashes of common machine oils and petrol.

**Electrical and thermal properties at 20°C:**

Conductor resistance approx. 135 Ω/km  
Insulation resistance ≥ 20 MΩ x km  
Capacitance at 800 Hz (shielded pair, core/core, shield earthed) approx. 140 pF/m  
Operating voltage (VDE 0812): 250 V- /750 V=  
Test voltage (core+core / shield) 500 V  
Current rating 1.5 A (ambient temp. 25°C)  
Temperature range -10°C to + 70°C (installation and operation)  
-30°C to + 80°C (transport and storage)

**Colour sequence on page 5**

The core pairs are counted sequentially through all layers, from the outside layer to the inside layers and all layers are counted in the same way.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock			Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
		Unshielded pairs	Shielded pairs	Number of cores		Price for 1 m	100 m	500 m	
4.0	5.8	2 + 1 = 6			2.30	152.00	114.00	76.00	<a href="#">3 x 2 - 12</a>
4.7	6.4	3 + 1 = 8			2.60	172.00	129.00	86.00	<a href="#">4 x 2 - 12</a>
7.1	7.9	5 + 1 = 12			3.60	240.00	180.00	120.00	<a href="#">6 x 2 - 12</a>
8.4	8.4	7 + 1 = 16			4.30	284.00	213.00	142.00	<a href="#">8 x 2 - 12</a>
10.2	9.6	9 + 1 = 20			2.30	154.00	—	—	<a href="#">10 x 2 - 12*</a>
10.8	10.0	11 + 1 = 24			2.60	176.00	132.00	—	<a href="#">12 x 2 - 12*</a>
15.6	11.6	15 + 1 = 32			3.20	216.00	162.00	—	<a href="#">16 x 2 - 12*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**



\* Items to be sold off

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**Technical data**

Flexible installation cable for power station systems and industrial electronic systems

**Preferred application**

Connection cables for control and regulation systems, measurement and signalling systems, especially in power stations and for power generation systems.

**Special feature**

Suitable for Maxi-Termi-Point wiring.

**Cable structure**

Conductors of fine-wire plain copper strands 7 x 0.30 mm Ø = 0.50 mm<sup>2</sup>  
Insulated with SR-PVC (Semi-Rigid Polyvinyl Chloride), cut-through resistant for Termi-Point wiring.  
Wall thickness of the core insulation: ≥ 0.25 mm

**Twisted structure:** Each of 2 cores twisted to a pair, each of 4 pairs twisted to a bundle.

With 2-pair cables the 4 cores are twisted in a star quad pattern.

The basic colours are repeated in each bundle. The bundles are labelled with coloured rings on the core insulation. The bundle of cores is wrapped with an overlapping layer of plastic foil and then shielded with braided, tinned copper wires (visual coverage ≥ 90%). The outer jacket is of PVC, light grey as per RAL 7032.

**Colour sequence**

Pair	1	2	3	4
a-core	blue	grey	green	white
b-core	red	yellow	brown	black

Weight		Total ø approx. mm	Usually available ex-stock	Net price including copper		Ordering information
kg / 100 m				Sample quantities under 100 metres	in EUR per 100 m on collection	
7.3	7.5		2 pairs = 4 cores	1.90	128.00	2 x 2 - 59*
11.7	10.0		4 pairs = 8 cores	2.85	192.00	4 x 2 - 59*
21.2	13.0		8 pairs = 16 cores	4.10	—	8 x 2 - 59*
28.7	15.0		12 pairs = 24 cores	5.35	358.00	12 x 2 - 59*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. \* Items to be sold off



**On-time · Fast · Reliable**

**Technical data**

**Application suggestion**

For interference-free transmission of audio, data and pulse signals. Suitable for permanent installation on and under plaster, in dry and wet rooms and on buildings outdoors.

**Special features**

The aluminium foil embedded in plastics and the additional copper drain wire provide 100% shielding against external electrical interference. The large production quantities resulting from the many possible applications make these cables especially good value for money.

**Construction data**

**Conductors:** plain copper wire, 0.6 mm Ø = 0.28 mm<sup>2</sup>. **Core insulation:** PVC, coloured.

**Twisted structure:** 2 cores are twisted to a pair, 2 to 12 pairs are then twisted together (in layers) and wrapped with an overlapping layer of transparent foil 0.019 mm Ø

**Shielding:** When the copper drain wire is earthed, the aluminium foil embedded in plastics provides 100% protection from external electrical interference. Drain wire Ø 0.4 mm (up to 10 pairs), Ø 0.6 mm (12 pairs or more).

**Outer jacket:** largely oil and petrol resistant PVC, light grey as per RAL 7032. Jacket wall thickness: 1.0 mm

**Core labelling**

With 2-pair cables the first pair has a red a-core and a black b-core; the second pair has a white a-core and a yellow b-core. With cables having more than 2 pairs, the a-core is red for the first pair (counting pair) in each layer and is white for all other pairs. The b-core follows a repeating colour sequence of blue, yellow, green, brown and black.

**Numbering system**

With communication cables the pairs are numbered sequentially through all layers, from the outside to the inside layers. Counting always begins with each respective counting pair.

Weight		Total ø approx. mm	Usually available ex-stock	Net price including copper		Ordering information
kg / 100 m				Sample quantities under 100 metres	in EUR per 100 m on collection	
3.4	4.5		2 pairs = 4 cores	0.39	—	2 x 2 - 06*
8.5	8.0		8 pairs = 16 cores	0.90	62.00	8 x 2 - 06*
12.0	9.0		10 pairs = 20 cores	1.05	—	10 x 2 - 06*
12.6	9.5		12 pairs = 24 cores	1.25	84.00	12 x 2 - 06*

Normal stock unit: 100 m ring. \* Items to be sold off



**On-time · Fast · Reliable**



**Technical data**

Highly flexible core structure, tightly twisted pairs. The cables have a shield under the outer jacket.

**Preferred application**

Transfer of data and currents; pulse connection cables in electronic systems and control and regulation systems.

**Special features**

Cores with UL certification, Style 11030 AWM-UL Standard 758  
Jackets with UL certification, Style 21318 AWM-UL Standard 758 Cable flame

**Construction data**

**Conductors of plain, fine-wire copper strands:** **Ø of the insulated core:**  
AWG 22/19: 19 x 0.15 mm (0,34 mm<sup>2</sup>) 1.05 mm  
AWG 24/19: 19 x 0.13 mm (0,25 mm<sup>2</sup>) 0.92 mm

**Core insulation:** mPPE halogen-free and flame-retardant, colours as per IEC (see Page 7)

**Twisted structure:** Each of 2 cores twisted to a pair

**Pair labelling:** Via colour combinations of the cores

**Twisting and wrapping of all pairs:** To ensure a round cable structure, the pairs are twisted with cotton filler and the resulting cable bundle is then wrapped with transparent polyester foil.

**Braided full shielding:** Under the PUR jacket is a full shielding of tinned copper wires; visual coverage > 85%.

**Outer jacket:** Thermoplastic Polyether Polyurethane (TPE-U), black  
Wall thickness of at least 0.6 - 0.8 mm; increasing with the number of pairs

**Electrical and thermal properties at 20°C:**

Conductor resistance AWG 22/19: 53.6 Ω/km  
AWG 24/19: 75.2 Ω/km  
Insulation resistance of one core ≥ 20 MΩ x km  
Capacitance (core/core + shield) approx. 90 to 100 pF/m (measured at 1 kHz)  
Operating voltage max. 90 V  
Test voltage max. 900 V  
Current rating (approximate values at an ambient temp. of 25°C) AWG 22/19: 5 to 8 A depending on the cable routing  
AWG 24/19: 3 to 5 A depending on the cable routing  
Temperature range -25°C to + 80°C (installation and operation)  
-40°C to + 80°C (transport and storage)

**Bending radius:** Static: 10 x outer diameter  
Moving: 15 x outer diameter



**Net price including copper**

Weight kg / 100 m	Total Ø approx. mm	Sample quantities under 100 metres	in EUR per 100 metres on collection upwards			Ordering information
			Price for 1 m	100 m	500 m	
2.0	3.60	3.10	204.00	153.00	102.00	<a href="#">LiHC11Y 1P 24 / UL 11Y black</a>
3.4	4.90	4.70	316.00	237.00	158.00	<a href="#">LiHC11Y 2P 24 / UL 11Y black</a>
3.9	5.10	5.60	372.00	279.00	186.00	<a href="#">LiHC11Y 3P 24 / UL 11Y black</a>
4.8	5.60	6.80	456.00	342.00	228.00	<a href="#">LiHC11Y 4P 24 / UL 11Y black</a>
6.4	6.40	9.20	612.00	459.00	306.00	<a href="#">LiHC11Y 6P 24 / UL 11Y black</a>

**Net price including copper**

Weight kg / 100 m	Total Ø approx. mm	Sample quantities under 100 metres	in EUR per 100 metres on collection upwards			Ordering information
			Price for 1 m	100 m	500 m	
2.3	3.90	3.30	220.00	165.00	110.00	<a href="#">LiHC11Y 1P 22 / UL 11Y black</a>
4.2	5.40	5.30	352.00	264.00	176.00	<a href="#">LiHC11Y 2P 22 / UL 11Y black</a>
5.0	5.70	6.50	432.00	324.00	216.00	<a href="#">LiHC11Y 3P 22 / UL 11Y black</a>
6.4	6.10	8.20	544.00	408.00	272.00	<a href="#">LiHC11Y 4P 22 / UL 11Y black</a>
8.1	6.90	10.30	684.00	513.00	342.00	<a href="#">LiHC11Y 6P 22 / UL 11Y black</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**

**Technical data**

Flexible, twisted-pair, full shielding, halogen-free (Assembly 222)  
Flexible, each twisted pair individually shielded and insulated, full shielding, halogen-free (Assembly 228)

**Preferred application**

Pulse and data transfer connection cables for electronic systems, control and regulation systems and as interconnection cables for paging and intercom systems. Special cable for data transfer.

**Special features**

The twisted-pair cores provide increased cross-talk attenuation.  
The full shielding prevents interference and external influences.

**Construction data**

Conductors of tinned, fine-wire copper strands 7 x 0.203 mm Ø,  
Core cross-section 0.22 mm<sup>2</sup> (AWG 24).  
Core insulation from PE, coloured, second colour as abrasion-resistant coloured rings.  
Ø of copper strands per core = 0.6 mm, insulation wall thickness = 0.3 mm,  
Ø of the insulated core = 1.2 mm. 2 cores are **tightly** twisted to a pair, twist length of 20 mm, i.e. 50 twists per metre.  
The collection of cores is wrapped with a layer of transparent polyester foil (15 x 0.019 mm).

**Colour sequence on page 7**

**Assembly 222:**

The full shielding lies on top of this foil; the braiding of the tinned copper wires provides a visual coverage of 86 to 90%.  
Over the shield, the cables are wrapped with fleece and a special matte black PUR jacket.

**Assembly 228:**

The pair shielding lies on top of this foil; the braiding of the tinned copper wires provides a visual coverage of 75%.  
The element shield (1 pair + shield) is covered by a jacket of a special polyester mixture;  
ø of one element pair = 3.7 mm.

The elements are twisted in layers, bandaged in special foil, shielded with braided, tinned copper wires (approx. 85% coverage) and wrapped in a special matte black PUR jacket.

**Electrical and thermal properties at 20°C:**

Conductor resistance approx. 92 Ω/km.  
Core insulation resistance ≥ 2,000 M Ω x km  
Capacitance at 800 Hz: nom. 56 nF/km  
Operating voltage: max. 250 V AC  
Test voltage (core/core + shield) 800 V AC  
Current rating (ambient temp. 25°C) max. 2 A  
Characteristic impedance of 90 Ω at 5 MHz, 110 Ω at 2 MHz  
Inductance (measured at 800 Hz) core/core: approx. 0.7 mH/km  
Temperature range -10°C to + 80°C (installation and operation)  
-30°C to + 80°C (transport and storage)

The core pairs are counted sequentially from pair 1 through all layers, from the inside layer to the outside layer and all layers are counted in the same way.



**On-time · Fast · Reliable**

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 metres on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
2.9	4.7	1 pair = 2 cores	3.20	216.00	162.00	108.00	<a href="#">1 x 2 - 222</a>
4.4	5.6	2 pairs = 4 cores	4.20	280.00	210.00	140.00	<a href="#">2 x 2 - 222</a>
5.1	6.3	3 pairs = 6 cores	4.50	300.00	225.00	150.00	<a href="#">3 x 2 - 222</a>
6.4	7.4	4 pairs = 8 cores	4.60	308.00	231.00	154.00	<a href="#">4 x 2 - 222</a>
9.5	8.7	8 pairs = 16 cores	7.80	520.00	390.00	260.00	<a href="#">8 x 2 - 222</a>

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 metres on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
5.0	6.1	1 pair = 2 cores	4.10	276.00	207.00	138.00	<a href="#">1 x 2 - 228</a>
10.7	9.3	2 pairs = 4 cores	7.30	488.00	366.00	244.00	<a href="#">2 x 2 - 228</a>
15.6	11.1	4 pairs = 8 cores	11.80	784.00	588.00	392.00	<a href="#">4 x 2 - 228</a>

The cables are halogen-free, resistant to splashes of common machine oils and crush-resistant.  
Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



Summary

Technical data

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

Small core and cable diameters

No filling material in the outer layers

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Especially suitable for insulation displacement and crimp connectors**



Label (USA Etikett)

**Suitable for:** digital signal connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems. Shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.13 mm  $\varnothing$  tinned = 0.09 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated core 0.9 mm.

**Core labelling:** international colour code (see page 7).

**Twisted structure:** 2 cores are twisted to a pair, the pairs are then twisted clockwise layer by layer (started with the colours black/brown) from inside out to form the cable core. No filling material is used in the outer layers.

**Pair twist length:** approx. 23 mm

**Wrapping and shield:** the twisted pair bundles are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%. An additional shield wire composed of tinned copper wires (7 x 0.13 mm  $\varnothing$ ) is connected to the shield.

**Outer jacket:** special PVC. Colour is black as per RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. Wall thickness of outer jacket: 1-pair = 0.8 mm, all others = 1.0 mm.

<b>Temperature range:</b>	Heat resistant	105°C as per DIN ISO 6722 (outer jacket) 80°C (Cores)
	Cold resistant	-10°C unrolling and installing -30°C storage and operation

<b>Electrical properties</b>	Operating voltage	300 V
	Test voltage	1,500 V
	Conductor resistance	(20°C) 210 $\Omega$ /km
	Insulation resistance	(20°C) 100 M $\Omega$ x km
	Operating capacitance	core/core, shield earthed approx. 72 pF/m

<b>Mechanical properties:</b>	Once-only bending radius	5 X outer diameter
	Repeated bending radius	20 X outer diameter

Net price including copper

Ordering information

100 m weighs approx.	Total $\varnothing \pm 3\%$	Number of pairs		Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Pair	AWG no. Shield	Jacket colour
		Number of pairs	Number of cores		Price for 1 m	100 m	500 m			
2.5 kg	4.1 mm	1	2	1.70	112.00	84.00	56.00			<a href="#">1P x AWG 28 C UL black</a>
3.3 kg	5.2 mm	2	4	2.00	136.00	102.00	68.00			<a href="#">2P x AWG 28 C UL black</a>
4.0 kg	5.5 mm	3	6	2.40	160.00	120.00	80.00			<a href="#">3P x AWG 28 C UL black</a>
4.1 kg	5.6 mm	4	8	2.70	180.00	135.00	90.00			<a href="#">4P x AWG 28 C UL black</a>
7.1 kg	7.2 mm	6	12	3.20	212.00	159.00	106.00			<a href="#">6P x AWG 28 C UL black</a>
7.2 kg	7.5 mm	8	16	4.00	268.00	201.00	134.00			<a href="#">8P x AWG 28 C UL black</a>
9.4 kg	9.0 mm	12	24	2.60	176.00	—	—			<a href="#">12P x AWG 28 C UL black*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.

Cutlengths are without Label.



\* Item to be sold off

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**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

Small core and cable diameters

No filling material in the outer layers

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Especially suitable for insulation displacement and crimp connectors**

**Suitable for:** digital signal connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems. Shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.16 mm  $\varnothing$  tinned = 0.14 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated core 1.0 mm.

**Core labelling:** international colour code (see page 7).

**Twisted structure:** 2 cores are twisted to a pair, the pairs are then twisted clockwise layer by layer (started with the colours black/brown) from inside out to form the cable core. No filling material is used in the outer layers.

**Twist length of the pairs:** approx. 25 mm.

**Wrapping and shield:** the twisted pair bundles are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%. An additional shield wire composed of tinned copper wires (7 x 0.16 mm  $\varnothing$ ) is connected to the shield.

**Outer jacket:** special PVC. Colour is black as per RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. Wall thickness of outer jacket: 1-pair = 0.8 mm, all others = 1.0 mm.

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

Operating voltage	300 V
Test voltage	1,500 V
Conductor resistance	(20°C) 149 $\Omega$ /km
Insulation resistance	(20 °C) 153 M $\Omega$ x km
Operating capacitance	core/core, shield earthed approx. 84 pF/m

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter



Label (USA Etikett)

**Net price including copper**

**Ordering information**

100 m weighs approx.	Total $\varnothing$ $\pm$ 3%	Number of pairs	Number of cores	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Pair	AWG no. Shield	Jacket colour
					100 m	500 m	3000 m			
2.6 kg	4.4 mm	1	2	1.90	128.00	96.00	64.00			<a href="#">1P x AWG 26 C UL black</a>
4.8 kg	5.8 mm	2	4	2.20	148.00	111.00	74.00			<a href="#">2P x AWG 26 C UL black</a>
5.7 kg	6.1 mm	3	6	2.60	176.00	132.00	88.00			<a href="#">3P x AWG 26 C UL black</a>
6.2 kg	6.4 mm	4	8	3.40	224.00	168.00	112.00			<a href="#">4P x AWG 26 C UL black</a>
8.0 kg	7.7 mm	6	12	4.00	264.00	198.00	132.00			<a href="#">6P x AWG 26 C UL black</a>
9.5 kg	8.1 mm	8	16	5.30	356.00	267.00	178.00			<a href="#">8P x AWG 26 C UL black</a>
13.1 kg	9.5 mm	12	24	7.40	492.00	369.00	246.00			<a href="#">12P x AWG 26 C UL black</a>
17.8 kg	10.9 mm	18	36	10.00	664.00	498.00	332.00			<a href="#">18P x AWG 26 C UL black</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.

Cutlengths are without Label.



**On-time · Fast · Reliable**





**Pair  
AWG 24**

**Shielded twisted pair control signal cables**  
AWG 24 = 0.22 mm<sup>2</sup> (7 x 0.20, tinned)

UL Style  
N° 2464/1061

**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

Small core and cable diameters

No filling material in the outer layers

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Especially suitable for insulation displacement and crimp connectors**



Label (USA Etikett)

**Technical data**

**Suitable for:** digital signal connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems. Shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No. 1061 and VDE 0881, copper strands 7 x 0.20 mm Ø tinned = 0.22 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm, Ø of insulated core 1.1 mm.

**Core labelling:** international colour code (see page 7).

**Twisted structure:** 2 cores are twisted to a pair, the pairs are then twisted clockwise layer by layer (started with the colours black/brown) from inside out to form the cable core. No filling material is used in the outer layers.

**Twist length of the pairs:** approx. 29 mm.

**Wrapping and shield:** the twisted pair bundles are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage ≥ 85%. An additional shield wire composed of tinned copper wires (7 x 0.20 mm Ø) is connected to the shield.

**Outer jacket:** special PVC. Colour is black as per RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant.

Wall thickness of outer jacket: 1-pair = 0.8 mm, all others = 1.0 mm.

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

Operating voltage	300 V
Test voltage	1,500 V
Conductor resistance	(20°C) 93.3 Ω/km
Insulation resistance	(20°C) 153 M Ω x km
Operating capacitance	core/core, shield earthed approx. 96 pF/m

**Mechanical properties:**

Impedance	90 Ω at 1 MHz
Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

UL Style  
N° 2464/1061

**Shielded twisted pair control signal cables**  
AWG 24 = 0.22 mm<sup>2</sup> (7 x 0.20, tinned)

**Pair  
AWG 24**

**Net price including copper**

**Ordering information**

100 m weighs approx.	Total Ø ± 3%	Number of pairs	Number of cores	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Pair	AWG no. Shield	Jacket colour
					Price for 1 m	100 m	500 m			
2.8 kg	4.5 mm	1	2	2.40	160.00	120.00	80.00			<a href="#">1P x AWG 24 C UL black</a>
5.6 kg	6.1 mm	2	4	2.60	176.00	132.00	88.00			<a href="#">2P x AWG 24 C UL black</a>
6.3 kg	6.4 mm	3	6	3.20	212.00	159.00	106.00			<a href="#">3P x AWG 24 C UL black</a>
6.6 kg	6.9 mm	4	8	3.80	256.00	192.00	128.00			<a href="#">4P x AWG 24 C UL black</a>
10.3 kg	8.1 mm	6	12	5.00	332.00	249.00	166.00			<a href="#">6P x AWG 24 C UL black</a>
11.9 kg	8.9 mm	8	16	6.40	428.00	321.00	214.00			<a href="#">8P x AWG 24 C UL black</a>
15.8 kg	10.6 mm	12	24	9.20	612.00	459.00	306.00			<a href="#">12P x AWG 24 C UL black</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

**No copper surcharge.**

Cutlengths are **without** Label.



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**Pair  
AWG 22**

**Shielded twisted pair control signal cables**  
AWG 22 = 0.34 mm<sup>2</sup> (7 x 0.25, tinned)

UL Style  
N° 2464/1061

UL Style  
N° 2464/1061

**Shielded twisted pair control signal cables**  
AWG 22 = 0.34 mm<sup>2</sup> (7 x 0.25, tinned)

**Pair  
AWG 22**

**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

Small core and cable diameters

No filling material in the outer layers

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Especially suitable for insulation displacement and crimp connectors**



Label (USA Etikett)

**Suitable for:** digital signal connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems. Shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.25 mm Ø tinned = 0.34 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm, Ø of insulated core 1.3 mm.

**Core labelling:** international colour code (see page 7).

**Twisted structure:** 2 cores are twisted to a pair, the pairs are then twisted clockwise layer by layer (started with the colours black/brown) from inside out to form the cable core. No filling material is used in the outer layers.

**Pair twist length:** approx. 33 mm

**Wrapping and shield:** the twisted pair bundles are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage ≥ 85%. An additional shield wire composed of tinned copper wires (7 x 0.25 mm ø) is connected to the shield.

**Outer jacket:** special PVC. Colour is black as per RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. Wall thickness of outer jacket: 1-pair = 0.8 mm, all others = 1.0 mm.

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

Operating voltage	300 V
Test voltage	1,500 V
Conductor resistance	(20°C) 55 Ω/km
Insulation resistance	(20°C) 153 M Ω x km
Operating capacitance	core/core, shield earthed approx. 100 pF/m

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Total Ø ± 3%	Number of pairs	Number of cores	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Pair	AWG no. Shield	Jacket colour
					Price for 1 m	100 m	500 m			
4.0 kg	5.3 mm	1	2	2.60	176.00	132.00	88.00			<a href="#">1P x AWG 22 C UL black</a>
5.9 kg	7.0 mm	2	4	2.90	196.00	147.00	98.00			<a href="#">2P x AWG 22 C UL black</a>
8.1 kg	7.3 mm	3	6	3.40	228.00	171.00	114.00			<a href="#">3P x AWG 22 C UL black</a>
9.6 kg	7.8 mm	4	8	4.10	272.00	204.00	136.00			<a href="#">4P x AWG 22 C UL black</a>
16.0 kg	10.1 mm	8	16	6.60	440.00	330.00	220.00			<a href="#">8P x AWG 22 C UL black</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.

Cutlengths are without Label.



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**Pair  
AWG 20**

**Shielded twisted pair control signal cables**  
AWG 20 = 0.56 mm<sup>2</sup> (7 x 0.32, tinned)

UL Style  
N° 2464/1061

**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

Small core and cable diameters

No filling material in the outer layers

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Especially suitable for insulation displacement and crimp connectors**



Label (USA Etikett)

**Suitable for:** digital signal connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems. Shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** As per Style No.1061 and VDE 0881, copper strands 7 x 0.32 mm  $\varnothing$  tinned = 0.56 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated core 1.5 mm.

**Core labelling:** international colour code (see page 7).

**Twisted structure:** 2 cores are twisted to a pair, the pairs are then twisted clockwise layer by layer (started with the colours black/brown) from inside out to form the cable core. No filling material is used in the outer layers.

**Pair twist length:** approx. 38 mm

**Wrapping and shield:** the twisted pair bundles are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%. An additional shield wire composed of tinned copper wires (7 x 0.32 mm  $\varnothing$ ) is connected to the shield.

**Outer jacket:** special PVC. Colour is black as per RAL 9005. No twist markings.

The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant.

Wall thickness of outer jacket: 1-pair = 0.8 mm, all others = 1.0 mm.

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

Operating voltage	300 V
Test voltage	1,500 V
Conductor resistance	(20°C) 34.6 $\Omega$ /km
Insulation resistance	(20°C) 153 M. $\Omega$ x km
Operating capacitance	core/core, shield earthed approx. 108 pF/m

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

UL Style  
N° 2464/1061

**Shielded twisted pair control signal cables**  
AWG 20 = 0.56 mm<sup>2</sup> (7 x 0.32, tinned)

**Pair  
AWG 20**

**Net price including copper**

**Ordering information**

100 m weights approx.	Total $\varnothing$ $\pm$ 3%	Number of pairs	Number of cores	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Pair	AWG no. Shield	Jacket colour
					Price for 1 m	100 m	500 m			
4.8 kg	5.2 mm	1	2	2.90	196.00	147.00	98.00			<a href="#">1P x AWG 20 C UL black</a>
8.7 kg	7.5 mm	2	4	3.30	220.00	165.00	110.00			<a href="#">2P x AWG 20 C UL black</a>
10.9 kg	7.9 mm	3	6	4.10	272.00	204.00	136.00			<a href="#">3P x AWG 20 C UL black</a>
12.8 kg	8.5 mm	4	8	4.90	328.00	246.00	164.00			<a href="#">4P x AWG 20 C UL black</a>
17.2 kg	10.1 mm	6	12	7.00	464.00	348.00	232.00			<a href="#">6P x AWG 20 C UL black</a>
22.6 kg	11.2 mm	8	16	8.30	556.00	417.00	278.00			<a href="#">8P x AWG 20 C UL black</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

**No copper surcharge.**

Cutlengths are without Label.



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C



Colour sequence:		Multi-core, multicoloured, flexible cables, PVC insulated, without protective conductor, jacket grey RAL 7032		
<b>Core colour</b>		<b>LiYY...x 0.14 mm<sup>2</sup></b>	(18 · 0.10)	2 - 50 cores
1	wh	<b>LiYY...x 0.25 mm<sup>2</sup></b>	(14 · 0.15)	2 - 50 cores
2	bn	<b>LiYY...x 0.38 mm<sup>2</sup></b>	(19 · 0.16)	2 - 32 cores
3	gn	<b>LiYY...x 0.50 mm<sup>2</sup></b>	(16 · 0.20)	2 - 50 cores
4	ye	<b>LiYY...x 0.75 mm<sup>2</sup></b>	(24 · 0.20)	2 - 32 cores
5	gy	<b>LiYY...x 1.0 mm<sup>2</sup></b>	(32 · 0.20)	2 - 6 cores
6	pk	<b>LiYY...x 1.5 mm<sup>2</sup></b>	(30 · 0.25)	3 cores
7	bu			
8	rd			
9	bk			
10	vt			
11	wh-bn			
12	wh-gn			
13	wh-ye			
14	wh-gy			
15	wh-pk			
16	wh-bu			
17	wh-rd			
18	wh-bk			
19	bn-gn			
20	bn-ye			
21	bn-gy			
22	bn-pk			
23	bn-bu			
24	bn-rd			
25	bn-bk			
26	gn-gy			
27	gn-pk			
28	gn-bu			
29	gn-rd			
30	gn-bk			
31	ye-gy			
32	ye-pk			
33	ye-bu			
34	ye-rd			
35	ye-bk			
36	rd-bk			
37	rd-bu			
38	rd-gy			
39	gy-bu			
40	gy-bk			
41	pk-gy			
42	pk-bu			
43	pk-rd			
44	pk-bk			
45	vt-wh			
46	vt-ye			
47	vt-rd			
48	vt-bk			
49	bu-bk			
50	ye-gn			

Multi-core, multicoloured, flexible cables, PVC insulated, without protective conductor, shielded, transparent jacket (BG 35 = grey)		
<b>LiYCY...x 0.14 mm<sup>2</sup></b>	(18 · 0.10)	3 - 50 cores
<b>LiYCY...x 0.25 mm<sup>2</sup></b>	(14 · 0.15)	2 - 24 cores
<b>LiYCY...x 0.38 mm<sup>2</sup></b>	(19 · 0.16)	1 - 7 cores
<b>LiYCY...x 0.50 mm<sup>2</sup></b>	(16 · 0.20)	2 - 32 cores
<b>LiYCY...x 0.75 mm<sup>2</sup></b>	(24 · 0.20)	2 - 32 cores

Multi-core, multicoloured, flexible cables, PVC insulated, without protective conductor, shielded, jacket grey RAL 7032		
<b>LiYCY...x 0.14 mm<sup>2</sup></b>	(18 · 0.10)	1 - 7 cores
<b>LiYCY...x 0.25 mm<sup>2</sup></b>	(14 · 0.15)	1 - 7 cores
<b>LiYCY...x 0.38 mm<sup>2</sup></b>	(19 · 0.16)	1 - 7 cores
<b>LiYCY...x 0.50 mm<sup>2</sup></b>	(16 · 0.20)	1 - 7 cores
<b>LiYCY...x 0.75 mm<sup>2</sup></b>	(24 · 0.20)	1 - 7 cores
<b>LiYCY...x 1.0 mm<sup>2</sup></b>	(32 · 0.20)	2 - 7 cores
<b>LiYCY...x 1.5 mm<sup>2</sup></b>	(30 · 0.25)	1 - 6 cores
<b>LiYCY...x 2.5 mm<sup>2</sup></b>	(50 · 0.25)	1 - 4 cores
<b>LiYCY...x 4.0 mm<sup>2</sup></b>	(56 · 0.30)	1 core

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				Page				
AWG 26 AWG 24 AWG 20		<b>AWG control signal cables</b>	2 to 60 cores, for insulation displacement connectors, good flexibility, cores in AWG sizes and to VDE 0881, 7-wire, AWG 26, AWG 24, AWG 20, also shielded, jacket grey RAL 7035	74 to 85				
						<b>AWG control signal cables</b>	2 to 60 cores, for insulation displacement connectors, good flexibility, cores in AWG sizes and to VDE 0881, 7-wire AWG 30, AWG 28, AWG 26, AWG 24, AWG 22, AWG 20, AWG 18 also shielded, jacket matte black with UL certification to Style 2464/1061	86 to 105
	<b>Control signal cables</b>	2 cores, 0,14 mm <sup>2</sup> , 0,34 mm <sup>2</sup> , 0,50 mm <sup>2</sup> <u>halogen-free</u> , flame-retardant, temperature-resistant +125°C shielded, unshielded jacket glossy black	108 + 109					
					<b>AWG control signal cables</b>	2 to 16 cores, for insulation displacement connectors, halogen-free, flame-retardant, self-extinguishing, with UL certification, cores in AWG sizes, 7-wire AWG 26, AWG 24, AWG 20 also shielded, jacket black	110 to 115	
								

**Technical data**

**Standard version without protective conductor, without shield, jacket light grey RAL 7032**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (18 x 0.10 mm) per core. Core insulation made of thermoplastic PVC plastic; Second colour: abrasion-resistant coloured rings  
Core Ø 1.1 mm ± 0.05 mm.  
The cores are produced in accordance with VDE regulation 0812. 2 to 50 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).  
The final layer is formed by the outer jacket made of thermoplastic PVC plastic, jacket colour light grey as per RAL 7032;  
Wall thickness of 0.6 mm to 1.0 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 135 Ω/km  
Insulation resistance ≥ 20 MΩ x km  
Capacitance at 1 kHz approx. 80 pF/m (core/core in same position or in the core).  
Depending on the cable construction, capacitance deviations of up to + 50% may result.  
Operating voltage max. 350 V; test voltage 2,000 V (core/core).  
Current rating max 1.5 A (ambient temp. 25°C).  
Temperature range -10°C to + 80°C (installation and operation)  
-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43.

We can also manufacture cables which deviate from our standard range.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
1.5	3.4	2-core	0.60	40.00	30.00	20.00	<a href="#">LiYY 2 X 0.14/13</a>
2.1	3.8	3-core	0.70	48.00	36.00	24.00	<a href="#">LiYY 3 X 0.14/13</a>
2.3	4.1	4-core	0.80	56.00	42.00	28.00	<a href="#">LiYY 4 X 0.14/13</a>
2.5	4.2	5-core	1.00	64.00	48.00	32.00	<a href="#">LiYY 5 X 0.14/13</a>
4.2	5.2	8-core	0.60	—	—	—	<a href="#">LiYY 8 X 0.14/13*</a>
4.7	5.8	10-core	0.75	52.00	—	—	<a href="#">LiYY 10 X 0.14/13*</a>
10.0	8.4	24-core	1.95	130.00	98.00	—	<a href="#">LiYY 24 X 0.14/13*</a>
19.0	11.6	50-core	4.05	272.00	204.00	—	<a href="#">LiYY 50 X 0.14/13*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**



\* Items to be sold off

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0      Fax: +49 (0)30 / 79 01 86 - 77**



**Technical data**

**Standard version without protective conductor, with full shield, transparent jacket**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, good flexibility, low overall diameter.  
The full shield protects against external interference.  
The transparent outer jacket allows you to check that the braided shield is fully sealed and of good quality.

**Construction data**

Tinned, fine-wire copper strand (18 x 0.10 mm) per core.  
Core insulation of thermoplastic PVC plastic; second colour: abrasion-resistant coloured rings.  
Core Ø 1.1 mm ± 0.05 mm. The cores are produced in accordance with VDE regulation 0812.  
3 to 50 cores are twisted to form cables.  
Colour sequence of the cores from inside starting clockwise with No. 1 (white).  
The cable bundle is covered in transparent polyester foil, with an overlap of approx. 40%.  
This is followed by the braided shield of tinned copper wires, visual coverage approx. 85%.  
The final layer is formed by the transparent outer jacket made of thermoplastic PVC plastic;  
Wall thickness of 0.6 mm to 1.0 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 135 Ω/km  
Insulation resistance ≥ 20 MΩ x km Capacitance at 1 kHz core/core, shield earthed 90 pF/m.  
Depending on the cable construction, the capacitance can deviate by up to ± 20%.  
Operating voltage max. 350 V; test voltage 2,000 V (core/core)  
1,200 V (core/shield).  
Current rating max. 1.5 A (ambient temperature up to 25°C).  
Temperature range -10°C to + 80°C (installation and operation)  
-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43.

We can also manufacture cables which deviate from our standard range.

**Net price including copper**

Weight kg / 100 m	Total Ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
2.5	4.1	3-core	1.70	112.00	84.00	56.00	LiYCY 3 X 0.14/15
2.7	4.2	4-core	1.90	128.00	96.00	64.00	LiYCY 4 X 0.14/15
3.0	4.5	5-core	2.10	140.00	105.00	70.00	LiYCY 5 X 0.14/15
3.6	4.8	6-core	2.20	148.00	111.00	74.00	LiYCY 6 X 0.14/15
3.8	4.8	7-core	2.40	160.00	120.00	80.00	LiYCY 7 X 0.14/15
4.3	5.3	8-core	2.50	168.00	126.00	84.00	LiYCY 8 X 0.14/15
5.3	5.9	10-core	2.90	192.00	144.00	96.00	LiYCY 10 X 0.14/15
6.0	6.3	12-core	3.20	212.00	159.00	106.00	LiYCY 12 X 0.14/15
7.7	7.5	16-core	4.30	284.00	213.00	142.00	LiYCY 16 X 0.14/15
10.0	8.2	20-core	2.40	162.00	122.00	—	LiYCY 20 X 0.14/15*
11.6	8.7	24-core	2.75	184.00	—	—	LiYCY 24 X 0.14/15*
14.1	9.6	32-core	3.30	—	—	—	LiYCY 32 X 0.14/15*
15.1	9.9	36-core	3.60	240.00	180.00	—	LiYCY 36 X 0.14/15*
19.9	11.4	50-core	4.70	314.00	236.00	—	LiYCY 50 X 0.14/15*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.



\* Items to be sold off

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**Phone: +49 (0)30 / 79 01 86 - 0      Fax: +49 (0)30 / 79 01 86 - 77**

**Technical data**

**Standard version without protective conductor, without shield, jacket light grey RAL 7032**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (14 x 0.15 mm) per core.

Core insulation of thermoplastic PVC plastic; second colour: abrasion-resistant coloured rings.

Core Ø 1.3 mm ± 0.05 mm. The cores are produced in accordance with VDE regulation 0812.

2 to 50 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The final layer is formed by the outer jacket made of thermoplastic PVC plastic;

Jacket colour light grey as per RAL 7032.

Wall thickness of 0.6 mm to 1.0 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 79 Ω/km

Insulation resistance ≥ 20 MΩ x km

Capacitance at 1 kHz 65 pF/m (core/core in same position or in the core).

Depending on the cable construction, the capacitance can deviate by up to + 50%.

Operating voltage max. 350 V; test voltage 2,000 V (core/core).

Current rating max. 2.5 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43.

We can also manufacture cables which deviate from our standard range.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
2.3	4.0	2-core	0.80	52.00	39.00	26.00	<a href="#">LiYY 2 X 0.25/23</a>
2.5	4.1	3-core	1.00	64.00	48.00	34.00	<a href="#">LiYY 3 X 0.25/23</a>
3.0	4.3	4-core	1.10	72.00	54.00	36.00	<a href="#">LiYY 4 X 0.25/23</a>
3.5	4.7	5-core	1.30	88.00	66.00	44.00	<a href="#">LiYY 5 X 0.25/23</a>
4.1	5.1	6-core	1.40	92.00	69.00	46.00	<a href="#">LiYY 6 X 0.25/23</a>
5.5	5.3	7-core	1.60	104.00	78.00	52.00	<a href="#">LiYY 7 X 0.25/23</a>
5.8	6.2	8-core	1.90	124.00	93.00	62.00	<a href="#">LiYY 8 X 0.25/23</a>
6.6	6.6	10-core	2.30	152.00	114.00	76.00	<a href="#">LiYY 10 X 0.25/23</a>
7.8	7.0	12-core	2.70	180.00	135.00	90.00	<a href="#">LiYY 12 X 0.25/23</a>
9.9	8.1	16-core	3.70	244.00	183.00	122.00	<a href="#">LiYY 16 X 0.25/23</a>
13.4	9.4	20-core	4.70	316.00	237.00	158.00	<a href="#">LiYY 20 X 0.25/23</a>
17.5	10.6	32-core	7.70	516.00	387.00	258.00	<a href="#">LiYY 32 X 0.25/23</a>
26.8	13.4	50-core	5.00	334.00	251.00	—	<a href="#">LiYY 50 X 0.25/23*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**



\*Item to be sold off

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**Flexible control signal cables LiYCY ... x 0.25 mm<sup>2</sup>**

**Technical data**

**Standard version without protective conductor, with full shield, transparent jacket**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, good flexibility, low overall diameter.  
The full shield protects against external interference.

The transparent outer jacket allows you to check that the braided shield is fully sealed and of good quality.

**Construction data**

Tinned, fine-wire copper strand (14 x 0.15 mm) per core. Core insulation made of thermoplastic PVC plastic;  
Second colour: abrasion-resistant coloured rings.

Core Ø 1.3 mm ± 0.05 mm.

The cores are produced in accordance with VDE regulation 0812. 2 to 24 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The cable bundle is covered in transparent polyester foil, with an overlap of approx. 40%.

This is followed by the braided shield of tinned copper wires, visual coverage approx. 85%.

The final layer is formed by the transparent outer jacket made of thermoplastic PVC plastic;

Wall thickness of 0.6 mm to 1.0 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 79 Ω/km

Insulation resistance ≥ 20 MΩ x km

Capacitance at 1 kHz core/core, shield earthed 100 pF/m.

Depending on the cable construction, the capacitance can deviate by up to ± 20%.

Operating voltage max. 350 V; test voltage 2,000 V (core/core)

1,200 V (core/shield).

Current rating max. 2.5 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43.

**We can also manufacture cables which deviate from our standard range.**

**Flexible control signal cables LiYCY ... x 0.25 mm<sup>2</sup>**

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
2.8	4.1	2-core	1.40	92.00	69.00	46.00	<a href="#">LiYCY 2 X 0.25/25</a>
3.0	4.3	3-core	1.90	128.00	96.00	64.00	<a href="#">LiYCY 3 X 0.25/25</a>
3.4	4.6	4-core	2.20	148.00	111.00	72.00	<a href="#">LiYCY 4 X 0.25/25</a>
4.4	5.2	5-core	2.30	156.00	117.00	78.00	<a href="#">LiYCY 5 X 0.25/25</a>
4.8	5.6	6-core	2.50	164.00	123.00	82.00	<a href="#">LiYCY 6 X 0.25/25</a>
4.9	5.6	7-core	2.60	172.00	129.00	86.00	<a href="#">LiYCY 7 X 0.25/25</a>
5.8	6.0	8-core	2.90	196.00	147.00	98.00	<a href="#">LiYCY 8 X 0.25/25</a>
7.3	6.9	10-core	3.50	232.00	174.00	116.00	<a href="#">LiYCY 10 X 0.25/25</a>
9.0	7.7	12-core	4.00	268.00	201.00	134.00	<a href="#">LiYCY 12 X 0.25/25</a>
11.2	8.4	16-core	5.40	360.00	270.00	180.00	<a href="#">LiYCY 16 X 0.25/25</a>
13.5	9.1	20-core	6.90	460.00	345.00	230.00	<a href="#">LiYCY 20 X 0.25/25</a>
15.4	9.9	24-core	8.00	536.00	402.00	268.00	<a href="#">LiYCY 24 X 0.25/25</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**



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**Technical data**

Standard version without protective conductor, without shield, jacket light grey RAL 7032

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (19 x 0.16 mm) per core. Core insulation made of thermoplastic PVC plastic;

Second colour: abrasion-resistant coloured rings.

Core Ø 1.6 mm ± 0.05 mm.

The cores are produced in accordance with VDE regulation 0812 and twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The final layer is formed by the outer jacket made of thermoplastic PVC plastic; jacket colour light grey as per RAL 7032.

Wall thickness of 0.6 mm to 1.1 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 49 Ω/km

Insulation resistance ≥ 20 MΩ x km

Capacitance at 1 kHz approx. 160 pF/m (core/core in same position or in the core).

Depending on the cable construction, the capacitance can deviate by up to + 50%.

Operating voltage max. 350 V; test voltage 2,000 V.

Current rating max. 4 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43.

We can also manufacture cables which deviate from our standard range.

**Net price including copper**

Weight kg / 100 m	Total Ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
2.6	4.4	2-core	0.80	56.00	42.00	28.00	<a href="#">LiYY 2 X 0.38/33</a>
3.2	4.7	3-core	1.00	64.00	48.00	32.00	<a href="#">LiYY 3 X 0.38/33</a>
3.8	5.0	4-core	1.20	80.00	60.00	40.00	<a href="#">LiYY 4 X 0.38/33</a>
4.5	5.6	5-core	0.65	44.00	33.00	22.00	<a href="#">LiYY 5 X 0.38/33*</a>
5.9	6.2	6-core	1.70	116.00	87.00	58.00	<a href="#">LiYY 6 X 0.38/33</a>
6.2	6.2	7-core	0.90	60.00	45.00	—	<a href="#">LiYY 7 X 0.38/33*</a>
6.6	6.5	8-core	1.20	80.00	60.00	—	<a href="#">LiYY 8 X 0.38/33*</a>
8.2	7.5	10-core	1.20	82.00	62.00	41.00	<a href="#">LiYY 10 X 0.38/33*</a>
10.1	8.0	12-core	1.45	98.00	74.00	—	<a href="#">LiYY 12 X 0.38/33*</a>
12.5	8.9	16-core	2.25	150.00	113.00	—	<a href="#">LiYY 16 X 0.38/33</a>
14.2	10.3	20-core	2.80	—	—	—	<a href="#">LiYY 20 X 0.38/33*</a>
17.9	11.6	24-core	3.00	200.00	150.00	—	<a href="#">LiYY 24 X 0.38/33*</a>
23.8	12.6	32-core	3.65	246.00	185.00	132.00	<a href="#">LiYY 32 X 0.38/33*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.



\*Items to be sold off

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**Phone: +49 (0)30 / 79 01 86 - 0      Fax: +49 (0)30 / 79 01 86 - 77**

**Technical data**

**Standard version without protective conductor, with full shield, jacket light grey RAL 7032**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (19 x 0.16 mm) per core. Core insulation made of thermoplastic PVC plastic.

Core Ø 1.6 mm ± 0.05 mm.

The cores are produced in accordance with VDE regulation 0812 and twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The cable bundle is covered in transparent polyester foil, with an overlap of approx. 40%.

This is followed by the braided shield made of tinned copper wires; visual coverage approx. 85%.

The final layer is formed by the outer jacket made of thermoplastic PVC plastic; jacket colour light grey as per RAL 7032.

Wall thickness of 0.6 mm to 0.7 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 49 Ω/km

Insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz Single-core: core/shield 300 pF/m

Multi-core: core/core, shield earthed 190 pF/m.

Depending on the cable construction, the capacitance can deviate by up to ± 20%.

Operating voltage max. 350 V; test voltage 2,000 V (core/core)

1,200 V (core/shield).

Current rating max. 4 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

**We can also manufacture cables which deviate from our standard range.**

The colours of the insulated cores and the sequence are listed on page 43.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
1.5	2.9	1-core	1.10	72.00	54.00	36.00	<a href="#">LiYCY 1 X 0.38/35</a>
3.8	5.0	3-core	2.20	148.00	111.00	74.00	<a href="#">LiYCY 3 X 0.38/35</a>
4.7	5.6	4-core	2.50	164.00	123.00	82.00	<a href="#">LiYCY 4 X 0.38/35</a>
6.2	6.2	5-core	2.70	180.00	135.00	90.00	<a href="#">LiYCY 5 X 0.38/35</a>
7.3	6.7	6-core	3.10	208.00	156.00	104.00	<a href="#">LiYCY 6 X 0.38/35</a>
7.6	6.7	7-core	3.40	224.00	168.00	112.00	<a href="#">LiYCY 7 X 0.38/35</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**



**Please note:**

By contrast from the standard cables with full shields offered in this catalogue

(assemblies 15-25-55-75), which all have a transparent outer jacket, we supply the cables on this page with full shields with a light grey jacket as per RAL 7032 only.

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**Phone: +49 (0)30 / 79 01 86 - 0 Fax: +49 (0)30 / 79 01 86 - 77**



Technical data

Standard version without protective conductor, without shield, jacketlight grey RAL 7032

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (16 x 0.20 mm) per core. Core insulation made of thermoplastic PVC plastic;

Second colour: abrasion-resistant coloured rings.

Core Ø 1.8 mm ± 0.05 mm.

The cores are produced in accordance with VDE regulation 0812. 2 to 50 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The final layer is formed by the outer jacket made of thermoplastic PVC plastic; jacket colour light grey as per RAL 7032.

Wall thickness of 0.6 mm to 1.4 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 40.1 Ω/km

Insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz approx. 145 pF/m (core/core in same position or in the core).

Depending on the cable construction, the capacitance can deviate by up to + 50%.

Operating voltage max. 350 V; test voltage 2,000 V.

Current rating max. 6 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43

We would be happy to produce cables which deviate from our standard range for you!

Net price including copper

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
3.5	4.8	2-core	1.00	64.00	48.00	32.00	LiYY 2 X 0.5/53
4.3	5.2	3-core	1.10	72.00	54.00	36.00	LiYY 3 X 0.5/53
5.6	6.0	4-core	1.40	92.00	69.00	46.00	LiYY 4 X 0.5/53
6.3	6.6	5-core	1.70	116.00	87.00	58.00	LiYY 5 X 0.5/53
7.6	7.0	6-core	2.10	140.00	105.00	70.00	LiYY 6 X 0.5/53
8.0	7.0	7-core	2.30	156.00	117.00	78.00	LiYY 7 X 0.5/53
9.0	8.0	8-core	2.80	184.00	138.00	92.00	LiYY 8 X 0.5/53
11.0	9.0	10-core	3.70	244.00	183.00	122.00	LiYY 10 X 0.5/53
14.0	10.0	12-core	4.40	296.00	222.00	148.00	LiYY 12 X 0.5/53
18.0	11.0	16-core	5.70	380.00	285.00	190.00	LiYY 16 X 0.5/53
22.0	12.0	20-core	2.75	184.00	138.00	—	LiYY 20 X 0.5/53*
32.5	14.6	32-core	5.65	—	—	—	LiYY 32 X 0.5/53*
34.5	15.0	36-core	13.10	876.00	657.00	438.00	LiYY 36 X 0.5/53
50.0	18.5	50-core	19.00	1268.00	951.00	634.00	LiYY 50 X 0.5/53

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.



\*Items to be sold off

Technical data

Standard version without protective conductor, with full shield, transparent jacket.

Preferred application

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

Special feature

Cores are easy to identify thanks to the colour coding, good flexibility, low overall diameter.  
The full shield protects against external interference.

The transparent outer jacket allows you to check that the braided shield is fully sealed and of good quality.

Construction data

Tinned, fine-wire copper strand (16 x 0.20 mm) per core.

Core insulation made of thermoplastic PVC plastic;

Second colour: abrasion-resistant coloured rings.

Core Ø 1.8 mm ± 0.05 mm.

The cores are produced in accordance with VDE regulation 0812.

2 to 32 cores are twisted to form cables. Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The cable bundle is covered in transparent polyester foil, with an overlap of approx. 40%.

This is followed by the braided shield of tinned copper wires, visual coverage approx. 85%.

The final layer is formed by the transparent outer jacket made of thermoplastic PVC plastic;

Wall thickness of 0.6 mm to 1.2 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

Electrical and physical properties at 20°C

Conductor resistance max. 40.1 Ω/km

Insulation resistance ≥ 20 MΩ x km

Capacitance at 1 kHz core/core, shield earthed 120 pF/m.

Depending on the cable construction, the capacitance can deviate by up to ± 20%.

Operating voltage max. 350 V; test voltage 2,000 V (core/core)  
1,500 V (core/shield).

Current rating max. 6 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43

We can also manufacture cables which deviate from our standard range.

Net price including copper

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
3.8	5.2	2-core	1.80	120.00	90.00	60.00	<a href="#">LiYCY 2 X 0.5/55</a>
4.8	5.6	3-core	2.50	164.00	123.00	82.00	<a href="#">LiYCY 3 X 0.5/55</a>
6.3	6.2	4-core	2.70	180.00	135.00	90.00	<a href="#">LiYCY 4 X 0.5/55</a>
8.3	6.8	5-core	3.10	208.00	156.00	104.00	<a href="#">LiYCY 5 X 0.5/55</a>
9.7	7.6	6-core	3.50	232.00	174.00	116.00	<a href="#">LiYCY 6 X 0.5/55</a>
10.4	7.6	7-core	3.90	260.00	195.00	130.00	<a href="#">LiYCY 7 X 0.5/55</a>
12.0	8.2	8-core	4.10	276.00	207.00	138.00	<a href="#">LiYCY 8 X 0.5/55</a>
14.0	9.6	10-core	5.20	344.00	258.00	172.00	<a href="#">LiYCY 10 X 0.5/55</a>
21.0	10.8	16-core	7.90	524.00	393.00	262.00	<a href="#">LiYCY 16 X 0.5/55</a>
26.0	12.2	20-core	9.80	656.00	492.00	328.00	<a href="#">LiYCY 20 X 0.5/55</a>
31.0	13.2	24-core	4.95	330.00	—	—	<a href="#">LiYCY 24 X 0.5/55*</a>
42.0	15.2	32-core	6.10	408.00	306.00	—	<a href="#">LiYCY 32 X 0.5/55*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



\* Items to be sold off

Technical data

Standard version without protective conductor, without shield, jacket light grey RAL 7032

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (24 x 0.20 mm) per core. Core insulation made of thermoplastic PVC plastic;

Second colour: abrasion-resistant coloured rings.

Core Ø 2.0 mm ± 0.05 mm.

The cores are produced in accordance with VDE regulation 0812. 2 to 32 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The final layer is formed by the outer jacket made of thermoplastic PVC plastic; jacket colour light grey as per RAL 7032.

Wall thickness of 0.6 mm to 1.4 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 26 Ω/km

Insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz approx. 140 pF/m (core/core in same position or in the core).

Depending on the cable construction, the capacitance can deviate by up to + 50%.

Operating voltage max. 350 V; test voltage 2,000 V.

Current rating max. 10 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

We can also manufacture cables which deviate from our standard range.

The colours of the insulated cores and the sequence are listed on page 43

Net price including copper

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
4.5	5.3	2-core	1.10	72.00	54.00	36.00	<a href="#">LiYY 2 X 0.75/73</a>
5.5	5.6	3-core	1.30	88.00	66.00	44.00	<a href="#">LiYY 3 X 0.75/73</a>
7.0	6.1	4-core	1.70	116.00	87.00	58.00	<a href="#">LiYY 4 X 0.75/73</a>
8.0	6.7	5-core	2.30	152.00	114.00	76.00	<a href="#">LiYY 5 X 0.75/73</a>
18.0	10.3	12-core	2.10	142.00	107.00	—	<a href="#">LiYY 12 X 0.75/73*</a>
23.0	11.4	16-core	3.60	240.00	180.00	—	<a href="#">LiYY 16 X 0.75/73*</a>
33.0	14.6	24-core	4.15	278.00	209.00	—	<a href="#">LiYY 24 X 0.75/73*</a>
42.0	15.8	32-core	5.30	356.00	267.00	—	<a href="#">LiYY 32 X 0.75/73*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharge.



\* Items to be sold off

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0      Fax: +49 (0)30 / 79 01 86 - 77**

**Technical data**

**Standard version without protective conductor, with full shield, transparent jacket**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, good flexibility, low overall diameter.

The full shield protects against external interference.

The transparent outer jacket allows you to check that the braided shield is fully sealed and of good quality.

**Construction data**

Tinned, fine-wire copper strand (24 x 0.20 mm) per core. Core insulation made of thermoplastic PVC plastic;

Second colour: abrasion-resistant coloured rings.

Core Ø 2.0 mm ± 0.05 mm. The cores are produced in accordance with VDE regulation 0812.

2 to 32 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The cable bundle is covered in transparent polyester foil, with an overlap of approx. 40%.

This is followed by the braided shield of tinned copper wires, visual coverage approx. 85%.

The final layer is formed by the transparent outer jacket made of thermoplastic PVC plastic;

Wall thickness of 0.6 mm to 1.4 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 26 Ω/km

Insulation resistance ≥ 20 MΩ x km

Capacitance at 1 kHz core/core, shield earthed 160 pF/m.

Depending on the cable construction, the capacitance can deviate by up to ± 20%.

Operating voltage max. 350 V; test voltage 2,000 V (core/core)

1,500 V (core/shield).

Current rating max. 10 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43

We can also manufacture cables which deviate from our standard range.

**Net price including copper**

Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
5.6	5.8	2-core	1.05	70.00	53.00	—	<a href="#">LIYCY 2 X 0.75/75*</a>
8.3	6.7	4-core	3.50	232.00	174.00	116.00	<a href="#">LIYCY 4 X 0.75/75</a>
16.5	8.9	8-core	5.30	352.00	264.00	176.00	<a href="#">LIYCY 8 X 0.75/75</a>
23.0	10.6	12-core	8.80	588.00	441.00	294.00	<a href="#">LIYCY 12 X 0.75/75</a>
40.0	14.5	24-core	15.90	1,060.00	795.00	530.00	<a href="#">LIYCY 24 X 0.75/75</a>
50.0	16.1	32-core	7.05	472.00	354.00	—	<a href="#">LIYCY 32 X 0.75/75*</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.**



\* Items to be sold off

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0      Fax: +49 (0)30 / 79 01 86 - 77**

**Flexible control signal cables LiYY ... x 1.0 mm<sup>2</sup>**

**Technical data**

**Standard version without protective conductor, without shield, jacket light grey RAL 7032**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (32 x 0.20 mm) per core. Core insulation made of thermoplastic PVC plastic.

Core Ø 2.1 mm ± 0.10 mm.

The cores are produced in accordance with VDE regulation 0812.

2 to 6 cores are twisted to form cables. Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The final layer is formed by the outer jacket made of thermoplastic PVC plastic; jacket colour light grey as per RAL 7032.

Wall thickness of 0.6 mm to 1.0 mm, increasing with the number of cores.

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 20 Ω/km

Insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz approx. 155 pF/m (core/core in same position or in the core).

Depending on the cable construction, the capacitance can deviate by up to + 50%.

Operating voltage max. 350 V; test voltage 2,000 V.


Current rating max. 12 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43

We can also manufacture cables which deviate from our standard range.

		<b>Net price including copper</b>					<b>Ordering information</b>
Weight kg / 100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			
				100 m	500 m	3000 m	
5.5	5.8	2-core	1.30	88.00	66.00	44.00	<a href="#">LiYY 2 X 1.0/103</a>
6.5	6.2	3-core	1.70	116.00	87.00	58.00	<a href="#">LiYY 3 X 1.0/103</a>
8.0	6.7	4-core	2.30	152.00	114.00	76.00	<a href="#">LiYY 4 X 1.0/103</a>
12.5	9.3	6-core	1.80	120.00	90.00	60.00	<a href="#">LiYY 6 X 1.0/103*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

\* Items to be sold off

**Flexible control signal cables LiYY ... x 1.5 mm<sup>2</sup>**

**Technical data**

**Standard version: without protective conductor, without shield, jacket light grey RAL 7032**

**Preferred application**

Connection cables for electronic systems, control and regulation systems and measurement and signalling systems.

**Special feature**

Cores are easy to identify thanks to the colour coding, outstanding flexibility, low overall diameter.

**Construction data**

Tinned, fine-wire copper strand (30 x 0.25 mm) per core. Core insulation made of thermoplastic PVC plastic;

Core Ø 2.6 mm ± 0.10 mm.

The cores are produced in accordance with VDE regulation 0812. 3 cores are twisted to form cables.

Colour sequence of the cores from inside starting clockwise with No. 1 (white).

The final layer is formed by the outer jacket made of thermoplastic PVC plastic; jacket colour light grey as per RAL 7032.

Wall thickness 0.6 mm

The PVC mixtures used for the insulation are largely oil and petrol-resistant.

**Electrical and physical properties at 20°C**

Conductor resistance max. 13.7 Ω/km

Insulation resistance ≥ 20 M Ω x km

Capacitance at 1 kHz approx. 160 pF/m (core/core in same position or in the core).

Depending on the cable construction, the capacitance can deviate by up to + 50%.

Operating voltage max. 350 V; test voltage 2,000 V.


Current rating max. 16 A (ambient temperature up to 25°C).

Temperature range -10°C to + 80°C (installation and operation)

-30°C to + 80°C (transport and storage)

The colours of the insulated cores and the sequence are listed on page 43

We would be happy to produce cables which deviate from our standard range!

		<b>Net price including copper</b>				<b>Ordering information</b>
Weight kg/100 m	Total ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		
				100 m	100 m	
9.5	7.5	3-core	0.85	58.00		<a href="#">LiYY 3 X 1.5/153*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

\* Item to be sold off



**Flexible control signal cable with full shield**

9 cross-sections, partly with 1 to 7 different coloured cores each, grey jacket  
Type LiYCY as per VDE 0812

Technical data

**General information for all cross-sections:**

Core construction: tinned, fine-wire copper strand, insulated in various colours.  
Colour sequence: 1. core wh, 2. bn, 3. gn, 4. ye, 5. gy, 6. pk, 7. bu, twisted clockwise, starting from the inside with white.  
Full shield of braided, tinned copper wire; visual coverage approx. 85%.  
Insulation made of spec. PVC: cold resistant,  
Temperature range -30°C to + 80°C  
Insulation resistance at least 20 MΩ x km (20°C)

**Assembly  
0.14 C**

Standard designation: **LiYCY .... x 0.14 mm<sup>2</sup>**

▲  
Number of cores

Cores 18 x 0.10, tinned, core Ø 1.1 mm, conductor resistance 135 Ω/km.  
Current rating to 1.5 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, core/shield 1,200 V.  
Capacitance in pF/m Single-core: core/shield 195 pF/m  
at 1 kHz, tol. ± 20% Multi-core: core/core, shield earthed 90 pF/m.

**Assembly  
0.25 C**

Standard designation: **LiYCY .... x 0.25 mm<sup>2</sup>**

▲  
Number of cores

Cores 14 x 0.15, tinned, core Ø 1.3 mm, conductor resistance 79 Ω/km.  
Current rating to 2.5 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, core/shield 1,200 V.  
Capacitance in pF/m Single-core: core/shield 245 pF/m  
at 1 kHz, tol. ± 20% Multi-core: core/core, shield earthed 100 pF/m.

**Assembly  
0.38 C**

Standard designation: **LiYCY .... x 0.38 mm<sup>2</sup>**

▲  
Number of cores

Cores 19 x 0.16, tinned, core Ø 1.6 mm, conductor resistance 49 Ω/km.  
Current rating to 4 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, core/shield 1,200 V.  
Capacitance in pF/m Single-core: core/shield 300 pF/m  
at 1 kHz, tol. ± 20% Multi-core: core/core, shield earthed 190 pF/m.



**Flexible control signal cable with full shield**

9 cross-sections, partly with 1 to 7 different coloured cores each, grey jacket  
Type LiYCY as per VDE 0812

Net price including copper

Cross-section of shield mm <sup>2</sup>	Weight of 100 m in kg	Total $\phi$ ±5% in mm	Number of cores	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information	Jacket colour
					100 m	500 m	3000 m		
0.4	1.0	2.4	1	1.00	64.00	48.00	32.00	<a href="#">LiYCY 1 x 0.14 C</a>	Light grey, RAL 7032
0.6	2.2	3.7	2	1.20	80.00	60.00	40.00	<a href="#">LiYCY 2 x 0.14 C</a>	
0.8	2.5	4.1	3	1.70	112.00	84.00	56.00	<a href="#">LiYCY 3 x 0.14 C</a>	
0.8	3.2	4.2	4	1.90	128.00	96.00	64.00	<a href="#">LiYCY 4 x 0.14 C</a>	
0.9	3.8	4.5	5	2.10	140.00	105.00	70.00	<a href="#">LiYCY 5 x 0.14 C</a>	
1.0	4.4	4.8	6	2.20	148.00	111.00	74.00	<a href="#">LiYCY 6 x 0.14 C</a>	
1.0	4.6	4.8	7	2.40	160.00	120.00	80.00	<a href="#">LiYCY 7 x 0.14 C</a>	
0.5	1.2	2.6	1	1.10	68.00	51.00	34.00	<a href="#">LiYCY 1 x 0.25 C</a>	Light grey, RAL 7032
0.7	2.4	4.1	2	1.40	92.00	69.00	46.00	<a href="#">LiYCY 2 x 0.25 C</a>	
0.9	3.0	4.3	3	1.90	128.00	96.00	64.00	<a href="#">LiYCY 3 x 0.25 C</a>	
0.9	3.5	4.6	4	2.20	148.00	111.00	74.00	<a href="#">LiYCY 4 x 0.25 C</a>	
1.1	4.4	5.2	5	2.30	156.00	117.00	78.00	<a href="#">LiYCY 5 x 0.25 C</a>	
1.2	5.5	5.6	6	2.50	164.00	123.00	82.00	<a href="#">LiYCY 6 x 0.25 C</a>	
1.2	5.7	5.6	7	2.60	172.00	129.00	86.00	<a href="#">LiYCY 7 x 0.25 C</a>	
0.6	1.5	2.9	1	1.10	72.00	54.00	36.00	<a href="#">LiYCY 1 x 0.38 C</a>	Light grey, RAL 7032
1.0	3.8	5.0	3	2.20	148.00	111.00	74.00	<a href="#">LiYCY 3 x 0.38 C</a>	
1.5	4.7	5.6	4	2.50	164.00	123.00	82.00	<a href="#">LiYCY 4 x 0.38 C</a>	
1.6	6.2	6.2	5	2.70	180.00	135.00	90.00	<a href="#">LiYCY 5 x 0.38 C</a>	
1.8	7.3	6.7	6	3.10	208.00	156.00	104.00	<a href="#">LiYCY 6 x 0.38 C</a>	
1.8	7.6	6.7	7	3.40	224.00	168.00	112.00	<a href="#">LiYCY 7 x 0.38 C</a>	

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

**Flexible control signal cable with full shield**

9 cross-sections, partly with 1 to 7 different coloured cores each, grey jacket  
Type LiYCY as per VDE 0812

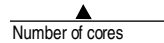
Technical data

**General information for all cross-sections:**

Core construction: tinned, fine-wire copper strand, insulated in various colours.  
Colour sequence: 1. core wh, 2. bn, 3. gn, 4. ye, 5. gy, 6. pk, 7. bu, twisted clockwise, starting from the inside with white.  
Full braided shield made of tinned copper wire, visual coverage approx. 85%.  
Insulation made of spec. PVC: cold resistant,  
Temperature range -30°C to + 80°C  
Insulation resistance at least 20 MΩ x km (20°C)

Assembly  
**0.50 C**

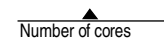
Standard designation: **LiYCY ..... x 0.50 mm<sup>2</sup>**



Cores 16 x 0.20, tinned, core Ø 1.8 mm, conductor resistance 40.1 Ω/km.  
Current rating to 6 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, core/shield 1,500 V.  
Capacitance in pF/m Single-core: core/shield 265 pF/m  
at 1 kHz, tol. ± 20% Multi-core: core/core, shield earthed 120 pF/m.

Assembly  
**0.75 C**

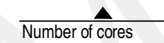
Standard designation: **LiYCY .... x 0.75 mm<sup>2</sup>**



Cores 24 x 0.20, tinned, core Ø 2.0 mm, conductor resistance 26 Ω/km.  
Current rating to 10 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, core/shield 1,500 V.  
Capacitance in pF/m Single-core: core/shield 320 pF/m  
at 1 kHz, tol. ± 20% Multi-core: core/core, shield earthed 160 pF/m.

Assembly  
**1.0 C**

Standard designation: **LiYCY ..... x 1.0 mm<sup>2</sup>**



Cores 32 x 0.20, tinned, core Ø 2.1 mm, conductor resistance 20 Ω/km.  
Current rating to 12 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, core/shield 1,500 V.  
Capacitance in pF/m Single-core: core/shield 350 pF/m  
at 1 kHz, tol. ± 20% Multi-core: core/core, shield earthed 130 pF/m.



**Flexible control signal cable with full shield**

9 cross-sections, partly with 1 to 7 different coloured cores each, grey jacket  
Type LiYCY as per VDE 0812

Net price including copper

Cross-section of shield mm <sup>2</sup>	Weight of 100 m in kg	Total Ø ± 0.5% in mm	Number of cores	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information	Jacket colour
					100 m	500 m	3000 m		
0.6	1.8	3.1	1	1.20	80.00	60.00	40.00	<a href="#">LiYCY 1 x 0.50 C</a>	Light grey, RAL 7032
1.1	3.8	5.2	2	1.80	120.00	90.00	60.00	<a href="#">LiYCY 2 x 0.50 C</a>	
1.2	4.8	5.6	3	2.50	164.00	123.00	82.00	<a href="#">LiYCY 3 x 0.50 C</a>	
1.9	6.5	6.2	4	2.70	180.00	135.00	90.00	<a href="#">LiYCY 4 x 0.50 C</a>	
2.2	8.4	6.8	5	1.40	96.00	—	—	<a href="#">LiYCY 5 x 0.50 C*</a>	
2.4	9.7	7.6	6	3.50	232.00	174.00	116.00	<a href="#">LiYCY 6 x 0.50 C</a>	
2.4	10.4	7.6	7	3.90	260.00	195.00	130.00	<a href="#">LiYCY 7 x 0.50 C</a>	
0.6	2.2	3.2	1	1.30	84.00	63.00	42.00	<a href="#">LiYCY 1 x 0.75 C</a>	Light grey, RAL 7032
1.9	5.6	5.8	2	2.30	152.00	114.00	76.00	<a href="#">LiYCY 2 x 0.75 C</a>	
2.0	6.8	6.2	3	3.20	216.00	162.00	108.00	<a href="#">LiYCY 3 x 0.75 C</a>	
2.4	8.3	6.7	4	3.50	232.00	174.00	116.00	<a href="#">LiYCY 4 x 0.75 C</a>	
2.4	10.3	7.7	5	1.80	120.00	—	—	<a href="#">LiYCY 5 x 0.75 C*</a>	
2.9	13.3	8.3	7	2.10	142.00	107.00	—	<a href="#">LiYCY 7 x 0.75 C*</a>	
2.0	6.3	6.1	2	2.80	188.00	141.00	94.00	<a href="#">LiYCY 2 x 1.0 C</a>	
2.2	8.2	6.8	3	3.80	252.00	189.00	126.00	<a href="#">LiYCY 3 x 1.0 C</a>	
2.4	10.0	7.4	4	1.95	132.00	99.00	—	<a href="#">LiYCY 4 x 1.0 C*</a>	
2.9	12.0	8.0	5	2.10	140.00	105.00	70.00	<a href="#">LiYCY 5 x 1.0 C*</a>	
3.0	14.6	9.0	6	5.60	376.00	282.00	188.00	<a href="#">LiYCY 6 x 1.0 C</a>	
3.0	15.4	9.0	7	6.10	408.00	306.00	204.00	<a href="#">LiYCY 7 x 1.0 C</a>	

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

\* Items to be sold off

**Flexible control signal cable with full shield**

9 cross-sections, partly with 1 to 6 different coloured cores, grey jacket  
Type LiYCY as per VDE 0812

Technical data

**General information for all cross-sections:**

Core construction: tinned, fine-wire copper strand, insulated in various colours.  
Colour sequence: 1. core wh, 2. bn, 3. gn, 4. ye, 5. gy, 6. pk, twisted clockwise, starting from the inside with white.  
Full braided shield made of tinned copper wire, visual coverage approx. 85%.  
Insulation made of spec. PVC: cold resistant,  
Temperature range -30°C to + 80°C  
Insulation resistance at least 20 MΩ x km (20°C)

**Assembly  
1.5 C**

Standard designation: **LiYCY .... x 1.5 mm<sup>2</sup>**

Number of cores

Cores 30 x 0.25, tinned, conductor Ø 2.6 mm, conductor resistance 13.7 Ω/km.  
Current rating to 16 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, conductor/shield 1,500 V.  
Capacitance in pF/m Single-conductor: conductor/shield 375 pF/m  
at 1 kHz, tol. ± 20% Multi-conductor: conductor/conductor, shield earthed. 130 pF/m

**Assembly  
2.5 C**

Standard designation: **LiYCY .... x 2.5 mm<sup>2</sup>**

Number of cores

Cores 50 x 0.25, tinned, conductor Ø 3.5 mm, conductor resistance 7.5 Ω/km.  
Current rating to 20 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, conductor/shield 1,500 V.  
Capacitance in pF/m Single-conductor: conductor/shield 400 pF/m  
at 1 kHz, tol. ± 20% Multi-conductor: conductor/conductor, shield earthed. 130 pF/m

**Assembly  
4.0 C**

Standard designation: **LiYCY .... x 4.0 mm<sup>2</sup>**

Number of cores

Cores 56 x 0.30, tinned, conductor Ø 4.0 mm, conductor resistance 4.7 Ω/km.  
Current rating to 30 A (for ambient temperatures up to 25°C).  
Operating voltage max. 350 V, test voltage 2,000 V, conductor/shield 1,500 V.  
Capacitance in pF/m:  
at 1 kHz, tol. ± 20% Single-conductor: conductor/shield 510 pF/m



**Flexible control signal cable with full shield**

9 cross-sections, partly with 1 to 6 different coloured cores, grey jacket  
Type LiYCY as per VDE 0812

Net price including copper

Cross-section of shield mm <sup>2</sup>	Weight of 100 m in kg	Total Ø ± 5% in mm	Number of cores	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection			Ordering information	Jacket colour
					100 m	500 m	3000 m		
0.8	3.5	4.1	1	1.10	72.00	54.00	—	<a href="#">LiYCY 1 x 1.5 C*</a>	
2.3	9.2	7.5	2	1.70	112.00	84.00	—	<a href="#">LiYCY 2 x 1.5 C*</a>	
2.5	11.7	8.0	3	2.20	144.00	108.00	—	<a href="#">LiYCY 3 x 1.5 C*</a>	
2.9	14.2	9.0	4	2.25	152.00	114.00	—	<a href="#">LiYCY 4 x 1.5 C*</a>	Light grey, RAL 7032
3.3	16.8	9.6	5	2.60	174.00	131.00	—	<a href="#">LiYCY 5 x 1.5 C*</a>	
3.4	19.7	10.5	6	3.80	248.00	186.00	—	<a href="#">LiYCY 6 x 1.5 C*</a>	
1.0	5.5	5.0	1	2.60	176.00	132.00	88.00	<a href="#">LiYCY 1 x 2.5 C</a>	
3.2	16.5	10.0	2	2.00	136.00	102.00	—	<a href="#">LiYCY 2 x 2.5 C*</a>	Light grey, RAL 7032
3.9	21.0	11.5	4	3.20	216.00	162.00	108.00	<a href="#">LiYCY 4 x 2.5 C*</a>	
2.1	8.5	6.0	1	1.45	98.00	—	—	<a href="#">LiYCY 1 x 4.0 C*</a>	Light grey, RAL 7032

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

\*Items to be sold off

On-time · Fast · Reliable



Summary

Technical data

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

To a limited extent oil resistant

To a limited extent petrol resistant

Flame-retardant in accordance with UL VW-1/CSA FT-1

Suitable for insulation displacement and crimp connectors

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.16 mm  $\varnothing$  tinned = 0.14 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.0 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Outer jacket:** special PVC. Colour is light grey as per RAL 7035. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (52-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 155 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, approx. 130 pF/metre.

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

Net price including copper

Ordering information

100 m weighs approx.	Overall $\varnothing \pm 3\%$	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Jacket colour
				Price for 1 m	100 m	500 m			
1.78 kg	3.7 mm	2	0.70	48.00	36.00	24.00	2 X	AWG 26	grey
1.96 kg	3.9 mm	3	0.80	56.00	42.00	28.00	3 X	AWG 26	grey
2.24 kg	4.1 mm	4	1.00	64.00	48.00	32.00	4 X	AWG 26	grey
2.45 kg	4.7 mm	6	1.40	92.00	69.00	46.00	6 X	AWG 26	grey
3.80 kg	5.7 mm	10	1.90	128.00	96.00	64.00	10 X	AWG 26	grey
4.55 kg	5.9 mm	12	1.00	68.00	51.00	—	12 X	AWG 26	grey*
5.60 kg	6.5 mm	16	1.30	88.00	66.00	44.00	16 X	AWG 26	grey*
6.20 kg	6.8 mm	18	1.40	96.00	72.00	48.00	18 X	AWG 26	grey*
8.20 kg	7.8 mm	24	1.85	124.00	—	—	24 X	AWG 26	grey*
11.60 kg	9.0 mm	36	3.10	206.00	155.00	—	36 X	AWG 26	grey*
15.00 kg	10.2 mm	48	4.10	274.00	—	—	48 X	AWG 26	grey*
15.75 kg	10.4 mm	52	3.95	264.00	—	—	52 X	AWG 26	grey*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\*Items to be sold off



**Flexible shielded light-grey control signal cables**  
AWG 26 = 0.14 mm<sup>2</sup> (7 x 0.16, tinned)

Summary

Technical data

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cables must be shielded against external interference.

No live core conductor

**Connection system:** low-cost connection using insulation displacement connectors.

Small conductor and cable diameters

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.16 mm  $\varnothing$  tinned = 0.14 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.0 mm.

No twist markings

**Core labelling:** international colour code (see page 228).

Will not break under vibration

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

Very flexible

Heat resistant

**Wrapping and shield:** the twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage > 85%.

Cold resistant

**Outer jacket:** special PVC. Colour is light grey as per RAL 7035. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (44-conductor).

To a limited extent oil resistant

To a limited extent petrol resistant

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket) 80°C (Cores)
Cold resistant	-10°C unrolling and installing -30°C storage and operation

Flame-retardant in accordance with UL VW-1/CSA FT-1

**Electric properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 155 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, shield earthed approx. 130 pF/metre.

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

Suitable for insulation displacement and crimp connectors

**Flexible shielded light-grey control signal cables**  
AWG 26 = 0.14 mm<sup>2</sup> (7 x 0.16, tinned)

Net price including copper

Ordering information

100 m weighs approx.	Overall $\varnothing \pm 3\%$	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Shield	Jacket colour
			Price for 1 m	100 m	500 m	3000 m			
2.5 kg	4.2 mm	2	1.60	104.00	78.00	52.00	2	X	AWG 26 C grey
2.8 kg	4.3 mm	3	1.70	112.00	84.00	56.00	3	X	AWG 26 C grey
3.1 kg	4.6 mm	4	1.80	120.00	90.00	60.00	4	X	AWG 26 C grey
4.1 kg	5.2 mm	6	2.10	140.00	105.00	70.00	6	X	AWG 26 C grey
5.3 kg	6.0 mm	8	2.50	164.00	123.00	82.00	8	X	AWG 26 C grey
5.7 kg	6.2 mm	10	3.10	204.00	153.00	102.00	10	X	AWG 26 C grey
6.3 kg	6.4 mm	12	3.20	216.00	162.00	108.00	12	X	AWG 26 C grey
8.6 kg	7.3 mm	18	2.10	140.00	105.00	—	18	X	AWG 26 C grey*
9.6 kg	8.4 mm	24	2.60	—	—	—	24	X	AWG 26 C grey*
11.1 kg	8.8 mm	30	3.00	202.00	152.00	101.00	30	X	AWG 26 C grey*
12.9 kg	9.4 mm	36	3.45	232.00	174.00	—	36	X	AWG 26 C grey*
15.0 kg	10.4 mm	44	4.25	286.00	215.00	—	44	X	AWG 26 C grey*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\*Items to be sold off



**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

To a limited extent oil resistant

To a limited extent petrol resistant

Flame-retardant in accordance with UL VW-1/CSA FT-1

**Suitable for insulation displacement and crimp connectors**

**Technical data**

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.20 mm  $\varnothing$  tinned = 0.22 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.15 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Outer jacket:** special PVC. Colour is light grey as per RAL 7035. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (27-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket) 80°C (Cores)
Cold resistant	-10°C unrolling and installing -30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 87 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, approx. 150 pF/metre.

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ $\pm$ 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Jacket colour
				Price for 1 m	100 m	500 m			
1.55 kg	4.0 mm	2	0.80	56.00	42.00	28.00	2	X	AWG 24 grey
1.90 kg	4.1 mm	3	1.00	64.00	48.00	32.00	3	X	AWG 24 grey
2.25 kg	4.4 mm	4	1.10	72.00	54.00	36.00	4	X	AWG 24 grey
3.15 kg	5.2 mm	6	1.60	108.00	81.00	54.00	6	X	AWG 24 grey
5.45 kg	6.3 mm	10	2.40	160.00	120.00	80.00	10	X	AWG 24 grey
6.00 kg	6.6 mm	12	2.80	184.00	138.00	92.00	12	X	AWG 24 grey
7.45 kg	7.3 mm	16	3.50	232.00	174.00	116.00	16	X	AWG 24 grey
12.40 kg	9.3 mm	27	2.60	174.00	131.00	—	27	X	AWG 24 grey*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\*Item to be sold off

**Flexible shielded light-grey control signal cables**

AWG 24 = 0.22 mm<sup>2</sup> (7 x 0.20, tinned)

**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

To a limited extent oil resistant

To a limited extent petrol resistant

Flame-retardant in accordance with UL VW-1/CSA FT-1

**Suitable for insulation displacement and crimp connectors**

**Technical data**

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cables must be shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.20 mm  $\varnothing$  tinned = 0.22 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.15 mm.

**Core labelling:** international colour code (see page 228)

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** The twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%.

**Outer jacket:** special PVC. Colour is light grey as per RAL 7035. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (48-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 87 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, shield earthed approx. 150 pF/metre.

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Flexible shielded light-grey control signal cables**

AWG 24 = 0.22 mm<sup>2</sup> (7 x 0.20, tinned)

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ $\pm$ 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Shield	Jacket colour
				Price for 1 m	100 m	500 m			
1.9 kg	4.5 mm	2	1.90	128.00	96.00	64.00	2 X	AWG 24 C	grey
2.4 kg	4.6 mm	3	2.10	140.00	105.00	70.00	3 X	AWG 24 C	grey
2.8 kg	4.9 mm	4	2.20	148.00	111.00	74.00	4 X	AWG 24 C	grey
3.9 kg	5.7 mm	6	2.50	164.00	123.00	82.00	6 X	AWG 24 C	grey
5.0 kg	6.5 mm	8	2.90	196.00	147.00	98.00	8 X	AWG 24 C	grey
5.8 kg	6.8 mm	10	1.60	108.00	81.00	54.00	10 X	AWG 24 C	grey*
6.4 kg	7.1 mm	12	3.90	260.00	195.00	130.00	12 X	AWG 24 C	grey
8.5 kg	7.9 mm	16	5.00	332.00	249.00	166.00	16 X	AWG 24 C	grey
9.9 kg	8.2 mm	18	2.55	170.00	128.00	—	18 X	AWG 24 C	grey*
13.3 kg	9.6 mm	27	3.65	244.00	183.00	—	27 X	AWG 24 C	grey*
14.5 kg	9.9 mm	30	3.95	264.00	—	—	30 X	AWG 24 C	grey*
19.8 kg	11.6 mm	44	5.50	—	—	—	44 X	AWG 24 C	grey*
22.0 kg	12.0 mm	48	6.00	400.00	—	—	48 X	AWG 24 C	grey*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\*Items to be sold off

**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

To a limited extent oil resistant

To a limited extent petrol resistant

Flame-retardant in accordance with UL VW-1/CSA FT-1

**Suitable for insulation displacement and crimp connectors**

**Technical data**

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.32 mm  $\varnothing$  tinned = 0.56 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.5 mm.

**Core labelling:** international colour code (see page 228)

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Outer jacket:** special PVC. Colour is light grey as per RAL 7035. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (60-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 33 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, approx. 200 pF/metre.

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing \pm 3\%$	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Jacket colour
				Price for 1 m	100 m	500 m			
2.7 kg	4.7 mm	2	1.10	76.00	57.00	38.00	2 X	AWG 20 grey	
3.3 kg	4.9 mm	3	1.40	92.00	69.00	46.00	3 X	AWG 20 grey	
4.1 kg	5.4 mm	4	1.70	112.00	84.00	56.00	4 X	AWG 20 grey	
6.5 kg	6.3 mm	6	2.20	144.00	108.00	72.00	6 X	AWG 20 grey	
10.2 kg	7.7 mm	10	3.60	240.00	180.00	120.00	10 X	AWG 20 grey	
15.2 kg	8.9 mm	16	5.80	388.00	291.00	194.00	16 X	AWG 20 grey	
32.0 kg	12.6 mm	36	11.20	748.00	561.00	374.00	36 X	AWG 20 grey	
39.4 kg	14.2 mm	44	5.50	—	—	—	44 X	AWG 20 grey*	
41.6 kg	14.4 mm	48	7.10	472.00	354.00	—	48 X	AWG 20 grey*	
50.5 kg	15.9 mm	60	7.25	484.00	363.00	—	60 X	AWG 20 grey*	

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\*Items to be sold off

**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

To a limited extent oil resistant

To a limited extent petrol resistant

Flame-retardant in accordance with UL VW-1/CSA FT-1

Suitable for insulation displacement and crimp connectors

**Technical data**

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cables must be shielded against external interference.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.32 mm Ø tinned = 0.56 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm, Ø of insulated conductor 1.5 mm.

**Core labelling:** international colour code (see page 228)

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** the twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage ≥ 85%.

**Outer jacket:** special PVC. Colour is light grey as per RAL 7035. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, heat resistant and cold resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (48-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 33 Ω/km
<u>Insulation resistance</u>	(20°C) ≥ 20 MΩ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, shield earthed approx. 200 pF/metre.

**Mechanical properties:**

Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall Ø ± 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Shield	Jacket colour
				Price for 1 m	100 m	500 m			
4.1 kg	5.2 mm	2	2.00	138.00	104.00	69.00	2 X	AWG 20 C	grey
4.9 kg	5.4 mm	3	2.40	160.00	120.00	80.00	3 X	AWG 20 C	grey
5.9 kg	5.9 mm	4	2.50	168.00	126.00	84.00	4 X	AWG 20 C	grey
8.0 kg	6.8 mm	6	3.10	208.00	156.00	104.00	6 X	AWG 20 C	grey
11.3 kg	8.3 mm	10	2.55	170.00	128.00	—	10 X	AWG 20 C	grey*
12.9 kg	8.6 mm	12	2.15	144.00	108.00	—	12 X	AWG 20 C	grey*
16.3 kg	9.5 mm	16	7.00	464.00	348.00	232.00	16 X	AWG 20 C	grey
29.1 kg	12.2 mm	30	4.55	—	—	—	30 X	AWG 20 C	grey*
34.2 kg	13.2 mm	36	5.50	368.00	276.00	—	36 X	AWG 20 C	grey*
40.6 kg	14.8 mm	44	6.60	442.00	—	—	44 X	AWG 20 C	grey*
43.4 kg	15.0 mm	48	7.30	488.00	366.00	—	48 X	AWG 20 C	grey*

Normal stock unit: 100-m ring, packed in a box. Short sample (20 cm) free of charge.



\*Items to be sold off



**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for insulation displacement and crimp connectors**

**Certified:**  
UL - Style No. 2464  
UL - Style No. 1061

**Technical data**

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cables must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** As per Style No. 1061 and VDE 0881, copper strands 7 x 0.102 mm  $\varnothing$  tinned = 0.057 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 0.85 mm.

**Core labelling:** international colour code (see page 228)

**Twisted structure:** starting with the black conductor, the conductors are twisted clockwise layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** the twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage > 85%.

**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 0.9 mm (16-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 354 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq 20$ M $\Omega$ X km
<u>Operating capacitance</u>	Core to conductor: approx. 65 pF/m
	Core to shield: approx. 110 pF/m.


**Mechanical properties:** Once-only bending radius 5 X outer diameter  
Repeated bending radius 20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ $\pm$ 0.15-0.20 mm	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Certification	Jacket colour
				Price for 1 m	100 m	500 m				
<b>Unshielded</b>										
1.3 kg	3.4 mm	2	1.30	88.00	66.00	44.00	2 X	AWG 30	UL bk	
1.5 kg	3.5 mm	3	1.60	104.00	78.00	52.00	3 X	AWG 30	UL bk	
1.7 kg	3.7 mm	4	1.70	116.00	87.00	58.00	4 X	AWG 30	UL bk	
2.3 kg	4.2 mm	6	2.30	156.00	117.00	78.00	6 X	AWG 30	UL bk	
3.3 kg	5.1 mm	10	3.20	216.00	162.00	108.00	10 X	AWG 30	UL bk	
3.6 kg	5.3 mm	12	3.80	252.00	189.00	126.00	12 X	AWG 30	UL bk	
<b>Shielded</b>										
2.3 kg	3.9 mm	2	2.90	192.00	144.00	96.00	2 X	AWG 30 C	UL bk	
2.5 kg	4.0 mm	3	3.10	208.00	156.00	104.00	3 X	AWG 30 C	UL bk	
2.7 kg	4.2 mm	4	3.40	228.00	171.00	114.00	4 X	AWG 30 C	UL bk	
3.5 kg	4.7 mm	6	3.80	256.00	192.00	126.00	6 X	AWG 30 C	UL bk	
3.9 kg	5.4 mm	8	4.60	304.00	228.00	152.00	8 X	AWG 30 C	UL bk	
4.6 kg	5.6 mm	10	4.90	328.00	246.00	164.00	10 X	AWG 30 C	UL bk	
6.0 kg	6.2 mm	16	6.50	432.00	324.00	216.00	16 X	AWG 30 C	UL bk	

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)



**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for insulation displacement and crimp connectors**

**Certified:**  
UL - Style No. 2464  
UL - Style No. 1061

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cable must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.127 mm  $\varnothing$  tinned = 0.09 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 0.90 mm.

**Core labelling:** international colour code (see page 228)

**Twisted structure:** starting with the black conductor, the conductors are twisted clockwise layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** The twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%.

**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 0.9 mm (12-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 215 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	Core to conductor: approx. 65 pF/m Core to shield: approx. 110 pF/m.

**Mechanical properties:**


Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ ± 0.15-0.20 mm	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Certification	Jacket colour
				Price for 1 m	100 m	500 m				
<b>Unshielded</b>										
1.3 kg	3.5 mm	2	0.70	48.00	36.00	24.00	2 X	AWG 28	UL bk	
1.5 kg	3.6 mm	3	0.80	56.00	42.00	28.00	3 X	AWG 28	UL bk	
1.7 kg	3.8 mm	4	1.00	68.00	51.00	34.00	4 X	AWG 28	UL bk	
2.3 kg	4.4 mm	6	1.40	96.00	72.00	48.00	6 X	AWG 28	UL bk	
3.3 kg	5.3 mm	10	1.90	128.00	96.00	64.00	10 X	AWG 28	UL bk	
3.6 kg	5.5 mm	12	2.30	152.00	114.00	76.00	12 X	AWG 28	UL bk	
<b>Shielded</b>										
2.3 kg	4.0 mm	2	1.70	116.00	87.00	58.00	2 X	AWG 28 C	UL bk	
2.5 kg	4.1 mm	3	1.90	124.00	93.00	62.00	3 X	AWG 28 C	UL bk	
2.7 kg	4.3 mm	4	2.10	140.00	105.00	70.00	4 X	AWG 28 C	UL bk	
3.5 kg	4.9 mm	6	2.40	160.00	120.00	80.00	6 X	AWG 28 C	UL bk	
3.9 kg	5.6 mm	8	2.80	184.00	138.00	92.00	8 X	AWG 28 C	UL bk	
4.6 kg	5.8 mm	10	3.20	212.00	159.00	106.00	10 X	AWG 28 C	UL bk	
5.2 kg	6.0 mm	12	3.50	232.00	174.00	116.00	12 X	AWG 28 C	UL bk	

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

The rings are marked with the  label. (Cutlength are without Label) This label is the proof of certification in the USA.



Label (USA Etikett)



6 x 0.09 mm<sup>2</sup> (7 x 0.127) AWG 28 shielded - UL 2464

**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for insulation displacement and crimp connectors**

**Certified:**  
UL - Style No. 2464  
UL - Style No. 1061

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.16 mm  $\varnothing$  tinned = 0.14 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.0 mm.

**Core labelling:** international colour code (see page 228)

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (24-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 155 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, approx. 130 pF/metre.

**Mechanical properties:**


Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ $\pm$ 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Certification	Jacket colour
				Price for 1 m	100 m	500 m				
1.76 kg	3.7 mm	2		1.00	64.00	48.00	32.00			<a href="#">2 X AWG 26 UL bk</a>
1.86 kg	3.8 mm	3		1.10	72.00	54.00	36.00			<a href="#">3 X AWG 26 UL bk</a>
2.28 kg	4.1 mm	4		1.30	84.00	63.00	42.00			<a href="#">4 X AWG 26 UL bk</a>
2.45 kg	4.7 mm	6		1.60	104.00	78.00	52.00			<a href="#">6 X AWG 26 UL bk</a>
3.80 kg	5.7 mm	10		2.50	164.00	123.00	82.00			<a href="#">10 X AWG 26 UL bk</a>
4.55 kg	5.9 mm	12		2.70	180.00	135.00	90.00			<a href="#">12 X AWG 26 UL bk</a>
5.60 kg	6.5 mm	16		3.60	240.00	180.00	120.00			<a href="#">16 X AWG 26 UL bk</a>
6.20 kg	6.8 mm	18		4.20	280.00	210.00	140.00			<a href="#">18 X AWG 26 UL bk</a>
8.20 kg	7.8 mm	24		5.30	356.00	267.00	178.00			<a href="#">24 X AWG 26 UL bk</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)



**Summary**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for insulation displacement and crimp connectors**

**Certified:**  
UL - Style No. 2464  
UL - Style No. 1061

**Technical data**

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cable must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.16 mm  $\varnothing$  tinned = 0.14 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.0 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted clockwise layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** The twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%.

**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (48-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 155 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, shield earthed approx. 130 pF/metre.

**Mechanical properties:**


Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ $\pm$ 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Shield Certification Jacket colour
				Price for 1 m	100 m	500 m		
2.6 kg	4.2 mm	2	1.80	120.00	90.00	60.00	2 X	<a href="#">AWG 26 C UL bk</a>
2.8 kg	4.3 mm	3	1.90	128.00	96.00	64.00	3 X	<a href="#">AWG 26 C UL bk</a>
3.1 kg	4.6 mm	4	2.20	148.00	111.00	74.00	4 X	<a href="#">AWG 26 C UL bk</a>
4.0 kg	5.2 mm	6	2.50	164.00	123.00	82.00	6 X	<a href="#">AWG 26 C UL bk</a>
5.3 kg	6.0 mm	8	2.90	192.00	144.00	96.00	8 X	<a href="#">AWG 26 C UL bk</a>
5.8 kg	6.2 mm	10	3.50	232.00	174.00	116.00	10 X	<a href="#">AWG 26 C UL bk</a>
6.1 kg	6.4 mm	12	3.90	260.00	195.00	130.00	12 X	<a href="#">AWG 26 C UL bk</a>
6.2 kg	7.0 mm	16	4.70	312.00	234.00	156.00	16 X	<a href="#">AWG 26 C UL bk</a>
6.7 kg	7.3 mm	18	5.30	356.00	267.00	178.00	18 X	<a href="#">AWG 26 C UL bk</a>
9.6 kg	8.4 mm	24	6.70	444.00	333.00	222.00	24 X	<a href="#">AWG 26 C UL bk</a>
10.4 kg	8.5 mm	27	7.10	472.00	354.00	236.00	27 X	<a href="#">AWG 26 C UL bk</a>
12.9 kg	9.4 mm	36	9.50	632.00	474.00	316.00	36 X	<a href="#">AWG 26 C UL bk</a>
15.9 kg	10.6 mm	48	12.50	812.00	609.00	406.00	48 X	<a href="#">AWG 26 C UL bk</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



**AWG 24**Unshielded  
2 to 24 conductors**Flexible black control signal cables**  
AWG 24 = 0.22 mm<sup>2</sup> (7 x 0.20, tinned)UL Style  
2464/1061UL Style  
2464/1061**Flexible black control signal cables**  
AWG 24 = 0.22 mm<sup>2</sup> (7 x 0.20, tinned)**AWG 24**Unshielded  
2 to 24 conductors**Summary****Technical data**Copper conductors in  
AWG sizes, 7-wire,  
UL 1061 and VDE 0881No live  
core conductorSmall conductor and  
cable diameters

No twist markings

Will not break under  
vibration

Very flexible

Heat resistant

Cold resistant


Oil resistant to a limited  
extentPetrol resistant to a  
limited extentFlame-retardant  
as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for  
insulation displacement  
and crimp connectors****Certified:**  
UL Style no. 2464  
UL Style no. 1061**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the products are intended for export to the USA.**Connection system:** low-cost connection using insulation displacement connectors.**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.20 mm  $\varnothing$  tinned = 0.22 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.15 mm.**Core labelling:** international colour code (see page 228).**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core.  
Ductile fractures are avoided, as the cables do not contain any live central conductors.**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings.  
The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant.  
The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (24-conductor).**Temperature range:**  
Heat resistant 105°C as per DIN ISO 6722 (outer jacket)  
80°C (Cores)  
Cold resistant -10°C unrolling and installing  
-30°C storage and operation**Electrical properties:**  
Operating voltage 300 V  
Test voltage 1,500 V  
Conductor resistance (20°C) 87  $\Omega$ /km  
Insulation resistance (20°C)  $\geq 20$  M $\Omega$  X km  
Operating capacitance One conductor to the remaining conductors,  
approx. 150 pF/metre.**Mechanical properties:**  
Once-only bending radius 5 X outer diameter  
Repeated bending radius 20 X outer diameter**Net price including copper****Ordering information**

100 m weighs approx.	Overall $\varnothing \pm 3\%$	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No.	Certification	Jacket colour
				Price for 1 m	100 m	500 m				
1.55 kg	4.0 mm	2	1.10	72.00	54.00	36.00	2 X	AWG 24	UL bk	
1.90 kg	4.1 mm	3	1.30	84.00	63.00	42.00	3 X	AWG 24	UL bk	
2.25 kg	4.4 mm	4	1.40	92.00	69.00	46.00	4 X	AWG 24	UL bk	
3.15 kg	5.2 mm	6	1.80	120.00	90.00	60.00	6 X	AWG 24	UL bk	
5.45 kg	6.3 mm	10	2.70	180.00	135.00	90.00	10 X	AWG 24	UL bk	
6.00 kg	6.6 mm	12	3.30	220.00	165.00	110.00	12 X	AWG 24	UL bk	
7.45 kg	7.3 mm	16	4.40	292.00	219.00	146.00	16 X	AWG 24	UL bk	
11.60 kg	8.9 mm	24	6.60	440.00	330.00	220.00	24 X	AWG 24	UL bk	

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**The rings are marked with the  label.  
(Cutlength are without Label)  
This label is the proof of certification in the USA.

Label (USA Etikett)

metrofunk  
KABEL-UNION**On-time · Fast · Reliable****On-time · Fast · Reliable**metrofunk  
KABEL-UNION



**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for insulation displacement and crimp connectors**

**Certified:**  
UL - Style No. 2464  
UL - Style No. 1061

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cable must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.20 mm  $\varnothing$  tinned = 0.22 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.15 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted clockwise layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** The twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage  $\geq$  85%.

**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant.

The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (48-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket)
	80°C (Cores)
Cold resistant	-10°C unrolling and installing
	-30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 87 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, shield earthed approx. 150 pF/metre.

**Mechanical properties:**


Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing$ $\pm$ 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Shield Certification Jacket colour
				Price for 1 m	100 m	500 m		
1.9 kg	4.5 mm	2	2.20	148.00	111.00	74.00	<a href="#">2 X AWG 24 C UL bk</a>	
2.4 kg	4.6 mm	3	2.30	156.00	117.00	78.00	<a href="#">3 X AWG 24 C UL bk</a>	
2.8 kg	4.9 mm	4	2.50	164.00	125.00	82.00	<a href="#">4 X AWG 24 C UL bk</a>	
3.9 kg	5.7 mm	6	2.90	192.00	144.00	96.00	<a href="#">6 X AWG 24 C UL bk</a>	
5.0 kg	6.5 mm	8	3.20	216.00	162.00	108.00	<a href="#">8 X AWG 24 C UL bk</a>	
5.8 kg	6.8 mm	10	3.90	260.00	195.00	130.00	<a href="#">10 X AWG 24 C UL bk</a>	
6.4 kg	7.1 mm	12	4.40	292.00	219.00	146.00	<a href="#">12 X AWG 24 C UL bk</a>	
8.5 kg	7.9 mm	16	5.60	376.00	282.00	188.00	<a href="#">16 X AWG 24 C UL bk</a>	
9.9 kg	8.2 mm	18	6.40	424.00	318.00	212.00	<a href="#">18 X AWG 24 C UL bk</a>	
12.4 kg	9.5 mm	24	8.10	540.00	405.00	270.00	<a href="#">24 X AWG 24 C UL bk</a>	
13.3 kg	9.6 mm	27	9.10	604.00	453.00	302.00	<a href="#">27 X AWG 24 C UL bk</a>	
16.8 kg	10.7 mm	36	11.60	776.00	582.00	388.00	<a href="#">36 X AWG 24 C UL bk</a>	
22.0 kg	12.0 mm	48	7.15	—	—	—	<a href="#">48 X AWG 24 C UL bk*</a>	

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)



\*Item to be sold off



**Summary** **Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

**Suitable for insulation displacement and crimp connectors**

**Certified:**  
UL - Style No. 2464  
UL - Style No. 1061

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cable must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.25 mm Ø tinned = 0.34 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm, Ø of insulated conductor 1.3 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.


**Wrapping and shield:** the twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage ≥ 85%.

**Outer jacket:** matte black, made of special PVC, colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (24-conductor).

**Temperature range:**  
Heat resistant: 105°C as per DIN ISO 6722 (outer jacket) 80°C (Cores)  
Cold resistant: -10°C unrolling and installing -30°C storage and operation

**Electrical properties:**  
Operating voltage 300 V  
Test voltage 1,500 V  
Conductor resistance (20°C) 56 Ω/km.  
Insulation resistance (20°C) ≥ 20 MΩ X km  
Operating capacitance One conductor to the remaining conductors, shield earthed approx. 150 pF/metre

**Mechanical properties:**  
Once-only bending radius 5 X outer diameter  
Repeated bending radius 20 X outer diameter

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.

**Net price including copper** **Ordering information**

100 m weighs approx.	Total Ø ± 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Certification Jacket colour
				Price for 1 m	100 m	500 m		
				<b>Unshielded</b>				
2.7 kg	4.3 mm	2	1.30	88.00	66.00	44.00	2 X	AWG 22 UL bk
3.2 kg	4.4 mm	3	1.50	100.00	75.00	50.00	3 X	AWG 22 UL bk
3.7 kg	4.8 mm	4	1.60	108.00	81.00	54.00	4 X	AWG 22 UL bk
5.2 kg	5.7 mm	6	2.20	144.00	108.00	72.00	6 X	AWG 22 UL bk
6.6 kg	6.5 mm	8	2.70	180.00	135.00	90.00	8 X	AWG 22 UL bk
8.5 kg	7.2 mm	12	3.80	252.00	189.00	126.00	12 X	AWG 22 UL bk
10.9 kg	8.0 mm	16	5.10	340.00	255.00	170.00	16 X	AWG 22 UL bk
15.5 kg	9.8 mm	24	7.40	492.00	369.00	246.00	24 X	AWG 22 UL bk
				<b>Shielded</b>				
3.3 kg	4.8 mm	2	2.30	156.00	117.00	78.00	2 X	AWG 22 C UL bk
4.0 kg	4.9 mm	3	2.50	164.00	123.00	82.00	3 X	AWG 22 C UL bk
4.9 kg	5.4 mm	4	2.70	180.00	135.00	90.00	4 X	AWG 22 C UL bk
6.3 kg	6.2 mm	6	3.10	204.00	153.00	102.00	6 X	AWG 22 C UL bk
7.9 kg	6.8 mm	8	3.50	236.00	177.00	118.00	8 X	AWG 22 C UL bk
8.7 kg	7.5 mm	10	4.30	284.00	213.00	142.00	10 X	AWG 22 C UL bk
9.8 kg	7.8 mm	12	5.20	348.00	261.00	174.00	12 X	AWG 22 C UL bk
13.5 kg	8.6 mm	16	3.35	224.00	168.00	—	16 X	AWG 22 C UL bk*
14.2 kg	9.0 mm	18	7.90	528.00	396.00	264.00	18 X	AWG 22 C UL bk

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



Label (USA Etikett)

\*Item to be sold off

**Summary**

**Technical data**

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

Suitable for insulation displacement and crimp connectors

Certified:  
UL - Style No. 2464  
UL - Style No. 1061

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.32 mm  $\varnothing$  tinned = 0.56 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm,  $\varnothing$  of insulated conductor 1.5 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Outer jacket:** matte black made of special PVC. Colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (18-conductor).

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket) 80°C (Cores)
Cold resistant	-10°C unrolling and installing -30°C storage and operation

**Electrical properties:**

<u>Operating voltage</u>	300 V
<u>Test voltage</u>	1,500 V
<u>Conductor resistance</u>	(20°C) 33 $\Omega$ /km
<u>Insulation resistance</u>	(20°C) $\geq$ 20 M $\Omega$ X km
<u>Operating capacitance</u>	One conductor to the remaining conductors, approx. 200 pF/metre.

**Mechanical properties:**


Once-only bending radius	8 X outer diameter
Repeated bending radius	15 X outer diameter

**Net price including copper**

**Ordering information**

100 m weighs approx.	Overall $\varnothing \pm 3\%$	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Certification	Jacket colour
				Price for 1 m	100 m	500 m			
2.7 kg	4.7 mm	2	1.40	92.00	69.00	46.00	2 X	AWG 20 UL bk	
3.3 kg	4.9 mm	3	1.70	112.00	84.00	56.00	3 X	AWG 20 UL bk	
4.1 kg	5.4 mm	4	1.80	120.00	90.00	60.00	4 X	AWG 20 UL bk	
6.5 kg	6.3 mm	6	2.50	164.00	123.00	82.00	6 X	AWG 20 UL bk	
10.2 kg	7.7 mm	10	3.60	240.00	180.00	120.00	10 X	AWG 20 UL bk	
15.2 kg	8.9 mm	16	5.80	384.00	288.00	192.00	16 X	AWG 20 UL bk	
16.8 kg	9.4 mm	18	6.50	436.00	327.00	218.00	18 X	AWG 20 UL bk	

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)

Summary

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

Suitable for insulation displacement and crimp connectors

Certified:  
UL - Style No. 2464  
UL - Style No. 1061

Technical data

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cable must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.32 mm Ø tinned = 0.56 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm, Ø of insulated conductor 1.5 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** the twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage ≥ 85%.

**Outer jacket:** matte black, made of special PVC, colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket increases gradually with the number of conductors from approx. 0.8 mm (2-conductor) to approx. 1.0 mm (60-conductor).

**Temperature range:**  
Heat resistant 105°C as per DIN ISO 6722 (outer jacket)  
80°C (Cores)  
Cold resistant -10°C unrolling and installing  
-30°C storage and operation

**Electrical properties:**  
Operating voltage 300 V  
Test voltage 1,500 V  
Conductor resistance (20°C) 33 Ω/km  
Insulation resistance (20°C) ≥ 20 MΩ X km  
Operating capacitance One conductor to the remaining conductors, shield earthed approx. 200 pF/metre.


**Mechanical properties:**  
Once-only bending radius 5 X outer diameter  
Repeated bending radius 20 X outer diameter

Net price including copper

Ordering information

100 m weighs approx.	Overall Ø ± 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Shield Certification	Jacket colour
				Price for 1 m	100 m	500 m			
4.1 kg	5.2 mm	2	2.50	164.00	123.00	82.00	2	X	AWG 20 C UL bk
4.9 kg	5.4 mm	3	2.60	172.00	129.00	86.00	3	X	AWG 20 C UL bk
5.9 kg	5.9 mm	4	2.90	196.00	147.00	98.00	4	X	AWG 20 C UL bk
8.0 kg	6.8 mm	6	3.20	216.00	162.00	108.00	6	X	AWG 20 C UL bk
10.7 kg	7.9 mm	8	4.30	284.00	213.00	142.00	8	X	AWG 20 C UL bk
11.3 kg	8.3 mm	10	4.90	328.00	246.00	164.00	10	X	AWG 20 C UL bk
12.9 kg	8.6 mm	12	5.80	388.00	291.00	194.00	12	X	AWG 20 C UL bk
16.3 kg	9.5 mm	16	7.20	480.00	360.00	240.00	16	X	AWG 20 C UL bk
23.6 kg	11.5 mm	24	10.40	692.00	519.00	346.00	24	X	AWG 20 C UL bk
25.7 kg	11.7 mm	27	11.70	780.00	585.00	390.00	27	X	AWG 20 C UL bk
29.1 kg	12.2 mm	30	5.00	334.00	251.00	—	30	X	AWG 20 C UL bk*
34.2 kg	13.2 mm	36	13.80	920.00	690.00	460.00	36	X	AWG 20 C UL bk
46.8 kg	15.4 mm	52	12.95	862.00	647.00	—	52	X	AWG 20 C UL bk*
53.1 kg	16.2 mm	60	9.75	652.00	489.00	—	60	X	AWG 20 C UL bk*

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)

\*Items to be sold off

Summary

Technical data

Copper conductors in AWG sizes, 7-wire, UL 1061 and VDE 0881

No live core conductor

Small conductor and cable diameters

No twist markings

Will not break under vibration

Very flexible

Heat resistant

Cold resistant

Oil resistant to a limited extent

Petrol resistant to a limited extent

Flame-retardant as per UL VW-1/CSA FT-1

Resistant to weathering

Ultraviolet resistant

Suitable for insulation displacement and crimp connectors

Certified:  
UL - Style No. 2464  
UL - Style No. 1061

**Suitable for:** connections in and between electrical systems, control systems, regulation systems, measurement systems, signalling systems and pulsed signal systems, especially if the cable must be shielded against external interference, and if the products are intended for export to the USA.

**Connection system:** low-cost connection using insulation displacement connectors.

**Core structure:** as per Style No.1061 and VDE 0881, copper strands 7 x 0.40 mm Ø tinned = 0.90 mm<sup>2</sup>, insulated with semi-rigid PVC. Insulation wall thickness 0.25 mm, Ø of insulated conductor 1.72 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** starting with the black conductor, the conductors are twisted layer by layer from inside out to form the cable core. Ductile fractures are avoided, as the cables do not contain any live central conductors.

**Wrapping and shield:** the twisted conductors are wrapped in overlapping transparent plastic foil and shielded with a dense braid of tinned copper wires, visual coverage ≥ 85%.

**Outer jacket:** matte black, made of special PVC, colour RAL 9005. No twist markings. The PVC mixture is oil resistant to a limited extent, petrol resistant to a limited extent, flame-retardant, weather resistant and ultraviolet resistant. The wall thickness of the outer jacket is at least 0.76 mm.

**Temperature range:**

Heat resistant	105°C as per DIN ISO 6722 (outer jacket) 80°C (Cores)
Cold resistant	-10°C unrolling and installing -30°C storage and operation

**Electrical properties:**

Operating voltage	300 V
Test voltage	1,500 V
Conductor resistance (20°C)	max. 21.7 Ω/km
Insulation resistance (20°C)	≥ 20 MΩ X km
Operating capacitance	One conductor to the remaining conductors, shield earthed approx. 200 pF/metre

**Mechanical properties:**


Once-only bending radius	5 X outer diameter
Repeated bending radius	20 X outer diameter

Net price including copper

Ordering information

100 m weighs approx.	Total Ø ± 3%	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Cores	AWG No. Certification	Jacket colour
				Price for 1 m	100 m	500 m			
<b>Unshielded</b>									
4.6 kg	5.4 mm	2	2.10	140.00	105.00	70.00	2 X	AWG 18	UL bk
5.8 kg	5.7 mm	3	2.20	148.00	111.00	74.00	3 X	AWG 18	UL bk
6.8 kg	6.1 mm	4	2.40	160.00	120.00	80.00	4 X	AWG 18	UL bk
10.0 kg	7.4 mm	6	3.90	260.00	195.00	130.00	6 X	AWG 18	UL bk
13.0 kg	8.0 mm	8	4.90	328.00	246.00	164.00	8 X	AWG 18	UL bk
<b>Shielded</b>									
5.7 kg	5.7 mm	2	3.10	208.00	156.00	104.00	2 X	AWG 18 C	UL bk
7.0 kg	6.0 mm	3	3.20	216.00	162.00	108.00	3 X	AWG 18 C	UL bk
8.0 kg	6.6 mm	4	3.50	232.00	174.00	116.00	4 X	AWG 18 C	UL bk
12.0 kg	7.8 mm	6	4.90	328.00	246.00	164.00	6 X	AWG 18 C	UL bk
15.0 kg	8.8 mm	8	6.50	432.00	324.00	216.00	8 X	AWG 18 C	UL bk

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

The rings are marked with the  label. (Cutlength are without Label) This label is the proof of certification in the USA.



Label (USA Etikett)





**Technical data**

In the event of a fire, no aggressive combustion products (halogens) are formed; the smoke load is minimal.

**Technical data for AWG 24 (0.22 mm<sup>2</sup>) / AWG 20 (0.56 mm<sup>2</sup>) unshielded / shielded**

Tinned copper strand	AWG 24: 7 x 0.20 mm ø / AWG 20: 7 x 0.32 mm ø Suitable for insulation displacement connectors (IDC)
Core insulation	made of a halogen-free, flame-retardant polyolefin mixture as per DIN VDE 0207 Part 23. ø of the conductor approx. 1.15 mm (AWG 24) / approx. 1.5 mm (AWG 20). Cores twisted in layers, halogen-free shield wires.
Outer jacket	made of halogen-free, flame-retardant polyolefin mixture HM 2 as per DIN VDE 0207 Part 24. All materials can be recycled.
Wall thickness of the conductor sleeve	0.23 mm (average)
Conductor resistance	AWG 24 = 93.3 Ω/km max. / AWG 20 = 34.3 Ω/km max.
Core colours	1 bk, 2 bn, 3 rd, 4 or, 5 ye, 6 gn, 7 bu, 8 vt, 9 gy, 10 wh, 11 wh/bk, 12 wh/bn
Shielded version	braid of tinned copper wires; visual coverage ≥ 80%
Outer jacket	(average) wall thickness approx. 0.75 mm
Labelling	print on the matte black outer jacket: Example: 4 AWG 24 / 4 AWG 20 HFFR halogen-free 4 AWG 24C / 4 AWG 20C HFFR halogen-free
Rated voltage	U <sub>o</sub> / U 300 / 300 V
Limit temperature range	in operation +70°C at the cable, +150°C in the event of a short circuit, at the surface -30 to 70°C when moving -50 to 70°C when permanently installed
Bending radius	once only ≤ 5 x external ø repeated ≤ 20 x external ø
Tensile load (VDE 0289 Part 3)	when installing max. 50 N/mm <sup>2</sup> in operation max. 15 N/mm <sup>2</sup>

Fire safety class DIN VDE 0472 / Part 804 / Test Type B, IEC 332/1

These halogen-free, flame-retardant and low smoke control signal and data transfer cables have largely the same electrical and mechanical properties as our PVC-insulated control signal cables which have proven themselves for many years, and are presented on pages 94 to 103 of this manual.

The advantage of these cables is in their use of environmentally-friendly recyclable polymer materials.

In the event of a fire, no aggressive combustion products (little smoke formation, low toxicity and corrosiveness of the combustion gases).

Flame-retardant properties of the cable comply with DIN VDE 0472 Part 804 Test Type B.

**Net price including copper**

**Ordering information**

Colours of the conductor insulation	CU cross-section of shield = mm <sup>2</sup>	100 m weighs approx. kg	Total Ø approx...mm	Number of conductors	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Halogen-free	Number of conductors	AWG cross-section = assembly	C = full shield
						100 m	500 m				
					<b>Unshielded</b>						
	-	2.1	4.0	<b>3</b>	0.45	32.00	—	H	3	x 24*	
	-	5.4	6.0	<b>10</b>	1.20	80.00	60.00	H	10	x 24*	
					<b>Shielded</b>						
	0.90	3.4	4.8	<b>4</b>	1.05	—	—	H	4	x 24	C*
	0.90	4.5	5.4	<b>6</b>	1.20	80.00	60.00	H	6	x 24	C*
					<b>Unshielded</b>						
	-	4.4	5.2	<b>4</b>	0.80	56.00	—	H	4	x 20*	
	-	6.3	6.1	<b>6</b>	1.05	—	—	H	6	x 20*	
	-	10.2	7.6	<b>10</b>	1.60	108.00	81.00	H	10	x 20*	
	-	11.7	8.2	<b>12</b>	1.90	128.00	—	H	12	x 20*	
					<b>Shielded</b>						
	0.90	3.9	5.1	<b>2</b>	1.10	—	—	H	2	x 20	C*
	2.13	11.7	8.2	<b>10</b>	1.95	132.00	99.00	H	10	x 20	C*
	2.13	13.0	8.4	<b>12</b>	2.30	156.00	117.00	H	12	x 20	C*

Core:

- 1 bk
- 2 bn
- 3 rd
- 4 or
- 5 ye
- 6 gn
- 7 bu
- 8 vt
- 9 gy
- 10 wh
- 11 wh/bk
- 12 wh/bn

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\*Items to be sold off

**On-time · Fast · Reliable**





**Li13Y13Y**  
**Li13YC13Y**

**Halogen-free flame-retardant cable  
temperature-resistant (+ 125°C)**

**Li13Y13Y 2-wire 0.14 mm<sup>2</sup>, 0.34 mm<sup>2</sup>, 0.50 mm<sup>2</sup>**  
**Li13YC13Y 2-wire 0.14 mm<sup>2</sup>, 0.34 mm<sup>2</sup>, 0.50 mm<sup>2</sup>**

**Li13Y13Y**  
**Li13YC13Y**

**Technical data**

**Connection cable for measurement and control technology.**

Good resistance to acids, solvents, fuel/diesel at 85°C, water, oils and greases, UV-resistant.

**Technical data for cross-section 0.14 mm<sup>2</sup>, 0.34 mm<sup>2</sup>, 0.50 mm<sup>2</sup> unshielded/shielded**

**Copper stranded wire** 0.14 mm<sup>2</sup> = 7 x 0.16 mm = Wire diameter: 1.00 ± 0.05 mm  
0.34 mm<sup>2</sup> = 43 x 0.10 mm = Wire diameter: 1.40 ± 0.05 mm  
0.50 mm<sup>2</sup> = 28 x 0.15 mm = Wire diameter: 1.60 ± 0.05 mm

**Insulating sheath of the wires** halogen-free, flame retardant, thermoplastic compound (TPC, 13Y)  
Shore hardness (D) 62 ± 3

**Outer sheath** halogen-free, flame retardant, thermoplastic compound (TPC, 13Y)  
Shore hardness (D) 55 ± 3

**Wire colours** white and brown respectively  
**Shielded version** Braid of tinned copper wires, optical covering ≥ 85 ± 5%

**Labelling** whiteprinting on the glossy black outer sheath (similar to RAL 9005):  
Metrofunk and respective item description

**Operating voltage** max. 300 V

**Temperature range** at rest - 50°C to + 125°C  
in motion - 30°C to + 125°C  
short-term + 150°C possible with shortened service life (max. 3000 h)

**Bending radius**  
**once** 0.14 mm<sup>2</sup> unshielded: 8 x outer Ø      0.14 mm<sup>2</sup> shielded: 10 x outer Ø  
**multiple times** 15 x outer Ø      18 x outer Ø

**once** 0.34 mm<sup>2</sup> + 0.50 mm<sup>2</sup> unshielded : 5 x outer Ø      0.34 mm<sup>2</sup> + 0.50 mm<sup>2</sup> shielded: 10 x outer Ø  
**multiple times** 10 x outer Ø      18 x outer Ø

**Test voltage** Wire/Wire > 2 kV  
Wire/shield > 1 kV  
at 50 Hz eff. over 1 minute

The cables are flame retardant in compliance with VDE 0482-332-1-2/IEC 60332-1-2

**Net prices including copper**

**Order data**

100 m weighs approx.	max. conductor resistance per km at 20°C ± 5 % tolerance	Total Ø approx....mm	Sample quantities under 100 metres	in Euros per 100 m at the time of acceptance from			Order data
			1 m costs	100 m	500 m	3000 m	
			<b>unshielded</b>				
1.3 kg	140 Ω	3.00	4.20	278.00	209.00	139.00	<a href="#">Li13Y13Y 2 x 0.14</a>
2.5 kg	58 Ω	4.20	5.20	343.00	257.00	171.00	<a href="#">Li13Y13Y 2 x 0.34</a>
3.2 kg	40.1 Ω	4.50	6.10	404.00	303.00	202.00	<a href="#">Li13Y13Y 2 x 0.50</a>
			<b>shielded</b>				
2.3 kg	140 Ω	3.80	5.10	339.00	254.00	169.00	<a href="#">Li13YC13Y 2 x 0.14</a>
3.7 kg	58 Ω	4.90	7.40	491.00	368.00	245.00	<a href="#">Li13YC13Y 2 x 0.34</a>
4.2 kg	40.1 Ω	5.30	8.70	576.00	432.00	288.00	<a href="#">Li13YC13Y 2 x 0.50</a>

**Usual layout: 100 m rings. Short samples (20 cm) free of charge.**



You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0      Fax: +49 (0)30 / 79 01 86 - 77**

Lepsiusstraße 89  
12165 Berlin, Germany

Central store  
Berlin - Steglitz



Technical data

**More safety in the event of a fire.**

**No aggressive combustion products (halogens) are formed; the material is flame-retardant and also self-extinguishing, with minimal smoke development.**

**Connection system:** low-cost connection using insulation displacement connectors (IDC).

**Core structure:** to Style No.10493; copper strand 7 x 0.16 mm Ø tinned = 0.14 mm<sup>2</sup> (AWG 26), insulated with TPM. Insulation wall thickness 0.20 - 0,25 mm (rated width), Ø of insulated conductor approx. 1.0 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** the conductors are twisted in layers with halogen-free shield wires.

**Wrapping and shield:** the twisted conductors and shielded with a braid of tinned copper wires, visual coverage ≥ 80%. A separating layer of overlapping fibre mat is permitted.

**Outer jacket:** black, halogen-free, flame-retardant TPU with white print after UL 21198. Excellent chemical and mechanical properties. The wall thickness of the outer jacket (average) is approx. 0.75 mm.

**Temperature range:**  
Heat resistant 80°C  
Cold resistant -30°C (moving)  
-50°C (permanently installed)

**Electrical properties:**  
Rated voltage U<sub>0</sub> / U 300 V  
Conductor resistance 149 Ω/km max.

**Mechanical properties:**  
Once-only bending radius ≤ 5 X outer diameter  
Repeated bending radius ≤ 20 X outer diameter

**Tensile load:**  
when installing max. 50 N/mm<sup>2</sup>  
(VDE 0289 Part 3) in operation max. 15 N/mm<sup>2</sup>

The new jacket formula, PUR-Medoxprotect-S, makes the cables more flame-retardant than standard polyurethane insulation. They are also self-extinguishing. The lack of halogens reduces the smoke development. That increases fire safety! FT2 - fire resistant.


Not to mention the insulating effect, smoothness, flexibility and resistance to grease, oil and water.

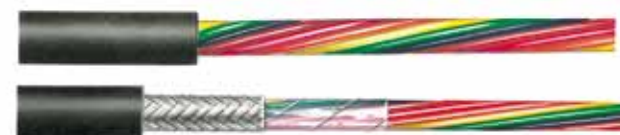
Net price including copper

Ordering information

100 m weighs approx.	Overall Ø ± 0.3 mm	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			
				Price for 1 m	100 m	500 m	
				<b>Unshielded</b>			
1.7 kg	3.6 mm	2	1.60	104.00	78.00	52.00	<a href="#">Medox 2 X AWG 26</a>
2.1 kg	3.8 mm	3	1.90	128.00	96.00	64.00	<a href="#">Medox 3 X AWG 26</a>
2.6 kg	4.0 mm	4	2.10	140.00	105.00	70.00	<a href="#">Medox 4 X AWG 26</a>
3.4 kg	4.6 mm	6	2.60	176.00	132.00	88.00	<a href="#">Medox 6 X AWG 26</a>
4.4 kg	5.5 mm	10	4.10	272.00	204.00	136.00	<a href="#">Medox 10 X AWG 26</a>
				<b>Shielded</b>			
2.4 kg	4.3 mm	2	2.70	180.00	135.00	90.00	<a href="#">Medox 2 X AWG 26 C</a>
3.0 kg	4.5 mm	3	3.30	220.00	165.00	110.00	<a href="#">Medox 3 X AWG 26 C</a>
3.2 kg	4.7 mm	4	3.50	232.00	174.00	116.00	<a href="#">Medox 4 X AWG 26 C</a>
3.9 kg	5.2 mm	6	3.80	256.00	192.00	128.00	<a href="#">Medox 6 X AWG 26 C</a>
5.4 kg	6.2 mm	8	4.10	272.00	204.00	136.00	<a href="#">Medox 8 X AWG 26 C</a>
5.6 kg	6.2 mm	10	5.20	344.00	258.00	172.00	<a href="#">Medox 10 X AWG 26 C</a>
6.1 kg	6.4 mm	12	6.10	404.00	303.00	202.00	<a href="#">Medox 12 X AWG 26 C</a>
7.2 kg	6.9 mm	16	7.50	500.00	375.00	250.00	<a href="#">Medox 16 X AWG 26 C</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)

Technical data

**More safety in the event of a fire.**

**No aggressive combustion products (halogens) are formed; the material is flame-retardant and also self-extinguishing, with minimal smoke development.**

**Connection system:** low-cost connection using insulation displacement connectors (IDC).

**Core structure:** to Style No.10493; copper strand 7 x 0.20 mm Ø tinned = 0.22 mm<sup>2</sup> (AWG 24), insulated with TPM. Insulation wall thickness 0.20 - 0,25 mm (rated width), Ø of insulated conductor approx. 1.15 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** the conductors are twisted in layers with halogen-free shield wires.

**Wrapping and shield:** the twisted conductors are wrapped and shielded with a braid of tinned copper wires, visual coverage ≥ 80%. A separating layer of overlapping fibre mat is permitted.

**Outer jacket:** black, halogen-free, flame-retardant TPU with white print after UL 21198. Excellent chemical and mechanical properties. The wall thickness of the outer jacket (average) is approx. 0.75 mm.

**Temperature range:**  
Heat resistant 80°C  
Cold resistant -30°C (moving)  
-50°C (permanently installed)

**Electrical properties:**  
Rated voltage U<sub>0</sub> / U 300 V  
Conductor resistance 93.3 Ω/km max.

**Mechanical properties:**  
Once-only bending radius ≤ 5 X outer diameter  
Repeated bending radius ≤ 20 X outer diameter

**Tensile load:**  
when installing max. 50 N/mm<sup>2</sup>  
(VDE 0289 Part 3) in operation max. 15 N/mm<sup>2</sup>

The new jacket formula, PUR-Medoxprotect-S, makes the cables more flame-retardant than standard polyurethane insulation. They are also self-extinguishing. The lack of halogens reduces the smoke development. That increases fire safety! FT2 - fire resistant.


Not to mention the insulating effect, smoothness, flexibility and resistance to grease, oil and water.

Net price including copper

Ordering information

100 m weighs approx.	Overall Ø ± 0.3 mm	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			
				Price for 1 m	100 m	500 m	
				<b>Unshielded</b>			
2.1 kg	3.9 mm	2	1.70	116.00	87.00	58.00	<a href="#">Medox 2 X AWG 24</a>
2.6 kg	4.1 mm	3	2.00	136.00	102.00	68.00	<a href="#">Medox 3 X AWG 24</a>
2.8 kg	4.4 mm	4	2.30	152.00	114.00	76.00	<a href="#">Medox 4 X AWG 24</a>
3.8 kg	5.1 mm	6	2.80	184.00	138.00	92.00	<a href="#">Medox 6 X AWG 24</a>
6.3 kg	6,3 mm	12	4.50	296.00	222.00	148.00	<a href="#">Medox 12 X AWG 24</a>
				<b>Shielded</b>			
2.8 kg	4.6 mm	2	2.80	184.00	138.00	92.00	<a href="#">Medox 2 X AWG 24 C</a>
3.5 kg	4.8 mm	3	3.50	232.00	174.00	116.00	<a href="#">Medox 3 X AWG 24 C</a>
3.9 kg	5.1 mm	4	3.90	260.00	195.00	130.00	<a href="#">Medox 4 X AWG 24 C</a>
4.9 kg	5.7 mm	6	4.20	280.00	210.00	140.00	<a href="#">Medox 6 X AWG 24 C</a>
6.8 kg	6.8 mm	8	4.50	296.00	222.00	148.00	<a href="#">Medox 8 X AWG 24 C</a>
7.2 kg	6.8 mm	10	5.90	392.00	294.00	196.00	<a href="#">Medox 10 X AWG 24 C</a>
7.8 kg	7.0 mm	12	7.10	476.00	357.00	238.00	<a href="#">Medox 12 X AWG 24 C</a>
9.6 kg	7.7 mm	16	8.40	560.00	420.00	280.00	<a href="#">Medox 16 X AWG 24 C</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
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Label (USA Etikett)



Technical data

**More safety in the event of a fire.**

**No aggressive combustion products (halogens) are formed; the material is flame-retardant and also self-extinguishing, with minimal smoke development.**

**Connection system:** low-cost connection using insulation displacement connectors (IDC).

**Core structure:** to Style No.10493; copper strand 7 x 0.32 mm Ø tinned = 0.56 mm<sup>2</sup> (AWG 20), insulated with TPM. Insulation wall thickness 0.20 - 0,25 mm (rated width), Ø of insulated conductor approx. 1.5 mm.

**Core labelling:** international colour code (see page 228).

**Twisted structure:** the conductors are twisted in layers with halogen-free shield wires.

**Wrapping and shield:** the twisted conductors are wrapped and shielded with a braid of tinned copper wires, visual coverage ≥ 80%. A separating layer of overlapping fibre mat is permitted.

**Outer jacket:** black, halogen-free, flame-retardant TPU with white print after UL 21198. Excellent chemical and mechanical properties. The wall thickness of the outer jacket (average) is approx. 0.75 mm.

**Temperature range:**  
Heat resistant 80°C  
Cold resistant -30°C (moving)  
-50°C (permanently installed)

**Electrical properties:**  
Rated voltage U<sub>0</sub> / U 300 V  
Conductor resistance 34.6 Ω/km max.

**Mechanical properties:**  
Once-only bending radius ≤ 5 X outer diameter  
Repeated bending radius ≤ 20 X outer diameter

**Tensile load:**  
when installing max. 50 N/mm<sup>2</sup>  
in operation max. 15 N/mm<sup>2</sup>  
(VDE 0289 Part 3)


The new jacket formula, PUR-Medoxprotect-S, makes the cables more flame-retardant than standard polyurethane insulation. They are also self-extinguishing. The lack of halogens reduces the smoke development. That **increases fire safety!** FT2 - fire resistant. Not to mention the insulating effect, smoothness, flexibility and resistance to grease, oil and water.

Net price including copper

Ordering information

100 m weighs approx.	Overall Ø ± 0.3 mm	Number of conductors	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			
				Price for 1 m	100 m	500 m	
				<b>Unshielded</b>			
3.2 kg	4.6 mm	2	2.80	188.00	141.00	94.00	<a href="#">Medox 2 X AWG 20</a>
4.2 kg	4.8 mm	3	3.10	204.00	153.00	102.00	<a href="#">Medox 3 X AWG 20</a>
4.6 kg	5.2 mm	4	3.50	236.00	177.00	118.00	<a href="#">Medox 4 X AWG 20</a>
6.4 kg	6.1 mm	6	4.20	280.00	210.00	140.00	<a href="#">Medox 6 X AWG 20</a>
9.6 kg	7.5 mm	10	5.90	396.00	297.00	198.00	<a href="#">Medox 10 X AWG 20</a>
				<b>Shielded</b>			
4.0 kg	5.3 mm	2	3.40	228.00	171.00	114.00	<a href="#">Medox 2 X AWG 20 C</a>
5.5 kg	5.6 mm	3	4.30	288.00	216.00	144.00	<a href="#">Medox 3 X AWG 20 C</a>
6.1 kg	6.0 mm	4	4.80	320.00	240.00	160.00	<a href="#">Medox 4 X AWG 20 C</a>
7.7 kg	6.7 mm	6	5.20	348.00	261.00	174.00	<a href="#">Medox 6 X AWG 20 C</a>
10.2 kg	7.7 mm	8	5.80	384.00	288.00	192.00	<a href="#">Medox 8 X AWG 20 C</a>
11.4 kg	8.2 mm	10	7.10	472.00	354.00	236.00	<a href="#">Medox 10 X AWG 20 C</a>
13.1 kg	8.5 mm	12	7.80	520.00	390.00	260.00	<a href="#">Medox 12 X AWG 20 C</a>
16.3 kg	9.3 mm	16	11.00	732.00	549.00	366.00	<a href="#">Medox 16 X AWG 20 C</a>

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)



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Hook-up wires insulated with silicone rubber  
Produced based on VDE 0250 Part 1 + 502  
Highly resistant to heat and cold, especially flexible, halogen-free

## Structure of the hook-up wires

Cross-section of the conductor	Number of wires x Wire Ø (mm)	Conductor resistance	Max. current to ...	Wall thickness of the insulation in mm	Max. operating voltage	Test voltage	Total Ø of the cable ± 5%	100 m weighs approx.
0.15 mm <sup>2</sup>	39 x 0.07 plain Cu Highly flexible	122 Ω/km	1,5 A	0,25	150 V	2000 V	1,0 mm	0,3 kg
0.20 mm <sup>2</sup>	102 x 0.05 plain Cu Highly flexible	92 Ω/km	2 A	0,5	300 V	2000 V	1,7 mm	0,6 kg
0.50 mm <sup>2</sup>	256 x 0.05 plain Cu Highly flexible	37 Ω/km	5 A	0,45	500 V	2000 V	1,9 mm	0,9 kg
0.50 mm <sup>2</sup>	16 x 0.20 tinned Cu	37 Ω/km	5 A	0,6	500 V	2000 V	2,1 mm	0,9 kg
0.75 mm <sup>2</sup>	24 x 0.20 tinned Cu	25 Ω/km	9 A	0,6	500 V	2000 V	2,3 mm	1,1 kg
1.0 mm <sup>2</sup>	32 x 0.20 tinned Cu	18 Ω/km	12 A	0,6	500 V	2000 V	2,4 mm	1,4 kg
1.5 mm <sup>2</sup>	30 x 0.25 tinned Cu	12 Ω/km	16 A	0,6	500 V	2000 V	2,7 mm	2,0 kg
2.5 mm <sup>2</sup>	50 x 0.25 tinned Cu	7,5 Ω/km	20 A	0,7	500 V	2000 V	3,2 mm	3,0 kg
4.0 mm <sup>2</sup>	56 x 0.30 tinned Cu	4,9 Ω/km	25 A	0,7	500 V	2000 V	4,0 mm	4,4 kg
6.0 mm <sup>2</sup>	84 x 0.30 tinned Cu	3,3 Ω/km	33 A	0,7	500 V	2000 V	4,6 mm	6,2 kg
10 mm <sup>2</sup>	80 x 0.40 tinned Cu	1,9 Ω/km	45 A	0,85	500 V	2000 V	6,5 mm	12,4 kg
16 mm <sup>2</sup>	128 x 0.40 tinned Cu	1,2 Ω/km	61 A	0,85	500 V	2000 V	7,7 mm	18,5 kg

**Electrical properties:** dielectric loss angle approx.  $5 \times 10^{-3}$ , dielectric constant approx. 2-3.

**Heat resistance:** constant temperature 180°C, short-term up to 220°C.

**Cold resistance:** constant temperature -50°C, short-term down to -60°C.  
Without reduction of the rubber-elastic properties.



## Net price including copper

Ordering information	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			Usually available ex-stock colours
		100 m	500 m	5000 m	
<a href="#">Si-Lif 0,15 mm<sup>2</sup>*</a>	--,51	34.00	27.20	17.00	yellow-green* white brown green yellow grey blue red black pink** purple**
<a href="#">Si-Lif 0,20 mm<sup>2</sup></a>	--,66	44.00	33.00	22.00	
<a href="#">Si-Lif 0,50 mm<sup>2</sup>*</a>	--,90	60.00	48.00	30.00	
<a href="#">Si-Li 0,50 mm<sup>2</sup></a>	--,51	34.00	27.00	17.00	
<a href="#">Si-Li 0,75 mm<sup>2</sup></a>	--,70	44.00	35.00	22.00	
<a href="#">Si-Li 1,0 mm<sup>2</sup></a>	--,72	48.00	38.00	24.00	
<a href="#">Si-Li 1,5 mm<sup>2</sup></a>	--,81	54.00	43.00	27.00	* only available from Si-Li 0.75 upwards ** only available for Si-Li 0.5
<a href="#">Si-Li 2,5 mm<sup>2</sup></a>	1.26	84.00	—	—	
<a href="#">Si-Li 4,0 mm<sup>2</sup></a>	1.62	108.00	—	—	
<a href="#">Si-Li 6,0 mm<sup>2</sup></a>	2.40	160.00	—	—	
<a href="#">Si-Li 10 mm<sup>2</sup>*</a>	3.15	210.00	—	—	
<a href="#">Si-Li 16 mm<sup>2</sup>*</a>	4.65	310.00	—	—	

**Normal stock unit: 100-m ring, short sample (20 cm) free of charge.**

Excellent dielectric properties over a wide temperature range at high frequencies.  
Resistant to high molecular weight oils, vegetable and animal fats, Clophen, softeners, alcohols, diluted acids, alkalis and salt solutions, sea water, oxidation agents and tropical influences.  
Silicone is fully resistant to oxidation attacks from oxygen and ozone. High flash point.  
Insulating SiO<sub>2</sub> remains after burning.

\* Items to be sold off

Technical data

**Preferred application**

All applications requiring unchanged mechanical flexibility at high and low temperatures, e.g. electrical appliances, refrigeration systems.

**Construction**

Conductors: 7 x 0.127 mm, tinned copper = 0.09 mm<sup>2</sup> (ø 0.39 mm)  
Core ø: 2.0 mm  
Insulation: silicone.  
Core labelling: generally black cores with printed numbers  
Outer jacket: silicone (red).

**Wrapping and shield:**

the twisted cores are wrapped in overlapping foil and shielded with as braid of tinned copper wires.

**Electrical and physical properties**

Conductor resistance max. 25 Ω/kmat 20°C  
Operating voltage 300 V  
Test voltage 3 kV  
(Ambient temperature to 30°C)  
Dielectric strength approx. 25 kV/mm  
Temperature range -50°C to +150°C

**Special properties**


Almost no change to the insulation resistance and dielectric strength at high temperatures.  
Excellent dielectric properties over a wide temperature range at high frequencies.  
Resistant to high molecular weight oils, vegetable and animal fats, Clophen, softeners, alcohols, diluted acids, alkalis and salt solutions, sea water, oxidation agents and tropical influences.  
Silicone is fully resistant to oxidation attacks from oxygen and ozone.  
High flash point.  
Insulating SiO<sub>2</sub> remains after burning.

The cables are produced and tested in accordance with UL 4476 and halogen-free.

Net price including copper

100 m weighs approx.	Total Ø ± 0.2 mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
				100 m	500 m	
<b>Unshielded</b>						
3.9 kg	6.4 mm	2-core	5.00	332.00	249.00	<a href="#">Si-SL-0</a> <a href="#">2 x AWG 28 UL</a>
5.8 kg	7.2 mm	4-core	6.90	460.00	345.00	<a href="#">Si-SL-0</a> <a href="#">4 x AWG 28 UL</a>
8.0 kg	8.3 mm	6-core	9.70	648.00	486.00	<a href="#">Si-SL-0</a> <a href="#">6 x AWG 28 UL</a>
9.3 kg	9.0 mm	8-core	13.00	840.00	630.00	<a href="#">Si-SL-0</a> <a href="#">8 x AWG 28 UL</a>
<b>Shielded</b>						
6.4 kg	7.2 mm	2-core	6.70	448.00	336.00	<a href="#">Si-SL-0</a> <a href="#">2 x AWG 28 C UL</a>
8.3 kg	8.0 mm	4-core	9.00	600.00	450.00	<a href="#">Si-SL-0</a> <a href="#">4 x AWG 28 C UL</a>
11.0 kg	9.1 mm	6-core	12.00	800.00	600.00	<a href="#">Si-SL-0</a> <a href="#">6 x AWG 28 C UL</a>
12.9 kg	9.8 mm	8-core	15.00	1,020.00	765.00	<a href="#">Si-SL-0</a> <a href="#">8 x AWG 28 C UL</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

The rings are marked with the  label.  
(Cutlength are without Label)  
This label is the proof of certification in the USA.



Label (USA Etikett)

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Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

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12165 Berlin

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### Technical data

#### Preferred application

All applications requiring unchanged mechanical flexibility at extreme high and low temperatures, e.g. electrical appliances, refrigeration systems.

#### Special feature

Coloured cores allow easy identification.

#### Construction

Conductors: 16 x 0.20 mm, tinned copper = 0.5 mm<sup>2</sup>  
Insulation: silicone.  
Outer jacket: silicone (red-brown).

#### Electrical and physical properties

	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1.5 mm <sup>2</sup>
Conductor resistance	max. 40 Ω/km	max. 27 Ω/km	max. 14 Ω/km
Current rating	max. 11 A	max. 15 A	max. 24 A

Insulation resistance	≥ 1,200 M Ω x km
Operating voltage	max. 500 V
Test voltage (Ambient temperature to 30°C)	2,000 V
Dielectric strength	approx. 25 kV/mm
Temperature range	-50°C to +180°C

#### Special properties

Almost no change to the insulation resistance and dielectric strength at high temperatures.  
Excellent dielectric properties over a wide temperature range at high frequencies.  
Resistant to high molecular weight oils, vegetable and animal fats, Clophen, softeners, alcohols, diluted acids, alkalis and salt solutions, sea water, oxidation agents and tropical influences. Silicone is fully resistant to oxidation attacks from oxygen and ozone. High flash point. Insulating SiO<sub>2</sub> remains after burning.

The cables are produced based on VDE 0250.

#### Colour sequence:

1st core white	7th core blue
2nd core brown	8th core red
3rd core green	9th core black
4th core yellow	10th core purple
5th core grey	11th core white-green
6th core pink	12th core white-yellow



### Net price including copper

100 m weighs approx.	Total Ø approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
				100 m	500 m	
3.9 kg	5.9 mm	2-core	3.90	260.00	195.00	<a href="#">Si-SL-0</a> <a href="#">2 x 0.5</a>
5.1 kg	6.2 mm	3-core	4.40	316.00	237.00	<a href="#">Si-SL-0</a> <a href="#">3 x 0.5</a>
5.8 kg	6.8 mm	4-core	5.50	370.00	278.00	<a href="#">Si-SL-0</a> <a href="#">4 x 0.5</a>
8.6 kg	8.3 mm	6-core	9.20	611.00	458.00	<a href="#">Si-SL-0</a> <a href="#">6 x 0.5</a>
11.4 kg	9.4 mm	8-core	10.80	721.00	541.00	<a href="#">Si-SL-0</a> <a href="#">8 x 0.5</a>
16.2 kg	11.3 mm	12-core	11.20	748.00	561.00	<a href="#">Si-SL-0</a> <a href="#">12 x 0.5*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

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Si-SL-O

Si-SL-J

Silicone-insulated, highly heat-resistant control signal cables

2 to 5 x 0.75 mm<sup>2</sup> 5 x 1.5 mm<sup>2</sup>

## Technical data

Silicone insulation Highly heat-resistant Halogen-free		Core colours
<b>Si-SL 0.75 mm<sup>2</sup></b>	(24 x 0.20) tinned	brown, blue
2-core = Si-SL-0 = without protective conductor		green / yellow, brown, blue
3 to 5-core = Si-SL-J = with protective conductor		green / yellow, brown, blue, black
		green / yellow, brown, blue, black, black
<b>Si-SL 1.5 mm<sup>2</sup></b>	(30 x 0.25) tinned	
5-adrig = Si-SL-J = with protective conductor		green / yellow, brown, blue, black

Information on the excellent properties of silicone insulation is provided on page 122  
The cables are produced based on VDE 0250.



On-time · Fast · Reliable

Silicone-insulated, highly heat-resistant control signal cables

2 to 5 x 0.75 mm<sup>2</sup> 5 x 1.5 mm<sup>2</sup>

Si-SL-O

Si-SL-J

## Net price including copper

100 m weighs approx.	Total $\varnothing$ approx. mm $\pm 5\%$	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
				100 m	500 m	
4.6 kg	6.5 mm	2-core	4.60	308.00	231.00	<a href="#">Si-SL-0</a> <a href="#">2 x 0.75</a>
5.8 kg	6.7 mm	3-core	5.20	344.00	258.00	<a href="#">Si-SL-J</a> <a href="#">3 x 0.75*</a>
7.8 kg	6.8 mm	4-core	5.90	396.00	297.00	<a href="#">Si-SL-J</a> <a href="#">4 x 0.75</a>
9.7 kg	8.3 mm	5-core	3.35	224.00	-	<a href="#">Si-SL-J</a> <a href="#">5 x 0.75*</a>
15.1 kg	10.0 mm	5-core	3.90	260.00	-	<a href="#">Si-SL-J</a> <a href="#">5 x 1.50*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

\*Items to be sold off

On-time · Fast · Reliable



ASS 0.14  
ASS 0.25  
ASS 0.5

ASS 1 - 4 pairs and 1 - 3 cores  
Halogen-free

Technical data

Special features

Halogen-free, highly flexible, heat and cold resistant, twisted as pairs or all cores, full shield.

Construction data

Highly flexible conductors 0.14 mm<sup>2</sup>: 72 x 0.05 (= ø max. 0.5 mm)

0.25 mm<sup>2</sup>: 65 x 0.07

0.50 mm<sup>2</sup>: 129 x 0.07

of tinned, fine-wire copper strands

Core insulation

silicone

Insulation wall thickness: 0.45 mm

Core Ø over the insulation

0.14 mm<sup>2</sup>: **1.4 mm** ± 10%

0.25 mm<sup>2</sup>: **1.6 mm** ± 10%

0.50 mm<sup>2</sup>: **1.9 mm** ± 10%

Colour sequence

with twisted pairs

1st pair white and brown

2nd pair green and yellow

3rd pair grey and pink

4th pair blue and red

with all cores twisted

1st core white

2nd core brown

3rd core green

Core pair twisting tight at:

0.14 mm<sup>2</sup>: with approx. 40 twists per m

0.25 mm<sup>2</sup>: with approx. 25 twists per m

0.5 mm<sup>2</sup>: with approx. 25 twists per m

Wrapping of the cable bundle overlapping with halogen-free, heat-resistant special foil, <sup>25</sup>/<sub>1000</sub> mm thin.

Full shield by winding with tinned copper wires

with a Ø of 0.127 mm. Visual coverage ≥ 90%.

Outer jacket silicone, self-extinguishing, UV-resistant.

Jacket colour red, similar to RAL 3000.

Electrical and thermal properties at 20°C

Conductor resistance 0.14 mm<sup>2</sup>: max. 143 Ω/km; 0.25 mm<sup>2</sup>: ≤ 80 Ω/km; 0.5 mm<sup>2</sup>: ≤ 40 Ω/km

Insulation resistance ≥ 1,200 M Ω x km

Operating voltage max. 300 V

Test voltage core + core/shield at 50 Hz, 1 min. = 1,500 V

Current rating at ambient temp. of 25°C: 0.14 mm<sup>2</sup>: max. 6 A, 0.25 mm<sup>2</sup>: max. 3 A, 0.5 mm<sup>2</sup>: max. 5 A

Temperature range -50°C to +180°C

Cross-section of the shield twisting:

1-pair = 0.81 mm<sup>2</sup>

2-pair = 1.22 mm<sup>2</sup>

3-pair = 1.32 mm<sup>2</sup>

4-pair = 1.42 mm<sup>2</sup>

1-core = 0.46 mm<sup>2</sup>

3-core = 0.81 mm<sup>2</sup>

1-pair = 0.91 mm<sup>2</sup>

2-pair = 1.22 mm<sup>2</sup>

3-pair = 1.37 mm<sup>2</sup>

4-pair = 1.37 mm<sup>2</sup>

3-core = 1.06 mm<sup>2</sup>

1-pair = 1.06 mm<sup>2</sup>

2-pair = 1.37 mm<sup>2</sup>

3-pair = 1.52 mm<sup>2</sup>

4-pair = 1.52 mm<sup>2</sup>

1-core = 0.51 mm<sup>2</sup>

3-core = 1.22 mm<sup>2</sup>

ASS 1 - 4 pairs and 1 - 3 cores  
Halogen-free

ASS 0.14  
ASS 0.25  
ASS 0.5



Net price including copper

100 m weighs approx.	Total ø (± 0.2 mm)	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			Ordering information
				100 m	500 m	3000 m	
2.9 kg	4.8 mm	1 pair = 2 cores	5.40	360.00	270.00	180.00	<a href="#">ASS 1 x 2 x 0.14</a>
4.6 kg	6.3 mm	2 pairs = 4 cores	10.00	664.00	498.00	332.00	<a href="#">ASS 2 x 2 x 0.14</a>
5.9 kg	7.0 mm	3 pairs = 6 cores	12.50	832.00	624.00	416.00	<a href="#">ASS 3 x 2 x 0.14</a>
7.0 kg	7.4 mm	4 pairs = 8 cores	14.60	976.00	732.00	488.00	<a href="#">ASS 4 x 2 x 0.14</a>
1.4 kg	3.0 mm	1-core	3.50	236.00	177.00	118.00	<a href="#">ASS 1 x 0.14</a>
3.3 kg	5.0 mm	3-core	6.40	428.00	321.00	214.00	<a href="#">ASS 3 x 0.14</a>
3.5 kg	4.8 mm	1 pair = 2 cores	6.50	432.00	324.00	216.00	<a href="#">ASS 1 x 2 x 0.25</a>
6.6 kg	6.9 mm	2 pairs = 4 cores	11.90	792.00	594.00	396.00	<a href="#">ASS 2 x 2 x 0.25</a>
7.2 kg	7.2 mm	3 pairs = 6 cores	14.20	944.00	708.00	472.00	<a href="#">ASS 3 x 2 x 0.25</a>
9.0 kg	8.0 mm	4 pairs = 8 cores	16.20	1080.00	810.00	540.00	<a href="#">ASS 4 x 2 x 0.25</a>
4.4 kg	5.5 mm	3-core	7.30	488.00	366.00	244.00	<a href="#">ASS 3 x 0.25</a>
4.3 kg	5.4 mm	1 pair = 2 cores	7.90	524.00	393.00	262.00	<a href="#">ASS 1 x 2 x 0.5</a>
9.2 kg	8.0 mm	2 pairs = 4 cores	13.20	880.00	660.00	440.00	<a href="#">ASS 2 x 2 x 0.5</a>
10.4 kg	8.5 mm	3 pairs = 6 cores	16.40	1,092.00	819.00	546.00	<a href="#">ASS 3 x 2 x 0.5</a>
12.4 kg	9.4 mm	4 pairs = 8 cores	20.10	1,340.00	1,005.00	670.00	<a href="#">ASS 4 x 2 x 0.5</a>
2.3 kg	3.6 mm	1-core	2.45	164.00	123.00	—	<a href="#">ASS 1 x 0.5*</a>
5.7 kg	6.2 mm	3-core	8.80	584.00	438.00	292.00	<a href="#">ASS 3 x 0.5</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge. No copper surcharge.

Preferred application

Connection cables for all devices used for data storage and data transfer, for high-quality control and regulation systems, measurement and signalling systems and for applications where massive consequential damage caused by the burning of non halogen-free insulation (hydrochloric acid vapour) needs to be ruled out.

\*Item to be sold off

Technical data

**With silver-coated copper strands  
With silver-coated full shield  
White TEFLON® jacket**

1st core white  
2nd core brown  
3rd core green  
4th core yellow

Bending radius:  
once only = 5 x outer diameter

repeated = 10 x outer diameter

<b>LITCT</b>	<b>0.06 mm<sup>2</sup></b> , 1 to 4-core
Conductor	7 x 0.10 mm Ø, silver-coated Cu, AWG 30
Core insulation	FEP (fluorinated ethylene propylene), core Ø: approx. 0.8 mm
Shield	braided, silver-coated Cu, visual coverage ≥ 85%
Jacket	white FEP
<b>LITCT</b>	<b>0.24 mm<sup>2</sup></b> , 1 to 4-core
Conductor	19 x 0.13 mm Ø, silver-coated Cu, AWG 24
Core insulation	FEP, core Ø: approx. 1.1 mm
Shield	braided, silver-coated Cu, visual coverage ≥ 85%
Jacket	white FEP
<b>LITCT</b>	<b>0.38 mm<sup>2</sup></b> , 1 to 4 core
Conductor	19 x 0.16 mm Ø, silver-coated Cu, AWG 22
Core insulation	FEP, core Ø: approx. 1.3 mm
Shield	braided, silver-coated Cu, visual coverage ≥ 85%
Jacket	white FEP
<b>LITCT</b>	<b>0.56 mm<sup>2</sup></b> , 1 to 4-core
Conductor	19 x 0.20 mm Ø, silver-coated Cu, AWG 20
Core insulation	FEP, core Ø: approx. 1.5 mm
Shield	braided, silver-coated Cu, visual coverage ≥ 85%
Jacket	white FEP

The insulated strands conform to the Nema standards

Operating voltage	600 V
Test voltage	3,400 V
Insulation resistance	≥ 500 MΩ x km
Temperature range	-100°C to + 200°C
Dielectric constant	(constant from 60 Hz to 30,000 MHz) = 2.1 (remains constant from -180°C to + 200°C)
Loss factor	(60 Hz to 10,000 MHz) 0.0002 - 0.0007, temperature-independent

Net prices including copper and silver

100 m weighs approx.	Total Ø ± 5%	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
			100 m	500 m	3000 m	
0.7 kg	1.8 mm	4.60	<b>308.00</b>	<b>231.00</b>	<b>154.00</b>	<a href="#">LITCT 1 X 0.06</a>
1.2 kg	2.7 mm	7.70	<b>516.00</b>	<b>387.00</b>	<b>258.00</b>	<a href="#">LITCT 2 X 0.06</a>
1.6 kg	2.9 mm	10.40	<b>692.00</b>	<b>519.00</b>	<b>346.00</b>	<a href="#">LITCT 3 X 0.06</a>
1.9 kg	3.0 mm	13.90	<b>928.00</b>	<b>696.00</b>	<b>464.00</b>	<a href="#">LITCT 4 X 0.06</a>
1.2 kg	2.1 mm	6.30	<b>420.00</b>	<b>315.00</b>	<b>210.00</b>	<a href="#">LITCT 1 X 0.24</a>
2.2 kg	3.2 mm	9.10	<b>608.00</b>	<b>456.00</b>	<b>304.00</b>	<a href="#">LITCT 2 X 0.24</a>
2.6 kg	3.4 mm	12.10	<b>808.00</b>	<b>606.00</b>	<b>404.00</b>	<a href="#">LITCT 3 X 0.24</a>
3.0 kg	3.7 mm	15.20	<b>1,016.00</b>	<b>762.00</b>	<b>508.00</b>	<a href="#">LITCT 4 X 0.24</a>
1.3 kg	2.3 mm	7.70	<b>516.00</b>	<b>387.00</b>	<b>258.00</b>	<a href="#">LITCT 1 X 0.38</a>
2.6 kg	3.8 mm	10.40	<b>692.00</b>	<b>519.00</b>	<b>346.00</b>	<a href="#">LITCT 2 X 0.38</a>
3.5 kg	4.0 mm	13.90	<b>928.00</b>	<b>696.00</b>	<b>464.00</b>	<a href="#">LITCT 3 X 0.38</a>
4.2 kg	4.4 mm	16.60	<b>1,104.00</b>	<b>828.00</b>	<b>552.00</b>	<a href="#">LITCT 4 X 0.38</a>
1.6 kg	2.4 mm	9.30	<b>620.00</b>	<b>465.00</b>	<b>310.00</b>	<a href="#">LITCT 1 X 0.56</a>
3.4 kg	4.1 mm	13.40	<b>896.00</b>	<b>672.00</b>	<b>448.00</b>	<a href="#">LITCT 2 X 0.56</a>
4.5 kg	4.4 mm	16.10	<b>1,076.00</b>	<b>807.00</b>	<b>538.00</b>	<a href="#">LITCT 3 X 0.56</a>
5.5 kg	4.7 mm	19.30	<b>1,288.00</b>	<b>966.00</b>	<b>644.00</b>	<a href="#">LITCT 4 X 0.56</a>

Normal stock unit: 50 and 100-m rings. Short sample (20 cm) free of charge.

Properties of the Teflon® FEP insulation  
FEP is not attacked by solvents (acids, alkalis)

FEP is not inflammable  
FEP is resistant to micro-cultures and does not permit the growth of fungus.  
FEP is fully ozone-resistant

FEP does not absorb water, 0%  
FEP has low water vapour permeability (0.16 mg/cm<sup>2</sup>/24 hrs.)  
FEP is absolutely weatherproof  
FEP saves space through thin walls at high operating voltages  
TEFLON® is a protected trademark of DuPont


**Net prices including copper and silver**

Ordering information	Sample quantities under 100 metres	in EUR per 100 m on collection upwards	Total $\varnothing \pm 5\%$ 100 m weighs approx.	
	Price for 1 m	100 m		
<a href="#">LiTCT 2 X 0.14/2750*</a> <a href="#">LiTCT 3 X 0.14/2750*</a>	6.45 7.60	— 518.00	4.6 mm 4.9 mm	4.7 kg 5.1 kg
<a href="#">LiTCT 4 X 0.24/2750*</a>	9.70	648.00	5.7 mm	6.2 kg
<a href="#">LiTCT 2 X 0.38/2750*</a> <a href="#">LiTCT 3 X 0.38/2750*</a> <a href="#">LiTCT 6 X 0.38/2750*</a>	8.75 9.45 15.05	584.00 632.00 1,004.00	5.3 mm 5.6 mm 7.2 mm	6.3 kg 6.5 kg 10.0 kg

**Net prices including copper and silver**

100 m weighs approx. Total $\varnothing$ approx. $\pm 0.2$ mm	Cores colours	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
		Price for 1 m	100 m	500 m	3000 m	
1.7 kg 2.7 mm	white, brown	7.00	468.00	351.00	234.00	<a href="#">LiTT 2 X 0.24</a>
2.7 kg 3.2 mm	white, brown, green, yellow	12.00	800.00	600.00	400.00	<a href="#">LiTT 4 X 0.24</a>
2.2 kg 3.5 mm	white, brown	9.00	600.00	450.00	300.00	<a href="#">LiTT 2 X 0.56</a>
4.5 kg 4.1 mm	white, brown, green, yellow	14.40	960.00	720.00	480.00	<a href="#">LiTT 4 X 0.56</a>

**Normal stock unit: 50 and 100-m rings. Short sample (20 cm) free of charge.**

The rings are marked with the  label. (Cutlength are without Label)  
This label is the proof of certification in the USA.

\*Items to be sold off

LiTCT	0,14 mm <sup>2</sup>	0,24 mm <sup>2</sup>	0,38 mm <sup>2</sup>
Conductor, silver-coated	19 x 0,102 mm	19 x 0,127 mm	19 x 0,16 mm
Core insulation	PTFE	PTFE	PTFE
Core $\varnothing$	1,55 mm	1,70 mm	1,85 mm
Shield, silver-coated	Braid	Braid	Braid
Jacket	FEP white	FEP white	FEP white



Label (USA Etikett)

**Core colours:** 1st core black, 2nd core brown, 3rd core red, 4th core orange, 5th core yellow, 6th core green

Wall thickness of the PTFE core insulation = 0.51 mm as per UL 1199  
of the FEP jacket = 0.51 mm as per UL 2750

Operating voltage: 600 V  
Test voltage: 4,000 V = AWG 24, AWG 26  
5,000 V = AWG 22

Insulation resistance:  $\geq 500$  M $\Omega$  x km  
Temperature range: -100°C to 200°C  
Dielectric constant: PTFE + FEP = 2.1

Bending radius:  
once only = 5 x outer diameter  
repeated = 10 x outer diameter

**Normal stock unit: 50 and 100-m rings. Short sample (20 cm) free of charge.**

Silvered strands are coated with coloured FEP and enclosed in a white FEP jacket.

**LiTT 0.24 mm<sup>2</sup>, 2-core and 4-core**

Conductors 19 x 0.127 mm  $\varnothing$ , Cu silvered, AWG 24  
Conductor diameter 0.63 mm  $\pm$  0.05 mm  
Core insulation Coloured FEP; wall thickness approx. 0.24 mm  $\pm$  0.05 mm  
Core diameter 1.11 mm  $\pm$  0.10 mm  
Jacket White FEP,  
2-core wall thickness = 0.25 mm  $\pm$  0.1 mm  
4-core wall thickness = 0.25 mm  $\pm$  0.1 mm

**LiTT 0.56 mm<sup>2</sup>, 2-core and 4-core**

Conductors 19 x 0.20 mm  $\varnothing$ , Cu silvered, AWG 20  
Conductor diameter 1.01 mm  $\pm$  0.05 mm  
Core insulation Coloured FEP; wall thickness approx. 0.25 mm  $\pm$  0.05 mm  
Core diameter 1.51 mm  $\pm$  0.10 mm  
Jacket White FEP, wall thickness 0.25 mm  $\pm$  0.1 mm

High voltage test

Core insulation 3400 V  
Max. operating voltage 600 V  
Jacket 3400 V

Long-term temperature resistance

Core insulation -100°C to +205°C short-term up to +230°C  
Jacket material -100°C to +205°C short-term up to +230°C

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HO5VV5-F-JZ



Harmonised high voltage cables with 2 to 5 cores

Cross-section 0.75 mm<sup>2</sup> black jacketCross-section 1.0 mm<sup>2</sup> black jacketHigh voltage cables with 2 to 5 cores and additional braided shield under the outer jacketCross-section 0.75 mm<sup>2</sup> grey jacket RAL 7032Cross-section 1.0 mm<sup>2</sup> grey jacket RAL 7032Cross-section 1.5 mm<sup>2</sup> grey jacket RAL 7032

High voltage control signal cables oil-resistant, numbered, with protective conductor

Cross-section 0.75 mm<sup>2</sup> 3-12 cores grey jacket RAL 7001Cross-section 1.0 mm<sup>2</sup> 3-5 cores grey jacket RAL 7001Cross-section 1.5 mm<sup>2</sup> 10+12 cores grey jacket RAL 7001Cross-section 2.5 mm<sup>2</sup> 3-5 cores grey jacket RAL 7001

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Harmonised **high voltage cables 0.75 / 1.0 mm<sup>2</sup>**

**Technical data**

As per VDE 0281 Part 401 or 402 with 2 to 5 cores or different colours, 3 cores or more with a protective conductor

**Preferred application**

As mains cables for relocatable electrical devices in dry rooms.

**Special features**

Cables with at least 3 cores have a "green-yellow" core as the protective conductor.

**Construction data**

0.75 mm<sup>2</sup> = 24 x 0.20 mm plain and insulated with coloured PVC.  
1.00 mm<sup>2</sup> = 32 x 0.20 mm plain and insulated with coloured PVC.

**Core colours:**

2 cores = brown + blue  
3 cores = brown + blue + green/yellow  
4 cores = brown + grey + black + green/yellow  
5 cores = brown + blue + black + black + green/yellow

**Twisting and jacket**

2 to 5 cores are twisted together and surrounded by a PVC jacket.  
Jacket colour is black, and grey for some cables

**Electrical and thermal properties at 20°C**

	0.75 mm <sup>2</sup>	1.0 mm <sup>2</sup>
Conductor resistance:	max. 26 Ω / km	max. 19.5 Ω / km
Current rating:	max. 13 A	max. 16 A

Insulation resistance for all cables: greater than 20 MΩ x km

**Rated voltages**

2-3-4 core = max. 300 V  
5 core = max. 300 V between an outer conductor and the protective conductor,  
ax. 500 V between the outer conductors

**Test voltage**

2,000 V (core/core)

**Temperature range**

-5°C to + 70°C (installation and operation)  
-40°C to + 70°C (transport and storage)

**Explanation of the harmonised designations**

<b>H</b>	Cable is harmonised and certified in the EU countries
<b>03</b>	Rated voltage 300 V
<b>05</b>	Rated voltage 300/500 V
<b>V</b>	PVC core insulation
<b>V</b>	PVC jacket insulation
<b>F</b>	fine-wire plain copper strands
<b>2X</b>	2-core without protective conductor
<b>3G 4G 5G</b>	Number of cores incl. protective conductor
<b>0.75, 1.0</b>	Cross-section of one core in mm <sup>2</sup>

Harmonised **high voltage cables 0.75 mm<sup>2</sup>**

**Net prices including copper**

Weight kg / 100 m	Total Ø approx. mm	Ø of the insulated cores in mm	Sample quantities under 100 metres	in EUR per 100 m on collection upwards		Ordering information
			Price for 1 m	100 m	500 m	
5.2	5.7	2.2	1.00	66.00	50.00	<a href="#">H 03 VV-F 2X 0.75</a>
6.1	5.7	2.2	1.20	78.00	60.00	<a href="#">H 03 VV-F 3G 0.75</a>
8.4	8.2	2.2	0.65	43.00	33.00	<a href="#">H 05 VV-F 5G 0.75*</a>

Harmonised **high voltage cables 1.0 mm<sup>2</sup>**

8.1	7.3	2.6	1.30	86.00	—	<a href="#">H 05 VV-F 3 G 1.0*</a>
11.1	8.9	2.6	0.85	57.00	43.00	<a href="#">H 05 VV-F 5 G 1.0*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

Jacket  
black



\*Items to be sold off

Shielded **high voltage cables 0.75 / 1.0 / 1.5 mm<sup>2</sup>**

Technical data

Produced in the same way as the harmonised high voltage cables (see pages 134 + 135).  
The cable is additionally wrapped in overlapping transparent polyester foil and shielded under the outer jacket (light grey RAL 7032) with tinned braided copper wires (24 x 7 x 0.15).

**Preferred application**

As connection and control signal cables for relocatable devices in toolmaking machines, electronic systems and control and regulation systems.

**Special feature**

Protected by the braided shield from external interference.

**Construction data**

0.75 mm<sup>2</sup> = 24 x 0.20 mm plain and insulated with coloured PVC.  
1.00 mm<sup>2</sup> = 32 x 0.20 mm plain and insulated with coloured PVC.  
1.50 mm<sup>2</sup> = 30 x 0.25 mm plain and insulated with coloured PVC.

**Core colours:**

2 cores = brown + blue  
3 cores = brown + blue + green/yellow  
4 cores = brown + grey + black + green/yellow  
5 cores = brown + blue + grey + black + green/yellow

**Twisting, shield and jacket**

2 to 5 cores are twisted together, wrapped in overlapping transparent polyester foil and shielded over the foil with braided, tinned copper wire. The outer jacket is of PVC, light grey as per RAL 7032.

**Electrical and thermal properties at 20°C**

	0.75 mm <sup>2</sup>	1.0 mm <sup>2</sup>	1.5 mm <sup>2</sup>
Conductor resistance:	max. 26 Ω / km	max. 19.5 Ω / km	max. 13.5 Ω / km
Current rating:	max. 10 A	max. 11.5 A	max. 16 A

Insulation resistance for all cables: greater than 20 MΩ x km

**Capacitance in pF per metre at 1 kHz**

a) Core/core, shield earthed (other cores free)	<b>0.75 mm<sup>2</sup>:</b> 45 pF	<b>1.0 mm<sup>2</sup>:</b> 50 pF	<b>1.5 mm<sup>2</sup>:</b> 55 pF
b) Between one core and the remaining cores, shield earthed	<b>0.75 mm<sup>2</sup>:</b> 120 pF	<b>1.0 mm<sup>2</sup>:</b> 130 pF	<b>1.5 mm<sup>2</sup>:</b> 130 pF
b) Between one core and the remaining cores + shield	<b>0.75 mm<sup>2</sup>:</b> 200 pF	<b>1.0 mm<sup>2</sup>:</b> 200 pF	<b>1.5 mm<sup>2</sup>:</b> 210 pF

<b>Inductance</b>	at 1 kHz approx. 0.2 mH/km
<b>Rated voltage</b>	2-4 core = max. 300 V, 5 core = max. 300 V between an outer conductor and the protective conductor
<b>Test voltage</b>	2,000 V (core/core), 1,500 V (core/shield)
<b>Temperature range</b>	-10°C to + 80°C (installation and operation) -30°C to + 80°C (transport and storage)

**Explanation of the designations**

<b>N</b>	Cable is standardised
<b>(N)</b>	Not standardised but produced according to the requirements of the standardised cable
<b>Y</b>	PVC insulated cores
<b>L</b>	Light version / <b>M</b> Medium version
<b>H</b>	For relocatable installation
<b>C</b>	Braided, tinned full shield
<b>Y</b>	PVC jacket

Shielded **high voltage cables 0.75 mm<sup>2</sup>**

Net prices including copper

Weight kg / 100 m	Total Ø approx. mm	Ø of the insulated cores in mm	Sample quantities under 100 metres	in EUR per 100 m on collection upwards		Ordering information
			Price for 1 m	100 m	500 m	
7.4	6.7	2.2	1.55	—	—	<a href="#">(N)YLHCY-J 3 x 0.75*</a>
9.3	7.4	2.2	1.75	118.00	89.00	<a href="#">(N)YLHCY-J 4 x 0.75*</a>

Shielded **high voltage cables 1.0 mm<sup>2</sup>**

8.9	7.5	2.6	1.20	82.00	62.00	<a href="#">(N)YMHCY-O 2 x 1.0*</a>
9.6	7.8	2.6	3.90	260.00	194.00	<a href="#">(N)YMHCY-J 3 x 1.0</a>

Shielded **high voltage cables 1.5 mm<sup>2</sup>**

11.2	9.0	2.8	2.05	138.00	—	<a href="#">(N)YMHCY-J 3 x 1.5*</a>
14.1	10.0	2.8	5.20	346.00	260.00	<a href="#">(N)YMHCY-J 4 x 1.5</a>
17.4	11.4	2.8	2.80	185.00	—	<a href="#">(N)YMHCY-J 5 x 1.5*</a>

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

\*Items to be sold off

Jacket  
grey RAL 7032



## Technical data

## Oil-resistant, numbered, high voltage cables with protective conductor

Especially flexible control signal cables  
Type H05VV5-F (successor to NYSLYÖ)  
Oil-resistant PVC jacket YM5 as per VDE 0207 Part 5  
Standard or based on VDE 0207, 0281 Part 13,  
0293, 0295, 0472, 0473, EN 60811

## Preferred application

In dry **and wet rooms** as permanently installed or movable control signal or power cables, in mechanical engineering, toolmaking construction and elevator construction, in heating and air conditioning systems, in refrigerators, office machines, assembly lines and production lines.

## Cable structure

Black cores, marked with white numerals,  
protective conductor longitudinally marked with green-yellow stripes in the outer layer, grey jacket as per RAL 7001.

## Electrical and physical properties

**Temperature range** -5°C to +70°C moving  
-30°C to +70°C static

H05VV5-F	0.75 mm <sup>2</sup>	1.0 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Max. operating voltage	500 V	500 V	500 V	500 V
Test voltage core/core	3,000 V	3,000 V	3,000 V	3,000 V
Max. current (25°C ambient temp.)	13 A	16 A	20 A	27 A
Core insulation wall thickness in mm	0.6	0.6	0.7	0.8
Core ø in mm	2.4	2.6	3.0	3.8
Conductor resistance max. Ω / km (20°C)	26	19.5	13.3	8
Insulation resistance M Ω x km (20°C)	20	20	20	20
Bending radius (20°C)	10 x Ø	10 x Ø	10 x Ø	10 x Ø

Core structure Flexible copper strands	100 m weighs approx. ... kg	
	Total Ø ..... mm ± 5%	
24 x 0.20 plain =	6.5	6.8
	11.0	8.3
<b>0.75 mm<sup>2</sup></b>	20.6	12.2
32 x 0.20 plain =	8.2	7.2
	10.5	7.9
<b>1.0 mm<sup>2</sup></b>	11.5	9.1
30 x 0.25 plain =	29.5	14.6
	32.1	15.1
<b>1.5 mm<sup>2</sup></b>		
50 x 0.25 plain =	15.5	10.2
	20.0	11.4
<b>2.5 mm<sup>2</sup></b>	25.5	12.5

## Net prices including copper

Usually available ex-stock (number of cores always including protective conductor)	Sample quantities under 100 metres  Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
		100 m	500 m	
3-core 5-core 12-core	0.60 0.95 2.10	41.00 66.00 140.00	— 50.00 —	<a href="#">H05VV5-F-JZ 3 x 0.75*</a> <a href="#">H05VV5-F-JZ 5 x 0.75*</a> <a href="#">H05VV5-F-JZ 12 x 0.75*</a>
3-core 4-core 5-core	0.65 0.85 1.10	46.00 58.00 74.00	35.00 44.00 56.00	<a href="#">H05VV5-F-JZ 3 x 1.0*</a> <a href="#">H05VV5-F-JZ 4 x 1.0*</a> <a href="#">H05VV5-F-JZ 5 x 1.0*</a>
10-core 12-core	2.95 3.05	198.00 —	— —	<a href="#">H05VV5-F-JZ 10 x 1.5*</a> <a href="#">H05VV5-F-JZ 12 x 1.5*</a>
3-core 4-core 5-core	1.35 1.70 2.00	90.00 116.00 136.00	— — 102.00	<a href="#">H05VV5-F-JZ 3 x 2.5*</a> <a href="#">H05VV5-F-JZ 4 x 2.5*</a> <a href="#">H05VV5-F-JZ 5 x 2.5*</a>

\*Items to be sold off

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## NF

Audio frequency

Amplifier

Microphone

Stereo

Diodes

Radar

Telecommunications



- NF 1** Shielded PE insulated cable, especially for microphones, recording heads, dictation devices
- NF 4** Device connection cables and control signal cables with full shielding (sym. microphone connection)
- NF 5** Individually shielded, low-capacitance diode cables (flat splittable cables)
- NF 6** Individually shielded, low-capacitance microphone cables for stereo audio applications
- NF 7** Device connection cables and control signal cables with full shielding
- NF 8** Shielded PE connection cables (photography flash cables)
- NF 11** Device connection cables and control signal cables with full shielding (suitable for mini-couplings)
- NF 11b** Hook-up wire with twisted shielding for telecommunications and data processing devices
- NF 12** Device connection cables and control signal cables with full shielding
- NF 13** Device connection cables and control signal cables with full shielding, especially flexible
- NF 14** Shielded microphone and amplifier cables, especially flexible
- NF 16** Device connection cables and control signal cables with full shielding
- NF 17** Device connection cables and control signal cables with full shielding, especially flexible

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## Technical data

Normal stock unit	100-m ring	Conductor resistance in $\Omega$ /km at 20°C (specified for 1-core cables, slightly higher for multi-core cables)	
Temperature range	-20°C to + 80°C.	0.08 mm <sup>2</sup> = 236 $\Omega$	0.50 mm <sup>2</sup> = 40 $\Omega$
Test voltage	approx. 2.5 times the operating voltage	0.11 mm <sup>2</sup> = 180 $\Omega$	0.75 mm <sup>2</sup> = 26 $\Omega$
Insulation resistance	for PVC-insulated cores $\geq 20 \text{ M}\Omega \times \text{km}$ for PE-insulated cores $\geq 1,000 \text{ M}\Omega \times \text{km}$	0.14 mm <sup>2</sup> = 135 $\Omega$	

**NF 1** Shielded, PE-insulated cable, especially for microphones, recording heads, dictation devices

**Conductors:** plain Cu strands 10 x 0.10 mm = 0.08 mm<sup>2</sup>, insulated with transparent PE to 1.6 mm  $\varnothing$ .

**Cable structure:** the PE core is shielded by twisted plain copper wires.

$\square$  of the shield is 0.40 mm<sup>2</sup>, coverage  $\geq 90\%$ . The final layer is formed by the silver-grey PVC jacket.

**Capacitance:** core/shield approx. 80 pF/m.

**Operating voltage:** max. 350 V~

**NF 4** Device connection cables and control signal cables with full shielding (sym. microphone connection)

**Conductors:** plain Cu strands 10 x 0.10 mm = 0.08 mm<sup>2</sup>, insulated with PVC to 1.0 mm  $\varnothing$  (colours white, brown).

**Cable structure:** 2 cores are twisted to a pair; shielded by braided, plain copper wires.

$\square$  of the shield is 0.65 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the silver-grey PVC jacket.

**Capacitance:** core/shield, shield earthed. 100 pF/m.

**Operating voltage:** max. 250 V~

**NF 5** Individually shielded, low-capacitance diode cables (flat splittable cable)

**Conductors:** plain Cu strands 10 x 0.10 mm = 0.08 mm<sup>2</sup>, insulated with PE to 1.6 mm  $\varnothing$  (colours red, yellow), shielded by twisted plain Cu wire.

**Cable structure:** the two individually shielded cores run parallel and are covered with a silver-grey PVC jacket in a manner allowing easy separation of the cores.

$\square$  of the shield is 0.32 mm<sup>2</sup>, coverage  $\geq 90\%$ .

**Capacitance:** core/shield approx. 80 pF/m.

**Operating voltage:** max. 350 V~

**NF 6** Individually shielded, low-capacitance microphone cable for stereo audio applications

**Conductors:** plain Cu strands 10 x 0.10 mm = 0.08 mm<sup>2</sup>, insulated with PE to 1.3 mm  $\varnothing$  (colours wh, ye, br, gn), shielded by twisted plain Cu wire.

**Cable structure:** 4 individually shielded cores are twisted to a cable and covered with a grey RAL 7001 PVC jacket.

$\square$  of the shield is 0.3 mm<sup>2</sup>, coverage  $\geq 90\%$ .

**Capacitance:** core/shield approx. 90 pF/m.

**Operating voltage:** max. 250 V~

## Structure of the cables

## Net price including copper

Core insulation / jacket insulation	Number of cores	Cross-section of one core	Total $\varnothing$ approx.	100 m weights approx.	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
						100 m	500 m	3000 m	
PE/PVC	1 x 0.08 mm <sup>2</sup>		2.4 mm	0.9 kg	0.80	56.00	42.00	28.00	<a href="#">NF 1</a>
PVC/PVC	2 x 0.08 mm <sup>2</sup>		3.3 mm	1.6 kg	1.30	88.00	66.00	44.00	<a href="#">NF 4</a>
PE/PVC	2 x 0.08 mm <sup>2</sup>		5.8 mm x 2.3 mm	2.3 kg	0.55	35.00	27.00	18.00	<a href="#">NF 5*</a>
PE/PVC	4 x 0.08 mm <sup>2</sup>		5.2 mm	3.7 kg	2.30	156.00	117.00	78.00	<a href="#">NF 6</a>

\*Item to be sold off



## Technical data

Normal stock unit	100-m ring	Conductor resistance in $\Omega/\text{km}$ at 20°C (specified for 1-core cables, slightly higher for multi-core cables)
Temperature range	-20°C to + 80°C.	
Test voltage	approx. 2.5 times the operating voltage	0.08 mm <sup>2</sup> = 236 $\Omega$ 0.50 mm <sup>2</sup> = 37 $\Omega$
Insulation resistance	for PVC-insulated cores $\geq 20 \text{ M}\Omega \times \text{km}$ for PE-insulated cores $\geq 1,000 \text{ M}\Omega \times \text{km}$	0.11 mm <sup>2</sup> = 180 $\Omega$ 0.75 mm <sup>2</sup> = 25 $\Omega$ 0.14 mm <sup>2</sup> = 131 $\Omega$

## NF 7

Device connection cables and control signal cables with full shielding  
Conductors: plain Cu strands 14 x 0.10 mm = 0.11 mm<sup>2</sup>, insulated with PVC to 1.05 mm  $\phi$  (colours wh, bn, gn).  
Cable structure: 3 cores are twisted to a cable; shielded by twisted, plain copper wires.  
 □□ of the shield is 0.5 mm<sup>2</sup>, coverage  $\geq 90\%$ . The final layer is formed by the silver-grey PVC jacket.  
Capacitance: core/shield approx. 150 pF/m.  
Operating voltage: max. 250 V~.

## NF 8

Shielded PE connection cables (photography flash cables)  
Conductors: plain Cu strands 18 x 0.10 mm = 0.14 mm<sup>2</sup>, insulated with transparent PE to 1.1 mm  $\phi$ .  
Cable structure: the PE core is shielded by twisted plain copper wires.  
 □□ of the shield is 0.30 mm<sup>2</sup>, coverage  $\geq 90\%$ . The final layer is formed by the black PVC jacket.  
Capacitance: core/shield approx. 145 pF/m.  
Operating voltage: max. 250 V~.





## NF 11

Device connection and control signal cables with full shielding (suitable for mini-couplings)  
Conductors: plain Cu strands 18 x 0.10 mm = 0.14 mm<sup>2</sup>, insulated with PVC to 1.1 mm  $\phi$  (colours wh, bn, gn, ye, gy).  
Cable structure: 5 cores are twisted to a cable; shielded by braided, plain copper wires.  
 □□ of the shield is 0.9 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the silver-grey PVC jacket.  
Capacitance: core/core + shield approx. 180 pF/m.    Operating voltage: max. 250 V~.

## NF11b

Hook-up wire with twisted shielding for telecommunications and data processing devices  
Conductors: tinned Cu strands 16 x 0.20 mm = 0.5 mm<sup>2</sup>, insulated with white PVC to 1.7 mm  $\phi$ .  
Cable structure: the PVC core is shielded by twisted tinned copper wires.  
 □□ of the shield is 0.5 mm<sup>2</sup>, coverage  $\geq 90\%$ . The outer jacket is of PVC, light grey as per RAL 7032.  
Capacitance: core/shield approx. 265 pF/m.  
Operating voltage: max. 500 V~.

## Net price including copper

Core insulation / jacket insulation	Number of cores	Cross-section of one core	Total $\phi$ approx.	100 m weighs approx.	Sample quantities under 100 metres  Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
						100 m	500 m	3000 m	
PVC/PVC	3 x 0.11 mm <sup>2</sup>		3.5 mm	2.0 kg	1.30	84.00	63.00	42.00	<a href="#">NF 7</a>
									
PE/PVC	1 x 0.14 mm <sup>2</sup>		1.9 mm	0.7 kg	0.90	60.00	45.00	30.00	<a href="#">NF 8</a>
									
PVC/PVC	5 x 0.14 mm <sup>2</sup>		4.5 mm	3.0 kg	2.00	136.00	102.00	68.00	<a href="#">NF 11</a>
									
PVC/PVC	1 x 0.5 mm <sup>2</sup>		2.7 mm	1.4 kg	1.00	68.00	51.00	34.00	<a href="#">NF11b</a>
									

## Technical data

Normal stock unit:	100-m ring	Conductor resistance in $\Omega/\text{km}$ at 20°C: (specified for 1-core cables, slightly higher for multi-core cables)	
Temperature range:	-20°C to + 80°C.	0.08 mm <sup>2</sup> = 236 $\Omega$	0.50 mm <sup>2</sup> = 37 $\Omega$
Test voltage:	approx. 2.5 times the operating voltage.	0.11 mm <sup>2</sup> = 180 $\Omega$	0.75 mm <sup>2</sup> = 25 $\Omega$
Insulation resistance:	for PVC-insulated cores $\geq 20 \text{ M}\Omega \times \text{km}$	0.14 mm <sup>2</sup> = 131 $\Omega$	
	for PE-insulated cores $\geq 1,000 \text{ M}\Omega \times \text{km}$		

**NF 12** Device connection cables and control signal cables with full shielding  
**Conductors:** tinned Cu strands 27 x 0.15 mm = 0.50 mm<sup>2</sup>, insulated with PVC to 1.7 mm  $\phi$  (colours white and brown).  
**Cable structure:** 2 cores are twisted to a pair; shielded by braided, tinned copper wires.  
 □ of the shield is 1.1 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the silver-grey, weatherproof PVC jacket.  
**Capacitance:** core/core, shield earthed approx. 140 pF/m.  
**Operating voltage:** max. 250 V~.






**NF 13** Device connection cables and control signal cables with full shielding, especially flexible  
**Conductors:** tinned Cu strands 64 x 0.10 mm = 0.50 mm<sup>2</sup>, insulated with PVC to 1.7 mm  $\phi$  (colours white and brown).  
**Cable structure:** 2 cores are twisted to a pair; shielded by braided, tinned copper wires.  
 □ of the shield is 1.1 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the black PVC jacket.  
**Capacitance:** core/core, shield earthed approx. 140 pF/m.  
**Operating voltage:** max. 250 V~, cold wrapping (-40°C) and weatherproof

**NF 14** Shielded microphone and amplifier cables, especially flexible  
**Conductors:** tinned Cu strands 64 x 0.10 mm = 0.50 mm<sup>2</sup>, insulated with PVC to 1.7 mm  $\phi$  (colours wh, ye, bn, gn)  
**Cable structure:** 4 cores are twisted to a cable; shielded by braided, tinned copper wires  
 □ of the shield is 1.5 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the black PVC jacket.  
**Capacitance:** core/core, diagonal, shield with remaining cores earthed approx. 200 pF/m  
**Operating voltage:** max. 250 V~, cold wrapping (-40°C) and weatherproof

**NF 16** Device connection cables and control signal cables with full shielding  
**Conductors:** tinned Cu strands 42 x 0.15 mm = 0.75 mm<sup>2</sup>, insulated with PVC to 1.9 mm  $\phi$  (colours white and brown).  
**Cable structure:** 2 cores are twisted to a pair; shielded by braided, tinned copper wires.  
 □ of the shield is 1.1 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the silver-grey, weatherproof PVC jacket.  
**Capacitance:** core/core, shield earthed approx. 160 pF/m.  
**Operating voltage:** max. 250 V~.

**NF 17** Device connection cables and control signal cables with full shielding, especially flexible  
**Conductors:** tinned Cu strands 96 x 0.10 mm = 0.75 mm<sup>2</sup>, insulated with PVC to 1.9 mm  $\phi$ . (colours white and brown).  
**Cable structure:** 2 cores are twisted to a pair; shielded by braided, tinned copper wires.  
 □ of the shield is 1.1 mm<sup>2</sup>, coverage  $\geq 80\%$ . The final layer is formed by the black PVC jacket.  
**Capacitance:** core/core, shield earthed approx. 160 pF/m.  
**Operating voltage:** max. 250 V~, cold wrapping (-40°C) and weatherproof

## Net prices including copper

Core insulation / jacket insulation	Number of cores	Cross-section of one core	Total $\phi$ approx.	100 m weighs approx.	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
						100 m	500 m	3000 m	
PVC/PVC	2 x 0.5 mm <sup>2</sup>	4.9 mm	4.9 mm	3.3 kg	2.10	140.00	105.00	70.00	<a href="#">NF 12</a>
									
PVC/PVC	2 x 0.5 mm <sup>2</sup>	4.9 mm	4.9 mm	3.3 kg	2.30	152.00	114.00	76.00	<a href="#">NF 13</a>
									
PVC/PVC	4 x 0.5 mm <sup>2</sup>	6.0 mm	6.0 mm	5.8 kg	3.30	220.00	165.00	110.00	<a href="#">NF14</a>
									
PVC/PVC	2 x 0.75 mm <sup>2</sup>	5.5 mm	5.5 mm	4.2 kg	2.50	168.00	126.00	84.00	<a href="#">NF16</a>
									
PVC/PVC	2 x 0.75 mm <sup>2</sup>	5.5 mm	5.5 mm	4.2 kg	1.20	82.00	—	—	<a href="#">NF17*</a>
									

\*Item to be sold off

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## Coaxial high-frequency cable - 40...90°C

Type	Characteristic impedance	Insulation	
		Inner	Outer
RG - 58 C/U	50 Ω	PE	PVC
RG - 58 C/U LSZH	50 Ω	PE	LSZH jacket
RG - 174 A/U	50 Ω	PE	PVC
RG - 214 /U	50 Ω	PE	PVC

AL 0.8 / 3.2 L	60 Ω	PE	PVC
RG - 59 B/U	75 Ω	PE	PVC

RG - 62 A/U	93 Ω	PE	PVC
RG - 22 B/U	95 Ω	PE	PVC

## Heat-resistant, coaxial high-frequency cable -180...200°C

RG - 400 / U	50 Ω	Teflon-PTFE	Teflon-FEP brown
RG - 178 B/U	50 Ω	Teflon-PTFE	Teflon-FEP brown
RG - 196 A/U	50 Ω	Teflon-PTFE	Teflon-PTFE (foil white)
RG - 316 / U	50 Ω	Teflon-PTFE	Teflon-FEP brown
RG - 179 B/U	75 Ω	Teflon-PTFE	Teflon-FEP brown
RG - 187 A/U	75 Ω	Teflon-PTFE	Teflon-PTFE (foil) white
RG - 180 B/U	95 Ω	Teflon-PTFE	Teflon-FEP brown
RG - 195 A/U	95 Ω	Teflon-PTFE	Teflon-PTFE (foil) white

ECR	50 Ω	Teflon-PTFE	Teflon-FEP red
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PE-KOAX  
50 Ω



PE-KOAX  
60 + 75 Ω



PE-KOAX  
93 + 95 Ω



TEFLON  
KOAX



ECR

Flexible, temperature-resistant coaxial cables 50 Ω  
100% shielding through immersion tinning, also without jacket



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Cable type and dimensions based on MIL - C - 17F

Characteristic impedance ± 4%

\* Items to be sold off

**RG - 58 C/U** 50 Ω

Inner conductors: tinned Cu strands 19 x 0.18 = 0.9 mm Ø  
 + PE insulation = 2.95 mm Ø  
 + outer conductor: tinned Cu braid = 3.5 mm Ø  
 + black PVC jacket, cold resistant = 5.0 mm Ø



**RG - 58 C/U LSZH** 50 Ω

Inner conductors: tinned Cu strands 19 x 0.18 = 0.9 mm Ø  
 + PE insulation = 2.95 mm Ø  
 + outer conductor: tinned copper braid = 3.5 mm Ø  
 92% visual coverage  
 + grey LSZH jacket = 5.0 mm Ø



Halogen-free

**RG - 174 A/U** 50 Ω

Inner conductor: plain copper-steel strands 7 x 0.16 = 0.5 mm Ø  
 + PE insulation = 1.5 mm Ø  
 + outer conductor: tinned copper braid = 2.0 mm Ø  
 + black PVC jacket, cold resistant = 2.8 mm Ø



**RG - 214 /U** 50 Ω

Inner conductors: silver-coated Cu strands 7 x 0.76 = 2.3 mm Ø  
 + PE insulation = 7.3 mm Ø  
 + outer conductor: double, silver-coated copper braid = 7.6 mm Ø  
 + black PVC jacket, cold resistant = 10.8 mm Ø



Bending radius: permanently installed = 5 x Ø , repeated bending = 20 x Ø . Relative expansion speed Vr 66%.

Technical data							Net price including copper				Ordering information
Attenuation (dB / 100 m)		HF peak voltage max. in kV	Capacitance C/i pF/m	Total Ø approx. mm	100 m weighs approx. kg	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards				
at 100 MHz	at 800 MHz						100 m	500 m	3000 m		
17	51	1.9	101	5	3.6	1.90	124.00	93.00	62.00	<a href="#">RG - 58 C/U</a>	
	at 860 MHz										
	15.1	-	98 ± 2	5	3.6	0.60	42.00	32.00	—	<a href="#">RG - 58 C/U* LSZH</a>	
29	84	1.5	101	2.8	1.2	1.90	124.00	93.00	62.00	<a href="#">RG - 174 A/U</a>	
7	23	5	101	10.8	17.9	4.70	—	—	—	<a href="#">RG - 214 /U*</a>	

Normal stock unit: 100-m rings and production lengths on drums, short samples (20 cm) free of charge.

Cable type and dimensions based on MIL - C - 17F

Characteristic impedance ± 4%

**AL - 0.8/3.2 L**      **60 Ω**

- Inner conductors: plain Cu strands 7 x 0.27 = 0.8 mm Ø
- + PE insulation = 3.2 mm Ø
- + outer conductor: tinned Cu braid = 3.9 mm Ø
- + white PVC jacket = 4.9 mm Ø



**RG - 59 B/U**      **75 Ω**

- Inner conductors: copper-steel wire = 0.6 mm Ø
- + PE insulation = 3.7 mm Ø
- + outer conductor: plain Cu braid = 4.5 mm Ø
- + black PVC jacket, cold resistant = 6.15 mm Ø



Bending radius: permanently installed = 5 x Ø , repeated bending = 20 x Ø . Relative expansion speed Vr 66%.

Technical data							Net price including copper				Ordering information
Attenuation (dB / 100 m)		HF peak voltage max. in kV	Capacitance C/i pF/m	Total Ø approx. mm	100 m weighs approx. kg	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards				
at 100 MHz	at 800 MHz						100 m	500 m	3000 m		
14.6	44	2	84	4.9	3.4	0.48	32.00	24.00	16.00	<a href="#">AL 0.8/3.2 L*</a>	
11.5	35	2.3	68	6.15	5.0	1.00	68.00	51.00	—	<a href="#">RG - 59 B/U*</a>	

**Normal stock unit: 100-m rings and production lengths on drums, short samples (20 cm) free of charge.**

\*Items to be sold off

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Cable type and dimensions based on MIL - C - 17F

Characteristic impedance ± 4%

**RG - 62 A/U 93 Ω**

Inner conductors: copper-steel wire  
+ PE hollow insulation  
+ outer conductor: plain Cu braid  
+ black PVC jacket, cold resistant

= 0.65 mm Ø  
= 3.7 mm Ø  
= 4.4 mm Ø  
= 6.15 mm Ø



**RG - 22 B/U 95 Ω**

Inner conductors: 2 x plain Cu strands 7 x 0.40  
+ PE insulation  
+ PE inner jacket  
+ 1st outer conductor: tinned Cu braid  
+ 2nd outer conductor: tinned Cu braid  
+ black PVC jacket, cold resistant

= 1.2 mm Ø  
= 2.3 mm Ø  
= 7.3 mm Ø  
= 8.0 mm Ø  
= 8.1 mm Ø  
= 10.7 mm Ø



Bending radius: permanently installed = 5 x Ø , repeated bending = 20 x Ø .  
Relative expansion speed Vr 66%.

Technical data

Net price including copper

Attenuation (dB / 100 m)		HF peak voltage max. in kV	Capacitance Ci pF/m	Total Ø approx. mm	100 m weighs approx. kg	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
at 100 MHz	at 800 MHz						100 m	500 m	
9	30	0.75	42	6.15	5.2	0.60	43.00	33.00	<a href="#">RG - 62 A/U*</a>
12	35	1.0	52	10.7	18	2.55	172.00	129.00	<a href="#">RG - 22 B/U*</a>

Normal stock unit: 100-m rings and production lengths on drums, short samples (20 cm) free of charge.

\* Items to be sold off

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0**

**Fax: +49 (0)30 / 79 01 86 - 77**

Lepsiusstraße 89  
12165 Berlin

Central store  
Berlin - Steglitz



**Structure of the cables**

Inner conductor	Ø over the core insulation made of PTFE	Shield	Jacket material and colour	Characteristic impedance in Ω, ± 4%	Max. HF peak voltage in kV ss
Copper-steel strand, silver-coated 19 x 0.20 mm	3 mm	2 braided shields Silver-coated Cu	FEP brown	50	1.9
Copper-steel strand, silver-coated 7 x 0.10 mm	0.9 mm	1 braided shield Silver-coated Cu	FEP brown	50	1.5
Copper-steel strand, silver-coated 7 x 0.10 mm	0.9 mm	1 braided shield Silver-coated Cu	PTFE foil, white	50	1.5
Copper-steel strand, silver-coated 7 x 0.10 mm	1.5 mm	1 braided shield Silver-coated Cu	FEP brown	50	1.5
Copper-steel strand, silver-coated 7 x 0.10 mm	1.5 mm	1 braided shield Silver-coated Cu	FEP brown	75	1.5
Copper-steel strand, silver-coated 7 x 0.10 mm	1.5 mm	1 braided shield Silver-coated Cu	PTFE foil, white	75	1.5
Copper-steel strand, silver-coated 7 x 0.10 mm	2.6 mm	1 braided shield Silver-coated Cu	FEP brown	95	1.5
Copper-steel strand, silver-coated 7 x 0.10 mm	2.6 mm	1 braided shield Silver-coated Cu	PTFE foil, white	95	1.5

**Copper-steel:** Conductivity: at least 40%    Tensile strength: 3,860 kg/cm<sup>2</sup>    Expansion: at least 8%

**Net price including copper and silver**

Attenuation approx. dB/100 m at 200 MHz	Capacitance approx. pF/m	Outer Ø approx. mm	100 m weighs approx.	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards		Ordering information
					100 m	500 m	
20	95	4.95	6.3 kg	11.40	760.00	570.00	<a href="#">RG-400 / U</a>
62	95	1.85	0.8 kg	2.80	186.00	140.00	<a href="#">RG-178 B / U</a>
62	93	1.9	0.9 kg	3.30	220.00	165.00	<a href="#">RG-196 A / U</a>
40	95	2.5	1.5 kg	3.30	220.00	165.00	<a href="#">RG-316 / U</a>
41	64	2.55	1.4 kg	3.30	220.00	165.00	<a href="#">RG-179 B / U</a>
41	64	2.7	1.9 kg	4.50	300.00	225.00	<a href="#">RG-187 A / U</a>
33	49	3.7	2.8 kg	5.80	390.00	292.00	<a href="#">RG-180 B / U</a>
33	49	3.8	3.2 kg	6.90	460.00	345.00	<a href="#">RG-195 A / U</a>

Normal stock unit: Rings of various lengths, short samples (20 cm) free of charge.

**Technical data**

Coaxial, highly-shielded (100% shielding through immersion tinning)  
High-frequency cables with compact tinned braid

**Special features**

- Good flexibility
- Easy to use
- Easy, low-cost connection
- Space-saving due to tight bending radius
- Compatible with the standardised semi-rigid plugs
- Electrical properties remain unchanged after installation
- Excellent electrical properties (low attenuation, high shield attenuation)

**Applications:**

- Components of high-frequency devices
- Measurement system applications up to 2 GHz
- Signal transfer under high ambient temperatures

**Technical data:**

Characteristic impedance (IEC 61196-1 11.8.1):  $50 \Omega \pm 2$

Insulation resistance (IEC 61196-1 11.2):  $10 \text{ G } \Omega \cdot \text{km}$

Shield attenuation (IEC 61196-1 12.6):  $\geq 80 \text{ dB @ } 10 \text{ MHz} - 2,000 \text{ MHz}$   
(multiple bending reduces the shield attenuation)

Reflection loss min. (IEC 61196-1 11.12): 25 dB  
with isolated peaks to 20 dB @ 50 MHz - 2,000 MHz

**Temperature range:**

Operation (permanently installed) and storage:  $-40^\circ\text{C}$  to  $+130^\circ\text{C}$   
Installation:  $-20^\circ\text{C}$  to  $+70^\circ\text{C}$

**Mechanical properties**

Bending radius: once only  $\geq 3 \times D$   
multiple  $\geq 60 \times D$

**Net price including copper and silver**

Inner conductor Tolerance $\pm 0.03 \text{ mm}$	Dielectric PTFE 5Y as per VDE 0207, Part 5 Tolerance $\pm 0.01 \text{ mm}$	Diameter over the shield	Dielectric voltage resistance 50 Hz, 1 min (kVeff) IEC 61196-1 11.5	100 m weighs approx.	in EUR per 100 m on collection upwards		Ordering information
					1 m	100 m	
Copper-steel wire, silver-coated 0.51 mm	1.6 mm	2.1 mm	2.0 kV	1.7 kg	450.00	300.00	ECR 86-50*
Cu wire, silver-coated 0.94 mm	3.0 mm	3.5 mm	4.0 kV	3.3 kg	510.00	340.00	ECR 141-50*

**Normal stock unit: Rings or reels of various lengths, short samples (20 cm) free of charge.**

\* Items to be sold off

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**Ribbon cables AWG 28**

With cores in different colours, IEC colour sequence.  
In lengths of 100 m and 100 ft (30.48 m) on flat reels, UL certified and labelled

Grey as per RAL 7032 with red edge core in lengths of 100 m and 100 ft (30.48 m) on flat reels, UL certified and labelled

Halogen-free, grey with coloured edge core



**Measurement and trailing cables** with 8 individually shielded core pairs, 0.14 mm<sup>2</sup>, cores can be separated



**Ribbon cables**, tinned, colour sequence as per VDE 0812

For soldered connections, 0.14 mm<sup>2</sup> cores, up to 24 cores in different colours  
For soldered connections, 0.25 mm<sup>2</sup> cores, up to 16 cores in different colours  
For soldered connections, 0.50 mm<sup>2</sup> cores, up to 16 cores in different colours  
For soldered connections, 0.75 mm<sup>2</sup> cores, 8 and 10 cores in different colours  
Cores can be separated, flat, welded to a ribbon

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Connection system

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Soldered connections

166 + 167

**Technical data**

**Net price including copper**

Tinned copper strands  
7 x 0.127 mm = 0.09 mm<sup>2</sup>  
are clad in multicoloured PVC (DIN 0207)  
Core Ø 0.93 mm ± 0.08 mm.

Grid 1.27 ± 0.06 mm  
Ribbon thickness 1.05 ± 0.08 mm  
Ribbon width number of cores  
x 1.27 mm

Colour sequence as per IEC =  
brown, red, orange, yellow, green,  
blue, purple, grey, white, black.  
This colour sequence repeats  
after every 10 cores.

Operating temperature -20 to 105°C  
Cold resistance -30°C  
Operating voltage max. 300 V  
Test voltage 2,000 V  
Conductor resistance 240 Ω/km  
Insulation resistance ≥20 MΩxkm

Capacitance at 1 kHz:  
symmetric/asymmetric 38 / 64 pF/m

Relative expansion speed:  
symmetric/asymmetric 75 / 73%

Characteristic impedance:  
symmetric/asymmetric 160 / 103 Ω



Label (USA Etikett)

Weight of 100 m approx...kg	Number of cores	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
			Price for 1 m	91 m	488 m	
1.9	10	1.70	112.00	84.00	56.00	<a href="#">10 x FBL - CC</a>
2.6	14	2.30	156.00	117.00	78.00	<a href="#">14 x FBL - CC</a>
3.0	16	2.60	176.00	132.00	88.00	<a href="#">16 x FBL - CC</a>
3.8	20	3.30	220.00	165.00	110.00	<a href="#">20 x FBL - CC</a>
4.9	26	4.30	288.00	216.00	144.00	<a href="#">26 x FBL - CC</a>
6.4	34	5.60	376.00	282.00	188.00	<a href="#">34 x FBL - CC</a>

**Normal stock unit: flat reels with cable lengths of 100 ft = 30.48 m**

The rings are marked with the label.  
(Cutlength are without Label)  
This label is the proof of certification in the USA.

These ribbon cables in foot lengths are UL certified as per USA Style No. 2651 and have a certification label for use on and in devices intended for export to UL certification areas.



**Technical data**

**Net price including copper**

Tinned copper strands  
7 x 0.127 mm ø = 0.09 mm<sup>2</sup>  
(AWG 28) are insulated  
with **grey PVC**, one edge core is  
marked with a red PVC jacket.

Grid 1.27 + 0.05 mm  
Ribbon thickness 0.93 ± 0.08 mm  
Ribbon width number of cores  
x 1.27 mm  
Operating temperature: -20 to 105°C  
Cold resistance -30°C  
Operating voltage max. 300 V  
Test voltage 2,000 V  
Conductor resistance 240 Ω/km  
Insulation resistance: ≥ 20 MΩxkm

Capacitance at 1 kHz:  
symmetric/asymmetric 38 / 64 pF/m

Relative expansion speed:  
symmetric/asymmetric 75 / 73%

Characteristic impedance:  
symmetric/asymmetric 160 / 103 Ω



Weight of 100 m approx...kg	Number of cores	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
			Price for 1 m	100 m	500 m	
1.6	9	1.00	64.00	48.00	32.00	<a href="#">9 x FBL 28 grey</a>
1.8	10	1.00	64.00	48.00	32.00	<a href="#">10 x FBL 28 grey</a>
2.5	14	1.30	88.00	66.00	44.00	<a href="#">14 x FBL 28 grey</a>
2.9	16	1.50	100.00	75.00	50.00	<a href="#">16 x FBL 28 grey</a>
3.6	20	1.80	124.00	93.00	62.00	<a href="#">20 x FBL 28 grey</a>
4.3	24	0.85	58.00	44.00	—	<a href="#">24 x FBL 28 grey*</a>
4.7	26	2.40	164.00	123.00	82.00	<a href="#">26 x FBL 28 grey</a>
6.1	34	3.20	212.00	159.00	106.00	<a href="#">34 x FBL 28 grey</a>
6.7	37	3.50	232.00	174.00	116.00	<a href="#">37 x FBL 28 grey</a>
9.0	50	4.70	312.00	234.00	156.00	<a href="#">50 x FBL 28 grey</a>
10.8	60	2.10	140.00	—	—	<a href="#">60 x FBL 28 grey*</a>



Label (USA Etikett)

Certified to UL Style 2651

**Normal stock units: flat reels with cable lengths of 30,5 m or 100 m**

The rings are marked with the label.  
(Cutlength are without Label)  
This label is the proof of certification in the USA.

\* Items to be sold off



**Technical data**

Tinned copper strands  
7 x 0.127 mm  $\varnothing$  = 0.09 mm<sup>2</sup> (AWG 28)  
Are a polyolefin compound  
as per VDE 0207 Part 24, grey,  
with edge marking on one side, insulated.

Shore hardness of D 51

Grid 1.27 + 0.08 mm

Ribbon thickness 0.92 ± 0.05 mm

Operating temperature

Static: -40 to +105 °C

Operating voltage max. 300 V

Test voltage 2,000 V

Conductor resistance 230  $\Omega$ /km

Insulation resistance  $\geq$  50 M $\Omega$ xkm

Capacitance (1 MHz) GSG  
52 pF/m

Impedance (1 MHz) GSG  
115  $\Omega$

Certified to  
UL 21151



Label (USA Etikett)

**Net price including copper**

Weight of 100 m approx. .kg Number of cores	Sample quantities under 100 metres	in EUR per 100 m on collection upwards				Ordering information
		Price for 1 m	100 m	500 m	3000 m	
1.8 10	1.90	128.00	96.00	64.00	10 x FBL-H-grey	
2.9 16	3.00	204.00	153.00	102.00	16 x FBL-H-grey	
3.6 20	3.80	256.00	192.00	128.00	20 x FBL-H-grey	
4.7 26	4.70	312.00	234.00	156.00	26 x FBL-H-grey	
7.2 40	7.70	512.00	384.00	256.00	40 x FBL-H-grey	

\* other numbers of cores on request.

**Normal stock unit: lengths of 100 m. Short sample (20 cm) free of charge.**

The rings are marked with the label.  
(Cutlength are without Label)  
This label is the proof of certification in the USA.

Our halogen-free ribbon cables with improved flame-retardant behaviour are especially suitable for use with insulation displacement connectors (IDC).  
The halogen-free insulation material has an oxygen index of 27.5% and has a low smoke density.  
This means that no corrosive or toxic gases are produced in the case of a fire or overheating.  
This protects humans, the environment and the device.



**Net price including copper**

Number of conductors	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards		Ordering information
		100 m	500 m	
16-core	3.75	240.00	180.00	8 X (LiYC 2 X 0.14) - Y*

**Normal stock unit: 50-m reel. Short sample (20 cm) free of charge.**

\*Item to be sold off

**Structure of each core**

7 x 0.16 mm  $\varnothing$  tinned copper strands = AWG 26. PVC insulation (yellow and black), core  $\varnothing$  1.1 mm.

2 cores are twisted to a pair and shielded by braided, tinned copper wire, coverage  $\geq$  84%.

8 shielded pairs are insulated with grey PVC and welded to each other.

**Technical data**

Conductor resistance max. 131  $\Omega$ /km. Insulation resistance  $\geq$  20 M $\Omega$ xkm. Operating voltage max. 350 V.

Test voltage 1,200 V. Test voltage core/shield 800 V.

Maximum current rating 1.5 A (ambient temperature up to 25°C). Bending radius min. 40 mm.

Capacitance (core/core, shield earthed) 135 pF/m, outer dimensions: 3.6 x 29.6 mm.

100 m weighs 18 kg.

16 cores = 8 pairs  
Cores can be separated



**Technical data**

Colour sequence	Temperature range: -10°C to +70°C (installation and operation) -20°C to +70°C (transport and storage)	Cross-section
1st core wh 2nd core bn 3rd core gn 4th core ye 5th core gy 6th core pk 7th core bu 8th core rd 9th core bk 10th core vt 11th core wh-gn 12th core wh-ye 13th core wh-bu 14th core wh-bk 15th core wh-rd 16th core wh-bn 17th core bn-gn 18th core bn-ye 19th core bn-bu 20th core bn-bk 21st core gn-ye 22nd core gn-rd 23rd core gn-bk 24th core ye-rd	<p><b>Preferred application:</b> Connection cables for electronic systems, control and regulation systems and the toy industry.</p> <p><b>Special features:</b> Up to 50% space-saving and maximum mechanical flexibility compared to conventional cable looms.</p> <p><b>Construction data:</b> Strand structure: 18 x 0.10 mm, tinned Core insulation: coloured PVC, second colour applied with abrasion-resistant longitudinal stripes. Diameter of the insulated cores = 1.1 mm. Core construction as per VDE 0812. No repetition of the core colours. Ribbon connection: the insulated cores are directly welded to each other and can be easily separated without damaging the insulation.</p> <p><b>Electrical and thermal properties at 20°C:</b> Conductor resistance max. 135 Ω/km. Operating voltage max. 350 V. Test voltage 1,200 V. Current rating max. 1.5 A (ambient temperature up to 25°C).</p>	<b>0.14 mm<sup>2</sup></b>
gn = green gy = grey	<p><b>Construction data:</b> Strand structure: 14 x 0.15 mm, tinned Outer diameter: 1.3 mm; otherwise 0.14 mm<sup>2</sup></p> <p><b>Electrical and thermal properties at 20°C:</b> Conductor resistance max. 79 Ω/km Operating voltage max. 350 V. Test voltage 1,200 V. Current rating max. 3 A (ambient temperature up to 25°C).</p>	<b>0.25 mm<sup>2</sup></b>
	<p><b>Construction data:</b> Strand structure: 16 x 0.20 mm, tinned Outer diameter: 1.8 mm; otherwise 0.14 mm<sup>2</sup></p> <p><b>Electrical and thermal properties at 20°C:</b> Conductor resistance max. 40.1 Ω/km Operating voltage max. 350 V. Test voltage 2,000 V. Current rating max. 5 A (ambient temperature up to 25°C).</p>	<b>0.50 mm<sup>2</sup></b>
	<p>Strand structure: 24 x 0.20 mm, tinned Outer diameter: 2.0 mm; otherwise 0.14 mm<sup>2</sup> or 0.5 mm<sup>2</sup> Conductor resistance max. 26 Ω/km. Current rating: max. 9 A. (ambient temperature to 25°C)</p>	<b>0.75 mm<sup>2</sup></b>

\* Items to be sold off

**Net price including copper**

100 m weighs approx. ... kg	Dimension of the ribbon approx. mm	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection upwards			Ordering information
				100 m	500 m	3000 m	
0.50	1.1 x 2.2	<b>2 cores</b>	0.75	48.00	36.00	24.00	<a href="#">2 x LiY 0.14 flat</a>
0.75	1.1 x 3.3	<b>3 cores</b>	0.95	64.00	48.00	32.00	<a href="#">3 x LiY 0.14 flat</a>
1.00	1.1 x 4.4	<b>4 cores</b>	1.10	72.00	54.00	36.00	<a href="#">4 x LiY 0.14 flat</a>
1.50	1.1 x 6.6	<b>6 cores</b>	1.50	100.00	75.00	50.00	<a href="#">6 x LiY 0.14 flat</a>
2.50	1.1 x 11.0	<b>10 cores</b>	2.20	144.00	108.00	72.00	<a href="#">10 x LiY 0.14 flat</a>
3.00	1.1 x 13.2	<b>12 cores</b>	2.90	196.00	147.00	98.00	<a href="#">12 x LiY 0.14 flat</a>
4.00	1.1 x 17.6	<b>16 cores</b>	1.30	88.00	66.00	—	<a href="#">16 x LiY 0.14 flat*</a>
6.00	1.1 x 26.4	<b>24 cores</b>	1.80	122.00	92.00	—	<a href="#">24 x LiY 0.14 flat*</a>
0.80	1.3 x 2.6	<b>2 cores</b>	0.85	56.00	42.00	28.00	<a href="#">2 x LiY 0.25 flat</a>
1.20	1.3 x 3.9	<b>3 cores</b>	1.20	80.00	60.00	40.00	<a href="#">3 x LiY 0.25 flat</a>
1.60	1.3 x 5.2	<b>4 cores</b>	1.40	92.00	69.00	46.00	<a href="#">4 x LiY 0.25 flat</a>
2.40	1.3 x 7.8	<b>6 cores</b>	1.90	128.00	96.00	64.00	<a href="#">6 x LiY 0.25 flat</a>
3.20	1.3 x 10.4	<b>8 cores</b>	2.30	152.00	114.00	76.00	<a href="#">8 x LiY 0.25 flat</a>
4.00	1.3 x 13.0	<b>10 cores</b>	2.75	184.00	138.00	92.00	<a href="#">10 x LiY 0.25 flat</a>
4.80	1.3 x 15.6	<b>12 cores</b>	3.35	224.00	168.00	112.00	<a href="#">12 x LiY 0.25 flat</a>
6.40	1.3 x 20.8	<b>16 cores</b>	4.35	288.00	216.00	144.00	<a href="#">16 x LiY 0.25 flat</a>
1.50	1.8 x 3.6	<b>2 cores</b>	1.10	72.00	54.00	36.00	<a href="#">2 x LiY 0.50 flat</a>
2.25	1.8 x 5.4	<b>3 cores</b>	1.45	96.00	72.00	48.00	<a href="#">3 x LiY 0.50 flat</a>
3.00	1.8 x 7.2	<b>4 cores</b>	1.80	120.00	90.00	60.00	<a href="#">4 x LiY 0.50 flat</a>
4.50	1.8 x 10.8	<b>6 cores</b>	2.70	180.00	135.00	90.00	<a href="#">6 x LiY 0.50 flat</a>
6.00	1.8 x 14.4	<b>8 cores</b>	3.60	244.00	183.00	122.00	<a href="#">8 x LiY 0.50 flat</a>
7.50	1.8 x 18.0	<b>10 cores</b>	4.10	272.00	204.00	136.00	<a href="#">10 x LiY 0.50 flat</a>
9.00	1.8 x 21.6	<b>12 cores</b>	2.40	—	—	—	<a href="#">12 x LiY 0.50 flat</a>
12.00	1.8 x 28.8	<b>16 cores</b>	2.90	194.00	—	—	<a href="#">16 x LiY 0.50 flat</a>
8.00	2.0 x 16.0	<b>8 cores</b>	4.60	304.00	228.00	152.00	<a href="#">8 x LiY 0.75 flat</a>
10.00	2.0 x 20.0	<b>10 cores</b>	5.80	388.00	291.00	194.00	<a href="#">10 x LiY 0.75 flat</a>

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<b>AWG - Strands PTFE - 5Y insulation 600 V</b>	Teflon <sup>®</sup> -PTFE insulated strands Type TX = silver-coated strands for 600 V -100°C to 260°C Type HX = silver-coated strands for 1000 V -100°C to 260°C Type TXn = nickel-coated strands for 600 V -100°C to 260°C	188 - 191 192 + 193			

Technical information				Weight/reel			Standard designations			
Conductor cross-section	Number of wires x Wire Ø (mm)	AWG No.	Max. conductor resistance at 20°C/km	Max. operating voltage Test voltage	Max. current rating at 50°C Ambient temperature	100 m weights approx.	500 m weights Including reel approx.	Size of standard plastic reel	Standard designation	
									according to VDE 0881	according to MIL-W-76 B
0.14 mm <sup>2</sup>	7 x 0.16	26	155 Ω	250/1,500 V	3.6 A	220 g	1.2 kg	K 125	LiY 0.14/1.0	LWP-C-26 (7) U
0.22 mm <sup>2</sup>	7 x 0.20	24	88 Ω	250/1,500 V	5.1 A	290 g	1.7 kg	K 125	LiY 0.22/1.1	LWP-C-24 (7) U
0.34 mm <sup>2</sup>	7 x 0.25	22	56 Ω	250/1,500 V	7.2 A	450 g	2.65 kg	K 160	LiY 0.34/1.3	LWP-C-22 (7) U
0.56 mm <sup>2</sup>	7 x 0.32	20	34 Ω	250/1,500 V	9.5 A	630 g	3.55 kg	K 160	LiY 0.56/1.5	LWP-C-20 (7) U
0.22 mm <sup>2</sup>	7 x 0.20	24	88 Ω	1,000/3,000 V	5.1 A	400 g	2.25 kg	K 160	LiY 0.22/1.4	MWP-C-24 (7) U
0.34 mm <sup>2</sup>	7 x 0.25	22	56 Ω	1,000/3,000 V	7.2 A	550 g	3.1 kg	K 160	LiY 0.34/1.6	MWP-C-22 (7) U
0.56 mm <sup>2</sup>	7 x 0.32	20	34 Ω	1,000/3,000 V	9.5 A	750 g	4.15 kg	K 160	LiY 0.56/1.8	MWP-C-20 (7) U
0.93 mm <sup>2</sup>	19 x 0.25	18	21 Ω	1,000/3,000 V	12.2 A	1.2 kg	6.5 kg	K 200	LiY 0.93/2.1	MWP-C-18 (19) U
1.3 mm <sup>2</sup>	19 x 0.29	16	16 Ω	1,000/3,000 V	16.8 A	1.5 kg	8.0 kg	K 200	LiY 1.3 / 2.3	MWP-C-16 (19) U
1.9 mm <sup>2</sup>	19 x 0.36	14	10 Ω	1,000/3,000 V	30 A	2.15 kg	11.5 kg	K 250	LiY 1.9 / 2.6	MWP-C-14 (19) U
3.2 mm <sup>2</sup>	19 x 0.46	12	6 Ω	1,000/3,000 V	42 A	3.26 kg	17.0 kg	K 250	LiY 3.2 / 3.1	MWP-C-12 (19) U

**Temperature range:**

Moving -20 ...80°C  
Static down to -55°C

**Mechanical properties:**

Once-only bending radius = 5 x outer Ø  
Repeated bending radius = 10 x outer Ø

**Description of the standard designations:**

a) according to VDE  
Li = tinned copper strands  
Y = PVC insulation  
0.14 = conductor cross-section in mm<sup>2</sup>  
/1.0 = outer Ø

b) international  
LWP-C = light version  
MWP-C = medium version  
26 = AWG No.  
(7)(19) = 7 or 19-wire  
U = unshielded

Major data				Net price including copper			Colours	
Cross-section / AWG No.	Ø of the insulated strands in mm	Insulation wall thickness in mm	Max. operating voltage	in EUR per 100 metres on collection (per colour) of			Ordering information (Please also specify the colour)	Usually available ex-stock Colours
				Normal stock unit: 100-m ring	Normal stock unit: 500-m reel 500 m upwards	5,000 m upwards		
0.14 mm <sup>2</sup> AWG 26	1.0 Ø	0.25	250 V	11.50	7.70	5.75	<a href="#">LWP-C-26</a>	No. Colour
0.22 mm <sup>2</sup> AWG 24	1.1 Ø	0.25	250 V	13.40	8.90	6.70	<a href="#">LWP-C-24</a>	11 black 22 white 33 grey 44 red 55 blue 60 orange 66 yellow 77 green 88 purple 99 brown
0.34 mm <sup>2</sup> AWG 22	1.3 Ø	0.25	250 V	15.60	10.40	7.80	<a href="#">LWP-C-22</a>	
0.56 mm <sup>2</sup> AWG 20	1.5 Ø	0.25	250 V	21.80	14.50	10.90	<a href="#">LWP-C-20</a>	
0.22 mm <sup>2</sup> AWG 24	1.4 Ø	0.40	1,000 V	14.50	9.70	7.25	<a href="#">MWP-C-24</a>	
0.34 mm <sup>2</sup> AWG 22	1.6 Ø	0.40	1,000 V	17.50	11.70	8.75	<a href="#">MWP-C-22</a>	
0.56 mm <sup>2</sup> AWG 20	1.8 Ø	0.40	1,000 V	23.25	15.50	11.60	<a href="#">MWP-C-20</a>	Base colour + colour ring *
0.93 mm <sup>2</sup> AWG 18	2.1 Ø	0.40	1,000 V	34.20	22.80	17.10	<a href="#">MWP-C-18</a>	20 wh + or 21 wh + bk 23 wh + gy 24 wh + rd 25 wh + bu 26 wh + ye 27 wh + gn 28 wh + vt 29 wh + bn
1.3 mm <sup>2</sup> AWG 16	2.3 Ø	0.40	1,000 V	45.90	30.60	22.95	<a href="#">MWP-C-16</a>	
1.9 mm <sup>2</sup> AWG 14	2.6 Ø	0.40	1,000 V	69.50	46.35	34.80	<a href="#">MWP-C-14</a>	67 ye + gn Protective conductors
3.2 mm <sup>2</sup> AWG 12	3.1 Ø	0.40	1,000 V	104.40	69.60	52.20	<a href="#">MWP-C-12</a>	*double colours available ex-stock for:

**For orders of 500 m or more, please specify delivery as 500-m reels or 100-m rings.**

Our quantity prices are net prices (in the Federal Republic of Germany with extra sales tax)  
**including copper, reels, packaging, delivery free of charge**  
(urgent, express and export deliveries at extra cost).

7 and 19-core copper strands are break-resistant under vibration.

The PVC insulation is acid and alkali resistant, largely oil-resistant, flame-retardant and largely heat and cold elastic. The normal AWG circular twisting of the conductors (1+6=7-wire and 1+6+12=19-wire) results in an even wall thickness of the insulation and thus higher voltage ratings at lower diameters.

The 100-m rings are packed tangle-free in boxes,  
the 500-m plasticreels or cardboard coil correspond approximately to the DIN sizes.

LWP-C-26  
MWP-C-24  
MWP-C-22  
MWP-C-20

Technical data					Weight/reel			
Conductor cross-section	Number of wires x Wire Ø (mm)	AWG No.	Max. conductor resistance at 20 °C/km	Max. operating voltage Test voltage	Max. current rating at 50 °C Ambient temperature	100 m weighs approx.	500 m weighs Including reel approx.	Size of standard plastic-/ cardboard reel
0.34 mm <sup>2</sup>	7 x 0.25	22	56 Ω	300/1,500 V	6 A	430 g	2.1 kg	K 160
0.22 mm <sup>2</sup>	7 x 0.20	24	88 Ω	600/2,000 V	4 A	360 g	1.7 kg	K 160
0.56 mm <sup>2</sup>	7 x 0.32	20	34 Ω	600/2,000 V	8 A	740 g	3.4 kg	K 160

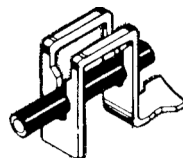
<b>Conductors:</b>	tinned copper strands
<b>Insulation:</b>	semi-rigid (≥95 Shore A) semi-rigid (SR) PVC
<b>Temperature range:</b>	-20°C ... + 90°C (constant) +120°C (24 hours) -40°C (permanently installed)

**Insulation displacement connectors (IDC)**

Insulation displacement connectors are a solder-free connection system. In this process the insulation is penetrated and clamped in the U or V shaped contact in a single step. The conductors do not need to be stripped or pre-tinned. To ensure a perfect connection, only correctly twisted strands, 7-wire or 19-wire as per VDE 0881 can be used. Normal bunched strands as per VDE 0812 are not suitable.

No PVC residue may remain between the contact and the conductor when piercing the insulation. This requires an insulation hardness of ≥95 Shore A.

Excellent properties of SR-PVC for insulation displacement connectors are the high notch toughness, the low degree of shrinkage, the high tensile strength and expansion.



Insulation displacement connectors (IDC)

Major data				Net price including copper			Colours	
Cross-section /AWG No.	Ø of the insulated strands in mm	Insulation wall thickness in mm	Max. operating voltage	in EUR per 100 metres on collection (per colour) of			Ordering information (Please also specify the colour)	Usually available ex-stock Colours
				Normal stock unit: 100-m ring	Normal stock unit: 500-m reel 500 m upwards	5,000 m upwards		
0.34 mm <sup>2</sup> AWG 22	1.05 Ø	0.15	300 V	17.00	11.40	8.50	<a href="#">MSR-22-730</a>	No. Colour
0.22 mm <sup>2</sup> AWG 24	1.15 Ø	0.25	600 V	16.85	11.20	8.40	<a href="#">TSR-24-732</a>	11 black
0.56 mm <sup>2</sup> AWG 20	1.45 Ø	0.25	600 V	22.20	14.80	11.10	<a href="#">TSR-20-728</a>	22 white 33 grey 44 red 55 blue 60 orange 66 yellow 77 green 88 purple 99 brown

**For orders of 500 m or more, please specify delivery as 500-m reels or 100-m rings.**

<b>The 100-m rings are packed tangle-free in boxes;</b>	*Description of the ordering designations: <b>M</b> = max. operating voltage = 300 V <b>T</b> = max. operating voltage = 600 V <b>SR</b> = semi-rigid insulation <b>22-24-20</b> = AWG number <b>7</b> = number of copper wires <b>30-32-28</b> = AWG number of one wire
<b>the 500-m plastic reels or cardboard coil correspond approximately to DIN size K160.</b>	

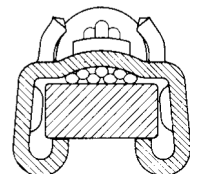


The insulation of our strands for Termi-Point connections always achieve the best possible values for:

- Notch resistance of the insulation
- Seating of the conductor in the insulation (lightly adherent)
- Tensile expansion behaviour of the insulation
- Tear resistance of the insulation

**Termi-Point® connectors**

Termi-Point connectors are also a solder-free connection system where the wires are pressed onto a pin by a sleeve without first stripping the insulation from the conductor. Only correctly twisted 7-wire strands and a PVC compound (semi-rigid PVC) specially developed for Termi-Point connectors can be used for this.





Technical data					Weight/reel			
Conductor cross-section	Number of wires x Wire Ø (mm)	AWG No.	Max. conductor resistance at 20°C / km	Max. operating voltage Test voltage	Max. current rating at 50°C Ambient temperature	100 m weighs approx.	500 m weighs Including reel approx.	Size of standard plastic reel
0.14 mm <sup>2</sup>	7 x 0.16	26	142 Ω	500/1,200 V	6.0 A	210 g	1.2 kg	K 160
0.22 mm <sup>2</sup>	7 x 0.20	24	88 Ω	900/2,500 V	8.5 A	360 g	2.0 kg	K 160
0.56 mm <sup>2</sup>	7 x 0.32	20	34 Ω	900/2,500 V	12.0 A	740 g	3.8 kg	K 160

**Temperature range:**

Static: -40°C to +90°C  
Moving: -10°C to +90°C

**Flame retardance**

According to IEC 60332.2.2; halogen-free strands have significantly better properties in the case of fire, the insulating materials contain no halogens or other substances that produce corrosive gases in the case of a fire.  
Human life and the environment are protected.

**Mechanical properties**


Bending radius: permanently installed = 4 x outer Ø  
freely movable = 6 x outer Ø

**Applications**

- In dry rooms, for wiring lights, devices and switching systems
- In buildings with high concentrations of people
- In vehicles

**Insulationmaterial:**

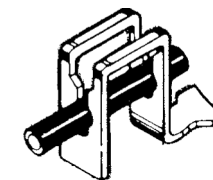
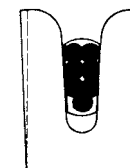
TI 6 as per DIN EN 50363-7, HJ2 as VDE 0207 T23

Major data		Net price including copper			Colours		
Cross-section / AWG No.	Ø of the insulated strands in mm	Wall thickness of the insulation in mm	in EUR per 100 metres on collection (per colour) of			Ordering information (Please also specify the colour)	Usually available ex-stock Colours
			Normal stock unit: 100-m ring	Normal stock unit: 500-m reel	500 m upwards		
0.14 mm <sup>2</sup> AWG 26	1.0	0.25	16.20	10.80	8.00	LiH AWG 26	No. Colour
0.22 mm <sup>2</sup> AWG 24	1.4	0.40	19.40	13.00	9.70	LiH AWG 24	11 black
0.56 mm <sup>2</sup> AWG 20	1.8	0.40	27.50	18.40	13.80	LiH AWG 20	22 white
For orders of 500 m or more, please specify delivery as 500-m reels or 100-m rings.							
							

**Insulation displacement connectors (IDC)**

Insulation displacement connectors are a solder-free connection system. With this process, the insulation is cut and clamped in the U or V shaped contact in a single step. The conductors do not need to be stripped or pre-tinned. To ensure a perfect connection, only correctly twisted strands, 7-wire or 19-wire as per VDE 0881 can be used. Normal bunched strands as per VDE 0812 are not suitable.

Our strands are insulated with thermoplastic elastomers (TPE) TI 6 modified (88 Shore A) according to DIN 53 505 3 Sec. 20°C.



**Structure of the AWG strands**


Conductor cross-section	Number of wires x Wire Ø in mm	Max. conductor resistance per km at 20°C	Operating voltage/ Test voltage V	Operating temperature°C	Wall thickness of the insulation, approx. mm	Ø of the insulated strands approx. mm	Weight per 100 m
0,09 mm <sup>2</sup>	7 x 0,13	239 Ω	300/2,000 V	80°C	0,26	0,90	0,16 kg
0,14 mm <sup>2</sup>	7 x 0,16	150 Ω	300/2,000 V	80°C	0,27	1,02	0,22 kg
0,22 mm <sup>2</sup>	7 x 0,20	94 Ω	300/2,000 V	80°C	0,27	1,15	0,32 kg
0,34 mm <sup>2</sup>	7 x 0,25	59 Ω	300/2,000 V	80°C	0,27	1,30	0,45 kg
0,56 mm <sup>2</sup>	7 x 0,32	37 Ω	300/2,000 V	80°C	0,27	1,50	0,69 kg
0,14 mm <sup>2</sup>	7 x 0,16	150 Ω	300/2,000 V	80/105°C	0,40	1,30	0,31 kg
0,22 mm <sup>2</sup>	7 x 0,20	94,2 Ω	300/2,000 V	80/105°C	0,40	1,50	0,42 kg
0,34 mm <sup>2</sup>	7 x 0,25	59,4 Ω	300/2,000 V	80/105°C	0,40	1,65	0,56 kg
0,56 mm <sup>2</sup>	7 x 0,32	36,7 Ω	300/2,000 V	80/105°C	0,40	1,85	0,82 kg
0,56mm <sup>2</sup>	18 x 0,20	35 Ω	300/2,000 V	80/105°C	0,40	1,90	0,82 kg
0,93 mm <sup>2</sup>	19 x 0,254	23,2 Ω	300/2,000 V	80/105°C	0,40	2,15	1,26 kg
0,88 mm <sup>2</sup>	28 x 0,20	22 Ω	300/2,000 V	80/105°C	0,40	2,15	1,26 kg
1,3 mm <sup>2</sup>	19 x 0,29	14,6 Ω	300/2,000 V	80/105°C	0,40	2,40	1,68 kg
1,29 mm <sup>2</sup>	41 x 0,20	13,5 Ω	300/2,000 V	80/105°C	0,40	2,50	1,70 kg
2,15 mm <sup>2</sup>	19 x 0,38	9 Ω	300/2,000 V	105°C	0,40	2,80	2,20 kg

The tinned 7-wire and 19-wire copper strands are insulated with semi-rigid PVC in the 1061 or with special PVC in the 1007, and are break-resistant, acid and alkali resistant to a limited extent, largely oil-resistant (as per UL 1061), oil-resistant (as per UL 1007) and flame-retardant according to UL 2556 VW-1 / FV-2 / FT1. The insulated strands are largely heat and cold elastic.  
**Low-cost connections are possible by using cutting, clamping and crimping connectors.**

**Net prices**

**Ordering information**

**Colours**

 Contents of one reel*	Including copper in EUR per 100 m on collection			(also specify the colour) *AWM = Appliance Wiring Material			Usually available ex-stock Colours
	300 m upwards	1,500 m upwards	6,000 m upwards	AWG No.	Number of wires	Style No.	
305 m/ 762 m	9,00	7,20	5,40	<a href="#">AWM*-AWG 28/ 7 - 1061</a>			11 black
305 m/ 1524 m	10,00	8,00	6,00	<a href="#">AWM -AWG 26/ 7 - 1061</a>			22 white
305 m/ 1524 m	11,50	9,20	6,90	<a href="#">AWM -AWG 24/ 7 - 1061</a>			33 grey
305 m/ 1524 m	14,50	11,60	8,70	<a href="#">AWM -AWG 22/ 7 - 1061</a>			44 red
305 m/ 1524 m	16,00	12,80	9,60	<a href="#">AWM -AWG 20/ 7 - 1061</a>			55 blue
305 m/ 762 m	11,50	9,20	6,90	<a href="#">AWM -AWG 26/ 7 - 1007/1569</a>			60 orange
305 m/ 762 m	13,50	10,80	8,10	<a href="#">AWM -AWG 24/ 7 - 1007/1569</a>			66 yellow
305 m/ 762 m	16,00	12,80	9,60	<a href="#">AWM -AWG 22/ 7 - 1007/1569</a>			77 green
305 m/ 762 m	20,00	16,00	12,00	<a href="#">AWM -AWG 20/ 7 - 1007/1569</a>			88 purple
305 m	20,00	16,00	12,00	<a href="#">AWM -AWG 20/18 - 1007/1569</a>			99 brown
305 m/ 762 m	30,00	24,00	18,00	<a href="#">AWM -AWG 18/19 - 1007/1569</a>			We supply 2-coloured certified strands at quantities of 5,000 metres upwards (minimum production quantity)
305 m	30,00	24,00	18,00	<a href="#">AWM -AWG 18/28 - 1007/1569</a>			Please send us your request.
305 m/ 762 m	44,00	35,20	26,40	<a href="#">AWM -AWG 16/19 - 1007/1569</a>			
305 m	45,00	36,00	27,00	<a href="#">AWM -AWG 16/41 - 1007/1569</a>			
305 m	70,00	56,00	42,00	<a href="#">AWM -AWG 14/19 - 1569</a>			

\*(Cuttlenght are without Label)

Insulation resistance: 153 Ω x km (20°C)      Mechanical properties: Once-only bending radius = 10 x outer diameter  
Repeated bending radius = 15 x outer diameter

**Structure of the AWG strands**

Conductor cross-section	Number of wires x Wire Ø in mm	Max. conductor resistance per km at 20°C	Operating voltage/ Test voltage V	Operating temperature°C	Wall thickness of the insulation, approx. mm	Ø of the insulated strands approx. mm	Weight per 100 m
0.56 mm <sup>2</sup>	7 x 0.32	36.7 Ω	600 / 2,000	105°	0.8	2.65	1.27 kg
0.61 mm <sup>2</sup>	19 x 0.20	36.7 Ω	600 / 2,000	105°	0.8	2.65	1.32 kg
0.93 mm <sup>2</sup>	19 x 0.254	23.2 Ω	600 / 2,000	105°	0.8	3.00	1.77 kg
1.3 mm <sup>2</sup>	19 x 0.30	14.6 Ω	600 / 2,000	105°	0.8	3.35	2.23 kg
1.9 mm <sup>2</sup>	19 x 0.375	8.96 Ω	600 / 2,000	105°	0.8	3.60	3.10 kg
2.37 mm <sup>2</sup>	37 x 0.29	8.62 Ω	600 / 2,000	105°	0.8	3.84	3.51 kg
3.2 mm <sup>2</sup>	19 x 0.46	6.0 Ω	600 / 2,000	105°	0.8	4.15	4.52 kg
3.35 mm <sup>2</sup>	37 x 0.34	5.43 Ω	600 / 2,000	105°	0.8	4.15	4.80 kg
5.37 mm <sup>2</sup>	37 x 0.43	3.45 Ω	600 / 2,000	105°	0.8	4.84	6.73 kg
8.85 mm <sup>2</sup>	61 x 0.43	2.14 Ω	600 / 10,000	105°	1.55	6.9	12.0 kg

The tinned copper strands are insulated with special PVC, are break-resistant, acid and alkali resistant to a limited extent, oil-resistant and flame-retardant according to UL 1581 VW-1 / UL 2556 FV-2. The insulated strands are largely heat and cold elastic (storage to -40°C).

Insulation resistance: 15.3 MΩ x km (20°C)      Mechanical properties: Once-only bending radius = 10 x outer diameter  
Repeated bending radius = 15 x outer diameter

**Net prices**

**Ordering information**

**Colours**

Rings / reels*	Including copper in EUR per 100 m on collection			(also specify the colour) *AWM = Appliance Wiring Material			Usually available ex-stock Colours
	100 m upwards	600 m upwards	4,500 m upwards	AWG No. Number of wires	Style No.		
100 m/305 m	27.00	21.60	16.20	<a href="#">AWM*-AWG 20/ 7 - 1015</a>		11 black 22 white 33 grey 44 red 55 blue 60 orange 66 yellow 77 green 88 purple 99 brown	
100 m/305 m	29.50	23.60	17.70	<a href="#">AWM-AWG 20/19 - 1015</a>		We supply 2-coloured certified strands at quantities of 5,000 m upwards (minimum production quantity)  Please send us your request.	
100 m/305 m	42.50	34.00	25.50	<a href="#">AWM-AWG 18/19 - 1015</a>			
100 m/305 m	50.00	40.00	30.00	<a href="#">AWM-AWG 16/19 - 1015</a>			
100 m/305 m	68.00	51.00	—	<a href="#">AWM-AWG 14/19 - 1015</a>			
100 m/305 m	47.00	36.00	—	<a href="#">AWM-AWG 14/37 - 1015 TEW*</a>			
100 m/305 m	50.00	37.00	—	<a href="#">AWM-AWG 12/19 - 1015 TEW*</a>			
100 m/305 m	45.00	35.00	—	<a href="#">AWM-AWG 12/37 - 1015 TEW*</a>			
100 m/305 m	75.00	50.00	—	<a href="#">AWM-AWG 10/37 - 1015 TEW*</a>			
100-m reel	76.00	61.00	—	<a href="#">AWM-AWG 8/ 61 - 1283 TEW*</a>			

\*(Cutlength are without Label)

\*Items to be sold off

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0**

**Fax: +49 (0)30 / 79 01 86 - 77**

Lepsiusstraße 89  
12165 Berlin

Central store  
Berlin - Steglitz

**Structure of the AWG strands**

Conductor cross-section	Number of wires x Wire Ø in mm	Max. conductor resistance per km at 20°C	Operating voltage/ Test voltage V	Operating temperature °C	Wall thickness of the insulation, approx. mm	Ø of the insulated strands approx. ... mm ± 0.05 mm to 0.08 mm	Weight per 100 m
0.09 mm <sup>2</sup>	7 x 0.13	239 Ω	90 / 1,000 V	105°	0.16	0.70	0.12 kg
0.14 mm <sup>2</sup>	7 x 0.16	150 Ω	90 / 1,000 V	105°	0.15	0.79	0.17 kg
0.09 mm <sup>2</sup>	7 x 0.13	239 Ω	300 / 2,000 V	105°	0.23	0.85	0.14 kg
0.14 mm <sup>2</sup>	7 x 0.16	150 Ω	300 / 2,000 V	105°	0.23	0.93	0.19 kg
0.22 mm <sup>2</sup>	7 x 0.20	94 Ω	300 / 2,000 V	105°	0.23	1.05	0.28 kg
0.14 mm <sup>2</sup>	7 x 0.16	150 Ω	600 / 2,000 V	105°	0.28	1.04	0.21 kg
0.22 mm <sup>2</sup>	7 x 0.20	94 Ω	600 / 2,000 V	105°	0.27	1.15	0.30 kg
0.34 mm <sup>2</sup>	7 x 0.25	59 Ω	600 / 2,000 V	105°	0.27	1.30	0.44 kg
0.56 mm <sup>2</sup>	7 x 0.32	37 Ω	600 / 2,000 V	105°	0.28	1.52	0.67 kg
0.22 mm <sup>2</sup>	7 x 0.20	94 Ω	1,000 / 3,000 V	105°	0.35	1.30	0.33 kg
0.56 mm <sup>2</sup>	7 x 0.32	37 Ω	1,000 / 3,000 V	105°	0.34	1.65	0.71 kg
0.93 mm <sup>2</sup>	19 x 0.25	23 Ω	1,000 / 3,000 V	105°	0.36	2.00	1.15 kg
1.3 mm <sup>2</sup>	19 x 0.30	15 Ω	1,000 / 3,000 V	105°	0.37	2.23	1.55 kg

The tinned 7-wire and 19-wire copper strands are insulated with mPPE. With a hardness of 91 until 95 (± 3) Shore A, they are just as durable and workable as PVC. They are significantly thinner and lighter than comparable cables in the same operating voltage class. They are phthalate-free.

Static temperature range: -40° to + 105°C  
moving: -25° to + 105°C

mPPE insulated cores pass the strict vertical flame test (VW1) as per UL 1581 / UL 2556 FV-2. (mPPE = modified polyphenylene ether)

**Net prices**

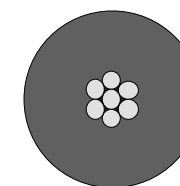
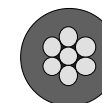
**Ordering information**

**Colours**

Reels	Including copper in EUR per 100 m on collection			(also specify the colour) AWG No. Number of wires Style No.	Usually available ex-stock Colours
	305 m upwards	915 m upwards	3,050 m upwards		
305 m	21.00	16.80	12.60	<a href="#">mPPE-AWG 28/7-11030</a>	00 orange
305 m	22.50	18.00	13.50	<a href="#">mPPE-AWG 26/7-11030</a>	11 black
305 m	22.50	18.00	13.50	<a href="#">mPPE-AWG 28/7-11027</a>	22 white
305 m	24.00	19.20	14.40	<a href="#">mPPE-AWG 26/7-11027</a>	33 grey
305 m	26.00	20.80	15.60	<a href="#">mPPE-AWG 24/7-11027</a>	44 red
305 m	25.00	20.00	15.00	<a href="#">mPPE-AWG 26/7-11028</a>	55 blue
305 m	27.00	21.60	16.20	<a href="#">mPPE-AWG 24/7-11028</a>	66 yellow
305 m	30.00	24.00	18.00	<a href="#">mPPE-AWG 22/7-11028</a>	77 green
305 m	40.00	32.00	24.00	<a href="#">mPPE-AWG 20/7-11028</a>	88 violet
305 m	29.00	23.20	17.40	<a href="#">mPPE-AWG 24/7-11029</a>	99 brown
305 m	41.00	32.80	24.60	<a href="#">mPPE-AWG 20/7-11029</a>	We supply 2-coloured certified strands at quantities of 5,000 m upwards (minimum production quantity)
305 m	56.00	44.80	33.60	<a href="#">mPPE-AWG 18/19-11029</a>	
305 m	70.00	56.00	42.00	<a href="#">mPPE-AWG 16/19-11029</a>	

The use of mPPE cores results in cables with a very small diameter for each respective voltage class. The strands are not printed and are identified with labels. The following example displays two 7-wire strands based on comparable Styles, both 600 V / 150°C.

mPPE  
Style11028



PVC  
Style 1015

Technical data

Silver-coated, heat-resistant PTFE-5Y (Teflon®) insulated copper cores with UL certification !

		Conductor resistance at 20°C in Ω / km	Outer Ø approx.	Including reel Weight of 500 ft (= 153 m) approx.
	<b>UL 1180</b>	<b>UL 1199</b>		
Insulation wall thickness approx.	0.33 mm	0.51 mm	218.8	1.02 mm 0.8 kg
Operating voltage	300 V	600 V	218.8	1.38 mm 1.0 kg
Test voltage	4,000 V	4,000 V	85.4	1.57 mm 1.3 kg
Temperature range	-100°C to +200°C			
			209.3	1.08 mm 0.8 kg
			82.7	1.34 mm 1.1 kg
			133.0	1.53 mm 1.2 kg
			82.7	1.66 mm 1.4 kg
			52.1	1.8 mm 1.7 kg
			31.8	2.0 mm 2.1 kg

Properties of the Teflon®-PTFE insulation

- PTFE is not inflammable
- PTFE is fully ozone-resistant
- PTFE does not absorb water, 0% !
- PTFE does not provide a creepage path (arc-resistant)
- PTFE is not attacked by solvents (acids, alkalis)
- PTFE is resistant to micro-cultures and does not permit the growth of fungus
- PTFE has low water vapour permeability (0.31 mg/cm²/24 hrs.)
- PTFE has an unlimited service life and is absolutely weatherproof
- PTFE is resistant to soldering temperatures (no shrinking or melting)

All UL-articles pass flame test UL-1581 VW-1.

Preferred applications for Teflon®-PTFE insulated cables and wires:

All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.



Label

On-time · Fast · Reliable



Net price including copper and silver

Cross-section and conductor structure	in EUR per 100 m on collection (per colour) from		Ordering information Please also specify the colour	Colours Colours usually available ex-stock*		
	500 feet (= 153 m)	3,000 feet (= 918 m)		No.	Colour	Abbreviation
Hook-up cable 300 V 0.08 mm² = 1 x 0.32 = AWG 28	60.00	45.00	<a href="#">MX 28 / 1 - 1180</a>	11	black	bk
Hook-up cables 600 V 0.08 mm² = 1 x 0.32 = AWG 28 0.20 mm² = 1 x 0.51 = AWG 24	80.00 84.00	60.00 63.00	<a href="#">TX 28 / 1 - 1199</a> <a href="#">TX 24 / 1 - 1199</a>	22	white	wh
Hook-up wires 300 V 0.09 mm² with 7 x 0.13 = AWG 28 0.22 mm² with 7 x 0.20 = AWG 24	72.00 76.00	54.00 57.00	<a href="#">MX 28 / 7 - 1180</a> <a href="#">MX 24 / 7 - 1180</a>	44	red	rd
Hook-up wires 600 V 0.14 mm² with 7 x 0.16 = AWG 26 0.22 mm² with 7 x 0.20 = AWG 24 0.34 mm² with 7 x 0.25 = AWG 22 0.56 mm² with 7 x 0.32 = AWG 20	88.00 108.00 120.00 144.00	66.00 81.00 90.00 108.00	<a href="#">TX 26 / 7 - 1199</a> <a href="#">TX 24 / 7 - 1199</a> <a href="#">TX 22 / 7 - 1199</a> <a href="#">TX 20 / 7 - 1199</a>	55	blue	bu
				66	yellow	ye
				77	green	gn
				99	brown	bn

\*other colours available upon request

Normal stock unit: 153-m reels (500 ft) (Cutlength are without Label)

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

Phone: +49 (0)30 / 79 01 86 - 0

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Berlin - Steglitz





**Technical data**

				Outer Ø approx.	including reel weight	
					250 m approx.	1,000 m approx.
Insulation wall thickness approx. 0.15 mm				0.47 mm	-	0.56 kg
Operating voltage				0.50 mm	0.28 kg	0.84 kg
Test voltage				0.56 mm	0.30 kg	1.10 kg
Operating voltage				0.63 mm	0.40 kg	1.30 kg
Test voltage				0.71 mm	0.50 kg	1.90 kg
Insulation wall thickness approx. 0.25 mm				0.64 mm	—	0.94 kg
Operating voltage				0.83 mm	0.5 kg	1.80 kg
Test voltage				0.90 mm	0.8 kg	2.40 kg
Operating voltage				1.00 mm	1.0 kg	3.30 kg
Test voltage				1.13 mm	1.5 kg	5.00 kg
Operating voltage				1.30 mm	1.9 kg	6.80 kg
Test voltage						
Temperature range		of the conductor	-100°C to 200°C	<b>No copper surcharge!</b> <b>No silver surcharge!</b>  <b>Normal stock unit:</b> <b>Standard reels with 250 m or 1,000 m</b>  <b>Lengths less than 250 m can be supplied as a free-wound ring.</b>		
		of the insulation	-100°C to 260°C			
Density		2.15 to 2.20 g/cm <sup>3</sup>				
Tensile strength		32 N/mm <sup>2</sup>				
Fracture strain		200 to 500%				
Specific volume resistivity		10 <sup>18</sup> Ω x cm				
Dielectric constant		2.1				
Loss factor		0.0002				
Oxygen index		> 95				
Radiation resistance		10 E3 Gy				
<b>Preferred applications for Teflon®-PTFE insulated wires and strands:</b> All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.						

**Net prices**

**Colours**

Cross-section and conductor structure	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m including copper and silver on collection (per colour)			Ordering information Please also specify the colour	Colours usually available ex-stock No. Colour
		100 m upwards	500 m upwards	1,000 m upwards		
<b>Hook-up wire 250 V</b>						
0.02 mm <sup>2</sup> = 1 x 0.12 mm Ø	1,36	85.00	68.00	51.00	<a href="#">MX 36 - 136</a>	11 black
0.03 mm <sup>2</sup> = 1 x 0.20 mm Ø	--,64	40.00	32.00	24.00	<a href="#">MX 32 - 132</a>	22 white
0.05 mm <sup>2</sup> = 1 x 0.25 mm Ø	--,56	35.00	28.00	21.00	<a href="#">MX 30 - 130</a>	33 grey
0.08 mm <sup>2</sup> = 1 x 0.32 mm Ø	--,64	40.00	32.00	24.00	<a href="#">MX 28 - 128</a>	44 red
0.13 mm <sup>2</sup> = 1 x 0.40 mm Ø	--,72	45.00	36.00	27.00	<a href="#">MX 26 - 126</a>	55 blue
<b>Hook-up wire 600 V</b>						60 orange
0.02 mm <sup>2</sup> = 1 x 0.11 mm Ø	1,44	90.00	72.00	54.00	<a href="#">TX 36 - 136</a>	66 yellow
0.08 mm <sup>2</sup> = 1 x 0.32 mm Ø	--,72	45.00	36.00	27.00	<a href="#">TX 28 - 128</a>	77 green
0.13 mm <sup>2</sup> = 1 x 0.40 mm Ø	--,80	50.00	40.00	30.00	<a href="#">TX 26 - 126</a>	88 purple
0.20 mm <sup>2</sup> = 1 x 0.51 mm Ø	--,88	55.00	44.00	33.00	<a href="#">TX 24 - 124</a>	99 brown
0.32 mm <sup>2</sup> = 1 x 0.64 mm Ø	1,36	85.00	68.00	51.00	<a href="#">TX 22 - 122</a>	
0.52 mm <sup>2</sup> = 1 x 0.81 mm Ø	1,60	100.00	80.00	60.00	<a href="#">TX 20 - 120</a>	

**\*Description of the ordering designations**

M	T	X	30	-1	30
250 V	600 V	silver-coated	AWG No.	single wire	AWG No.
max. operating voltage		PTFE insulation	of the conductor		of the wire

### Technical data

<b>Insulation wall thickness</b> approx. 0.15 mm / approx. 0.08 mm for AWG 36	including reel weight		
Operating voltage VDE 0881 / MIL-W-16878/6 <b>250 V</b> (ET) / 160 V at AWG 36	Outer Ø approx. mm	250 m approx.	1,000 m approx.
Test voltage VDE 0881 and MIL 1,500 V			
<b>Mechanical properties:</b> Once-only bending radius 5 x outer diameter Repeated bending radius 10 x outer diameter			
Temperature range of the conductor -100°C to 200°C / of the insulation - 65°C to 200°C (at AWG 36) -100°C to 260°C	0.32	0.1 kg	0.5 kg
Density 2.15 to 2.20 g/cm³	0.56	0.2 kg	0.9 kg
Tensile strength 32 N/mm²	0.61	0.3 kg	1.2 kg
Fracture strain 200 to 500%	0.69	0.4 kg	1.6 kg
Specific volume resistivity 10 <sup>18</sup> Ω X cm	0.79	0.5 kg	2.0 kg
Dielectric constant 2.1	0.92	0.8 kg	3.2 kg
Loss factor 0.0002	1.07	1.2 kg	4.6 kg
Oxygen index > 95	1.27	1.8 kg	6.7 kg
Radiation resistance 10 E3 Gy			
<b>Properties of the Teflon®-PTFE insulation:</b>	0.79	0.6 kg	2.3 kg
PTFE is not inflammable	0.92	0.8 kg	3.3 kg
PTFE is fully ozone-resistant	1.07	1.3 kg	4.8 kg
PTFE does not absorb water, 0% !	1.27	1.9 kg	7.2 kg
PTFE does not provide a creepage path (arc-resistant)			
PTFE is not attacked by solvents (acids, alkalis)			
PTFE is resistant to micro-cultures and does not permit the growth of fungus			
PTFE has low water vapour permeability (0.31 mg/cm²/24 hrs.)			
PTFE has an unlimited service life and is absolutely weatherproof			
PTFE is resistant to soldering temperatures (no shrinking or melting)			
PTFE saves space through thin walls at high operating voltages			

#### Preferred applications for Teflon®-PTFE insulated cables and wires:

All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.

**No copper surcharge!**  
**No silver surcharge!**

**Normal stock unit:**  
**Standard reels with 250 m / or 1,000 m**

**Lengths less than 250 m can be supplied as a free-wound ring.**

### Net prices

### Colours

Cross-section and conductor structure	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m including copper and silver on collection (per colour)			Ordering information Please also specify the colour	Colours usually available ex-stock No. Colour
		100 m upwards	500 m upwards	1,000 m upwards		
Hook-up wires 7-wire, 160 / 250 V 0.01 mm <sup>2</sup> with 7 x 0.05	2,64	165.00	132.00	99.00	<a href="#">LX 36 - 744</a>	11 black
0.03 mm <sup>2</sup> with 7 x 0.08	-,96	60.00	48.00	36.00	<a href="#">MX 32 - 740</a>	22 white
0.06 mm <sup>2</sup> with 7 x 0.10	1,04	65.00	52.00	39.00	<a href="#">MX 30 - 738</a>	33 grey
0.09 mm <sup>2</sup> with 7 x 0.13	1,04	65.00	52.00	39.00	<a href="#">MX 28 - 736</a>	44 red
0.14 mm <sup>2</sup> with 7 x 0.16	1,04	65.00	52.00	39.00	<a href="#">MX 26 - 734</a>	55 blue
0.22 mm <sup>2</sup> with 7 x 0.20	1,12	70.00	56.00	42.00	<a href="#">MX 24 - 732</a>	60 orange
0.34 mm <sup>2</sup> with 7 x 0.25	1,52	95.00	76.00	57.00	<a href="#">MX 22 - 730</a>	66 yellow
0.56 mm <sup>2</sup> with 7 x 0.32	1,84	115.00	92.00	69.00	<a href="#">MX 20 - 728</a>	77 green
Hook-up wires 19-core, 250 V						
0.14 mm <sup>2</sup> with 19 x 0.10	1,36	85.00	68.00	51.00	<a href="#">MX 26 - 1938</a>	88 purple
0.22 mm <sup>2</sup> with 19 x 0.13	1,60	100.00	80.00	60.00	<a href="#">MX 24 - 1936</a>	99 brown
0.34 mm <sup>2</sup> with 19 x 0.16	1,92	120.00	96.00	72.00	<a href="#">MX 22 - 1934</a>	
0.56 mm <sup>2</sup> with 19 x 0.20	2,48	155.00	124.00	93.00	<a href="#">MX 20 - 1932</a>	

#### \*Description of the ordering designations

L	M	X	32	7 or 19	40
Operating voltage 160 V	Operating voltage 250 V	silver-coated PTFE insulation	AWG No. of the conductor	Number of the wires	AWG No. of single wire

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Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

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**Fax: +49 (0)30 / 79 01 86 - 77**

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12165 Berlin

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**Technical data**

**Insulation wall thickness** approx. 0.25 mm

Operating voltage VDE 0881 / MIL-W-16878/4 600 V (E)  
Test voltage VDE 0881 and MIL 2,000 V

**Mechanical properties:** Once-only bending radius 5 x outer diameter  
Repeated bending radius 10 x outer diameter

Temperature range of the conductor -100°C to +200°C  
of the insulation -100°C to +260°C

Density 2.15 to 2.20 g/cm³  
Tensile strength 32 N/mm²  
Fracture strain 200 to 500%  
Specific volume resistivity 10<sup>18</sup> Ω X cm  
Dielectric constant 2.1  
Loss factor 0.0002  
Oxygen index > 95  
Radiation resistance 10 E3 Gy

**Properties of the Teflon®-PTFE insulation:**

PTFE is not inflammable  
PTFE is fully ozone-resistant  
PTFE does not absorb water, 0% !  
PTFE does not provide a creepage path (arc-resistant)  
PTFE is not attacked by solvents (acids, alkalis)  
PTFE is resistant to micro-cultures and does not permit the growth of fungus  
PTFE has low water vapour permeability (0.31 mg/cm²/24 hrs.)  
PTFE has an unlimited service life and is absolutely weatherproof  
PTFE is resistant to soldering temperatures (no shrinking or melting)  
PTFE saves space through thin walls at high operating voltages

**Preferred applications for Teflon®-PTFE insulated cables and wires:**

All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.

Conductor resistance at 25 °C in Ohms/km	Outer Ø approx. mm	Weight per 250 m incl. reel in kg
--	0.76	0.3
330	0.81	0.4
209	0.89	0.5
133	0.99	0.8
83	1.12	1.0
53	1.27	1.4
33	1.47	2.0
21	1.76	3.1
<hr/>		
133	0.99	0.8
83	1.12	1.3
53	1.27	1.5
33	1.47	2.1
21	1.76	3.2
15	2.00	4.2
10	2.35	6.2
6	2.85	8.8
<hr/>		
10	2.35	6.8
4	3.35	12.6

**Normal stock unit:  
Standard reels with 250 m or 1,000 m**

**Lengths less than 250 m can be supplied as a free-wound ring.**

**Net prices**

**Colours**

Cross-section and conductor structure	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m including copper and silver on collection (per colour)			Ordering information Please also specify the colour	Colours usually available ex-stock No. Colour
		100 m upwards	500 m upwards	1,000 m upwards		
<hr/>						
Hook-up wire 7-wire, 600 V						
0.03 mm <sup>2</sup> with 7 x 0.08	1,20	75.00	60.00	45.00	<a href="#">TX 32 - 740</a>	11 black
0.06 mm <sup>2</sup> with 7 x 0.10	--,96	60.00	48.00	36.00	<a href="#">TX 30 - 738</a>	22 white
0.09 mm <sup>2</sup> with 7 x 0.13	1,04	65.00	52.00	39.00	<a href="#">TX 28 - 736</a>	33 grey
0.14 mm <sup>2</sup> with 7 x 0.16	1,20	75.00	60.00	45.00	<a href="#">TX 26 - 734</a>	44 red
0.22 mm <sup>2</sup> with 7 x 0.20	1,36	85.00	68.00	51.00	<a href="#">TX 24 - 732</a>	55 blue
0.34 mm <sup>2</sup> with 7 x 0.25	1,60	100.00	80.00	60.00	<a href="#">TX 22 - 730</a>	60 orange
0.56 mm <sup>2</sup> with 7 x 0.32	2,00	125.00	100.00	75.00	<a href="#">TX 20 - 728</a>	66 yellow
0.93 mm <sup>2</sup> with 7 x 0.40	2,64	165.00	132.00	99.00	<a href="#">TX 18 - 726</a> *	77 green
<hr/>						
Hook-up wire 19-wire, 600 V						
0.14 mm <sup>2</sup> with 19 x 0.10	1,44	90.00	72.00	54.00	<a href="#">TX 26 - 1938</a>	88 purple
0.22 mm <sup>2</sup> with 19 x 0.13	1,68	105.00	84.00	63.00	<a href="#">TX 24 - 1936</a>	99 brown
0.34 mm <sup>2</sup> with 19 x 0.16	2,00	125.00	100.00	75.00	<a href="#">TX 22 - 1934</a>	
0.56 mm <sup>2</sup> with 19 x 0.20	2,64	165.00	132.00	99.00	<a href="#">TX 20 - 1932</a>	
0.93 mm <sup>2</sup> with 19 x 0.25	3,36	210.00	168.00	126.00	<a href="#">TX 18 - 1930</a>	
1.3 mm <sup>2</sup> with 19 x 0.29	4,40	275.00	220.00	165.00	<a href="#">TX 16 - 1929</a>	
1.9 mm <sup>2</sup> with 19 x 0.36	5,68	355.00	284.00	213.00	<a href="#">TX 14 - 1927</a>	
3.2 mm <sup>2</sup> with 19 x 0.45	8,24	515.00	412.00	309.00	<a href="#">TX 12 - 1925</a>	
<hr/>						
Hook-up wire 37-wire, 600 V						
2.4 mm <sup>2</sup> with 37 x 0.29	10,64	665.00	532.00	399.00	<a href="#">TX 14 - 3729</a>	TX 18 - 1930
4.7 mm <sup>2</sup> with 37 x 0.40	12,00	750.00	600.00	450.00	<a href="#">TX 10 - 3726</a>	TX 16 - 1929 TX 10 - 3726

\*Items to be sold off

**\*Description of the ordering designations**

T	X	32	7 or 19 or 37	40
Operating voltage	silver-coated	AWG No.	Number of	AWG No. of
600 V	PTFE insulated	the conductor	single wires	single wire

**Technical data**

**Insulation wall thickness** approx. 0.40 mm

Operating voltage VDE 0881 / MIL-W-16878/4 1,000 V (EE)  
Test voltage VDE 0881 and MIL 5,000 V

**Mechanical properties:** Once-only bending radius 5 x outer diameter  
Repeated bending radius 10 x outer diameter

Temperature range of the conductor -100°C to +200°C  
of the insulation -100°C to +260°C

Density 2.15 to 2.20 g/cm<sup>3</sup>  
Tensile strength 32 N/mm<sup>2</sup>  
Fracture strain 200 to 500%  
Specific volume resistivity 10<sup>18</sup> Ω X cm  
Dielectric constant 2.1  
Loss factor 0.0002  
Oxygen index > 95  
Radiation resistance 10 E3 Gy

**Properties of the Teflon®-PTFE insulation:**

PTFE is not inflammable  
PTFE is fully ozone-resistant  
PTFE does not absorb water, 0% !  
PTFE does not provide a creepage path (arc-resistant)  
PTFE is not attacked by solvents (acids, alkalis)  
PTFE is resistant to micro-cultures and does not permit the growth of fungus  
PTFE has low water vapour permeability (0.31 mg/cm<sup>2</sup>/24 hrs.)  
PTFE has an unlimited service life and is absolutely weatherproof  
PTFE is resistant to soldering temperatures (no shrinking or melting)  
PTFE saves space through thin walls at high operating voltages

**Preferred applications for Teflon®-PTFE insulated cables and wires:**

All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.

Conductor resistance at 25 °C in Ohms/km  
Outer Ø approx. mm  
Weight per 250 m incl. reel in kg

123	1.24	1.0
78	1.37	1.4
49	1.52	1.8
30	1.73	2.6
19	2.00	3.7

**Normal stock unit:  
Standard reels with 250 m/or 1,000 m**

**Lengths less than 250 m can  
be supplied as a free-wound ring.**

**Net prices**

**Colours**

Cross-section and conductor structure	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m including copper and silver on collection (per colour)			Ordering information Please also specify the colour	Colours usually available ex-stock No. Colour
		100 m upwards	500 m upwards	1,000 m upwards		
Hook-up wire 19-wire, 1000 V						
0.14 mm <sup>2</sup> with 19 x 0.10	1,92	120.00	96.00	72.00	<a href="#">HX 26 - 1938</a>	11 black
0.22 mm <sup>2</sup> with 19 x 0.13	2,00	125.00	100.00	75.00	<a href="#">HX 24 - 1936</a>	22 white
0.34 mm <sup>2</sup> with 19 x 0.16	2,24	140.00	112.00	84.00	<a href="#">HX 22 - 1934</a>	44 red
0.56 mm <sup>2</sup> with 19 x 0.20	2,80	175.00	140.00	105.00	<a href="#">HX 20 - 1932</a>	55 blue
0.93 mm <sup>2</sup> with 19 x 0.25	3,92	245.00	196.00	147.00	<a href="#">HX 18 - 1930</a>	

**\*Description of the ordering designations**

H	X	26	19	38
Operating voltage 1,000 V	silver-coated PTFE insulated	AWG No. the conductor	Number of single wires	AWG No. of single wire

**Technical data**

**Insulation wall thickness** approx. 0.25 mm

Operating voltage VDE 0881 / MIL-W-16878/4 600 V (E)

Test voltage VDE 0881 and MIL 2,000 V

Temperature -100°C to +260°C  
(Conductor and insulation)

Density 2.15 to 2.20 g/cm<sup>3</sup>  
Tensile strength 32 N/mm<sup>2</sup>  
Fracture strain 200 to 500%  
Specific volume resistivity 10<sup>18</sup> Ω X cm  
Dielectric constant 2.1  
Loss factor 0.0002  
Oxygen index > 95  
Radiation resistance 10E3 Gy

**Properties of the Teflon®-PTFE insulation:**

PTFE is not inflammable  
PTFE is fully ozone-resistant  
PTFE does not absorb water, 0%!  
PTFE does not provide a creepage path (arc-resistant)  
PTFE is not attacked by solvents (acids, alkalis)  
PTFE is resistant to micro-cultures and does not permit the growth of fungus  
PTFE has low water vapour permeability (0.31 mg/cm<sup>2</sup>/24 hrs.)  
PTFE has an unlimited service life and is absolutely weatherproof  
PTFE is resistant to soldering temperatures (no shrinking or melting)  
PTFE saves space through thin walls at high operating voltages

**Preferred applications for Teflon®-PTFE insulated cables and wires:**

All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.

These items can not be soldered, but probably crimp!

Conductor resistance at 25 °C in Ohms/km	Outer Ø approx. mm	Weight per 250 m incl. reel in kg
209	0.89	0.5
133	0.99	0.8
83	1.12	1.0
53	1.27	1.4

133	1.00	0.8
83	1.13	1.3
53	1.30	1.5
33	1.47	2.1

**Normal stock unit:  
Standard reels with 250 m/or 1,000 m**

**Lengths less than 250 m can  
be supplied as a free-wound ring.**

**Net prices**

**Colours**

Cross-section and conductor structure	Sample quantities under 100 metres  Price for 1 m	in EUR per 100 m including copper and nickel on collection (per colour)			Ordering information  Please also specify the colour	Colours usually available ex-stock  No. Colour
		100 m upwards	500 m upwards	1,000 m upwards		
Hook-up wire 7-wire, 600 V						
0.06 mm <sup>2</sup> with 7 x 0.10	--,88	55.00	44.00	33.00	<a href="#">TXn 30 - 738</a>	
0.09 mm <sup>2</sup> with 7 x 0.13	--,96	60.00	48.00	36.00	<a href="#">TXn 28 - 736</a>	
0.14 mm <sup>2</sup> with 7 x 0.16	1,12	70.00	56.00	42.00	<a href="#">TXn 26 - 734</a>	
0.22 mm <sup>2</sup> with 7 x 0.20	1,24	80.00	64.00	48.00	<a href="#">TXn 24 - 732</a>	11 black
0.34 mm <sup>2</sup> with 7 x 0.25	1,36	85.00	68.00	51.00	<a href="#">TXn 22 - 730</a>	22 white
Hook-up wire 19-wire, 600 V						44 red
0.14 mm <sup>2</sup> with 19 x 0.10	1,24	80.00	64.00	48.00	<a href="#">TXn 26 - 1938</a>	55 blue
0.22 mm <sup>2</sup> with 19 x 0.13	1,36	85.00	68.00	51.00	<a href="#">TXn 24 - 1936</a>	
0.34 mm <sup>2</sup> with 19 x 0.16	1,76	110.00	88.00	66.00	<a href="#">TXn 22 - 1934</a>	
0.56 mm <sup>2</sup> with 19 x 0.20	2,34	145.00	116.00	87.00	<a href="#">TXn 20 - 1932</a>	

**\*Description of the ordering designations**

T	Xn	30	7 or 19	38
Operating voltage	nickel-plated	AWG No.	Number of	AWG No. of
600 V	PTFE insulated	the conductor	single wires	single wire



**AWG wires**  
ETFE-7Y  
insulated  
250 V

**Tinned, heat-resistant copper hook-up cable with extruded ETFE-7Y-(Tefzel®) insulation.**  
Based on VDE 0881 / DIN 57 881 / IEC 673/MIL-W-22 759

### Technical data

Conductors: tinned copper (MT 30-130 is silver-coated)  
Insulation: ETFE extruded for **wire-wrap** applications.  
Insulation wall thickness approx. 0.15 mm.  
Operating voltage max. 250 V, test voltage (1 min.) 1,500 V.  
Operating temperature -100°C ... 150°C.

We always supply the type 2 (lightly adhesive) for wiring with self-stripping tools.

The notch toughness and conductor seating retention for **wire-wrapped**

MT - MTZ - TTZ wires are unsurpassed.

Conductor resistance at 25°C in Ohms/km	Outer Ø approx. mm	Weight per 250 m incl. reel in kg	Conductor ø mm	Cross-section in mm²		
361	0.55	0.23	0.25 silver-coated	0.05		
361	0.55	0.23	0.25	0.05		
225	0.60	0.31	0.32	0.08		
143	0.70	0.44	0.40	0.14		
90	0.80	0.63	0.51	0.22		

**AWG wires**  
ETFE-7Y  
insulated  
600 V

**Tinned, heat-resistant copper hook-up cable with extruded ETFE-7Y-(Tefzel®) insulation.**  
Based on VDE 0881 / DIN 57 881 / IEC 673/MIL-W-22 759

### Technical data

Conductors: tinned copper.  
Insulation: ETFE extruded for **wire-wrap** applications.  
Insulation wall thickness approx. 0.25 mm.  
Operating voltage max. 600 V, test voltage (1 min.) 2,500 V.  
Operating temperature -100°C ... 150°C.

We always supply the type 2 (lightly adhesive) for wiring with self-stripping tools.

The notch toughness and conductor seating retention for **wire-wrapped**

MT - MTZ - TTZ wires are unsurpassed.

Conductor resistance at 25°C in Ohms/km	Outer Ø approx. mm	Weight per 250 m incl. reel in kg	Conductor ø mm	Cross-section in mm²		
90	1.0	0.87	0.51	0.22		
55	1.2	1.22	0.64	0.34		
34	1.3	1.71	0.81	0.56		

#### Trademarks:

The designations **Tefzel** for ETFE (ethylene tetrafluoroethylene) and **Teflon** for PTFE (polytetrafluoroethylene) and are protected trademarks of DuPont.

**Normal stock unit:**  
Standard reels of 250 and 1,000 m

**Tinned, heat-resistant copper hook-up cable with extruded ETFE-7Y-(Tefzel®) insulation.**  
Based on VDE 0881 / DIN 57 881 / IEC 673/MIL-W-22 759

**AWG wires**  
ETFE-7Y  
insulated  
250 V

### Net prices

Sample quantities under 100 metres	in EUR per 100 m including copper on collection (per colour)				Ordering information	Colours usually available ex-stock
	100 m upwards	500 m upwards	5,000 m upwards	10,000 m upwards		
Price for 1 m					Please also specify the colour	No. Colour Abbreviation
--,60	40.00	30.00	24.00	21.60	<a href="#">MT 30 - 130</a>	11 black bk
--,42	28.00	21.00	16.80	15.10	<a href="#">MTZ 30 - 130</a>	22 white wh
--,45	30.00	22.50	18.00	16.20	<a href="#">MTZ 28 - 128</a>	33 grey gr
--,51	34.00	25.50	20.40	18.40	<a href="#">MTZ 26 - 126</a>	44 red rd
--,60	40.00	30.00	24.00	21.60	<a href="#">MTZ 24 - 124</a>	55 blue bl
						60 orange or
						66 yellow ye
						77 green gn
						88 purple pr
						99 brown br

**Tinned, heat-resistant copper hook-up cable with extruded ETFE-7Y-(Tefzel®) insulation.**  
Based on VDE 0881 / DIN 57 881 / IEC 673/MIL-W-22 759

**AWG wires**  
ETFE-7Y  
insulated  
600 V

### Net prices

Sample quantities under 100 metres	in EUR per 100 m including copper on collection (per colour)				Ordering information	Colours
	100 m upwards	500 m upwards	5,000 m upwards	10,000 m upwards		
Price for 1 m					Please also specify the colour	See above
--,66	44.00	33.00	26.40	23.80	<a href="#">TTZ 24 - 124</a>	
--,75	50.00	37.50	30.00	27.00	<a href="#">TTZ 22 - 122</a>	
--,96	64.00	48.00	38.40	34.60	<a href="#">TTZ 20 - 120</a>	

M	T	Z	30	1	30
Operating voltage max. 250 V	ETFE extruded	Tinned No letter: silver-coated	AWG No. of the conductor	Number of the wires of the conductor	AWG No. of one wire
T	T	Z	24	1	24
Operating voltage max. 600 V	ETFE extruded	Tinned	AWG No. of the conductor	Number of the wires of the conductor	AWG No. of one wire

**Net prices**

Outer Ø approx. in mm	1,000 m approx. incl. reel	Cross-section and conductor structure	Sample quantities under 100 metres  Price for 1 m	in EUR per 100 m including copper on collection (per colour)			Ordering information  Please also specify the colour
				100 m upwards	500 m upwards	1,000 m upwards	
0.68	1.6 kg	0.09 mm <sup>2</sup> with 7 x 0.13	--,48	30.00	24.00	18.00	<a href="#">MTZ 28- 736</a>
0.81	2.3 kg	0.15 mm <sup>2</sup> with 19 x 0.10	--,64	40.00	32.00	24.00	<a href="#">MTZ 26-1938</a>
0.91	3.3 kg	0.24 mm <sup>2</sup> with 19 x 0.13	--,72	45.00	36.00	27.00	<a href="#">MTZ 24-1936</a>
1.30	7.2 kg	0.60 mm <sup>2</sup> with 19 x 0.20	--,80	50.00	40.00	30.00	<a href="#">MTZ 20-1932</a>
1.55	10 kg	0.93 mm <sup>2</sup> with 19 x 0.25	1,20	75.00	60.00	45.00	<a href="#">MTZ 18-1930*</a>
1.70	13 kg	1.20 mm <sup>2</sup> with 19 x 0.29	1,52	95.00	76.00	57.00	<a href="#">MTZ 16-1929</a>

\* only black versions of this article are available ex-stock

**Description of the ordering data**

M	T	Z	28	7 or 19	36
Operating voltage max. 250 V	ETFE	Tinned	AWG No. of the conductor	Number of individual wires	AWG No. of the individual wires
<b>Colours usually available ex-stock:</b> black, white, red, blue, yellow		<b>Normal stock unit:</b> Standard reels with 250 m / 500 m / 1,000 m Lengths less than 250 m can be supplied as free-wound rings.			

**Technical data**

**Insulation wall thickness** approx. 0.15 mm

Operating voltage: 250 V

Test voltage: 2,500 V

Operating temperature: -100°C to 150°C

ETFE is very resistant to oils, grease, acids, alkalis, solvents

**Preferred applications for Tefzel®-ETFE insulated cables and wires:**

All areas with extremely stringent requirements on the thermal, electrical, chemical and mechanical properties, e.g. measurement and control system devices, the aerospace industry, for wiring of computers, for marine diesel engines, locomotives, alarm systems, measuring and test systems for the space industry.

**Net prices**

AWG	in EUR per 100 m including copper on collection (per colour)			Ordering information	Colours usually available ex-stock		
	100 m upwards	500 m upwards	1,000 m upwards		No.	Colour	Abbreviation
30	6.00	4.00	3.00	<a href="#">MCZ 30 - 130*</a>	11	black	bk
24	10.00	7.00	6.00	<a href="#">MCZ 24 - 124*</a>	22	white	wh
					55	blue	bu
					60	orange	or

\* Items to be sold off

**Technical data**

Hook-up cables for telecommunications and data processing systems halogen-free and flame-retardant  
**Conductors** tinned copper as per VDE 0881  
**Insulation** halogen-free, flame-retardant thermoplastic high-tech polymer (21 Y)  
**Insulation resistance** smallest value = 1,500 MΩ x km at 20°C  
**Operating voltage** 250 V  
**Test voltage** 1,500 V  
**Operating temperature** -50°C to +130°C (max. +150°C 3,000 h)  
**Normal stock units:** 250-m reels and 1,000-m reels

AWG	Conductor diameter in mm	Cross-section in mm <sup>2</sup>	Insulation wall thickness in approx. mm	Outer diameter approx.	Weight including reel		Conductor resistance (20°C) Ω/km
					250 m approx. kg	1,000 m approx. kg	
30	0.25	0.05	0.15	0.54	0.23	0.91	369
26	0.40	0.14	0.15	0.69	0.44	1.76	141
24	0.51	0.22	0.15	0.79	0.63	2.50	90

Technical data

Silver-coated, heat-resistant,  
flexible, insulated with Teflon®-FEP  
Colour: natural/transparent

Operating temperature

-90°C to +200°C

Special features

Small outer diameter  
High heat resistance  
Low capacitance

	Operating voltage at 50 Hz	AC test voltage	Outer diameter approx.
	2.0 kV	10 kV eff	3.1 mm
	2.0 kV	10 kV eff	3.5 mm
	3.0 kV	15 kV eff	6.8 mm

Net price including copper and silver

Cross-section and conductor structure	in EUR per 100 m on collection of at least			Ordering information
	50 m	100 m	500 m	
AWG 18 = 0.93 mm <sup>2</sup> with 7 x 0.40 silver-coated	442.00	340.00	272.00	<a href="#">HE 18 - 726 - 31</a>
AWG 16 = 1.3 mm <sup>2</sup> with 19 x 0.29 silver-coated	520.00	400.00	320.00	<a href="#">HE 16 - 1929 - 35</a>
AWG 10 = 4.7 mm <sup>2</sup> with 37 x 0.40 silver-coated	1,989.00	1,530.00	1,224.00	<a href="#">HE 10 - 3726 - 68</a>

short sample (20 cm) free of charge.

You can contact us **at any time** during our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

Phone: +49 (0)30 / 79 01 86 - 0

Fax: +49 (0)30 / 79 01 86 - 77



## Structure of the hook-up wires

Cross-section of the conductor	Number of wires x Wire Ø (mm)	Conductor resistance	Max. current to ...	Wall thickness of the insulation in mm	Max. operating voltage	Test voltage	Total Ø of the cable ±5%	100 m weighs approx.
0.15 mm <sup>2</sup>	39 x 0.07 plain Cu Highly flexible	122 Ω/km	1,5 A	0,25	150 V	2000 V	1,0 mm	0,3 kg
0.20 mm <sup>2</sup>	102 x 0.05 plain Cu Highly flexible	92 Ω/km	2 A	0,5	300 V	2000 V	1,7 mm	0,6 kg
0.50 mm <sup>2</sup>	256 x 0.05 plain Cu Highly flexible	37 Ω/km	5 A	0,45	500 V	2000 V	1,9 mm	0,9 kg
0.50 mm <sup>2</sup>	16 x 0.20 tinned Cu	37 Ω/km	5 A	0,6	500 V	2000 V	2,1 mm	0,9 kg
0.75 mm <sup>2</sup>	24 x 0.20 tinned Cu	25 Ω/km	9 A	0,6	500 V	2000 V	2,3 mm	1,1 kg
1.0 mm <sup>2</sup>	32 x 0.20 tinned Cu	18 Ω/km	12 A	0,6	500 V	2000 V	2,4 mm	1,4 kg
1.5 mm <sup>2</sup>	30 x 0.25 tinned Cu	12 Ω/km	16 A	0,6	500 V	2000 V	2,7 mm	2,0 kg
2.5 mm <sup>2</sup>	50 x 0.25 tinned Cu	7,5 Ω/km	20 A	0,7	500 V	2000 V	3,2 mm	3,0 kg
4.0 mm <sup>2</sup>	56 x 0.30 tinned Cu	4,9 Ω/km	25 A	0,7	500 V	2000 V	4,0 mm	4,4 kg
6.0 mm <sup>2</sup>	84 x 0.30 tinned Cu	3,3 Ω/km	33 A	0,7	500 V	2000 V	4,6 mm	6,2 kg
10 mm <sup>2</sup>	80 x 0.40 tinned Cu	1,9 Ω/km	45 A	0,85	500 V	2000 V	6,5 mm	12,4 kg
16 mm <sup>2</sup>	128 x 0.40 tinned Cu	1,2 Ω/km	61 A	0,85	500 V	2000 V	7,7 mm	18,5 kg

**Electrical properties:** dielectric loss angle approx.  $5 \times 10^{-3}$ , dielectric constant approx. 2-3.

**Heat resistance:** constant temperature 180°C, short-term up to 220°C.

**Cold resistance:** constant temperature -50°C, short-term down to -60°C.  
Without reduction of the rubber-elastic properties.

## Net price including copper

Ordering information	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			Usually available ex-stock colours
		100 m	500 m	5000 m	
<a href="#">Si-Lif 0.15 mm<sup>2</sup>*</a>	--,51	34.00	27.20	17.00	
<a href="#">Si-Lif 0.20 mm<sup>2</sup></a>	--,66	44.00	33.00	22.00	yellow-green*
<a href="#">Si-Lif 0.50 mm<sup>2</sup>*</a>	--,90	60.00	48.00	30.00	white
<a href="#">Si-Li 0.50 mm<sup>2</sup></a>	--,51	34.00	27.00	17.00	brown
<a href="#">Si-Li 0.75 mm<sup>2</sup></a>	--,70	44.00	35.00	22.00	green
<a href="#">Si-Li 1.0 mm<sup>2</sup></a>	--,72	48.00	38.00	24.00	yellow
<a href="#">Si-Li 1.5 mm<sup>2</sup></a>	--,81	54.00	43.00	27.00	grey
<a href="#">Si-Li 2.5 mm<sup>2</sup></a>	1.26	84.00	—	—	blue
<a href="#">Si-Li 4.0 mm<sup>2</sup></a>	1.62	108.00	—	—	red
<a href="#">Si-Li 6.0 mm<sup>2</sup></a>	2.40	160.00	—	—	black
<a href="#">Si-Li 10 mm<sup>2</sup></a>	3.15	210.00	—	—	pink**
<a href="#">Si-Li 16 mm<sup>2</sup></a>	4.65	310.00	—	—	purple**

**Normal stock unit: 100-m ring, short sample (20 cm) free of charge.**

Excellent dielectric properties over a wide temperature range at high frequencies.  
Resistant to high molecular weight oils, vegetable and animal fats, Clophen, softeners, alcohols, diluted acids, alkalis and salt solutions, sea water, oxidation agents and tropical influences.  
Silicone is fully resistant to oxidation attacks from oxygen and ozone. High flash point.  
Insulating SiO<sub>2</sub> remains after burning.

\* Items to be sold off

### Structure of the cables

Number of copper wires	Wire thickness in mm	Core cross-section	Wall thickness of the insulation in mm	Total $\varnothing$ of the cores in mm	Conductor resistance $\Omega$ /km at 20°C	Test voltage in kV*	100 m weighs approx.	Max. current up to ... as per VDE 0298/4
7	0.26	0.35 mm <sup>2</sup>	0.20	1.2 to 1.3	47.8 - 52.0	3	0.45 kg	1.5 A
19	0.19	0.50 mm <sup>2</sup>	0.22	1.4 to 1.6	34.1 - 37.1	3	0.66 kg	3 A
19	0.23	0.75 mm <sup>2</sup>	0.24	1.7 to 1.9	22.7 - 24.7	5	0.90 kg	6 A
19	0.26	1.0 mm <sup>2</sup>	0.24	1.9 to 2.1	17.0 - 18.5	5	1.1 kg	10 A
19	0.32	1.5 mm <sup>2</sup>	0.24	2.2 to 2.4	11.7 - 12.7	5	1.6 kg	16 A
19	0.41	2.5 mm <sup>2</sup>	0.28	2.7 to 3.0	7.0 - 7.6	5	2.6 kg	25 A
56	0.31	4.0 mm <sup>2</sup>	0.32	3.4 to 3.7	4.3 - 4.7	5	4.2 kg	32 A
84	0.31	6.0 mm <sup>2</sup>	0.32	4.0 to 4.3	2.8 - 3.2	5	6.1 kg	40 A

\* Test voltage: values above correspond to the regulations; we test with peak values of 6 kV.

Operating voltage: max. 60 V

#### Structure of the cables:

The plain copper strand is insulated with coloured PVC (reduced wall thickness).  
 The second colour is applied longitudinally extruded with coloured PVC

- FL means "Vehicle cable"
- R means "Reduced insulation wall thickness"
- Y means PVC
- A or B defines the type of strand structure

### Net price including copper

Ordering information	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection			Colours usually available ex-stock
		100 m upwards	500 m upwards	5,000 m upwards	
<a href="#">FLRY-A 0.35 mm<sup>2</sup></a>	0.21	13.50	9.00	6.00	white brown green yellow grey blue red black purple brown-white brown-green brown-yellow brown-grey brown-blue brown-red brown-black green-white yellow-brown yellow-green yellow-red blue-white blue-yellow blue-red red-white red-green red-yellow black-white black-green black-yellow
<a href="#">FLRY-A 0.50 mm<sup>2</sup></a>	0.27	18.00	12.00	8.00	
<a href="#">FLRY-A 0.75 mm<sup>2</sup></a>	0.34	22.50	15.00	10.00	
<a href="#">FLRY-A 1.0 mm<sup>2</sup></a>	0.47	31.50	21.00	14.00	
<a href="#">FLRY-A 1.5 mm<sup>2</sup></a>	0.68	45.00	30.00	20.00	
<a href="#">FLRY-A 2.5 mm<sup>2</sup></a>	1.00	67.50	45.00	30.00	
<a href="#">FLRY-B 4.0 mm<sup>2</sup></a>	1.62	108.00	72.00	48.00	
<a href="#">FLRY-B 6.0 mm<sup>2</sup></a>	2.43	162.00	108.00	72.00	

Normal stock unit: 400-m / 500-m reels;  
 for FLRY-B 4.0 and 6.0 reels of 200 m / 250 m.  
 Length less than 200 mtr. can be supplied as rings.

Short sample (20 cm) free of charge.

All prices are **net prices, including copper, reels and packaging** in the Federal Republic of Germany **delivered free of charge.**  
 Express and export deliveries always at extra cost.



Strand structure						Net price including copper				Ordering information
Number of wires (bare) and Ø in mm	Outer Ø in mm	PVC insulation wall thickness in mm	Rated current in A (25°C ambient temp.)	Conductor resistance/km (20°C) in Ω	100 m weights approx. in kg	Sample quantities under 100 metres			in EUR per 100 metres on collection	
						1 m upwards	100 m upwards	500 m upwards		
16 x 0.20	2.1	0.6	8	39	0.9	0.24	16.00	12.00	<a href="#">H 05V-K 0.5</a>	
24 x 0.20	2.3	0.6	13	25	1.1	0.36	24.00	18.00	<a href="#">H 05 V-K 0.75</a>	
32 x 0.20	2.6	0.6	16	19	1.4	0.42	28.00	21.00	<a href="#">H 05 V-K 1.0</a>	
30 x 0.25	3.0	0.7	20	13	2.2	0.54	36.00	27.00	<a href="#">H 07 V-K 1.5</a>	
50 x 0.25	3.6	0.8	27	8	3.1	0.90	60.00	45.00	<a href="#">H 07 V-K 2.5</a>	
56 x 0.30	4.2	0.8	36	4.7	4.8	1.38	92.00	69.00	<a href="#">H 07 V-K 4</a>	
84 x 0.30	4.8	0.8	47	3.2	6.9	2.04	136.00	102.00	<a href="#">H 07 V-K 6</a>	
80 x 0.40	6.3	1.0	65	1.8	12.5	3.60	240.00	180.00	<a href="#">H 07 V-K 10</a>	
128 x 0.40	7.6	1.0	87	1.2	18.0	5.46	364.00	273.00	<a href="#">H 07 V-K 16</a>	
200 x 0.40	9.6	1.2	115	0.75	28.0	8.61	574.00	-	<a href="#">H 07 V-K 25</a>	

Normal stock unit: 100-m ring, short sample (20 cm) free of charge.

**Colours available ex-stock**

black  
brown  
blue  
green-yellow  
red

Other colours available on request!

Technical data:

**Temperature range:** -10°C to 80°C  
Storage and operation

**Rated voltage U<sub>0</sub>/U:** H05V-K = 300/500 V  
H07V-K = 450/750 V

Strand structure						Net price including copper				Ordering information
Number of wires and Ø in mm	Outer Ø in mm	Rated current in A (25°C ambient temp.)	Conductor resistance/km (20°C) in Ω	100 m weights approx. in kg	Sample quantities under 100 metres	in EUR per 100 metres on collection				
						1 m upwards	100 m upwards	500 m upwards		
16 x 0,20	2.1-2.6	8	39	0.9	0.48	32.00	24.00	<a href="#">H 05 Z-K 0.5</a>		
24 x 0.20	2.2-2.8	15	25	1.2	0.72	48.00	36.00	<a href="#">H 05 Z-K 0.75</a>		
32 x 0.20	2.4-2.9	19	19	1.4	0.78	52.00	39.00	<a href="#">H 05 Z-K 1.0</a>		
30 x 0.25	2.8-3.5	24	13	2.2	0.90	60.00	45.00	<a href="#">H 07 Z-K 1.5</a>		
50 x 0.25	3.4-4.3	32	8	3.1	1.14	76.00	57.00	<a href="#">H 07 Z-K 2.5</a>		
56 x 0.30	3.9-4.0	42	4.7	4.8	1.98	132.00	99.00	<a href="#">H 07 Z-K 4</a>		
84 x 0.30	4.4-5.5	54	3.2	6.9	2.46	164.00	123.00	<a href="#">H 07 Z-K 6</a>		
80 x 0.40	5.7-7.1	73	1.8	11.5	4.08	272.00	204.00	<a href="#">H 07 Z-K 10</a>		
128 x 0.40	6.7-8.4	98	1.2	18.0	6.24	416.00	312.00	<a href="#">H 07 Z-K 16</a>		

Normal stock unit: 100-m ring, short sample (20 cm) free of charge.

Plain, fine-wire copper strands insulated with a **halogen-free polymer compound**

**Colours available ex-stock**

black  
brown  
blue  
green-yellow  
red

Other colours available on request!

Technical data:

**Temperature range:** -40°C to 90°C  
Storage and operation

**Rated voltage U<sub>0</sub>/U:** H05Z-K = 300/500 V  
H07Z-K = 450/750 V

**Test voltage:** 2,500 V

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Li9YY-11Y... × 0.09 mm<sup>2</sup>  
(19 × 0.08 mm Ø plain)

with PUR jacket, black

Page  
210 + 211



Li9YDY-11Y... × 0.09 mm<sup>2</sup>  
(19 × 0.08 mm Ø plain)

with PUR jacket, shielded, black



LifYY... × 0.04 mm<sup>2</sup>  
(20 × 0.05 mm Ø plain)

highly flexible with very small dimensions  
3 to 12 cores

212



LiY-LIYC-Y... × 0.14 mm<sup>2</sup>  
(18 × 0.10 mm Ø tinned)

one core in each cable is shielded  
3 to 5 cores

213



LiY-(CB)Y-Y... × 0.25 mm<sup>2</sup>  
(14 × 0.15 mm Ø tinned)

every core is shielded against contact  
3 cores, printed with numbers

214 + 215



LiYCY-CY... × 0.38 mm<sup>2</sup>  
(19 × 0.16 mm Ø tinned)

every core is shielded against contact, additional full shield  
2 to 7 cores

216 + 217



LifYY... × 0.50 mm<sup>2</sup>  
(256 × 0.05 mm Ø plain)

highly flexible for increased bending stresses  
2 to 12 cores, black RAL 9005 jacket

218 + 219



LiYY-LiYCY... × 0.50 mm<sup>2</sup>  
(16 × 0.20 mm Ø tinned)

various control signal cores + 2 cores  
individually shielded against contact  
4 to 16 cores

220 + 221

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- BUS
- RAILWAY
- POF



High-tech / power trailing cables

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Profibus, Interbus, ASI bus cables

223



Railway cables as per European standard EN 50200

224 + 225

## Polymer Optical Fibre

Polymer optical fibres/accessories + HFBR

226 + 227

## Technical data

Mini-cables, also shielded, as connection cables for mini-sensors (e.g. inductive proximity sensors, light barriers, ultrasonic sensors, etc.) or in the automotive sector, or other areas with restricted space requirements or heavy mechanical loads.

## Special features:

- Cores with thin walls of 0.13 mm
- Low core diameter of 0.65 mm
- PVC intermediate jacket for easy industrial wire-stripping
- PUR outer jacket with good properties
  - under mechanical and thermal loads
  - against lubricating oils and greases
  - also for outdoor installation

## Construction data

Fine-wire plain copper strands (19 x 0.08 mm = AWG 28) for each core.

## Core insulation:

Polypropylene (PP)

**Core diameter:** 0.65 mm ± 0.05 mm

**Core colours:** white, brown, green, yellow, grey, pink, blue, red

The cores are twisted and sprayed with a PVC intermediate jacket. The shielded versions have a twisted, plain copper 0.10-mm wire between the cores and intermediate jacket. The final layer is a formed by the outer thermoplastic polyether polyurethane (TPE-U) jacket, Shore hardness A88 ± 3, black.

## Electrical and physical properties at 20°C

Conductor resistance:	max. 200 Ω/km
Insulation resistance:	≥ 200 MΩ x km
Operating voltage:	300 V peak voltage
Test voltage:	1,200 Veff 50 Hz 1 minute
Core test voltage:	2.5 kV (spark test)
Temperature range:	-15°C to +80°C (installation and operation) -30°C to +80°C (transport and storage)

## Mechanical properties:

Once-only bending radius:	10 x outer diameter
Repeated bending radius:	15 x outer diameter

## Net prices including copper

Weight kg / 100 m	Total ø approx. mm ± 0.15 mm	Usually available ex-stock	Sample quantities under 100 metres	in EUR per 100 m on collection upwards			Ordering information
				Price for 1 m	100 m	500 m	
<b>Unshielded</b>							
0.85	2.4	3-core	1.30	88.00	66.00	44.00	<a href="#">Li9YY-11Y 3 x 0.09 black</a>
1.05	2.6	4-core	1.50	100.00	75.00	50.00	<a href="#">Li9YY-11Y 4 x 0.09 black</a>
1.39	3.1	6-core	1.90	128.00	96.00	64.00	<a href="#">Li9YY-11Y 6 x 0.09 black</a>
1.92	3.4	8-core	2.30	156.00	117.00	78.00	<a href="#">Li9YY-11Y 8 x 0.09 black</a>
<b>Shielded</b>							
1.49	2.8	3-core	2.10	140.00	105.00	70.00	<a href="#">Li9DY-11Y 3 x 0.09 black</a>
1.62	2.9	4-core	2.30	152.00	114.00	76.00	<a href="#">Li9DY-11Y 4 x 0.09 black</a>
2.00	3.5	6-core	2.60	176.00	132.00	88.00	<a href="#">Li9DY-11Y 6 x 0.09 black</a>
2.45	3.7	8-core	3.00	204.00	153.00	102.00	<a href="#">Li9DY-11Y 8 x 0.09 black</a>



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**Highly flexible control signal cables LifYY... x 0.04 mm<sup>2</sup>**  
(20 x 0.05 plain)

**Net prices including copper**

100 m weights approx.	Total ø approx.	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			Ordering information
				100 m	500 m	3000 m	
0.8 kg	2.6 mm	3-core	1.40	92.00	69.00	46.00	<a href="#">LifYY 3-04</a>
1.1 kg	2.8 mm	4-core	1.50	96.00	72.00	48.00	<a href="#">LifYY 4-04</a>
1.4 kg	3.2 mm	7-core	2.30	152.00	114.00	76.00	<a href="#">LifYY 7-04</a>
2.1 kg	4.1 mm	12-core	3.10	208.00	156.00	104.00	<a href="#">LifYY 12-04</a>

**Preferred application**

Connection cables for electronic systems, control and regulation systems.

**Special feature**

Highly flexible, suitable for frequent loads.

**Construction data**

Plain, fine-wire copper strands 20 x 0.05 = 0.04 mm<sup>2</sup>, coloured PVC insulation, core Ø 0.75 ± 0.1 mm. 3 to 12 cores are twisted to a cable.

Jacket light grey as per RAL 7032. Conductor resistance max. 600 Ω/km.

Insulation resistance ≥ 20 MΩ x km.

Capacitance at 1 kHz core/core 60 pF/metre + 50%.

Operating voltage max. 250 V, test voltage 800 V (VDE 0812),

current rating of 250 mA (ambient temperature of 25°C).

Temperature range -10°C ... +80°C, (transport and storage -40°C ... +80°C).

**Mechanical properties:** Once-only bending radius ≤ 5 X outer diameter  
Repeated bending radius ≤ 10 X outer diameter

**Colour sequence**

Core	Colour	Abbreviation
1	white	= wh
2	brown	= bn
3	green	= gn
4	yellow	= ye
5	grey	= gy
6	pink	= pk
7	blue	= bu
8	rot	= rd
9	black	= bk
10	violet	= vt
11	wh-bn	
12	wh-gn	



**Flexible control signal cables LiY-LiYC-Y ... x 0.14 mm<sup>2</sup>**  
one core in each cable is shielded

**Net prices including copper**

100 m weights approx.	Total ø approx.	not shielded shielded	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			Ordering information
				100 m	500 m	3000 m	
2.7 kg	4.2 mm	2 + 1	2.00	132.00	99.00	66.00	<a href="#">LiY-LiYC-Y 2+1 C</a>
3.0 kg	4.5 mm	3 + 1	2.20	144.00	108.00	72.00	<a href="#">LiY-LiYC-Y 3+1 C</a>
3.6 kg	4.8 mm	4 + 1	1.15	78.00	—	—	<a href="#">LiY-LiYC-Y 4+1 C*</a>

**Application**

Especially as microphone cable; also as a control signal cable when a core is to be protected from electrical interference.

**Conductor structure**

Shielded 1st (white) core: copper conductor, tinned 18 x 0.10 ø = 0.14 mm<sup>2</sup>.

PVC insulation, white with 0.30 mm wall thickness = 1.1 mm outer ø;

overlapping Hostaphan foil 0.02 mm ø.

C-shield of tinned copper wires 0.10 mm ø, 4-way, visual coverage 95%;

shield cross-section of 0.5 mm<sup>2</sup>. Overlapping Hostaphan foil.

Total ø of the shielded core is 1.7 mm.

Unshielded cores: copper conductor, tinned 18 x 0.10 mm ø = 0.14 mm<sup>2</sup>.

PVC insulation with 0.30 mm wall thickness.

Core colours: 2. core bn, 3. gn, 4. ye, 5. gy, outer ø of the unshielded cores is 1.1 mm.

**Structure**

The cores are twisted clockwise starting with the 1st white core.

The final covering is a PVC outer jacket, light grey RAL 7032 with a wall thickness of approx. 0.7 mm.

**Technical data**

Temperature range -10°C ... 80°C. Insulation resistance at least 20 MΩ x km (20°C). Conductor resistance max. 131 Ω/km.

Current rating of 1.5 A (ambient temperature of 25°C). Operating voltage max. 350 V, test voltage 1,200 V.

Capacitance of shielded cores approx. 300 pF/m (core/shield) at 1 kHz.

**Colour sequence**

1st core white (shielded)

2nd core brown

3rd core green

4th core yellow

5th core grey



\* Item to be sold off



**Technical data**

**Flexible control signal cables**  
Individually shielded cores, insulated against contact,  
printed with numbers, jacket light grey as per RAL 7032.

**Preferred application**  
Movable connection cables for electronic systems, especially for absolute and interference-free transmission  
of control pulses for data transfer.

**Special feature**  
Each core pair is shielded to prevent interference between different cable circuits  
and sheathed with a PVC jacket to prevent interference from external earthing.

**Construction data**

**Conductors and cross-sections**  
Tinned, fine-wire copper strands 14 x 0.15 = 0.25 mm<sup>2</sup>

**Core insulation**  
White PVC, core  $\varnothing = 1.3 \pm 0.05$  mm

**Shield**  
Braided shield of tinned Cu wire, 46 x 0.10 mm with approx. 90% visual coverage

**Wrapping**  
PVC hose jacket with a wall thickness of 0.30 mm,  
Total  $\varnothing$  of the cores is  $2.30 \pm 0.10$  mm,  
Orange jacket as per RAL 2000 with additional printed numerals

**Twisted structure**  
3 core are twisted to a cable.  
Cores numbered sequentially from the inner cores, starting with the number 1, through all layers in the same way  
as viewed from the A end of the cable

**Outer jacket**  
Light grey PVC as per RAL 7032, jacket wall thickness ca. 0.7 mm.

**Net price including copper**

100 m weighs approx.	Total $\varnothing$ $\pm 3\%$	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			<b>Ordering information</b>
				100 m	500 m	3000 m	
6.6 kg	6.5 mm	3-core	3.00	200.00	150.00	100.00	<a href="#">LiY(CB)Y-Y 3 x 0.25/27</a>

**Normal stock unit: 50 and 100-m rings. Short sample (20 cm) free of charge.**



**Electrical and thermal properties at 20°C (VDE 0812)**

Conductor resistance	max. 75 $\Omega$ /km
Insulation resistance	$\geq 20$ M $\Omega$ x km
Capacitance	approx. 310 pF/m core/shield (measured at 1 kHz)
Test voltage	1,000 V
Operating voltage	max. 250 V
Maximum current rating:	2.5 A (at ambient temperature up to 25°C)
<b>Temperature range</b>	
transport and	-10 .... 80°C
storage	-40 .... 80°C

Technical data

**Individually shielded, flexible control signal cables 0.38 mm<sup>2</sup> with full shield**

**Preferred application**

Connection cables for electronic systems, control and regulation systems, pulse and data transfer cables; especially when absolutely interference-free transmission must be guaranteed.

**Special feature**

Each core is shielded to prevent crosstalk interference and surrounded with a PVC jacket to prevent interference from external earthing. All cores are also surrounded by an additional full shield to provide protection from external influences.

**Construction data**

**Conductors and cross-sections**

Tinned copper strands 19 x 0.16 (AWG 22) = 0.38 mm<sup>2</sup>

**Core insulation**

Multicoloured PVC as per VDE 0812, core Ø over the core insulation 1.6 ± 0.5 mm, core Ø over the shield 2.2 mm, over the shield insulation 2.8 mm.

**Shield**

Tinned, braided copper wires, inner shields 16 x 0.10 (4-way), outer shield 16 x 0.16 (5-way) to 24 x 0.16 (7-way), for each Ø, coverage at least 83%.

**Outer jacket**

PVC, light grey as per RAL 7032.

**Electrical and thermal properties at 20°C (VDE 0812)**

Conductor resistance	max. 50 Ω/km
Core insulation resistance	≥ 20 M Ω x km
Capacitance	420 pF/m ± 15% (core/shield)
Operating voltage	max. 350 V
Test voltage	2,000 V, core/shield 1,200 V
Current rating	4 A (ambient temp. to 25°C).
Temperature range	-10°C ...105°C, short-term (1 hr.) 140°C

**Colour sequence**

in accordance with VDE 0812

- 1st core white
- 2nd core brown
- 3rd core green
- 4th core yellow
- 5th core grey
- 6th core pink
- 7th core blue

The intermediate insulation over the shields of each core and the outer jacket over the full shield are light grey as per RAL 7032.

Net price including copper

100 m weighs approx.	Total ø approx.	Usually available ex-stock	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection upwards			Ordering information
				100 m	500 m	3000 m	
8.8 kg	7.8 mm	2-core	5.10	340.00	255.00	170.00	<a href="#">LiYCY-CY 2 - 38</a>
10.8 kg	8.1 mm	3-core	6.80	456.00	342.00	228.00	<a href="#">LiYCY-CY 3 - 38</a>
13.6 kg	9.2 mm	4-core	3.80	256.00	192.00	—	<a href="#">LiYCY-CY 4 - 38</a> *
16.6 kg	10.4 mm	5-core	4.55	306.00	—	—	<a href="#">LiYCY-CY 5 - 38</a> *
19.5 kg	11.2 mm	6-core	5.20	—	—	—	<a href="#">LiYCY-CY 6 - 38</a> *
20.6 kg	11.2 mm	7-core	5.75	—	—	—	<a href="#">LiYCY-CY 7 - 38</a> *

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.



\* Items to be sold off

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Highly-flexible control signal cables LifYY ...x 0.5 mm<sup>2</sup>

Technical data

**Preferred application**

Connection cables for electronic systems, control and regulation systems.

**Special feature**

The cable is highly flexible and especially suitable for applications with frequent bending loads.

**Construction data**

**Conductors and cross-sections**

Fine-wire plain copper strands 256 x 0.05 mm = 0.50 mm<sup>2</sup>

**Core insulation**

PVC, coloured, second colour as abrasion-resistant coloured rings.

Conductor Ø 1.8 ± 0.1 mm.

**Twisted structure**

2 to 12 cores are twisted to a cable.

**Jacket**

Black PVC as per RAL 9005; the jacket is sprayed in a hose form to provide better cable flexibility.

Jacket wall thickness: up to 5-core 0.8 mm  
12-core 1.0 mm

**Electrical and thermal properties at 20°C (VDE 0812)**

Conductor resistance max. 37 Ω/km  
Insulation resistance ≥ 20 M Ω x km  
Capacitance approx. 100 pF/m core/core (measured at 1 kHz)  
Operating voltage max. 350 V  
Test voltage 1,200 V  
Current rating max. 6 A (ambient temp. up to 25°C).  
Temperature range -10°C ...80°C (installation and operation)

100 m weighs

2.4 kg  
4.6 kg  
5.7 kg  
7.8 kg  
16.4 kg

Highly-flexible control signal cables LifYY ...x 0.5 mm<sup>2</sup>

Net price including copper

Colour sequence

Total ø approx. ± 3%	Number of cores	Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection		Ordering information	Core	Colour	Abbreviation
			100 m upwards	500 m upwards				
5.6 mm	2-core	1.60	104.00	78.00	LifYY 2-54	1	white	= wh
5.8 mm	3-core	2.00	132.00	99.00	LifYY 3-54	2	brown	= bn
6.3 mm	4-core	2.50	164.00	123.00	LifYY 4-54	3	green	= gn
7.1 mm	5-core	1.70	114.00	86.00	LifYY 5-54*	4	yellow	= ye
10.4 mm	12-core	3.55	236.00	177.00	LifYY 12-54*	5	grey	= gy
						6	pink	= pk
						7	blue	= bl
						8	red	= rd
						9	black	= bk
						10	violet	= vt
						11	wh - bn	
						12	wh - gn	
						13	wh - ye	
						14	wh - gy	
						15	wh - pk	
						16	wh - bl	

Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.

No copper surcharges



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**LiYY-LiYCY ... x 0.5 mm<sup>2</sup>**

**Technical data**

Flexible control signal cables with 2 individually shielded and insulated cores.

**Preferred application**

Movable connection cables for electronic systems, control and regulation systems, measurement and signalling systems and as interconnection cables for paging and intercom systems.

**Special feature**

Every cable has two individually shielded cores for absolute, interference-free transmission of control pulses. The shields are also insulated to prevent interference from external earthing.

**Construction data**

**Conductors and cross-sections**

Tinned, fine-wire copper strands 16 x 0.20 mm = 0.50 mm<sup>2</sup>.

**Core insulation**

PVC, coloured, second colour as abrasion-resistant coloured rings.

Core Ø except for the two shielded cores 1.80 ± 0.1 mm.

**Braided shield**

(over the 1st = white and over the 2nd = brown core)

Braided shield of tinned Cu wire, 16 x 4 x 0.10 mm with approx. 80% visual coverage.

Each of the two shields is covered by a PVC hose jacket with a wall thickness of 0.5 mm.

Total Ø of each of the two shielded cores = 3.3 ± 0.1 mm.

**Twisted structure**

2 cores each with a Cu shield and PVC sheath are twisted with 2 to 14 unshielded PVC cores to form a cable.

**Outer jacket**

PVC, light grey as per RAL 7032. Jacket wall thickness increasing from 0.8 mm for 4 cores, through 1.0 mm for 8 cores to 1.2 mm for 16 cores.

**Electrical and thermal properties at 20°C (VDE 0812)**

Conductor resistance	max. 37 Ω/km
Insulation resistance	≥ 20 M Ω x km
Capacitance	approx. 80 pF/m core/core approx. 45 pF/m LiYCY core/core, shield earthed approx. 180 pF/m LiYCY core/core/shield (measured at 1 kHz)

Operating voltage	max. 250 V
Test voltage	1,000 V core/core, 500 V (core/shield)
Current rating	max. 5 A (ambient temp. up to 25 °C).
Temperature range	-10°C to 80°C (installation and operation) -40°C to 80°C (transport and storage)

**LiYY - LiYCY ... x 0.5 mm<sup>2</sup>**

**Net price including copper**

**Colour sequence**

100 m weighs approx.	Total ø ... ± 3%	Number of cores		Sample quantities under 100 metres Price for 1 m	in EUR per 100 metres on collection		Ordering information	Core Colour	
		Unshielded cores	Shielded cores		100 m upwards	500 m upwards		Core	Colour
9.1 kg	8.4 mm	2 + 2		4.00	268.00	201.00	<b>LiYY-LiYCY</b> <b>4 - 56</b>	1	white
12.0 kg	8.9 mm	4 + 2		4.80	320.00	240.00	<b>6 - 56</b>	2	brown
14.5 kg	10.0 mm	6 + 2		2.80	186.00	140.00	<b>8 - 56*</b>	3	green
15.6 kg	10.1 mm	8 + 2		2.40	162.00	122.00	<b>10 - 56*</b>	4	yellow
23.1 kg	12.5 mm	14 + 2		3.05	206.00	155.00	<b>16 - 56*</b>	5	grey
								6	pink
								7	blue
								8	red
								9	black
								10	purple
								11	wh-bn
								12	wh-gn
								13	wh-ye
								14	wh-gy
								15	wh-pk
								16	wh-bl

**Normal stock unit: 100-m ring. Short sample (20 cm) free of charge.**

**No copper surcharges**



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Only available while stocks last!

### Technical data

<b>Conductor structure:</b>	81 x 0.15 mm, plain = 1.5 mm <sup>2</sup> 133 x 0.15 mm, plain = 2.5 mm <sup>2</sup>
<b>Conductor insulation:</b>	Thermoplastic, modified
<b>Core colours:</b>	3 x black with printed numerals 1 x green / yellow (control signal pairs are 1 x white, 1 x black, wall thickness 0.4 mm)
<b>Shields:</b>	Cu braid, tinned, visual coverage ≥ 85%
<b>Jacket:</b>	TPU, flame-retardant, orange (similar to RAL 2003)
<b>Operating temperature:</b>	Permanent installation: -50°C to +80°C Moving: -20°C to +70°C
<b>Current rating:</b>	(as per DIN EN 60204-1 VDE 0113 Part 1) for 1.5 mm <sup>2</sup> = 16 A for 2.5 mm <sup>2</sup> = 22 A
<b>Operating voltage U<sub>eff</sub>:</b>	U <sub>o</sub> / V = 600 / 1,000 V (DIN - VDE) U = 1,000 V (UL)
<b>Certification:</b>	UL / CSA 20234



Label (USA Etikett)

**All cables are halogen-free, silicone-free, oil resistant and flame-retardant**

**When the installation specifications are adhered to, the following is guaranteed for all cables:**

- Min. permissible bending radius to 4 mm <sup>2</sup>	10 x D
- Max. permissible acceleration	5 m / sec <sup>2</sup>
- Max. permissible travel speed	180 m / min.
- Guaranteed bending (at ≥ 12 x D)	≥ 10 million
- Max. permissible horizontal travel distance	5 m

### Net price including copper

Conductor resistance in Ω/km at 20°C	Outer Ø approx. mm	100 m weighs approx.	Sample quantities under 100 metres Price for 1 m	Ordering information
8	11.7 ± 0.3 mm	24 kg	5.00	<a href="#">PSL C 11Y - J 4 x 2.5 orange*</a>
13.7	12.5 ± 0.4 mm	25 kg	5.15	<a href="#">PSL C 11Y - J 4 x 1.5 + 1P 1.5C orange*</a>
2.5 <sup>2</sup> = 8 1.5 <sup>2</sup> = 13.7	13.8 ± 0.4 mm	32 kg	6.30	<a href="#">PSL C 11Y - J 4 x 2.5 + 1P x 1.5C orange*</a>

Only available while stocks last!

### Net price including copper

Conductor resistance Ω/km at 20°C	Outer Ø approx. mm	100 m weighs approx.	Sample quantities under 100 metres Price for 1 m	in EUR per 100 m on collection <b>100 m upwards</b>	Ordering information
26,7	4.5 to 5.0	5 kg	1.50	100.00	<a href="#">2 MAZ 0.75 C HXOE*</a>

### Technical data

<b>Conductor structure:</b>	tinned Cu strands, 19-wire, 0.75 mm <sup>2</sup>
<b>Conductor insulation:</b>	special polymer, cross-linked
<b>Cores:</b>	twisted layers; 1 x white + 1 x brown
<b>Separating layer:</b>	foil or tape
<b>Shield:</b>	copper braid, tinned, coverage approx. 85%
<b>Separating layer:</b>	foil or tape
<b>Outer jacket:</b>	cross-linked, oil-resistant HFFR compound EM 104, black
<b>Operating conditions:</b>	Rated voltage: 300 V AC test voltage: (core/core/shield) 5 minutes = 2,000 V <sub>eff</sub>
<b>Jacket surface temperature limits:</b>	Operation = -40°C / +90°C Installation = -20°C / +50°C

You can contact us at any time **during** our business hours.  
Monday to Thursday from 7.30 a.m. to 4.00 p.m. and Friday from 7.30 a.m. to 2.00 p.m.

**Phone: +49 (0)30 / 79 01 86 - 0 Fax: +49 (0)30 / 79 01 86 - 77**

Lepsiusstraße 89  
12165 Berlin

Central store  
Berlin - Steglitz

metrofunk  
KABEL-UNION



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Technical data

**Profibus - Interbus - ASI bus**

<b>Conductor structure:</b>	1 x AWG 22 (wire) plain	<b>Jacket:</b>	PVC - purple
<b>Conductor insulation:</b>	Foamed PE	<b>Bending radius:</b>	once-only ≥ 75 mm multiple ≥ 150 mm
	Colours: green and red	<b>Impedance:</b>	150 Ω ± 15 Ω at 3 - 20 MHz
<b>Shield:</b>	a) plastic coated aluminium foil b) CU braid, tinned	<b>Temperature range:</b>	-20°C to +70°C

As above but with an inner jacket (directly over the cores, under the foil) Quick Strip

<b>Conductor structure:</b>	19 x 0.13 (AWG 24), plain	<b>Jacket:</b>	PUR - purple
<b>Conductor insulation:</b>	Foamed PE	<b>Bending radius:</b>	once-only ≥ 80 mm multiple ≥ 160 mm
	Colours: green and red	<b>Impedance:</b>	150 Ω ± 15 Ω at 3 - 20 MHz
<b>Shield:</b>	a) plastic coated Aluminium foil b) CU braid, tinned	<b>Temperature range:</b>	-20°C to +70°C

<b>Conductor structure:</b>	7 x 0.20 (AWG 24), plain	<b>Jacket:</b>	PVC - purple
<b>Conductor insulation:</b>	PE	<b>Bending radius:</b>	once-only ≥ 40 mm multiple ≥ 160 mm
<b>Core colours:</b>	1st pair: white + brown 2nd pair: grey + pink 3rd pair: yellow + green	<b>Impedance:</b>	100 Ω ± 15% at ≥ 1 MHz
		<b>Temperature range:</b>	-20 °C to +70 °C
		<b>Operating voltage:</b>	250 V AC
<b>Shield:</b>	a) plastic foil b) CU braid, plain	<b>Test voltage:</b>	1,000 Veff

<b>Conductor structure:</b>	76 x 0.15, tinned	<b>Jacket:</b>	Rubber compound EM 3 based on DIN VDE 0207 Part 21, yellow
<b>Conductor insulation:</b>	Rubber compound 3 G 13 as per DIN VDE 0207	<b>Temperature:</b>	permanent installation = -40°C to +85°C moving = -25°C to +85°C
		<b>Operating/</b>	
<b>Core colours:</b>	brown and blue, parallel	<b>Rated voltage:</b>	U <sub>0</sub> 32 V

Profibus

Standard Interbus

ASI bus

Only available while stocks last!

Net price including copper

Conductor resistance Ω/km at 20°C	Outer Ø approx. mm	Capacitance	100 m weighs approx.	Sample quantities under 100 metres Price for 1 m	in in EUR per 100 m on collection upwards			Ordering information
					100 m	500 m	3000 m	
≤ 57.1	8	30 pF/m	6.7 kg	1.00	68.00	51.00	34.00	<a href="#">02Y S(ST) CY</a> <a href="#">1 x 2 x AWG 22/1*</a> for permanent installation
≤ 57.1	8	35 pF/m	8.9 kg	1.30	88.00	66.00	44.00	<a href="#">02Y S2Y(ST) CY</a> <a href="#">1 x 2 x AWG 22/1</a> <a href="#">Quick Strip*</a> for permanent installation
≤ 79	8	30 pF/m	8.2 kg	2.10	—	—	—	<a href="#">Li 02Y(ST) C 11Y</a> <a href="#">1 x 2 x AWG 24/19*</a> Trailing cables
≤ 96	7.2	50 pF/m	7.0 kg	1.10	76.00	—	—	<a href="#">Li 2Y CY</a> <a href="#">3 x 2 x AWG 24/7*</a> for permanent installation and occasional movement
≤ 13.7	10.4	55 pF/m	7.0 kg	1.35	92.00	69.00	—	<a href="#">ASI</a> <a href="#">3G 3G - FL 2 x 1.5</a> <a href="#">yellow*</a> Bus power cables

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**Net prices in EUR per 100 m**

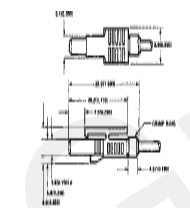
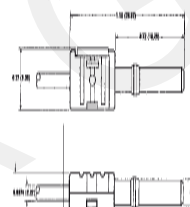
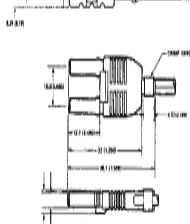
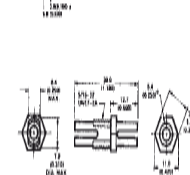
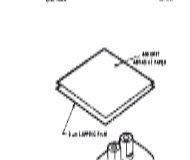
	Weight g/m	Diameter mm	on collection			Ordering information
			50 m upwards	250 m upwards	500 m upwards	
One fibre	3.7	2.2	79.00	63.00	48.00	POF 1*
Two fibres	7.5	4.4	118.00	95.00	71.00	POF 2*

Term		Acceptance criteria and/or [Test condition]	Area specification			
			Units of measure	Min.	Type.	Max.
Max. loading capacity	Attenuation Operating temperature	No wear of the optical properties [with dry atmosphere]	°C	-55	-	+85
Optical properties		[at 25°C, 50% RH, 650 nm wavelength]	dB/km	-	-	170
Mechanical properties	Min. bending radius	Attenuation increase ≤ 0.5 dB [with a quarter-bend]	mm	25		
	Tensile load	[tensile force at 5% expansion; in accordance with JIS C6861]	N	1-fibre 70 2-fibre 140		
Optical fibre	Core material		-	PMMA		
	Numerical aperture		-	0.5		
	Core diameter		µm	920	980	1,040
	Core jacket Diameter		µm	940	1,000	1,060
Cable jacket	Material [colour]		-	Polyethylene [black]		
	1 fibre Diameter		mm	2.13	2.20	2.27
	2 fibre		mm	4.3	4.4	4.5

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**Illustrations**

**Net prices in EUR per item**

Illustrations	1 item upwards	50 items upwards	100 items upwards	Ordering information
		0.40	0.32	
	0.40	0.32	0.24	<b>HFBR*</b> 4531 black Simplex (Duplex) Connector
	0.79	0.63	0.48	<b>HFBR*</b> 4506 white Duplex Connector
	0.69	0.55	0.41	<b>HFBR*</b> 4505 grey 4515 blue Adapter
	2.68	—	—	<b>HFBR*</b> 4593 Grinding set

**On-time · Fast · Reliable**



## TECHNOLOGY

### Technical data

<b>Ampere (A)</b>	=	Unit of electrical current
<b>Volt-Ampere (VA)</b>	=	The product of current and voltage, for direct current VA = Watt (W).
<b>Ohm (Ω)</b>	=	Unit of electrical resistance
		1 kΩ (kilohm) = 10 <sup>3</sup> Ω
		1 MΩ (megohm) = 10 <sup>6</sup> Ω
		1 GΩ (gigohm) = 10 <sup>9</sup> Ω
		1 TΩ (terohm) = 10 <sup>12</sup> Ω
<b>Power</b>	:	1 PS = 75 m kp / sec. 1 PS = 735.499 Watt
<b>Voltage</b>	:	Potential difference between 2 points. Electrical voltage is the cause of electrical current flowing through a conductor.
<b>Watt</b>	:	Unit of electrical power. 1 W = 1 V x A 1 kW = 1,000 W = 1.36 PS 1 kWh = the work performed by 1 kW in one hour.

For direct current, the resistance depends on the temperature at a specified current and voltage; for alternating current, the resistance additionally depends on the alternating current frequency. Each material presents a different resistance to the current, which is defined by the specific resistance (resistance of a body 1 cm long and 1 cm<sup>2</sup> cross-section).

**Colour sequence:** International colour code (IEC 60304) to the 10th colour  
**Core Colour**

1 black	16 white-green	31 green-red	46 grey-brown
2 brown	17 white-blue	32 green-orange	47 grey-red
3 red	18 white-purple	33 green-blue	48 grey-orange
4 orange	19 white-grey	34 green-purple	49 grey-yellow
5 yellow	20 brown-black	35 green-grey	50 grey-green
6 green	21 brown-red	36 green-white	51 grey-blue
7 blue	22 brown-orange	37 yellow-black	52 grey-purple
8 purple	23 brown-yellow	38 yellow-brown	53 grey-white
9 grey	24 brown-green	39 yellow-red	54 orange-black
10 white	25 brown-blue	40 yellow-orange	55 orange-brown
11 white-black	26 brown-purple	41 yellow-blue	56 orange-red
12 white-brown	27 brown-grey	42 yellow-purple	57 orange-yellow
13 white-red	28 brown-white	43 yellow-grey	58 orange-green
14 white-orange	29 green-black	44 yellow-white	59 orange-blue
15 white-yellow	30 green-brown	45 grey-black	60 orange-purple

## TECHNOLOGY

### Technical data

#### Primary insulating materials used in the electrical industry

<b>ETFE</b>	+150°C	very resistant to oils, greases, acids, alkalis and solvents.
<b>FEP</b>	+200°C	highly resistant to oils, greases, acids, alkalis and solvents.
<b>PTFE</b>	+260°C	best resistance to all chemicals.
<b>PVC</b>	+70°C to +105°C	resistant to oils, greases, acids and alkalis.
<b>PE</b>	+80°C	resistant to water, alcohol, petrol, greases, oils, diluted acids and most solvents.
<b>PUR</b>	+110 °C	resistant to oils, greases and solvents. Highly weather-resistant and hydrolysis-resistant.
<b>Silicone</b>	+180 °C	somewhat resistant to acids and alkalis.

**We are happy to provide you with a comprehensive overview (5 x DIN A4 pages) of all insulating materials used in the electronic industry free of charge.**

#### Technical data of PTFE, FEP and ETFE

Material		PTFE ( 5Y )	FEP ( 6Y )	ETFE ( 7Y )
Description	Unit	Polytetrafluoroethylene	Fluorinated ethylene propylene	Copolymerised ethylene Tetrafluoroethylene
Max. operating temperature	°C	+ 260	+ 200	+ 150
Cold resistance	°C	- 100	- 100	- 100
Tensile strength	N / mm <sup>2</sup>	≥ 20	≥ 10	≥ 30
Fracture strain	%	≥ 200	≥ 200	≥ 150
Specific volume resistivity	Ohm x cm	10 <sup>18</sup>	2 x 10 <sup>18</sup>	10 <sup>16</sup>
Dielectric constant		2.1	2.1	2.6
Loss factor		0.0002	0.0002	0.0008
Oxygen index		> 95	> 95	30
Radiation resistance	rad	10 <sup>5</sup>	10 <sup>6</sup>	10 <sup>7</sup>

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## Addresses of our foreign supply depots

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We have established supply depots in Sweden (also for Denmark, Finland and Norway) and in Switzerland. Customers in these countries can usually immediately obtain our wires, strands and cables ex-stock from the locations listed below.

### Sweden / Sverige

Vi har upprättat ett centrallager i Stockholm för kunder i Sverige, Finland, Norge och Danmark. Därifrån kan i stort sett hela vårt omfattande kabelprogram levereras omgående från lager.

ELPROMAN AB · Lövbacksvägen 3 · S-14171 Huddinge  
Phone: 08 - 970070 · Fax: 08 - 646 31 48

### Switzerland / Svizzera / Suisse

Noi abbiamo una rappresentanza generale in Svizzera a Zurigo. Voi potete avere, direttamente dai nostri magazzini, fili e elettrici trefoli, fili conduttori a cavi elettrici.

En Suisse, nous avons une agence générale à Zurich. Vous pouvez obtenir directement, pris au dépôt, des fils électriques.

INTERTECHNO - Firag AG · CH - 8852 Altendorf / Talstrasse 24c  
Phone: +41 55 620 10 11 · Fax: +41 55 620 10 12

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## General Terms of Delivery

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As of: 01/01/2018

for use in business dealings with entrepreneurs.

1. Our lists contain only net prices. Possible discounts and rebates are already included in the tiered pricing according to order quantities.
2. We do not charge copper surcharges.
3. For orders below €100.00 (net), a small order processing fee in the amount of €25.00 plus VAT will be charged additionally. This does not apply to residual quantities for subsequent deliveries caused by us.
4. Technical specifications, dimensions and weights are not binding; minor deviations are possible.
5. Payment terms, domestic: Our invoices must be paid 30-day net (no later than 30 days after the invoice date).
6. Payment terms, international: No discount for prepayment.
7. Returns are only accepted after prior agreement.
8. With subsidiary priority our delivery is subject to the enclosed general conditions for the supply of products and services of the electrical and electronics industry ("Allgemeine Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie" - edition June 2018 – of the association of the electrical engineering and electronic industry ("Zentralverband Elektrotechnik- und Elektronikindustrie e.V. (ZVEI)").
9. Confidentiality clause: The contracting parties agree to treat all commercial and technical data and documents, made available in the course of the business relationship, as confidential. They further agree to only process or use the data of the other contracting party for the contractually agreed purposes, in particular to secure it against unauthorized access by third parties and only to pass them on to third parties with the consent of the contracting party. They agree to store all data received in a secure location to protect it against access by third parties.